

# Research Report 2020

**Annual  
Research  
Report**

Politehnica  
University  
Timisoara  
2020

# Research Report 2020

Research Report, 2020

Copyright © Editura Politehnica 2021

All rights reserved to Politehnica University Timisoara.

No part of this booklet may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system now known or to be invented, without permission in writing from the publisher, except by a reviewer who wishes to quote brief passages in connection with a review written for inclusion in a magazine, newspaper, or broadcast.

Editorial team

Editor:

Prof. Liviu MARŞAVINA, PhD

Co-Editors:

Agnes STEPANIAN, Ladislau WALKOVSKY, Eugen Doru SZEKELY, Andreia Claudia LĂZĂRESCU

Layout & cover design: Eugen STAN

Editura Politehnica  
Bd. Vasile Pârvan nr. 2b  
300223 Timișoara, România  
Tel./Fax. 0256/404.677  
E-mail: editura@upt.ro

ISSN 1841-2769  
ISSN-L 1841-2769

Research  
Report 2020

**Annual  
Research  
Report**  
Politehnica  
University  
Timișoara  
2020



## Structure of the report

Introducing the Report .....	5
Research Centers .....	9
Scientific Excellence Awards .....	17
Projects supported by public funds .....	49
National Research Projects .....	51
International Research Projects .....	125
Projects supported by private funds .....	151
Patents .....	175
Granted Patents .....	179
Honorary Members .....	205
Doctor Honoris Causa .....	209
Honorary Professors .....	210
Habilitation Thesis .....	213
PhD Thesis .....	219
Scientific Conferences .....	227
Scientific Journals .....	237
ISI Papers .....	245
ISI Papers in highlight .....	249
Papers in ISI Journals .....	285
Papers in ISI Proceedings .....	305
Books .....	329
Books in highlight .....	333
Books List .....	339
Book Chapters List .....	345



## Introducing the Report



"It's not the walls that make a school, but the spirit living inside."

King Ferdinand I, 1923

The needs for a modern society, in the context of a competitive global market, require highly skilled human resource development. In this context, the role of universities in the innovation process has increased continuously over time because the development of new products or technologies depends more and more on the findings of scientific research.

Established in 1920, shortly after the union of Romanian territories, in a European context marked by the redefinition of states and by the aftermath of World War I, the Polytechnic School in Timișoara – as it was originally called – was the answer to one of the requirements of the Romanian society of the time, namely the formation of engineers.

The mission of the Politehnica University Timișoara (UPT) is to offer nationally competitive and internationally recognized opportunities for Learning, Research, and Innovation at the highest levels of excellence. As a resource of knowledge for the public, the university builds partnerships with other educational institutions, community organizations, government agencies, and the private sector to fulfill the requirements for competences of the societal environment through superior professional training for students and graduates.

The present Research Report of Politehnica University Timișoara gathers the main results obtained through the research activities carried out within the university in 2020, Politehnica being renowned as a remarkable actor on the stage of scientific research, both at national and international level. Our research activity is facilitated by the existence of twenty-six research centres specialized in fields that are capital for the sustainable development of any modern society. Each of these research centres brings together various prestigious researchers, whom, by their effort and vision, provide UPT with the incentives needed to contribute to the progress of our society.

Most of the research activity carried out by our institution is financed through external sources, obtained either from national and international calls for projects, or through agreements with private companies. This represents a confirmation of the superior quality of the research, but also of the prestige and professional deontology of the researchers affiliated to our institution. Politehnica's reputation as an institution of advanced research is also emphasized by the patents obtained by its researchers, by the medals and prizes obtained in both national and international competitions, and by the collaborations with important research centres and institutes from Romania and from abroad.

Each year we select the most talented young researchers for our doctoral school, providing them with the opportunity to transform their knowledge and ideas into the innovations of tomorrow. Many of them take part in peer learning programs and consolidate in this way the relationship between our university and similar partner institutions. They strive for becoming doctors in science.

This report is divided into twelve sections, each one presenting a specific component of the research activity performed within the institution.

The first section focuses on the research infrastructure, which comprises the twenty-six research centres hosted by the university. The order in which they are presented is given by the research fields. The research centres, respectively teams of researchers, on different themes, are highly important for our university since they manage to put into practice the scientific research strategy of the university successfully, within the framework of numerous grants and contracts won by competition. The research results are materialized in papers, patents and products, all bringing for the University prestige, as well as important funds.

# Research Report 2020

---

The second section of the Research Report is dedicated to the Scientific Excellence Awards. These prestigious awards celebrate those colleagues who have made a significant contribution in their field of research and continue to inspire future generations to get involved in science.

The third and fourth sections include the research projects implemented by the university. The third section includes the projects supported by public funds, both national and international, while the fourth one includes the projects supported by private funds awarded by companies. For the purposes of this report, we have chosen the most relevant projects for our the most representative projects for our research strategy.

The innovative capacity of the Politehnica University Timișoara is supported by teachers and scientific researchers through patents and utility models invented, presented in the fifth section.

Politehnica University Timișoara recognizes scientific excellence by conferring the honorary degrees of Doctor Honoris Causa and Honorary Professor to distinguished Researchers for their contribution to the development of UPT of continuous support, as shown in section six of this Report.

Sections seven and eight include habilitation theses and PhD theses held in 2020 in our University.

Section nine presents an overview of the most relevant scientific conferences that brought together scholars and professionals from Romania and from abroad. The conferences hosted by our university encouraged the dialogue, facilitated the exchange of ideas, and offered a great opportunity for new collaborations.

The tenth section gathers the scientific journals that have been published by our institution. This category includes journals specialized in various fields, such as computer science, chemistry and environmental engineering, electronics and communications, economics and social sciences, electrical engineering, mathematics and physics, hydrotechnics, physical education and sport, modern languages, etc.

The dissemination of the research results and findings is an integral part of the research process and the career in academia. Section eleven presents the most relevant scientific researches that have been published in 2020. It comprises the results obtained by our researchers, namely the papers that obtained recognition from some of the most prestigious journals, from both Romania and abroad.

And finally the twelfth section comprises a collection of books written by our researchers, most of them published under Politehnica Publishing House.

Through research we generate ideas, through ideas we generate innovation and through innovation we contribute to the improvement of the quality of life; this is why research is our priority.

# RESEARCH CENTRES



## Center for Innovation and Technology Transfer Politehnica 2020 (CITT) of the Politehnica University of Timișoara

In 11 November 2020, the Center for Innovation and Technology Transfer (CITT) Politehnica 2020 received the provisional authorization from the Ministry of National Education, for a 12 month period, in the fields of

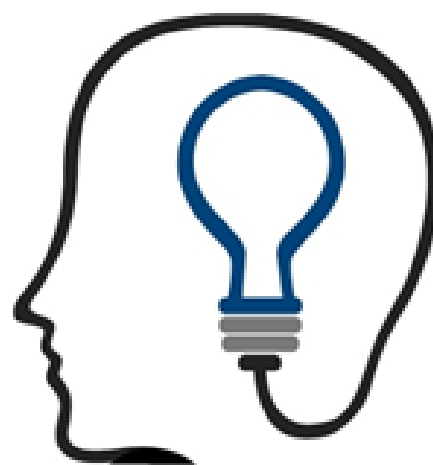
- ✓ *Eco-nano-technologies and advanced materials*
- ✓ *Information and communication technologies*
- ✓ *Energy, environment and climate change*

The **mission** of CITT is the general stimulation of the collaboration activity between the Research Centers within the Politehnica University of Timișoara and the economic and industrial environment, by supporting and encouraging the technological transfer, in order to introduce in the economic circuit the research results transformed into products, processes and new or improved services. CITT mediates the additional steps that separate laboratory knowledge from industrial technology.

The **vision** of the CITT is in line with the strategic policy of the European Union for economic growth for the next ten years, with efforts to gradually align with recent guidelines of EU policy dictated by the need to increase capacity and competitiveness of education and research – development – innovation presented in the NDP National Development Plan 2007–2013 and their compatibility with similar systems in the European Union.

The general **objectives** of the CITT are:

- a) Increasing the visibility of the research-innovation activity within the Politehnica University of Timișoara regionally, nationally and internationally;
- b) Consultation of the academic community, through the representatives of the research centers, for the implementation of the mission assumed by the Strategic Plan;
- c) Training and development of human resources involved in the realization of projects;
- d) Initiating, promoting and advising inter- and multidisciplinary collaboration for the realization of projects;
- e) Supporting the achievement of the performance indicators of the Politehnica University of Timișoara for the internal self-evaluation of the quality and the promotion of the quality in research;
- f) Modernization and efficiency of the material base necessary for the development of scientific research in the university;



**CITT**  
**POLITEHNICA 2020**

- g) Orienting the research of the Politehnica University of Timișoara towards the needs of the society on medium and long term and promoting the industrial doctorates;
- h) Achieving an efficient management of the research – development – innovation activity;
- i) Strengthening the dimension of national and international cooperation;
- j) Creating a climate of trust and scientific cooperation between UPT teachers, based on decision-making transparency;
- k) Periodic evaluation of the results of scientific research and research – development – innovation centers.
- l) Efficient management of technology transfer results through continuous updating of data, operation of the database and conducting statistical studies on activities;

The **role** of CITT is materialized through:

- a) Negotiating and drawing up research contracts, service contracts or partnership agreements with industrial partners;

- b) Supporting inventors to prove the concept and pre-industrial validation. CITT will also manage the protection of intellectual property generated by the institution. This includes identifying sources of funding, both internal and external, for the registration of applications for intellectual property protection (such as patents, trademarks or copyrights);
- c) Negotiation and preparation of license agreements and transfer of intellectual property to industry, with or without the support of specialized external legal advisers;
- d) CITT will encourage and support the creation of new companies.

CITT has the following **attributions**:

- a) Promotes the activity of innovation and technological transfer;
- b) Contributes to the implementation of the results of scientific research and advanced technologies;

- c) Ensures the access of SMEs to the technological services and RDI infrastructure of the Politehnica University of Timișoara;
- d) Provides assistance for technology acquisitions (domestic or import);
- e) Ensures the realization and administration of product packages (CDI-production transfer documents);
- f) Ensures the efficient transfer of the results of the RDI teams to the production departments of the companies;
- g) Ensures the participation in competitions for RDI projects financed by the Romanian Government through the Ministry of National Education and in the projects financed by the EU;
- h) Elaborates statistical or feasibility studies for the activities carried out.

#### Contact

ICER building on Gavril Muzicescu Street no. 138.2, RO-307221  
Timișoara, România  
Director, prof.univ.dr.ing. Nicolae Muntean  
Mail: nicolae.muntean@upt.ro  
Phone: 0256 403 450





## Research Institute for Renewable Energy

Director: prof. Viorel UNGUREANU

Contact: viorel.ungureanu@upt.ro, <https://www.icer.ro/>



## Research Centre for Smart Energy Conversion and Storage

Director: prof. Nicolae MUNTEAN

Contact: nicolae.muntean@upt.ro,  
<https://et.upt.ro/ro/pdf/energy-conversion-and-storage-control-research-center>



## Șt. Nădășan Laboratory

Director: prof. Liviu MARȘAVINA

Contact: liviu.marsavina@upt.ro, <https://eeri.eu/ERIF-2000-000P-0735>



## Research Centre for Mechanics of Materials and Structural Safety

Director: prof. Dan DUBINĂ

Contact: dan.dubina@upt.ro, <https://www.ct.upt.ro/centre/cemsig/index.htm>



## Research Centre for Processing and Characterization of Advanced Materials

Director: conf. Bogdan RADU

Contact: bogdan.radu@upt.ro, <https://sites.google.com/view/ccpcma/home>



## Research Centre for Power Systems Analysis and Optimization

Director: prof. Ștefan KILYENI

Contact: stefan.kilyeni@upt.ro,  
<https://et.upt.ro/ro/pdf/analiza-%C5%9Fi-optimizarea-regimurilor-sistemelor-electroenergetice>



## Research Centre for Computers and Information Technology

Director: prof. Vladimir-Ioan CREȚU

Contact: vladimir.cretu@upt.ro, <https://cs.upt.ro/ro/research>



## Research Centre for Organic, Macromolecular and Natural Compounds' Chemistry and Engineering

Director: prof. Corneliu DAVIDESCU

Contact: corneliu.davidescu@upt.ro, <http://www.chim.upt.ro/ro/cercetare/centre-cercetare/centru-de-cercetare-in-chimia-si-ingineria-compusilor-organici-macromoleculari-si-naturali>



## Research Centre for Skills Plasturgie

Director: conf. Nicolae CRAINIC

Contact: nicolae.crainic@upt.ro,  
<https://www.facebook.com/events/universitatea-politehnica-timisoara/centrul-de-competente-in-plasturgie/2151522965134377/>



## Research Centre for Hidrotechnical Engineering and Environmental Protection

Director: prof. Constantin FLORESCU

Contact: [constantin.florescu@upt.ro](mailto:constantin.florescu@upt.ro), <https://www.ct.upt.ro/centre/cchpm/index.htm>



## Research Centre for Construction and Transportation Substructures

Director: prof. Liviu Adrian CIUTINĂ

Contact: [adrian.ciutina@upt.ro](mailto:adrian.ciutina@upt.ro), <https://www.ct.upt.ro/centre/ict/>



## Research Centre for Automatic Systems Engineering

Director: prof. Radu-Emil PRECUP

Contact: [radu.precup@upt.ro](mailto:radu.precup@upt.ro), <https://www.aut.upt.ro/centru-cercetare/>



## Research Centre for Complex Fluid Systems Engineering

Director: prof. Romeo SUSAN-RESIGA

Contact: [romeo.resiga@upt.ro](mailto:romeo.resiga@upt.ro), <https://mh.mec.upt.ro/>



## Research Centre for Medical Engineering

Director: prof. Liviu MARŞAVINA

Contact: [liviu.marsavina@upt.ro](mailto:liviu.marsavina@upt.ro), <https://ccim.upt.ro/>



## Research Centre for Integrated Engineering

Director: prof. George DRĂGHICI

Contact: [george.draghici@upt.ro](mailto:george.draghici@upt.ro), <http://imf.upt.ro/CCI/index.html>



## Research Centre for Engineering and Management

Director: conf. Larisa Victoria IVAŞCU

Contact: [larisa.ivascu@upt.ro](mailto:larisa.ivascu@upt.ro), <http://www.mpt.upt.ro/eng/research/research-center.html>



## Research Centre for Building Services

Director: s.l. Călin SEBARCHIEVICI

Contact: [calin.sebarchievic@upt.ro](mailto:calin.sebarchievic@upt.ro), <https://www.ct.upt.ro/centre/ccic/>



## Research Centre for Thermal Machines and Equipments, Transportation and Environmental Pollution Control

Director: prof. Ioana IONEL

Contact: [ioana.ionel@upt.ro](mailto:ioana.ionel@upt.ro), <http://mettcp.mec.upt.ro/>



## Research Centre for Inorganic Materials and Alternative Energies

Director: prof. Ioan LAZĂU

Contact: [ioan.lazau@upt.ro](mailto:ioan.lazau@upt.ro), <http://www.chim.upt.ro/ro/cercetare/centre-cercetare/centru-de-cercetare-pentru-materiale-anorganice-si-energii-alternative>



## Research Center for Materials and Industrial Technologies

Director: prof. Teodor HEPUȚ

Contact: [teodor.heput@upt.ro](mailto:teodor.heput@upt.ro), <http://www.fih.upt.ro/ccmti/index.php>



## Research Centre for Mechatronics and Robotics

Director: prof. Inocențiu MANIU

Contact: [inocentiu.maniu@upt.ro](mailto:inocentiu.maniu@upt.ro), <https://mctr.mec.upt.ro/activitate-de-cercetare>



## Research Centre for Advanced Study Methods for Physical Phenomena

Director: prof. Dumitru TOADER

Contact: [dumitru.toader@upt.ro](mailto:dumitru.toader@upt.ro), <https://et.upt.ro/ro/pdf/metode-avansate-de-studiu-fenomenelor-fizice>



## Research Centre for Multimedia

Director: prof. Radu VASIU

Contact: [radu.vasiu@upt.ro](mailto:radu.vasiu@upt.ro), [https://www.cm.upt.ro/ro\\_ro/](https://www.cm.upt.ro/ro_ro/)



## Research Center in Urban Planning and Architecture

Director: prof. Smaranda BICA

Contact: [smaranda.bica@upt.ro](mailto:smaranda.bica@upt.ro), <https://sites.google.com/view/ccua/ro>



## Research Centre for Intelligent Signal Processing

Director: prof. Alexandu ISAR

Contact: [alexandru.isar@upt.ro](mailto:alexandru.isar@upt.ro), <https://com.upt.ro/isprc/index.html>



## Research Centre for Retrofitting of Constructions

Director: prof. Tamás NAGY GYÖRGY

Contact: [tamas.nagy-gyorgy@upt.ro](mailto:tamas.nagy-gyorgy@upt.ro), <https://www.ct.upt.ro/centre/reco/>



## Research Centre for Intelligent Electronic Systems

Director: prof. Marius OTEȘTEANU

Contact: [marius.otesteanu@upt.ro](mailto:marius.otesteanu@upt.ro), <https://ccesi.upt.ro/>



## Research Centre for Environmental Science and Engineering

Director: prof. Rodica PODE

Contact: [rodica.pode@upt.ro](mailto:rodica.pode@upt.ro), <http://www.chim.upt.ro/ro/cercetare/centre-cercetare/centru-de-cercetare-in-stiinta-si-ingineria-mediului>



# SCIENTIFIC EXCELLENCE AWARDS



## Romanian Academy The „Aurel Vlaicu” Prize awarded in 2020 Assist.Prof. Emanoil LINUL, phd & Nima MOVAHEDI, phd

„Aurel Vlaicu” Award of Romanian Academy to Emanoil LINUL and Nima MOVAHEDI for the group of scientific papers with the common title: „Mechanical characterization of advanced cellular materials”.

Cellular materials (metal, ceramic and polymeric foams) have experienced a considerable development in recent years, both in terms of manufacturing methodologies and by obtaining increasingly high-performance mechanical characteristics.

The year 2018 was a reference in disseminating the results and publishing them in prestigious journals in the field of cellular materials and foam-based composites. The group of papers entitled “Mechanical characterization of advanced cellular materials”, having as main authors Emanoil LINUL (Associate Professor, PhD) and Liviu MARȘAVINA (Academician, Professor, PhD) from the Politehnica University of Timișoara (Romania), respectively Nima MOVAHEDI (PhD) from the University of Newcastle (Australia), contains the following papers:

1. Emanoil Linul, Nima Movahedi, Liviu Marsavina, The temperature and anisotropy effect on compressive behavior of cylindrical closed-cell aluminum-alloy foams, *Journal of Alloys and Compounds* 2018, 740, 1172-1179.



The temperature and anisotropy effect on compressive behavior of cylindrical closed-cell aluminum-alloy foams

Emanoil Linul <sup>1,\*</sup>, Nima Movahedi <sup>2,\*\*\*</sup>, Liviu Marsavina <sup>3</sup>

<sup>1</sup> Politehnica University of Timișoara, Department of Mechanics and Strength of Materials, 1 Mihail Viteazul Avenue, 300 222 Timișoara, Romania

<sup>2</sup> Independent Researcher (Graduated from Semnan University), Igfishan, Iran

2. Nima Movahedi, Emanoil Linul, Mechanical properties of Light Expanded Clay Aggregated (LECA) filled tubes, *Materials Letters* 2018, 217, 194-197.



Mechanical properties of Light Expanded Clay Aggregated (LECA) filled tubes

Nima Movahedi <sup>1,\*</sup>, Emanoil Linul <sup>2,\*\*\*</sup>

<sup>1</sup> Independent Researcher (Graduated from Semnan University), Igfishan, Iran

<sup>2</sup> Department of Mechanics and Strength of Materials, Politehnica University of Timișoara, 1 Mihail Viteazul Avenue, 300 222 Timișoara, Romania

3. Nima Movahedi, Emanoil Linul, Liviu Marsavina, The temperature effect on the compressive behavior of closed-cell aluminum-alloy foams, *Journal of Materials Engineering and Performance* 2018, 27(1), 99-108.

JMEPEG (2018) 27:99-108  
https://doi.org/10.1007/s11665-017-3098-4

© ASM International  
1059-9495/18/0000



### The Temperature Effect on the Compressive Behavior of Closed-Cell Aluminum-Alloy Foams

Nima Movahedi, Emanoil Linul, and Liviu Marsavina

4. Emanoil Linul, Nima Movahedi, Liviu Marsavina, On the lateral compressive behavior of empty and ex-situ aluminum foam-filled tubes at high temperature, *Materials* 2018, 11(4), 554..



Article

### On the Lateral Compressive Behavior of Empty and Ex-Situ Aluminum Foam-Filled Tubes at High Temperature

Emanoil Linul <sup>1,\*</sup>, Nima Movahedi <sup>2,\*</sup> and Liviu Marsavina <sup>1</sup>

<sup>1</sup> Department of Mechanics and Strength of Materials, Politehnica University of Timișoara, 1 Mihail Viteazul Avenue, 300 222 Timișoara, Romania; liviu.marsavina@upt.ro

<sup>2</sup> Independent Researcher (Graduated from Department of Metallurgy and Materials Engineering, Semnan University, University Blvd.), 35131-19111 Semnan, Iran

\* Correspondence: emanoil.linul@upt.ro (E.L.); nima.movahedi@gmail.com (N.M.);

Tel.: +40-256-40-3741 (E.L.)

The research topic addressed by the authors aims to broaden the scope of cellular materials in the automotive industry. Although the automotive industry has developed high-strength materials, they are gradually being replaced with new advanced lightweight materials, mainly due to weight and price. The authors identified structures as fillers for the stiffening structural components can absorb structures, showing a significant have a high stiffness-to-weight energy, good corrosion resistance, makes them ideal candidates for materials (e.g. steel, aluminum, results present in the literature in systematic program for mechanical materials and structures filled with numerical and analytical methods. materials mentioned above and radial quasi-static compression tests. The effects of temperature (25–500°C) and anisotropy (three loading directions) were investigated. The mentioned parameters were chosen according to the foam matrix material.



a potential for the use of cellular elements of vehicles. Foam-filled more impact energy than foam-free increase in weight. These materials ratio, high capacity to absorb impact as well as recycling potential, which the replacement of high-density etc.). Due to the limitation of the this field, the authors developed a characterization of both cellular such materials, using experimental, The characterization of the cellular consisted in performing axial

## Romanian Academy

### The „Tudor Tănăsescu” Prize awarded in 2020

Assist.Prof. Raul-Cristian ROMAN and Prof. Radu-Emil PRECUP, phd

As.Dr.Ing. Raul-Cristian ROMAN and Prof.Dr.Ing. Radu-Emil PRECUP have been awarded the “Tudor Tănăsescu Award” prize, given by the Romanian Academy for a group of three papers generically grouped in “Tehnici data-driven de acordare a parametrilor reglatoarelor” – RO, “Data-driven techniques for tuning controller parameters – EN”. The prize was officially awarded during the special session “PREMIILE ACADEMIEI ROMÂNE PENTRU ANUL 2018” – RO, “ROMANIAN ACADEMY AWARDS FOR THE YEAR 2018” – EN in 3.12.2020 at 10:00 in Aula of the Romanian Academy [https://acad.ro/com2020/pag\\_com20\\_1203.htm](https://acad.ro/com2020/pag_com20_1203.htm)

The Romanian Academy is a cultural forum founded in Bucharest, Romania, in 1866. It covers the scientific, artistic, and literary domains. The academy has 181 acting members who are elected for life. According to its bylaws, the academy's main goals are the cultivation of Romanian language and Romanian



literature, the study of the national history of Romania and research into major scientific domains. Some of the academy's fundamental projects are the Romanian language dictionary, the dictionary of Romanian literature, and the treatise on the history of the Romanian people.

As.dr.ing. Raul-Cristian Roman and Prof.dr.ing. Radu-Emil Precup, corresponding member of the Romanian Academy, published in 2018, as main authors, the following three papers in the field of data-driven techniques for tuning the parameters of controllers:

1. R.-C. Roman, R.-E. Precup, R.-C. David, Second order intelligent proportional-integral fuzzy control of twin rotor aerodynamic systems, Sixth International Conference on Information Technology and Quantitative Management (ITQM 2018), Omaha, NE, USA, Procedia Computer Science, Elsevier, vol. 139, pp. 372-380, Oct. 2018.
2. R.-C. Roman, M.-B. Radac, C. Tureac, R.-E. Precup, Data-driven active disturbance rejection control of pendulum cart systems, Proceedings of 2018 IEEE Conference on Control Technology and Applications CCTA 2018, Copenhagen, Denmark, pp. 933-938, Aug. 2018.
3. M.-B. Radac, R.-E. Precup, R.-C. Roman, Data-driven model reference control of MIMO vertical tank systems with model-free VRFT and Q-learning, ISA Transactions, Elsevier, vol. 73, pp. 227-238, Feb. 2018.



These papers have proposed a number of important contributions in the field proposed for award due the fact they ensure autonomy and adaptability to automatic control systems and solve correctly defined control problems without accurate information about the modeled processes.

## Romanian Academy The „Gheorghe Cartianu” Prize awarded in 2020 Assoc.Prof. Codruța O. ANCUȚI, phd and Lect. Cosmin ANCUȚI, phd

1. Codruta O. Ancuti, Cosmin Ancuti, Philippe Bekaert and Christophe De Vleeschouwer “Color balance and fusion for underwater image enhancement”. IEEE Transactions on Image Processing, January, 2018, impact factor 9.34 (revista Q1).
2. Codruta O. Ancuti, Cosmin Ancuti, Christophe De Vleeschouwer, Radu Timofte “O-HAZE: a dehazing benchmark with real hazy and haze-free outdoor images”, 2018 NTIRE, IEEE Computer Vision and Pattern Recognition Workshops (CVPRW), Salt Lake City, US 2018
3. Codruta O. Ancuti, Cosmin Ancuti, Christophe De Vleeschouwer, Radu Timofte “I-HAZE: a dehazing benchmark with real hazy and haze-free indoor images”, International Conference on Advanced Concepts for Intelligent Vision Systems, LNCS, Springer, Poitiers, France, 24-27 Sept 2018
4. Cosmin Ancuti, Codruta O. Ancuti, Radu Timofte et al. “NTIRE 2018 challenge on image dehazing: Methods and results”. Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition, NTIRE Workshops, (CVPRW), Salt Lake City, US 2018



The first article introduces an original method that is the first and currently (despite of the advance of the CNN and deep learning field) the only method that proves to be effective to enhance challenging underwater scenes (e.g. deep and artificially illuminated underwater scenes). Due to its highly impact in the underwater imaging and in general in the image processing and computer vision research communities, in 2018 and 2019, our article occupied the first position in the ranking of the most popular articles in IEEE Transactions on Image Processing with more than 50.000 full text views and 100+ citation.



The next three papers are the result of the publication of the results and datasets used in the organization by the authors of the first image dehazing competition ever organized worldwide. This competition was organized during the NTIRE 2018 workshop of the prestigious IEEE Conference on Computer Vision and Pattern Recognition (IEEE CVPR), Utah, US 2018 (+9000 attendees).

## Highest honors for the Rector of the Politehnica University of Timisoara – The Doctor Honoris Causa title conferred by the Polytechnic University of Bucharest Prof. Viorel Aurel ȘERBAN, phd

On 27 February 2020, the Polytechnic University of Bucharest conferred to the Rector of the Politehnica University of Timisoara, Univ. prof.dr.eng. Viorel Aurel Serban, the highest distinction that can be bestowed by a higher education institution, that is the title of Doctor Honoris Causa.

At the solemn ceremony, the merits of Univ.prof.dr.eng. Viorel Aurel Serban were highlighted, both at the scientific and the academic management levels, as well as from the perspective of boosting the collaboration between the Politehnica University of Timisoara and the Polytechnic University of Bucharest. Among other things, the motivation of the award states that “For his entire scientific, teaching, managerial and collaboration activity with our university, for the remarkable results of such activity, the Senate of the Polytechnic University of Bucharest has decided to award the highest academic title, DOCTOR HONORIS CAUSA, to Professor Viorel-Aurel Serban”.

The ceremony also included a presentation of the teaching and research activity carried out by Univ.prof.dr.eng. Viorel Aurel Serban.

Such teaching and research activities were added to by a rich activity in the field of academic administration and management, which was crowned by the election as Rector of the Politehnica University of Timisoara, for two terms, between 2012 and 2020. As a Rector, he contributed to the establishment of The Romanian Alliance of Technical Universities – ARUT, in 2016, along with the Rectors of the other technical universities, and became the first President of the Alliance, which position he has occupied ever since.

Furthermore, during the awarding ceremony, his efforts were highlighted and his significant contribution to the development of international cooperation, by having signed numerous agreements with foreign universities and research institutions, as well as his extensive activity in the field of sports and culture.



## The Politehnica University of Timisoara, the best Romanian university in the field of information technology, computers and electronic engineering Prof. Radu-Emil PRECUP, phd and Prof. Stefan PREITL, phd

The Politehnica University of Timisoara was ranked as the best Romanian university, in the top 2020 of the best universities with study programs related to information technology, computers and electronic engineering, published by Guide2Research, one of the leading portals for research in such fields. In the world rankings, the Politehnica University of Timisoara ranks 449.

The ranking, based on H-Index and the DBLP publications, was designed so as to offer the academic community more visibility and exposure to research contributions made by leading institutions in the field of informatics, computer and electronic engineering.

### Guide2Research

#### University Ranking for Computer Science in Romania

The University Ranking for Computer Science & Electronics was prepared by Guide2Research, one of the leading portals for computer science research providing trusted data on scientific contributions since 2014.

The ranking represents h-index, and DBLP values gathered by August 25th 2020. It was based on a detailed examination of more than 6000 computer scientists' profiles on Google Scholar and DBLP.

[Read More...](#)

Search by name:	<input type="text"/>	SEARCH	View by country:	Romania (2)	
World	National	University	#Scholars	Σ DBLP	Σ H-Index
449	1	Politehnica University of Timisoara Romania	2	254	89
467	2	Babes-Bolyai University Romania	1	27	81
World	National	University	#Scholars	Σ DBLP	Σ H-Index

#### A ranking published by Guide2Research

The Hirsch Index (H-Index) is an assessing tool for the scientific results of researchers and academic institutions and a criterion for quantifying their scientific impact through the number of quotations, whereas the DBLP is the largest database that indexes scientific works in the field of informatics, computers and electronics.

The ranking is based on a sum of the H-index values of all top IT specialists affiliated with a university. The Hirsch index threshold for being a leading scientist was set at 40, provided that most of their scientific work were in the field of information technology, computers and electronics and be indexed in the DBLP

In the Guide2Research ranking, the Politehnica University of Timisoara is present with two prestigious researchers in the field, with a total Hirsch index value of 89 and a total of 254 DBLP publications:

- **Prof.dr.eng. Radu-Emil Precup**, corresponding Member of the Romanian Academy, Dean of the Faculty of Automation and Computing;
- **Prof.dr.eng. Stefan Preitl**, Director of the Center for Scientific Research in Automation and Computing, within the Politehnica University of Timisoara, between 2001 and 2011.

The ranking mirrors the H-Index and DBLP values collected by August 25, 2020 and is based on the detailed examination of more than 6000 engineering and computer profiles from Google Scholar and DBLP.



## Professor Nicolae Muntean, an Honorary Member of the Romanian Academy of Technical Sciences



A new reason for pride has occurred for the academic community of the Politehnica University of Timisoara. Professor Nicolae Muntean, from the Faculty of Electrical and Power Engineering, became an Honorary Member of the Romanian Academy of Technical Sciences, due to his scientific, teaching and managerial activities carried out both within the university and the industry.

A graduate of the Polytechnic Institute "Traian Vuia" of Timisoara, specialization of Electric Engineering, class of 1981, Prof. Nicolae Muntean began his career, like many other graduates of the Polytechnic, at the Electrotimis Company, as a design engineer. After a short time spent as a research engineer at ICMET Craiova, he started his teaching career at the Politehnica University of Timisoara in 1990, and took all the necessary steps. He got his doctorate in Electrical Engineering (1994), became a university professor in 2008, and a PhD coordinator in 2009.

Prof.univ.dr.eng. Nicolae Muntean has over 35 years of experience in the fields of electric drives with power electronics, industrial automation, automotive systems and renewable energy sources. He currently manages the Research Center for the Control of Energy Conversion and Storage, and has a special contribution to the development of extraordinary laboratories all over Eastern Europe, in the field of Power Electronics in Smart Microgrids and Automotive. Moreover, Prof. Muntean has developed competitive multi-disciplinary contracts and projects together with domestic and foreign industry companies. He is a Member or a Coordinator in over 20 nationally and internationally funded research programs. He is also an associated editor for the "Journal of Electrical Engineering", indexed INSPEC. Last but not least, Professor Nicolae Muntean also has a rich experience in management, both within the university (having been, over the time, a scientific secretary, a vice-dean, an Interim Dean of the Faculty of Electrical and Power Engineering, as well as director of the PUT Publishing House), and the industry (as the manager of Beespeed Automation Timisoara).



## The „Acad. Corneliu Mikloși” Medal awarded to the former Rector of the Politehnica University of Timisoara, Univ.Prof.dr.eng. Viorel-Aurel ȘERBAN

The Romanian Welding Politehnica University of on Wednesday, November Library, the symposium Field at the Centennial included the awarding “Acad. Corneliu Mikloși” Aurel Serban, former The festive moment of the

Medal’s delivery to Univ.prof.dr.eng. Viorel-Aurel Serban, was preceded by the reading of the Laudatio by Prof.dr.eng. Dorin Dehelean, President of the local branch of the Romanian Welding Association, who highlighted some points of the activity of Professor Serban, who is a personality of the field of materials science and of the Romanian Academy permanently involved in its related processes.

Professor Viorel-Aurel presentation called “The Centennial Politehnica”, emphasized the particularly Politehnica University of academics led by Corneliu development of welding this field, and that such work was the one of pioneers at the time, and placed Timisoara at the forefront of welding education, research and technology.



Association and the Timisoara jointly organized 4th, 2020 at the PUT called “The Welding Politehnica”. The event of the Association Medal to Univ.prof.dr.eng Viorel-Rector of the University.

“Acad. Corneliu Mikloși” Association and the Timisoara jointly organized 4th, 2020 at the PUT called “The Welding Politehnica”. The event of the Association Medal to Univ.prof.dr.eng Viorel-Rector of the University.



Serban held the Welding Field at the during which he important role that the Timisoara, through its Miklosi, played in the and of higher education in



## European Distance and E-learning Network, EDEN Fellow Award, Prof. Radu VASIU, phd

European Distance and E-learning Network, EDEN Fellow Award, Prof. Radu VASIU, PhD, awarded during the Official Opening Ceremony of the 2020 EDEN Annual Conference, 22 June 2020



The purpose of the EDEN Fellow scheme is to provide validation and support to professionals in Europe in this field, and to enhance their mobility within Europe through a respected scheme of recognition. The first Senior Fellow and Fellow Awards were presented at the 2007 Annual Conference in Naples. The EDEN Fellow title is an expression of acknowledgement of professional merit by the Association, for NAP members, who have demonstrated excellence in professional practice in the field of flexible and distance learning and provided valued support to the evolution and progress of EDEN.

EDEN is pleased to announce that at the Opening Ceremony of the EDEN2020 Annual Virtual Conference in Timisoara, the EDEN Fellow Title has been awarded to Radu Vasii, President of the Politehnica University Timisoara. The title given to Radu Vasii was exceptional, in honour of the EDEN Conference host, Politehnica University Timisoara.

The 2020 EDEN Fellow Awards will be officially held at the EDEN Research Workshop, Lisbon, Portugal this autumn, the announcement of the title given to Radu Vasii was exceptional, in honour of the EDEN Conference host, Politehnica University Timisoara.



## European Distance and E-learning Network, Elected Chair of the NAP Steering Committee Lect. Vlad MIHAESCU, phd

European Distance and E-learning Network, Elected Chair of the NAP Steering Committee, Lect. Vlad MIHAESCU, PhD, September 2020

We are delighted to announce that at their online meeting on June 18, 2020, the NAP Steering Committee elected Vlad Mihaescu by unanimous vote as new Chair of EDEN Network of Academics and Professionals (NAP) Steering Committee.

The NAP is EDEN's professional community, that includes in its membership all individual members as well as our institutional members' individual representatives. The official NAP membership consists over 1100 members. The activities of the community are coordinated by NAP's own Steering Committee (SC), the members of which are elected by the NAP individual community casting their votes once every three years. Vlad Mihaescu has a PhD in educational and technological models of MOOCs and has more than 10 years' experience as a trainer and teacher in areas like multimedia technologies, social media, e-tourism, e-learning, usability, programming, soft skills and leadership. Author of over 25 scientific papers and book chapters published in international conferences and journals, Vlad is involved in several European research projects in the field of eLearning. He is also a lecturer for UPT.



Vlad Mihaescu has a PhD in educational and technological models of MOOCs and has more than 10 years' experience as a trainer and teacher in areas like multimedia technologies, social media, e-tourism, e-learning, usability, programming, soft skills and leadership. Vlad as the Chair of the EDEN NAP Steering Committee at the same time is ex officio a member of the EDEN Executive Committee. EDEN thanks for the devoted and valuable work of former NAP SC Chair, Antonella Poce, and welcomes Vlad Mihaescu in his new position in the management of our Association.



## IEEE Senior Member grade elevation, Prof. Corina NAFORNIȚĂ, phd

In 2020, Dr Corina Nafornta was elevated to the grade of Senior Member by IEEE, Signal Processing Society (SPS). IEEE Senior Membership is an honor bestowed only to those who have made significant contributions to the profession and less than 10% of IEEE members achieve this level of professional recognition. Professor Corina Nafornta has been with the Communications Department at Politehnica University of Timisoara since 2003. In 2015, she successfully defended her Habilitation thesis. Her research interests include signal and image processing, radar, watermarking and wavelets. She is an affiliate member of the IEEE SPS SPTM Technical Committee and Secretary for IEEE Romania Section Joint Chapter, SP01/IT12/COM19.

Dr Nafornta's activity started in 2003, in the field of image watermarking using wavelets, also her PhD thesis subject, obtaining results with a significant impact.

The team from which Dr Nafornta is a part of, led by Prof. Alexandru Isar, proposed the hyperanalytic wavelet transform, with improved directional selectivity and quasi shift invariance.

The new transform was used also by other authors and had a large number of citations. One major contribution was the proposal of the Kullback-Leibler divergence for complex generalized Gaussian probability density functions, CGGD, not existing in the literature before, following the collaboration with Prof. Yannick Berthoumieu (Univ. of Bordeaux).

Other contributions are related to the field of Hurst exponent estimation and applications, in collaboration with James Nelson (University College London) and Alexandru Isar, that raised the interest of other known researchers, working in the same field. In 2011 she was invited researcher at IMS-LAPS, ENSEIRB Bordeaux and in 2009 Invited Professor at IMS-LAPS, Universite Bordeaux I, with an EGIDE scholarship for research. In 2018, Dr Nafornta was invited speaker at the University College London, at the Workshop in memory of Dr James Nelson, at the Department of Statistical Science, presenting the talk „Dr James Nelson: from mathematics to engineering. The Hurst exponent: estimation and applications“. In 2018, with the team from UCL and University of Cambridge, Dr Nafornta published a paper that harmonises two significant contributions to the field of wavelet analysis in the past two decades, the locally stationary wavelet process and the family of dual-tree complex wavelets (with James Nelson, Alex Gibberd, Nick Kingsbury). Dr Nafornta was director of an ESA funded grant (budget 150.000 Euros), which studied the coverage extension of EGNOS availability service in Romania. Dr Nafornta is also working in the field of automotive radar, having been a member of the FP7 programme ARTRAC. She advises two PhD students in this field. A third one has already defended his PhD thesis in 2020 in the field of satellite navigation. Dr Nafornta is a reviewer and TPC member for various prestigious conferences and journals.



## Winner at German Design Award 2020: "Home of Art" by Prof. Vlad GAIVORONSKI, phd

The German Design Council is the organizer of the annual international competition GDA –German Design Award – which is addressed to the whole world of design and architecture. In 2020 the exhibition dedicated to design products opened in 07.02. 2020 in the morning at Messe Frankfurt and the architecture exhibition was open the same day in the afternoon at the Museum Angewandte Kunst (applied art), the well known building designed by architect Richard Meyer.

Two works by AMA Design from Bucharest and "Home of Art" from Timisoara were declared among the winners . The entire event attracted professionals from all around the world and all projects declared winners were published in the catalogue of the event. Regarding to "Home of Art", the residential project from Timisoara



which was declared winner also at prior events (BETA Biennial Timisoara, BIG SEE Ljubljana), the statement of the GDA jury considered that *"The project combines a variety of building styles with the existing historical buildings to create a coherent and overall extremely high-quality and elegant-looking*

*ensemble."* It is for the second time that a contemporary architecture project from Timisoara attracts GDA jury attention. In 2018 City Business Centre was also declared winner. In both cases the project team was almost the same, composed by graduates from the UPT Architecture Faculty.



## Honorable Mention #1 in 2020 Best PhD Thesis Award Competition Awarded by IEEE Robotics and Automation Society Assist.Prof. Raul-Cristian ROMAN

As.Dr.Ing. Raul-Cristian ROMAN received "Honorable Mention #1" in 2020 Best PhD Thesis Award Competition awarded by IEEE Robotics and Automation Society for the PhD thesis entitled "Tehnici de tip model-free de acordare a parametrilor reglatoarelor automate" - RO, "Model-Free techniques for tuning the parameters of automatic controllers" - EN having Prof. Radu-Emil PRECUP as supervisor. The award was given during a special session organized at the 24th International Conference on System Theory, Control and Computing Joint Conference SINTES 24, SACCs 20, SIMSIS 24, CONTI 13 8 - 10 October 2020, Sinaia, Romania <http://ace.ucv.ro/icstcc2020/>

The IEEE Robotics and Automation Society – Romania Chapter is pleased to announce the launch of the 2020 Best PhD Thesis Award Competition. The main objective of this award is to recognize and encourage young researchers from the local robotics and automation academic and industrial communities and to increase their engagement with IEEE and with the Robotics and Automation Society.



The PhD thesis discusses a modern subject, of major practical interest, at a high scientific level. The thesis has made innovative theoretical and practical contributions to the development of high performance control systems, focusing on the design and tuning of controllers for processes in various fields including the "unconventional" nonlinear systems.

The main objective accomplished through this thesis was to automatically determine the parameters of the model-free algorithms. The benefit of achieving this objective was used to solve the problem of choosing the best values of the parameters of the initial controllers. Before solutioning this objective, the parameters values were determined heuristically in the case of model-free algorithms studied in thesis (MFC and MFAC), and now the process of determining the parameters of the model-free controllers was optimized by reducing practitioner's precious time.

The second objective accomplished through this thesis was to experimentally validate the model-free techniques. The experimental validations presented in the thesis chapters at that time were the first world-wide applications of the Model-Free Control (MFC) and the Model-Free Adaptive Control MFAC algorithms on the twin rotor aerodynamic system (TRAS) laboratory equipment.

The thesis makes remarkable major theoretical and applied research contributions to the development of very efficient model-free solutions for tuning the parameters of automatic controllers which are widely used in the engineering practice.



## Banat Excellence Gala, in 2020 - "Traian Vuia" price for "Engineering Sciences" Prof. Emeritus Radu BÂNCILĂ, phd

Radu Băncilă was born in Timișoara in April 1945. He graduated the "Nikolaus Lenau" High School in 1962 (German language). Absolvent of the Faculty of Civil Engineering in 1967, he went through all the teaching steps, becoming a university professor in 1993. He defended his doctorate in 1981 (PhD. supervisor – Acad. Prof. D. Mateescu). His didactic activity took place in the field of steel constructions and steel bridges at the Faculty for Civil Engineering within the Politehnica University of Timișoara (UPT). Since 2021 he is Professor Emeritus UPT. He became PhD supervisor in 1997; at present are eight doctors with a diploma and four in internships. Professor Băncilă has a rich scientific and technical activity of design and research, in the fields: Steel Constructions and Bridges, with 110 papers printed in prestigious publications – 10 specialized books, 4 in English, 2 in German (Springer Verlag). He was vice-dean and later dean (2004 – 2008), at the Faculty for Civil Engineering Timișoara. He is the initiator and coordinator of the German Teaching branch in Civil Engineering (founded in 1991) and has realized a double degree program with the Technical University of Munich (TUM). Currently, the German Teaching branch has 340 graduates, of which 30 with a double TUM/UPT diploma. He is an expert and checking engineer of the Railway and Highway Administration in the field of bridges. Professor Băncilă has an intense interdisciplinary activity, being since 1998 Lecturer at ASR (Romanian Welding Society)



and ISIM (National Institute for Welding and Material Testing) for the course International Welding Engineer (IWE) and Designer of Welded Metal Constructions (IWSD). He participated in the organization of courses in Serbia, Turkey, Republic of Moldova. The most important recognitions of his didactic and educational performances are highlighted: the Silver (2000) and gold (2018) distinction of TU Muenchen, Honorary Professor of the University of PECS – 2006, Professor Emeritus of UPT (2012), the German Federal Cross of Merit – first class (2012), ASR Medal "C. Miklosi" – 2018. He is an honorary

citizen of the tourist resort Bran – Brașov, where the Băncilă family comes from. He is an honorary member of the Romanian Academy of Technical Sciences – ASTR (June 2019).

For his whole activity he was granted with the prestigious "Traian Vuia" price for "Engineering Sciences", in the frame of the "Banat Excellence Gala, in December 2020. The research conducted within the paper presented at TIMTED 2019 International Conference was supported by a grant of the Romanian National Authority for Scientific Research and Innovation, CNCS-UEFISCDI, project number, PN-II-RU-TE-2014-4-1760, project entitled "The impact of the economic and financial stability on investments, innovation process and entrepreneurial activity in the EU" (Director, Prof. Claudiu ALBULESCU). The paper is accepted for publication in "Environmental Science and Pollution Research".



## Banat Excellence Gala, in 2020 - The Romanian Academy Award Prof.Viorel Aurel ȘERBAN, phd

In order to highlight the work of the Banat elites, the Gala of Excellence was born, which took the model of the Nobel Prize. The event reached its 7th edition, which aims at promoting the values of Timisoara, Banat and the Western region, while supporting the culture of excellence." The Banat Excellence Gala awards 10 awards every year to ten recognized and appreciated personalities of Banat and the Western Region. On 19 December 2020, this time online on the Internet, the 2020 Banat Excellence Gala took place, being linked to the most important historical moment of the contemporary history of Timisoara, that is the December 1989 Revolution. Among the winners of this edition is Prof.Dr.eng. Viorel-Aurel Serban , who was awarded the Romanian Academy Award. The jury was comprised of Acad. Dan Dubina, Assoc.prof.dr.eng. Florin Dragan, from the Politehnica University of Timisoara, Univ.prof.dr. Marilen Gabriel Pirtea, from the West University of Timisoara, Prof. Octavian Cretu, from the "Victor Babes" University of Medicine and Pharmacy of Timisoara, Prof. Cosmin Popescu, from the "King Mihai I of Romania" University of Agricultural Science and Veterinary Medicine of Banat, Timisoara. Professor Viorel-Aurel Serban is a graduate of the „Traian Vuia"



Polytechnic Institute, Faculty of Mechanical Engineering, specialization of Machinery Technology, class of 1978. In 1992 he obtained his PhD in Materials Science and became a lecturer, an associate professor in 1996, and a university professor in 2000. He is a PhD tutor in his field of study, with 20 doctoral graduates. He has participated in over 65 research agreements (in 18 as Director/Coordinator) and has published, as sole author or co-author, over 250 research papers in technical journals, books and session volumes (87 in the ISI circuit) and 19 books and manuals.

Ever since 1996, he has also had a rich managerial activity, being vice-dean of the Faculty of Mechanical Engineering ( 1996–2004), Vice-rector of the University (2004–2012) and the Rector of the University (2012 – 2020). He was the Chairman of the Materials Engineering Committee of the CNATDCU (2012–2020 ). He was awarded the Doctor Honoris Causa title by the Obuda University of Budapest (2018), by the Polytechnic University of Bucharest (2020), as well as the "Acad. Corneliu Miklosi" Medal, by the Romanian Welding Association. In 2021, Prof. Viorel Aurel Serban was elected a Corresponding Member of the Romanian Academy of Technical Sciences.



## The Politehnica University of Timisoara awards excellence

Faithful to the tradition it started in 2016 and followed each year ever since, during Christmas parties, The Politehnica University of Timisoara has once again awarded excellence in the field of research, in appreciation of efforts carried out by Master and doctoral students, as well as of young scientists with most scientific papers published in internationally known journals. Along with a certificate and a plaque, prizes included a supporting grant in the amount of 1000 Euro, out of the University's own funding sources.

Since, because of the pandemic situation, the University's Christmas party could not be held, the management team of the university has decided to keep the tradition, on December 15th 2020, in the form of a small festive gathering, in the Christmas spirit, around the decorated Christmas tree in the main hall of the University Library. Christmas carols sung by the University's choir added to the atmosphere.

Here are the most significant moments of the celebration:



- The Rector of the UPT, Assoc.prof.dr.eng. Florin Drăgan, offered a special award called "The Centennial Award", established on the occasion of the 100 years celebration of the University, to **Acad. Ion Boldea**, a true role model for all academics, for excellence in teaching and research.

- Univ.Prof.dr.eng. Liviu Marșavina, Vicerector of the UPT, offered the award "Excellence in Research", in the category of young researchers under the age of 40, to **Prof.dr.eng. Bogdan Groza**.

- Assoc.prof.dr.eng. Alina Dumitrel, Vicerector of the UPT, offered the award "Excellence in Research" in the master students category, to **Delia Anca Boțilă**.

- Univ.Prof.dr.eng. Radu-Emil Precup, Director of the Doctoral Studies Council, offered the award "Excellence in Research", in the category of doctoral students, to **Melinda Vajda**.



## 12th European Exhibition of Creativity and Innovation “EUROINVENT 2020” Iasi, online edition 21-23 May 2020 Multiple medals for Politehnica University Timisoara

Politehnica University of Timisoara participated in the EUROINVENT 2020 International Exhibition (virtual edition), from 21 to 23 May 2020, with 20 inventions, research projects, educational programmes, PhD theses, teaching stands and even weekend inventions, obtaining 32 awards and diplomas, as follows: 8 gold medals, 7 silver medals, 2 bronze medals, 3 diplomas of excellence and 12 special awards. Politehnica University of Timisoara was also awarded the EUROINVENT 2020 Popularity Award, given for the diversity, applicability and innovative spirit of the inventions presented at the EUROINVENT 2020 International Exhibition.

The international jury of the EUROINVENT 2020 exhibition have appreciated the following aspects:

- The diversity, novelty, applicability and environmental impact of the 20 inventions, research projects, educational programs, PhD theses, teaching stands and weekend inventions of the team of the Politehnica University of Timisoara;
- The international collaboration of UPT researchers with academic institutions and businesses for the development and implementation of the research projects;
- Recycling of ferrous materials, i.e. municipal pulverous waste, with an impact on the environment;
- Collaboration of the Politehnica University of Timisoara with the CorneliuGroup Association in the educational program “DEXTER’S Laboratory” in order to involve and support UPT students for the realization of the didactic stands;
- Increase in the performance of DRIFT cars by implementing Super Suction Air Filters (ECODrift programme) to reduce fuel consumption and pollutant emissions;
- Realization and development of products in the Weekend Inventions category (SeptoBirCor disinfectant, AIR by CORNELIU soap) in order to prevent and combat the spread of Coronavirus.

1. Cylindrical multi-hollow briquette produced of ferrous pulverous waste

- Inventors: Teodor HEPUT, Eugen CRIȘAN, Erika ARDELEAN, Ana SOCALICI, Marius ARDELEAN
- Diploma of gold medal
- University Politehnica of Bucharest bestows Excellence Innovation Award

2. Method for treatment of municipal solid waste incineration residues by stabilization/solidification into fly ash rock

- Inventors: Reinhold WÄCHTER, Ioana IONEL, Adina NEGREA
- Diploma of gold medal
- University Politehnica of Bucharest bestows Excellence Innovation Award

3. Project: Novel modular stack design for high PREssure PEM water elecTrolyzer tEchnoLoGy with wide operation range and reduced cost PRETZEL

- Partners: German Aerospace Center, Stuttgart, Germany, Westphalian University of Applied Sciences, Gelsenkirchen, Germany Armines, France, Politehnica University Timisoara, Romania, Adamant Composites Ltd., Greece, GKN Sinter Metals Filters GmbH, Germany, Centre for Research and Technology Hellas, Thessaloniki, Greece, Soluciones Catalíticas IBERCAT S. L., Madrid, Spain, iGas energy GmbH, Germany

- Diploma of Gold Medal
- Technical University Cluj-Napoca confers “Special Prize”



## The 24th International Exhibition of Inventions "INVENTICA 2020" Iasi, online edition, 29-31 July 2020 Multiple medals for Politehnica University Timisoara

The Politehnica University of Timisoara has participated in the International Exhibition INVENTICA 2020 (online edition) with 27 inventions, research projects, doctoral theses, experimental teaching stands and even weekend inventions:

**7 Special Awards; and 12 Medals Inventica 2020.**

The international jury at INVENTICA 2020 appreciated the following aspects:

- The real technological transfer capacity of UPT inventions in the context of the current situation, in order to reduce the spread of the SARS-CoV-2 virus by implementing the "Device for reducing the microbiological load of exhaled air of mechanically ventilated patients" and the disinfectant "SeptoBirCor" (UPT won the special TECHNOLOGICAL TRANSFER AWARD).
- The environmental impact of UPT inventions based on recycling materials from the incineration of solid waste and waste from ferrous processing.
- The involvement of UPT students through the educational programme "DEXTER's Laboratory" - Corneliu Group Association in actions aimed at non-formal education in order to develop communication skills and improve practical skills.
- The applicability and novelty of the presented research projects carried out by UPT researchers in collaboration with businesses and similar academic institutions.
- The study of human behaviour in interaction with the environment, by monitoring information about the psychomotor level, intensity of cognitive, emotional and behavioural reactions of subjects to various stimuli, in real time or in a virtual situation.

1. In recognition of its high scientific contribution and loyalty to INVENTICA 2020, the Politehnica University of Timisoara received the Award for Technological Transfer.

2. Method for the treatment of municipal solid waste incineration waste by stabilization/solidification into fly ash rock

- Inventors: Reinhold WÄCHTER, Ioana IONEL, Adina NEGREA
- Diploma of Achievement, Inventica 2020

3. Experimental plant for resistance to

thermal fatigue

- Inventors: Camelia PINCA BRETOTEAN
- Diploma of Achievement, Inventica 2020

4. Cylindrical multi-hollow briquette produced of ferrous pulverous waste

- Inventors: Teodor HEPUȚ, Eugen CRIȘAN, Erika ARDELEAN, Ana SOCALICI, Marius ARDELEAN
- Diploma of Achievement, Inventica 2020
- Politehnica University of Bucharest bestows Gold Medal & Diploma for Innovation

5. Device for reducing the microbiological load of the air exhaled by mechanically ventilated patients

- Inventors: Laurențiu Valentin ORDODI, Gabriela Alina DUMITREL, Ana-Maria PANĂ, TODEA Anamaria, Liliana MĂȚIU-IOVAN, Raul Ciprian IONEL, Dorel SĂNDESC, Ovidiu Horea BEDREAG, Marius PĂPURICĂ, Alexandru Florin ROGOBETE, Ion SIMION, Alin MOTICA, Dan Sergiu GROAPĂ, Virgil PĂUNESCU, Maria Florina BOJIN, Oana Isabela GAVRILIUC
- Diploma of Achievement, Inventica 2020
- Politehnica University of Bucharest bestows Gold Medal & Diploma for Innovation

6. Novel modular stack design for high PRESSure PEM water electrolyzer technology with wide operation range and reduced cost (PRETZEL)

- Inventors: German Aerospace Center, Stuttgart, Germany, Westphalian University of Applied Sciences, Gelsenkirchen, Germany, Armines, France, Politehnica University Timisoara, Romania, Adamant Composites Ltd., Greece, GKN Sinter Metals Engineering GmbH, Germany, Centre for Research and Technology Hellas, Thessaloniki, Greece, Soluciones Catalíticas IBERCAT S. L., Madrid, Spain, iGas energy GmbH, Germany
- Diploma of Excellence, Medal Inventica 2020



## The International Exhibition of Inventions and Innovations "TRAIAN VUIA" Timișoara, sixth edition, online 13 - 15 October 2020 Multiple medals for the Politehnica University of Timisoara

The POLITEHNICA TIMIȘOARA UNIVERSITY team participated in the TRAIAN VUIA International Exhibition of Inventions and Innovations, 13-15.10.2020 Timisoara, with 34 inventions, research projects, educational programs, PhD theses, teaching stands and even weekend inventions.

The results obtained after the jury's deliberation are:

20 - Gold Medals  
7 - Silver Medals  
7 - Bronze Medals  
8 - Special Prizes  
11 - Diplomas of Excellence

1. Control method for an automatic capacitive compensator for power factor improvement and load balancing in three-phase four-conductor electrical networks

- Inventors: Adrian PANĂ
- Gold Medal
- Diploma of Excellence awarded by Continental

2. Electrical installation for disinfecting air and surfaces in public transportation

- Inventors: Ștefan PAVEL, Daniel-Viorel UNGUREANU, Alexandru BÎNZAR, Ancuța Letiția TUTELCĂ, Siviu Cristian SUCIU, Călin Marius POPOIU
- Gold Medal

3. Installation for remote monitoring of ground corrosion of zinc coated and uncoated metal constructions

- Inventors: Ștefan PAVEL, Daniel-Viorel UNGUREANU, Alexandru BÎNZAR, Aurel MOLDOVAN
- Gold Medal

4. Device for reducing the microbiological load of the air exhaled by mechanically ventilated patients

- Inventors: Laurențiu Valentin ORDODI, Gabriela Alina DUMITREL, Ana-Maria PANĂ, TODEA Anamaria, Liliana MĂȚIU-IOVAN, Raul Ciprian IONEL, Dorel SÂNDESC, Ovidiu Horea BEDREAG, Marius PĂPURICĂ, Alexandru Florin ROGOBETE, Ion SIMION, Alin MOTICA, Dan Sergiu GROAPĂ, Virgil PĂUNESCU, Maria Florina BOJIN, Oana Isabela GAVRILIUC
- Gold Medal

5. Experimental plant for resistance to thermal fatigue

- Inventors: Camelia PINCA BRETOTEAN
- Gold Medal

6. Intelligent control system for continuous casting based on water flow control in the secondary cooling

- Inventors: Gelu-Ovidiu TIRIAN
- Gold Medal
- Diploma of Excellence - Justin Capră Association



## The International Exhibition of Scientific Research, Innovation and Invention “PRO INVENT 2020” Cluj-Napoca, 18th edition, online, 18-20 November 2020 Multiple medals for the Politehnica University of Timisoara

The theme of the fair was related to innovative materials, processes and products (energy, environment, health, agriculture, resources, etc.). Graphic presentations, accompanied by models, prototypes, finished products, series products, video presentations, as well as data on the social and financial impact of the work were appreciated by the jury.

The jury appreciated the diversity, adaptability and practical applicability of the inventions presented by the UPT team, led by Corneliu Birtok-Băneasă, Ph.D., Senior Lecturer.

1. Cylindrical multi-hollow briquette produced of ferrous pulverous waste
  - Inventors: Teodor HEPUȚ, Eugen CRIȘAN, Erika ARDELEAN, Ana SOCALICI, Marius ARDELEAN
  - Diploma of excellence and gold medal
2. Device for reducing the microbiological load of air exhaled by mechanically ventilated patients
  - Inventors: Laurențiu Valentin ORDODI, Gabriela Alina DUMITREL, Ana-Maria PANĂ, TODEA Anamaria, Liliana MĂȚIU-IOVAN, Raul Ciprian IONEL, Dorel SÂNDESC, Ovidiu Horea BEDREAG, Marius PĂPURICĂ, Alexandru Florin ROGOBETE, Ion SIMION, Alin MOTICA, Dan Sergiu GROAPĂ, Virgil PĂUNESCU, Maria Florina BOJIN, Oana Isabela GAVRILIUC
  - Diploma of excellence and gold medal
3. Process for the synthesis of silver nanowires coated with low-melting-point metal nanoparticles
  - Inventors: Radu Nicolae BĂNICĂ, Andrea Rozalia KELLENBERGER, Daniel Horațiu URSU, Liliana CSEH, Petrică Andrei LINUL, Nicolae VASZILCSIN
  - Diploma of excellence and gold medal
4. Control method for an automatic capacitive compensator meant to improve the power factor and to load balancing in three-phase four-wire electrical networks
  - Inventors: Adrian PANĂ
  - Diploma of excellence and gold medal
5. Technologic procedure for encapsulation of municipal solid waste incineration residue into coal fly ash rock matrix
  - Inventors: Mihail Reinhold WÄCHTER, Ioana IONEL, Adina Georgeta NEGREA
  - Diploma of excellence and gold medal
6. Intelligent control system for continuous casting based on water flow control in the secondary cooling
  - Inventors: Gelu-Ovidiu TIRIAN
  - Diploma of excellence and gold medal
7. Development of Experimental Laboratory of Applied Ergonomics
  - Inventors: Mihaela POPA, Marcel TOPOR, Amalia DASCĂL
  - Diploma of excellence and gold medal
8. Novel modular stack design for high PREssure PEM water elecTrolyZeR tEchnoLoGy with wide operation range and reduced cost (PRETZEL)
  - Inventors: German Aerospace Center, Stuttgart, Germany, Westphalian University of Applied Sciences, Gelsenkirchen, Germany, Armines, France, Politehnica University Timisoara, Romania, Adamant Composites Ltd., Greece, GKN Sinter Metals Engineering GmbH, Germany, Centre for Research and Technology Hellas, Thessaloniki, Greece, Soluciones Catalíticas IBERCAT S. L., Madrid, Spain, iGas energy GmbH, Germany
  - Diploma of excellence and gold medal



## First International Exhibition “InventCor” Deva, online edition, 17-19.12.2020 Multiple medals for the Politehnica University of Timisoara

The online event brought together nearly two hundred and fifty inventions from 14 countries around the world. The creativity of the participants took many forms: from inventions and research projects to products, educational programmes and educational stands. Among the fields represented were environmental protection, agriculture, medicine, nanotechnology, aviation, art, cosmetics and mechanics. The most appreciated inventions were awarded prizes.

InventCor 2020 brought together universities, research institutes, companies and private inventors. The fair aimed to cultivate a spirit of innovation, especially among young people.

1. Sustaining the inventive spirit and promoting innovation and research at international level
  - Politehnica University Timisoara
  - Inventcor Special Prize
2. Cylindrical multi-hollow briquette produced of ferrous pulverous waste
  - Inventors: Teodor HEPUT, Eugen CRIȘAN, Erika ARDELEAN, Ana SOCALICI, Marius ARDELEAN
  - Gold medal - Diploma
3. Device for reducing the microbiological load of air exhaled by mechanically ventilated patients
  - Inventors: Laurențiu Valentin ORDODI, Gabriela Alina DUMITREL, Ana-Maria PANĂ, TODEA Anamaria, Liliana MĂȚIU-IOVAN, Raul Ciprian IONEL, Dorel SÂNDESC, Ovidiu Horea BEDREAG, Marius PĂPURICĂ, Alexandru Florin ROGOBETE, Ion SIMION, Alin MOTICA, Dan Sergiu GROAPĂ, Virgil PĂUNESCU, Maria Florina BOJIN, Oana Isabela GAVRILIUC
  - Gold medal - Diploma
4. Experimental plant for resistance to thermal fatigue
  - Inventor: Camelia PINCA BRETOTEAN
  - Gold medal – Diploma
  - Antik Special Award
5. Method for treatment of municipal solid waste incineration residues by stabilization/solidification into fly ash rock
  - Inventors: Reinhold WÄCHTER, Ioana IONEL, Adina NEGREA
  - Gold medal - Diploma
6. Tubular briquette from powdery ferrous wastes
  - Inventors: Teodor HEPUT, Ana SOCALICI, Erika ARDELEAN, Marius ARDELEAN, Nicolae CONSTANTIN, Miron BUZDUGA, Radu BUZDUGA
  - Silver medal – Diploma
7. Process for the synthesis of silver nanowires coated with low-melting-point metal nanoparticles
  - Inventors: Radu Nicolae BĂNICĂ, Andrea Rozalia KELLENBERGER, Daniel Horațiu URSU, Liliana CSEH, Petrică Andrei LINUL, Nicolae VASZILCSIN
  - Gold medal – Diploma
8. Control method for an automatic capacitive compensator meant to improve the power factor and to load balancing in three-phase four-wire electrical networks
  - Inventor: Adrian PANĂ
  - Gold medal – Diploma
9. Novel modular stack design for high PREssure PEM water elecTrolyzer tEchnoLogY with wide operation range and reduced cost (PRETZEL)
  - Inventors: German Aerospace Center, Stuttgart, Germany, Westphalian University of Applied Sciences, Gelsenkirchen, Germany, Armines, France, Politehnica University Timisoara, Romania, Adamant Composites Ltd., Greece, GKN Sinter Metals Engineering GmbH, Germany, Centre for Research and Technology Hellas, Thessaloniki, Greece, Soluciones Catalíticas IBERCAT S. L., Madrid, Spain, iGas energy GmbH, Germany
  - Gold medal – Diploma
10. New Nature-Inspired Cycloidal Propeller for Low-Reynolds-Number Hovering Flight
  - Inventors: Francisc BERECZKY, Ioan SILEA
  - Diploma Inventcor: Popularity award

## EXECUTIVE UNIT FOR FINANCING HIGHER EDUCATION, RESEARCH, DEVELOPMENT AND INNOVATION - UEFISCDI AWARDS - ARTICLES

Through these awards UEFISCDI aims to increase quality, impact and international visibility of Romanian research by recognizing and rewarding significant results published in prestigious journals from international senior scientific stream.

Within this competition can participate the researchers affiliated to institutions in Romania, authors of scientific articles published in journals indexed by Clarivate Analytics Science Citation Index Expanded ("Science"), Social Sciences Citation Index ("Social Sciences") or Arts & Humanities Citation Index ("Arts & Humanities").

More information at <http://uefiscdi.gov.ro/Public/cat/471/Premierea-rezultatelor-cercetarii.html>

1. Albulescu, C.T., Demirel, R., Raheem, I.D., Tiwari, A.K. Does the US economic policy uncertainty connect financial markets? Evidence from oil and commodity currencies, *ENERGY ECONOMICS*, Volume: 83, Pages: 375–388, ISSN: 0140-9883, eISSN: 1873-6181, 2019;
2. Albulescu, C.T., Tiwari, A.K., Yoon, S.M., Kang, S.H. FDI, income, and environmental pollution in Latin America: Replication and extension using panel quantiles regression analysis, *ENERGY ECONOMICS*, Volume: 84, Article Number: UNSP 104504, ISSN: 0140-9883, eISSN: 1873-6181, 2019;
3. Anghel, A.A., Mohora, I., Preda, A.D., Giurea, D., Frigura-Iliasa, F.M. ENVIRONMENTAL TENDENCIES IN MODULAR GREEN INSTALLATIONS, *JOURNAL OF GREEN BUILDING*, Volume: 14, Issue: 4, Pages: 197–221, ISSN: 1552-6100, eISSN: 1943-4618, 2019;
4. Bereczky, F., Silea, I. New Nature-Inspired Cycloidal Propeller for Low-Reynolds-Number Hovering Flight, *AIAA JOURNAL*, Volume: 57, Issue: 9, Pages: 3791–3800, ISSN: 0001-1452, eISSN: 1533-385X, 2019;
5. Cioca, L.I., Ivascu, L., Turi, A., Artene, A., Gaman, G.A. Sustainable Development Model for the Automotive Industry, *SUSTAINABILITY*, Volume: 11, Issue: 22, Article Number: 6447, eISSN: 2071-1050, 2019;
6. Cismas, E.C., Lupa, N. A Nash-Moser approach for the Euler-Arnold equations, *MONATSHFTE FÜR MATHEMATIK*, Volume: 192, Issue: 2, Pages: 333–353, ISSN: 0026-9255, eISSN: 1436-5081, 2019;
7. Cristea, M., Baul, B., Ledeti, I., Ledeti, A., Vlase, G., Vlase, T., Karolewicz, B., Stefanescu, O., Dragomirescu, A.O., Muresan, C., Cipu, D.S., Velimirovic, D., Stefanescu, M. Preformulation studies for atorvastatin calcium An instrumental approach, *JOURNAL OF THERMAL ANALYSIS AND CALORIMETRY*, Volume: 138, Issue: 4, Pages: 2799–2806, ISSN: 1388-6150, eISSN: 1588-2926, 2019;
8. David, I., Orboi, M.D., Simandi, M.D., Chirila, C.A., Megyesi, C.I., Radulescu, L., Draghia, L.P., Lukinich-Gruia, A.T., Muntean, C., Hadaruga, D.I., Hadaruga, N.G. Fatty acid profile of Romanian's common bean (*Phaseolus vulgaris* L.) lipid fractions and their complexation ability by beta-cyclodextrin, *PLOS ONE*, Volume: 14, Issue: 11, Article Number: e0225474, PubMed ID: 31756198, ISSN: 1932-6203, 2019;
9. Fagadar-Cosma, E., Vlascici, D., Birdeanu, M., Fagadar-Cosma, G. Novel fluorescent pH sensor based on 5-(4-carboxy-phenyl)-10,15,20-tris(phenyl)-porphyrin, *ARABIAN JOURNAL OF CHEMISTRY*, Volume: 12, Issue: 7, Pages: 1587–1594, ISSN: 1878-5352, eISSN: 1878-5379, 2019;
10. Frigura-Iliasa, F.M., Musuroi, S., Sorandaru, C., Vatau, D. New Technical Parameters and Operational Improvements of the Metal Oxide Varistors Manufacturing Process, *PROCESSES*, Volume: 7, Issue: 1, Article Number: 18, ISSN: 2227-9717, 2019;
11. Golban, A., Lupa, L., Cocheci, L., Pode, R. Synthesis of MgFe Layered Double Hydroxide from Iron-Containing Acidic Residual Solution and Its Adsorption Performance, *CRYSTALS*, Volume: 9, Issue: 10, Article Number: 514, ISSN: 2073-4352, 2019;
12. Groza, B., Murvay, P.S. Identity-Based Key Exchange on In-Vehicle Networks: CAN-FD & FlexRay, *SENSORS*, Volume: 19, Issue: 22, Article Number: 4919, PubMed ID: 31718110, eISSN: 1424-8220, 2019;
13. Istratie, R., Stoia, M., Pacurariu, C., Locovei, C. Single and simultaneous adsorption of methyl orange and phenol onto magnetic iron oxide/carbon nanocomposites, *ARABIAN JOURNAL OF CHEMISTRY*, Volume: 12, Issue: 8, Pages: 3704–3722, ISSN: 1878-5352, eISSN: 1878-5379, 2019;

No.

UEFISCDI Awards

14. Kang, S.H., Tiwari, A.K., Albulescu, C.T., Yoon, S.M. Exploring the time-frequency connectedness and network among crude oil and agriculture commodities V1, *ENERGY ECONOMICS*, Volume: 84, Article Number: UNSP 104543, ISSN: 0140-9883, eISSN: 1873-6181, 2019;
15. Miclau, M., Kumar, S., Ursu, D., Orha, C., Miclau, N., Rueff, J.M., Malo, S., Martin, C. Ag<sub>2</sub>CrO<sub>4</sub> for photocatalytic applications: High performance of crystals designed by autogenous pressure, *MATERIALS CHARACTERIZATION*, Volume: 158, Article Number: 109970, ISSN: 1044-5803, eISSN: 1873-4189, 2019;
16. Mosoarca, M., Onescu, I., Onescu, E., Azap, B., Chieffo, N., Szitar-Sirbu, M. Seismic vulnerability assessment for the historical areas of the Timisoara city, Romania, *ENGINEERING FAILURE ANALYSIS*, Volume: 101, Pages: 86-112, ISSN: 1350-6307, eISSN: 1873-1961, 2019;
17. Motoc, S., Cretu, C., Costisor, O., Baci, A., Manea, F., Szerb, E.I. Cu(I) Coordination Complex Precursor for Randomized CuO<sub>x</sub> Microarray Loaded on Carbon Nanofiber with Excellent Electrocatalytic Performance for Electrochemical Glucose Detection, *SENSORS*, Volume: 19, Issue: 24, Article Number: 5353, PubMed ID: 31817245, eISSN: 1424-8220, 2019;
18. Motoc, S., Manea, F., Orha, C., Pop, A. Enhanced Electrochemical Response of Diclofenac at a Fullerene-Carbon Nanofiber Paste Electrode, *SENSORS*, Volume: 19, Issue: 6, Article Number: 1332, PubMed ID: 30884875, ISSN: 1424-8220, 2019;
19. Nicola, R., Costisor, O., Muntean, S.G., Nistor, M.A., Putz, A.M., Ianasi, C., Lazau, R., Almasy, L., Sacarescu, L. Mesoporous magnetic nanocomposites: a promising adsorbent for the removal of dyes from aqueous solutions, *JOURNAL OF POROUS MATERIALS*, Volume: 27, Issue: 2, Pages: 413-428, ISSN: 1380-2224, eISSN: 1573-4854, 2019;
20. Sarbu, I., Mirza, M., Crasmareanu, E. A review of modelling and optimisation techniques for district heating systems, *INTERNATIONAL JOURNAL OF ENERGY RESEARCH*, Volume: 43, Issue: 13, Pages: 6572-6598, ISSN: 0363-907X, eISSN: 1099-114X, 2019;
21. Scorza, D., Marsavina, L., Carpinteri, A., Ronchei, C., Vantadori, S. Size-effect independence of particleboard fracture toughness, *COMPOSITE STRUCTURES*, Volume: 229, Article Number: UNSP 111374, ISSN: 0263-8223, eISSN: 1879-1085, 2019;
22. Sorandaru, C., Musuroi, S., Frigura-Iliasa, F.M., Vatau, D., Dordescu, M. Analysis of the Wind System Operation in the Optimal Energetic Area at Variable Wind Speed over Time, *SUSTAINABILITY*, Volume: 11, Issue: 5, Article Number: 1249, ISSN: 2071-1050, 2019;
23. Stoia, D.I., Marsavina, L., Linul, E. Correlations between Process Parameters and Outcome Properties of Laser-Sintered Polyamide, *POLYMERS*, Volume: 11, Issue: 11, Article Number: 1850, PubMed ID: 31717539, eISSN: 2073-4360, 2019;
24. Tanasa, C., Bosioc, A., Muntean, S., Susan-Resiga, R. A Novel Passive Method to Control the Swirling Flow with Vortex Rope from the Conical Diffuser of Hydraulic Turbines with Fixed Blades, *APPLIED SCIENCES-BASEL*, Volume: 9, Issue: 22, Article Number: 4910, eISSN: 2076-3417, 2019;
25. Voda, M., Codrean, C., Chicot, D., Serban, V.A., Utu, D., Linul, E., Buzdugan, D. Characterization of brazed joints by electrical resistance spot brazing with Ni-based amorphous self-flux alloys, *JOURNAL OF MANUFACTURING PROCESSES*, Volume: 37, Pages: 617-627, ISSN: 1526-6125, 2019;
26. Ahmed, S.E., San, O., Bistrian, D.A., Navon, I.M. Sampling and resolution characteristics in reduced order models of shallow water equations: Intrusive vs nonintrusive, *INTERNATIONAL JOURNAL FOR NUMERICAL METHODS IN FLUIDS*, Volume: 92, Issue: 8, Pages: 992-1036, ISSN: 0271-2091, eISSN: 1097-0363, 2020;
27. Albulescu, C.T., Artene, A.E., Luminosu, C.T., Tamasila, M. CO<sub>2</sub> emissions, renewable energy, and environmental regulations in the EU countries, *ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH*, Volume: 27, Issue: 27, Pages: 33615-33635, PubMed ID: 31473925, ISSN: 0944-1344, eISSN: 1614-7499, 2020;
28. Albulescu, C.T., Tiwari, A.K., Ji, Q. Copula-based local dependence among energy, agriculture and metal commodities markets, *ENERGY*, Volume: 202, Article Number: 117762, ISSN: 0360-5442, eISSN: 1873-6785, 2020;
29. Ancuti, C., Ancuti, C.O., De Vleeschouwer, C., Bovik, A.C. Day and Night-Time Dehazing by Local Airlight Estimation, *IEEE TRANSACTIONS ON IMAGE PROCESSING*, Volume: 29, Pages: 6264-6275, PubMed ID: 32340946, ISSN: 1057-7149, eISSN: 1941-0042, 2020;

No.

UEFISCDI Awards

30. Ancuti, C.O., Ancuti, C., De Vleeschouwer, C., Sbert, M. Color Channel Compensation (3C): A Fundamental Pre-Processing Step for Image Enhancement, IEEE TRANSACTIONS ON IMAGE PROCESSING, Volume: 29, Pages: 2653-2665, PubMed ID: 31751271, ISSN: 1057-7149, eISSN: 1941-0042, 2020;
31. Ancuti, M.C., Musuroi, S., Sorandaru, C., Dordescu, M., Erdodi, G.M. Wind Turbines Optimal Operation at Time Variable Wind Speeds, APPLIED SCIENCES-BASEL, Volume: 10, Issue: 12, Article Number: 4232, eISSN: 2076-3417, 2020;
32. Apopei, P., Orha, C., Popescu, M.I., Lazau, C., Manea, F., Catrinescu, C., Teodosiu, C. Diclofenac removal from water by photocatalysis- assisted filtration using activated carbon modified with N-doped TiO<sub>2</sub>, PROCESS SAFETY AND ENVIRONMENTAL PROTECTION, Volume: 138, Pages: 324-336, ISSN: 0957-5820, eISSN: 1744-3598, 2020;
33. Artene, A., Bunget, O.C., Dumitrescu, A.C., Domil, A.E., Bogdan, O. Non-Financial Information Disclosures and Environmental Protection- Evidence from Romania and Greece, FORESTS, Volume: 11, Issue: 8, Article Number: 814, eISSN: 1999-4907, 2020;
34. Arvinti, B., Isar, A., Stolz, R., Costache, M. REMOVAL OF REPETITIVE MAGNETIC INTERFERENCES UPON UNSHIELDED FETAL MAGNETOCARDIOGRAMS, ROMANIAN REPORTS IN PHYSICS, Volume: 72, Issue: 3, Article Number: 607, ISSN: 1221-1451, eISSN: 1841-8759, 2020;
35. Bauer, M., Bruveris, M., Cismas, E., Escher, J., Kolev, B. Well-posedness of the EPDiff equation with a pseudo-differential inertia operator, JOURNAL OF DIFFERENTIAL EQUATIONS, Volume: 269, Issue: 1, Pages: 288-325, ISSN: 0022-0396, eISSN: 1090-2732, 2020;
36. Biba, D.R., Ancuti, M.C., Ianovici, A., Sorandaru, C., Musuroi, S. Power Supply Platform and Functional Safety Concept Proposals for a Powertrain Transmission Electronic Control Unit, ELECTRONICS, Volume: 9, Issue: 10, Article Number: 1580, eISSN: 2079-9292, 2020;
37. Boncalo, O., Amaricai, A., Lendek, Z. Fault Tolerant Digital Data-Path Design via Control Feedback Loops, ELECTRONICS, Volume: 9, Issue: 10, Article Number: 1721, eISSN: 2079-9292, 2020;
38. Borlea, A., Borcan, F., Sporea, I., Dehelean, C.A., Negrea, R., Cotoi, L., Stoian, D. TI-RADS Diagnostic Performance: Which Algorithm is Superior and How Elastography and 4D Vascularity Improve the Malignancy Risk Assessment, DIAGNOSTICS, Volume: 10, Issue: 4, Article Number: 180, PubMed ID: 32225078, eISSN: 2075-4418, 2020;
39. Bosioc, A.I., Tanasa, C. Experimental study of swirling flow from conical diffusers using the water jet control method, RENEWABLE ENERGY, Volume: 152, Pages: 385-398, ISSN: 0960-1481, 2020;
40. Bota, C., Caruntu, B., Tucu, D., Lapadat, M., Pasca, M.S. A Least Squares Differential Quadrature Method for a Class of Nonlinear Partial Differential Equations of Fractional Order, MATHEMATICS, Volume: 8, Issue: 8, Article Number: 1336, eISSN: 2227-7390, 2020;
41. Bucur, A.I., Linul, E., Taranu, B.O. Hydroxyapatite coatings on Ti substrates by simultaneous precipitation and electrodeposition, APPLIED SURFACE SCIENCE, Volume: 527, Article Number: 146820, ISSN: 0169-4332, eISSN: 1873-5584, 2020;
42. Buda, V., Baul, B., Andor, M., Man, D.E., Ledeti, A., Vlase, G., Vlase, T., Danciu, C., Matusz, P., Peter, F., Ledeti, I. Solid State Stability and Kinetics of Degradation for Candesartan-Pure Compound and Pharmaceutical Formulation, PHARMACEUTICS, Volume: 12, Issue: 2, Article Number: 86, PubMed ID: 31972960, eISSN: 1999-4923, 2020;
43. Buncianu, D., Tessier-Doyen, N., Absi, J., Negru, R., Serban, D.A., Marsavina, L. Multi-Scale Mechanical Behaviour of a Highly Porous Alumina Based Foam, METALS AND MATERIALS INTERNATIONAL, Volume: 26, Issue: 10, Pages: 1524-1532, ISSN: 1598-9623, eISSN: 2005-4149, 2020;
44. Buriac, O., Ciopec, M., Duteanu, N., Negrea, A., Negrea, P., Grozav, I. Platinum (IV) Recovery from Waste Solutions by Adsorption onto Dibenzo-30-crown-10 Ether Immobilized on Amberlite XAD7 Resin-Factorial Design Analysis, MOLECULES, Volume: 25, Issue: 16, Article Number: 3692, PubMed ID: 32823592, eISSN: 1420-3049, 2020;
45. Busoni, L., Varma, V.S., Loheac, J., Codrean, A., Stefan, O., Morarescu, I.C., Lasaulce, S. Learning control for transmission and navigation with a mobile robot under unknown communication rates, CONTROL ENGINEERING PRACTICE, Volume: 100, Article Number: 104460, ISSN: 0967-0661, eISSN: 1873-6939, 2020;

No.

UEFISCDI Awards

46. Cadariu, L., Popa, D., Rasa, I. Ulam Stability of a Second Linear Differential Operator with Nonconstant Coefficients, SYMMETRY-BASEL, Volume: 12, Issue: 9, Article Number: 1451, eISSN: 2073-8994, 2020;
47. Capota, E.A., Stangaciu, C.S., Micea, M.V., Curiac, D.I. Towards Fully Jitterless Applications: Periodic Scheduling in Multiprocessor MCSs Using a Table-Driven Approach, APPLIED SCIENCES-BASEL, Volume: 10, Issue: 19, Article Number: 6702, eISSN: 2076-3417, 2020;
48. Chirita-Emandi, A., Andreescu, N., Zimbru, C.G., Tutac, P., Arghirescu, S., Serban, M., Puiu, M. Challenges in reporting pathogenic/potentially pathogenic variants in 94 cancer predisposing genes - in pediatric patients screened with NGS panels, SCIENTIFIC REPORTS, Volume: 10, Issue: 1, Article Number: 223, PubMed ID: 31937788, ISSN: 2045-2322, 2020;
49. Ciopec, M., Gabor, A., Davidescu, C.M., Negrea, A., Negrea, P., Duteanu, N. Eu(III) removal by tetrabutylammonium di-hydrogen phosphate (TBAH2P) functionalized polymers, ARABIAN JOURNAL OF CHEMISTRY, Volume: 13, Issue: 1, Pages: 3534-3545, ISSN: 1878-5352, eISSN: 1878-5379, 2020;
50. Cividino, S., Halbac-Cotoara-Zamfir, R., Salvati, L. Revisiting the "City Life Cycle": Global Urbanization and Implications for Regional Development, SUSTAINABILITY, Volume: 12, Issue: 3, Article Number: 1151, eISSN: 2071-1050, 2020;
51. Cocheci, L., Lupa, L., Tolea, N.S., Muntean, C., Negrea, P. Sequential use of ionic liquid functionalized Zn-Al layered double hydroxide as adsorbent and photocatalyst, SEPARATION AND PURIFICATION TECHNOLOGY, Volume: 250, Article Number: 117104, ISSN: 1383-5866, eISSN: 1873-3794, 2020;
52. Cornea, O., Hulea, D., Muntean, N., Andreescu, G.D. Step-Down Switched-Inductor Hybrid DC-DC Converter for Small Power Wind Energy Conversion Systems With Hybrid Storage, IEEE ACCESS, Volume: 8, Pages: 136092-136107, ISSN: 2169-3536, 2020;
53. Covaci, C., Gontean, A. Piezoelectric Energy Harvesting Solutions: A Review, SENSORS, Volume: 20, Issue: 12, Article Number: 3512, PubMed ID: 32575888, eISSN: 1424-8220, 2020;
54. Craciunescu, C.M., Kohl, M., Ercuta, A. Micro-actuation design in VO<sub>2</sub>-based bimorph cantilevers, SMART MATERIALS AND STRUCTURES, Volume: 29, Issue: 11, Article Number: 115035, ISSN: 0964-1726, eISSN: 1361-665X, 2020;
55. Croitoru, C., Pop, M.A., Bedo, T., Cosnita, M., Roata, I.C., Hulka, I. Physically Crosslinked Poly (Vinyl Alcohol)/Kappa-Carrageenan Hydrogels: Structure and Applications, POLYMERS, Volume: 12, Issue: 3, Article Number: 560, PubMed ID: 32138357, eISSN: 2073-4360, 2020;
56. Croitoru, C., Roata, I.C., Pascu, A., Stanciu, E.M., Hulka, I., Stoian, G., Lupu, N. Photocatalytic surfaces obtained through one-step thermal spraying of titanium, APPLIED SURFACE SCIENCE, Volume: 504, Article Number: 144173, ISSN: 0169-4332, eISSN: 1873-5584, 2020;
57. Don, R., Ciutina, A., Vulcu, C., Stratan, A. Seismic-resistant slim-floor beam-to-column joints: experimental and numerical investigations, STEEL AND COMPOSITE STRUCTURES, Volume: 37, Issue: 3, Pages: 307-321, ISSN: 1229-9367, eISSN: 1598-6233, 2020;
58. Dragicevic, D., Pecek, N.J., Lupa, N. Admissibility and general dichotomies for evolution families, ELECTRONIC JOURNAL OF QUALITATIVE THEORY OF DIFFERENTIAL EQUATIONS, Issue: 58, Pages: 1-19, ISSN: 1417-3875, 2020;
59. Dragomir, G.M., Cernicova-Buca, M., Gherhes, V., Cismariu, L. Engineering Students' Human Values as Rhizomatic Lines of Sustainability, SUSTAINABILITY, Volume: 12, Issue: 18, Article Number: 7417, eISSN: 2071-1050, 2020;
60. Dumitru, R., Negrea, S., Ianculescu, A., Pacurariu, C., Vasile, B., Surdu, A., Manea, F. Lanthanum Ferrite Ceramic Powders: Synthesis, Characterization and Electrochemical Detection Application, MATERIALS, Volume: 13, Issue: 9, Article Number: 2061, PubMed ID: 32365678, eISSN: 1996-1944, 2020;
61. Egidi, G., Halbac-Cotoara-Zamfir, R., Cividino, S., Quaranta, G., Salvati, L., Colantoni, A. Rural in Town: Traditional Agriculture, Population Trends, and Long-Term Urban Expansion in Metropolitan Rome, LAND, Volume: 9, Issue: 2, Article Number: 53, eISSN: 2073-445X, 2020;
62. Ene, R.D., Pop, C., Petrisor, C. Systematic Review of Geometrical Approaches and Analytical Integration for Chen's System, MATHEMATICS, Volume: 8, Issue: 9, Article Number: 1530, eISSN: 2227-7390, SEP 2020;

No.

UEFISCDI Awards

63. Epasto, G., Distefano, F., Gu, L.X., Mozafari, H., Linul, E. Design and optimization of Metallic Foam Shell protective device against flying ballast impact damage in railway axles, MATERIALS & DESIGN, Volume: 196, Article Number: 109120, ISSN: 0264-1275, eISSN: 1873-4197, 2020;
64. Fagadar-Cosma, E., Plesu, N., Lascu, A., Anghel, D., Cazacu, M., Ianasi, C., Fagadar-Cosma, G., Fratilescu, I., Epuran, C. Novel Platinum-Porphyrin as Sensing Compound for Efficient Fluorescent and Electrochemical Detection of H<sub>2</sub>O<sub>2</sub>, CHEMOSENSORS, Volume: 8, Issue: 2, Article Number: 29, eISSN: 2227-9040, 2020;
65. Fiedler, T., Al-Sahlan, K., Linul, P.A., Linul, E. Mechanical properties of A356 and ZA27 metallic syntactic foams at cryogenic temperature, JOURNAL OF ALLOYS AND COMPOUNDS, Volume: 813, Article Number: 152181, ISSN: 0925-8388, eISSN: 1873-4669, 2020;
66. Frigura-Iliasa, M., Baloi, F.I., Frigura-Iliasa, F.M., Simo, A., Musuroi, S., Andea, P. Health-Related Electromagnetic Field Assessment in the Proximity of High Voltage Power Equipment, APPLIED SCIENCES-BASEL, Volume: 10, Issue: 1, Article Number: 260, eISSN: 2076-3417, 2020;
67. Gherhes, V., Dragomir, G.M., Cernicova-Buca, M. Migration Intentions of Romanian Engineering Students, SUSTAINABILITY, Volume: 12, Issue: 12, Article Number: 4846, eISSN: 2071-1050, 2020;
68. Groza, B., Andreica, T., Berdich, A., Murvay, P.S., Gurban, E.H. PRESTvO: PRivacy Enabled Smartphone Based Access to Vehicle On-Board Units, IEEE ACCESS, Volume: 8, Pages: 119105-119122, ISSN: 2169-3536, 2020;
69. Groza, B., Berdich, A., Jichici, C., Mayrhofer, R. Secure Accelerometer-Based Pairing of Mobile Devices in Multi-Modal Transport, IEEE ACCESS, Volume: 8, Pages: 9246-9259, ISSN: 2169-3536, 2020;
70. Groza, B., Popa, L., Murvay, P.S. Highly Efficient Authentication for CAN by Identifier Reallocation With Ordered CMACs, IEEE TRANSACTIONS ON VEHICULAR TECHNOLOGY, Volume: 69, Issue: 6, Pages: 6129-6140, ISSN: 0018-9545, eISSN: 1939-9359, 2020;
71. Gurban, D. Radial non-potential Dirichlet systems with mean curvature operator in Minkowski space, POSITIVITY, Volume: 25, Issue: 1, ISSN: 1385-1292, eISSN: 1572-9281, 2020;
72. Hadaruga, N.G., Szakal, R.N., Chirila, C.A., Lukinich-Gruia, A.T., Paunescu, V., Muntean, C., Rusu, G., Bujanca, G., Hadaruga, D.I. Complexation of Danube common nase (*Chondrostoma nasus* L.) oil by beta-cyclodextrin and 2-hydroxypropyl-beta-cyclodextrin, FOOD CHEMISTRY, Volume: 303, Article Number: 125419, PubMed ID: 31470276, ISSN: 0308-8146, eISSN: 1873-7072, 2020;
73. Halbac-Cotoara-Zamfir, R., Cividino, S., Egidi, G., Salvia, R., Salvati, L. Rapidity of Change in Population Age Structures: A Local Approach Based on Multiway Factor Analysis, SUSTAINABILITY, Volume: 12, Issue: 7, Article Number: 2828, eISSN: 2071-1050, 2020;
74. Halbac-Cotoara-Zamfir, R., Egidi, G., Mosconi, E.M., Poponi, S., Alhuseen, A., Salvati, L. Uncovering Demographic Trends and Recent Urban Expansion in Metropolitan Regions: A Paradigmatic Case Study, SUSTAINABILITY, Volume: 12, Issue: 9, Article Number: 3937, eISSN: 2071-1050, 2020;
75. Hegyi, A., Sarris, A., Curta, F., Floca, C., Fortiu, S., Urdea, P., Onaca, A., Timofte, F., Pisz, M., Timut, S., Nica, M., Maciulschi, D., Stavila, A. Deserted Medieval Village Reconstruction Using Applied Geosciences, REMOTE SENSING, Volume: 12, Issue: 12, Article Number: 1975, eISSN: 2072-4292, 2020;
76. Heinosaari, T., Jivulescu, M.A., Nechita, I. Random positive operator valued measures, JOURNAL OF MATHEMATICAL PHYSICS, Volume: 61, Issue: 4, ISSN: 0022-2488, eISSN: 1089-7658, 2020;
77. Hulka, I., Utu, D., Serban, V.A., Negrea, P., Lukac, F., Chraska, T. Effect of Ti addition on microstructure and corrosion properties of laser clad WC-Co/NiCrBSi(Ti) coatings, APPLIED SURFACE SCIENCE, Volume: 504, Article Number: 144349, ISSN: 0169-4332, eISSN: 1873-5584, 2020;
78. Ioana, A., Korodi, A. Improving OPC UA Publish-Subscribe Mechanism over UDP with Synchronization Algorithm and Multithreading Broker Application, SENSORS, Volume: 20, Issue: 19, Article Number: 5591, PubMed ID: 33003549, eISSN: 1424-8220, 2020;
79. Ioana, A., Korodi, A. OPC UA Publish-Subscribe and VSOME/IP Notify-Subscribe Based Gateway Application in the Context of Car to Infrastructure Communication, SENSORS, Volume: 20, Issue: 16, Article Number: 4624, PubMed ID: 32824493, eISSN: 1424-8220, 2020;

## No.

## UEFISCDI Awards

80. Ivascu, L. Measuring the Implications of Sustainable Manufacturing in the Context of Industry 4.0, *PROCESSES*, Volume: 8, Issue: 5, Article Number: 585, eISSN: 2227-9717, 2020;
81. Khezrzadeh, O., Mirzaee, O., Emadoddin, E., Linul, E. Anisotropic Compressive Behavior of Metallic Foams under Extreme Temperature Conditions, *MATERIALS*, Volume: 13, Issue: 10, Article Number: 2329, PubMed ID: 32438755, eISSN: 1996-1944, 2020;
82. Kiss, G., Rusu, G., Peter, F., Tanase, I., Bandur, G. Recovery of Flexible Polyurethane Foam Waste for Efficient Reuse in Industrial Formulations, *POLYMERS*, Volume: 12, Issue: 7, Article Number: 1533, PubMed ID: 32664336, eISSN: 2073-4360, 2020;
83. Kolumban-Antal, G., Lasak, V., Bogdan, R., Groza, B. A Secure and Portable Multi-Sensor Module for Distributed Air Pollution Monitoring, *SENSORS*, Volume: 20, Issue: 2, Article Number: 403, PubMed ID: 31936847, eISSN: 1424-8220, 2020;
84. Korodi, A., Anitei, D., Boitor, A., Silea, I. Image-Processing-Based Low-Cost Fault Detection Solution for End-of-Line ECUs in Automotive Manufacturing, *SENSORS*, Volume: 20, Issue: 12, Article Number: 3520, PubMed ID: 32580271, eISSN: 1424-8220, 2020;
85. Korodi, A., Crisan, R., Nicolae, A., Silea, I. Industrial Internet of Things and Fog Computing to Reduce Energy Consumption in Drinking Water Facilities, *PROCESSES*, Volume: 8, Issue: 3, Article Number: 282, eISSN: 2227-9717, 2020;
86. Lascu, C., Andreescu, G.D. PLL Position and Speed Observer With Integrated Current Observer for Sensorless PMSM Drives, *IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS*, Volume: 67, Issue: 7, Pages: 5990-5999, ISSN: 0278-0046, eISSN: 1557-9948, 2020;
87. Lascu, C., Argeșeanu, A., Blaabjerg, F. Supertwisting Sliding-Mode Direct Torque and Flux Control of Induction Machine Drives, *IEEE TRANSACTIONS ON POWER ELECTRONICS*, Volume: 35, Issue: 5, Pages: 5057-5065, ISSN: 0885-8993, eISSN: 1941-0107, 2020;
88. Ledeti, I., Bengescu, C., Circioban, D., Vlase, G., Vlase, T., Tomoroga, C., Buda, V., Ledeti, A., Dragomirescu, A., Murariu, M. Solid-state stability and kinetic study of three glucocorticoid hormones: prednisolone, prednisone and cortisone, *JOURNAL OF THERMAL ANALYSIS AND CALORIMETRY*, Volume: 141, Issue: 3, Pages: 1053-1065, ISSN: 1388-6150, eISSN: 1588-2926, 2020;
89. Linul, E., Marsavina, L., Valean, C., Banica, R. Static and dynamic mode I fracture toughness of rigid PUR foams under room and cryogenic temperatures, *ENGINEERING FRACTURE MECHANICS*, Volume: 225, Article Number: 106274, ISSN: 0013-7944, eISSN: 1873-7315, 2020;
90. Lupa, N. A New Approach on Datko-Zabczyk Method for Nonuniform Exponential Stability, *MATHEMATICS*, Volume: 8, Issue: 7, Article Number: 1095, eISSN: 2227-7390, 2020;
91. Lupa, N., Popescu, L.H. Admissible Banach Function Spaces and Nonuniform Stabilities, *MEDITERRANEAN JOURNAL OF MATHEMATICS*, Volume: 17, Issue: 4, Article Number: 105, ISSN: 1660-5446, eISSN: 1660-5454, 2020;
92. Marian, E., Duteanu, N., Vicas, L., Rusu, G., Jurca, T., Muresan, M., Micle, O., Hangan, A.C., Stan, R.L., Ionescu, C., Sevastre, B., Pall, E. Synthesis, characterization of inclusion compounds of amygdalin with beta-cyclodextrin and sod-like activity and cytotoxicity on hela tumor cells, *ARABIAN JOURNAL OF CHEMISTRY*, Volume: 13, Issue: 8, Pages: 6828-6837, ISSN: 1878-5352, eISSN: 1878-5379, 2020;
93. Marsavina, L., Linul, E. Fracture toughness of rigid polymeric foams: A review, *FATIGUE & FRACTURE OF ENGINEERING MATERIALS & STRUCTURES*, Volume: 43, Issue: 11, Pages: 2483-2514, ISSN: 8756-758X, eISSN: 1460-2695, 2020;
94. Mirsu, R., Simion, G., Căleanu, C.D., Pop-Calimanu, I.M. A PointNet-Based Solution for 3D Hand Gesture Recognition, *SENSORS*, Volume: 20, Issue: 11, Article Number: 3226, PubMed ID: 32517141, eISSN: 1424-8220, 2020;
95. Mosoarca, G., Vancea, C., Popa, S., Boran, S., Tanasie, C. A green approach for treatment of wastewater with manganese using wood ash, *JOURNAL OF CHEMICAL TECHNOLOGY AND BIOTECHNOLOGY*, Volume: 95, Issue: 6, Pages: 1781-1789, ISSN: 0268-2575, eISSN: 1097-4660, 2020;
96. Mosoarca, M., Onescu, I., Onescu, E., Anastasiadis, A. Seismic vulnerability assessment methodology for historic masonry buildings in the near-field areas, *ENGINEERING FAILURE ANALYSIS*, Volume: 115, Article Number: 104662, ISSN: 1350-6307, eISSN: 1873-1961, 2020;
97. Murvay, P.S., Groza, B. Efficient Physical Layer Key Agreement for FlexRay Networks, *IEEE TRANSACTIONS ON VEHICULAR TECHNOLOGY*, Volume: 69, Issue: 9, Pages: 9767-9780, ISSN: 0018-9545, eISSN: 1939-9359, 2020;

No.

UEFISCDI Awards

98. Murvay, P.S., Groza, B. TIDAL-CAN: Differential Timing Based Intrusion Detection and Localization for Controller Area Network, IEEE ACCESS, Volume: 8, Pages: 68895–68912, ISSN: 2169–3536, 2020;
99. Negrea, A., Mihailescu, M., Mosoarca, G., Ciopec, M., Duteanu, N., Negrea, P., Minzatu, V. Estimation on Fixed-Bed Column Parameters of Breakthrough Behaviors for Gold Recovery by Adsorption onto Modified/Functionalized Amberlite XAD7, INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH, Volume: 17, Issue: 18, Article Number: 6868, PubMed ID: 32962235, eISSN: 1660–4601, 2020;
100. Negrea, P., Gabor, A., Davidescu, C.M., Ciopec, M., Negrea, A., Duteanu, N. Kinetics and thermodynamics modeling of Nd(III) removal from aqueous solution using modified Amberlite XAD7, JOURNAL OF RARE EARTHS, Volume: 38, Issue: 3, Pages: 306–314, ISSN: 1002–0721, 2020;
101. Nicola, R., Costisor, O., Ciopec, M., Negrea, A., Lazau, R., Ianasi, C., Piciorus, E.M., Len, A., Almasy, L., Szerb, E.I., Putz, A.M. Silica-Coated Magnetic Nanocomposites for Pb<sup>2+</sup> Removal from Aqueous Solution, APPLIED SCIENCES–BASEL, Volume: 10, Issue: 8, Article Number: 2726, eISSN: 2076–3417, 2020;
102. Nicolae, A., Korodi, A., Silea, I. Weather-Based Prediction Strategy inside the Proactive Historian with Application in Wastewater Treatment Plants, APPLIED SCIENCES–BASEL, Volume: 10, Issue: 9, Article Number: 3015, eISSN: 2076–3417, 2020;
103. Onchis, D.M., Istin, C., Tudoran, C., Tudoran, M., Real, P. Timely-Automatic Procedure for Estimating the Endocardial Limits of the Left Ventricle Assessed Echocardiographically in Clinical Practice, DIAGNOSTICS, Volume: 10, Issue: 1, Article Number: 40, PubMed ID: 31941079, eISSN: 2075–4418, 2020;
104. Osaci, M., Cacciola, M. Influence of the magnetic nanoparticle coating on the magnetic relaxation time, BEILSTEIN JOURNAL OF NANOTECHNOLOGY, Volume: 11, Pages: 1207–1216, PubMed ID: 32832316, ISSN: 2190–4286, 2020;
105. Pana, A., Baloi, A., Molnar-Matei, F. New method for calculating the susceptances of a balancing capacitive compensator for a three-phase four-wire distribution network, INTERNATIONAL JOURNAL OF ELECTRICAL POWER & ENERGY SYSTEMS, Volume: 115, Article Number: 105414, ISSN: 0142–0615, eISSN: 1879–3517, 2020;
106. Pana, A.M., Ordodi, V., Rusu, G., Gherman, V., Bandur, G., Rusnac, L.M., Dumitrel, G.A. Biodegradation Pattern of Glycopolymer Based on D-Mannose Oligomer and Hydroxypropyl Acrylate, POLYMERS, Volume: 12, Issue: 3, Article Number: 704, PubMed ID: 32235772, eISSN: 2073–4360, 2020;
107. Pascu, B., Ardean, C., Davidescu, C.M., Negrea, A., Ciopec, M., Duteanu, N., Negrea, P., Rusu, G. Modified Chitosan for Silver Recovery–Kinetics, Thermodynamic, and Equilibrium Studies, MATERIALS, Volume: 13, Issue: 3, Article Number: 657, PubMed ID: 32024185, eISSN: 1996–1944, 2020;
108. Pascu, B., Negrea, A., Ciopec, M., Davidescu, C.M., Negrea, P., Gherman, V., Duteanu, N. New Generation of Antibacterial Products Based on Colloidal Silver, MATERIALS, Volume: 13, Issue: 7, Article Number: 1578, PubMed ID: 32235381, eISSN: 1996–1944, 2020;
109. Pietras, D., Linul, E., Sadowski, T., Rusinek, A. Out-of-plane crushing response of aluminum honeycombs in-situ filled with graphene-reinforced polyurethane foam, COMPOSITE STRUCTURES, Volume: 249, Article Number: 112548, ISSN: 0263–8223, eISSN: 1879–1085, 2020;
110. Pohoryles, D.A., Maduta, C., Bournas, D.A., Kouris, L.A. Energy performance of existing residential buildings in Europe: A novel approach combining energy with seismic retrofitting, ENERGY AND BUILDINGS, Volume: 223, Article Number: 110024, ISSN: 0378–7788, eISSN: 1872–6178, 2020;
111. Pop, M.D., Prostean, O., David, T.M., Prostean, G. Hybrid Solution Combining Kalman Filtering with Takagi–Sugeno Fuzzy Inference System for Online Car-Following Model Calibration, SENSORS, Volume: 20, Issue: 19, Article Number: 5539, PubMed ID: 32992622, eISSN: 1424–8220, 2020;
112. Popa, C.A. Dissipativity of impulsive matrix-valued neural networks with leakage delay and mixed delays, NEUROCOMPUTING, Volume: 405, Pages: 85–95, ISSN: 0925–2312, eISSN: 1872–8286, 2020;

No.

UEFISCDI Awards

113. Popa, C.A. Global mu-stability of neutral-type impulsive complex-valued BAM neural networks with leakage delay and unbounded time-varying delays, *NEUROCOMPUTING*, Volume: 376, Pages: 73-94, ISSN: 0925-2312, eISSN: 1872-8286, 2020;
114. Popa, C.A., Kaslik, E. Finite-Time Mittag-Leffler Synchronization of Neutral-Type Fractional-Order Neural Networks with Leakage Delay and Time-Varying Delays, *MATHEMATICS*, Volume: 8, Issue: 7, Article Number: 1146, eISSN: 2227-7390, 2020;
115. Popa, S., Milea, M.S., Boran, S., Nitu, S.V., Mosoarca, G.E., Vancea, C., Lazau, R.I. Rapid adulteration detection of cold pressed oils with their refined versions by UV-Vis spectroscopy, *SCIENTIFIC REPORTS*, Volume: 10, Issue: 1, Article Number: 16100, PubMed ID: 32999344, ISSN: 2045-2322, 2020;
116. Popescu, G., Radulov, I., Iordanescu, O.A., Orboi, M.D., Radulescu, L., Druga, M., Bujanca, G.S., David, I., Hadaruga, D.I., Lucan, C.A., Hadaruga, N.G., Ravis, M. Karl Fischer Water Titration-Principal Component Analysis Approach on Bread Products, *APPLIED SCIENCES-BASEL*, Volume: 10, Issue: 18, Article Number: 6518, eISSN: 2076-3417, 2020;
117. Roata, I.C., Croitoru, C., Pascu, A., Stanciu, E.M., Hulka, I., Petre, I., Gabor, C., Patroi, D., Sbarcea, B.G. Surface engineering of Ni-Al coatings through concentrated solar heat treatment, *APPLIED SURFACE SCIENCE*, Volume: 506, Article Number: 144185, ISSN: 0169-4332, eISSN: 1873-5584, 2020;
118. Salvia, R., Halbac-Cotoara-Zamfir, R., Cividino, S., Salvati, L., Quaranta, G. From Rural Spaces to Peri-Urban Districts: Metropolitan Growth, Sparse Settlements and Demographic Dynamics in a Mediterranean Region, *LAND*, Volume: 9, Issue: 6, Article Number: 200, eISSN: 2073-445X, 2020;
119. Shah, S.G.M., Sarfraz, M., Ivascu, L. Assessing the interrelationship corporate environmental responsibility, innovative strategies, cognitive and hierarchical CEO: A stakeholder theory perspective, *CORPORATE SOCIAL RESPONSIBILITY AND ENVIRONMENTAL MANAGEMENT*, Volume: 28, Issue: 1, Pages: 457-473, ISSN: 1535-3958, eISSN: 1535-3966, 2020;
120. Simon, S., Stoian, C.E., Gherhes, V. The Concept of Sustainability in the Romanian Top Universities' Strategic Plans, *SUSTAINABILITY*, Volume: 12, Issue: 7, Article Number: 2757, eISSN: 2071-1050, 2020;
121. Smuleac, A., Smuleac, L., Man, T.E., Popescu, C.A., Imbrea, F., Radulov, I., Adamov, T., Pascalau, R. Use of Modern Technologies for the Conservation of Historical Heritage in Water Management, *WATER*, Volume: 12, Issue: 10, Article Number: 2895, eISSN: 2073-4441, 2020;
122. Stavi, I., Siad, S.M., Kyriazopoulos, A.P., Halbac-Cotoara-Zamfir, R. Water runoff harvesting systems for restoration of degraded rangelands: A review of challenges and opportunities, *JOURNAL OF ENVIRONMENTAL MANAGEMENT*, Volume: 255, Article Number: 109823, PubMed ID: 31785458, ISSN: 0301-4797, eISSN: 1095-8630, 2020;
123. Stoia, D.L., Marsavina, L., Linul, E. Mode I Fracture Toughness of Polyamide and Alumide Samples obtained by Selective Laser Sintering Additive Process, *POLYMERS*, Volume: 12, Issue: 3, Article Number: 640, PubMed ID: 32168974, eISSN: 2073-4360, 2020;
124. Stratan, A., Zub, C.I., Dubina, D. Prequalification of a set of buckling restrained braces: Part I - experimental tests, *STEEL AND COMPOSITE STRUCTURES*, Volume: 34, Issue: 4, Pages: 547-559, ISSN: 1229-9367, eISSN: 1598-6233, 2020;
125. Tanase, I.M., Sbarcea, L., Ledeti, A., Vlase, G., Barvinschi, P., Varut, R.M., Dragomirescu, A., Axente, C., Ledeti, I. Physicochemical characterization and molecular modeling study of host-guest systems of aripiprazole and functionalized cyclodextrins, *JOURNAL OF THERMAL ANALYSIS AND CALORIMETRY*, Volume: 141, Issue: 3, Pages: 1027-1039, ISSN: 1388-6150, eISSN: 1588-2926, 2020;
126. Tekle-Roettering, A., Lim, S., Reisz, E., Lutze, H.V., Abdighahroudi, M.S., Willach, S., Schmidt, W., Tentscher, P.R., Rentsch, D., McArdell, C.S., Schmidt, T.C., von Gunten, U. Reactions of pyrrole, imidazole, and pyrazole with ozone: kinetics and mechanisms, *ENVIRONMENTAL SCIENCE-WATER RESEARCH & TECHNOLOGY*, Volume: 6, Issue: 4, Pages: 976-992, ISSN: 2053-1400, eISSN: 2053-1419, 2020;
127. Tigan, G., Lazureanu, C., Munteanu, F., Sterbeti, C., Florea, A. Bifurcation diagrams in a class of Kolmogorov systems, *NONLINEAR ANALYSIS-REAL WORLD APPLICATIONS*, Volume: 56, Article Number: 103154, ISSN: 1468-1218, 2020;

No.

UEFISCDI Awards

128. Tiwari, A.K., Adewuyi, A.O., Albulescu, C.T., Wohar, M.E. Empirical evidence of extreme dependence and contagion risk between main cryptocurrencies, NORTH AMERICAN JOURNAL OF ECONOMICS AND FINANCE, Volume: 51, Article Number: 101083, ISSN: 1062-9408, eISSN: 1879-0860, 2020;
129. Todea, A., Aparaschivei, D., Bitcan, I., Ledeti, I.V., Bandur, G., Peter, F., Nagy, L., Keki, S., Biro, E. Thermal behavior of oligo[(epsilon-caprolactone)-co-delta-gluconolactone] enzymatically synthesized in reaction conditions optimized by experimental design, JOURNAL OF THERMAL ANALYSIS AND CALORIMETRY, Volume: 141, Issue: 3, Pages: 1017-1026, ISSN: 1388-6150, eISSN: 1588-2926, 2020;
130. Tudoran, R.M., Girban, A. On the rattleback dynamics, JOURNAL OF MATHEMATICAL ANALYSIS AND APPLICATIONS, Volume: 488, Issue: 1, Article Number: 124066, ISSN: 0022-247X, eISSN: 1096-0813, 2020;
131. Tulcan, A., Vasilescu, M.D., Tulcan, L. Study of the Influence of Technological Parameters on Generating Flat Part with Cylindrical Features in 3D Printing with Resin Cured by Optical Processing, POLYMERS, Volume: 12, Issue: 9, Article Number: 1941, PubMed ID: 32867332, eISSN: 2073-4360, 2020;
132. Udrescu, L., Bogdan, P., Chis, A., Sirbu, I.O., Topirceanu, A., Varut, R.M., Udrescu, M. Uncovering New Drug Properties in Target-Based Drug-Drug Similarity Networks, PHARMACEUTICS, Volume: 12, Issue: 9, Article Number: 879, PubMed ID: 32947845, eISSN: 1999-4923, 2020;
133. Ungureanu, L., Micea, M.V., Carstoiu, G. Online state of health prediction method for lithium-ion batteries, based on gated recurrent unit neural networks, INTERNATIONAL JOURNAL OF ENERGY RESEARCH, Volume: 44, Issue: 8, Pages: 6767-6777, ISSN: 0363-907X, eISSN: 1099-114X, 2020;
134. Ungureanu, V.I., Miclea, R.C., Korodi, A., Silea, I. A Novel Approach against Sun Glare to Enhance Driver Safety, APPLIED SCIENCES-BASEL, Volume: 10, Issue: 9, Article Number: 3032, eISSN: 2076-3417, 2020;
135. Vajda, M., Ursu, D., Duteanu, N., Miclau, M. Low lying valence band edge materials based on copper oxide for tandem dye -sensitized solar cells, MATERIALS LETTERS, Volume: 275, Article Number: 128151, ISSN: 0167-577X, eISSN: 1873-4979, 2020;
136. Vajda, M., Ursu, D., Mosoarca, C., Duteanu, N., Miclau, M. Experimental investigation of hydrogen insertion in copper oxide on photovoltaic performance of p-type dye-sensitized solar cell, INTERNATIONAL JOURNAL OF ENERGY RESEARCH, ISSN: 0363-907X, eISSN: 1099-114X, 2020;
137. Vasiliu, R.D., Porojan, S.D., Birdeanu, M.I., Utu, I.D., Porojan, L. The Effect of Thermocycling and Surface Treatments on the Surface Roughness and Microhardness of Three Heat-Pressed Ceramics Systems, CRYSTALS, Volume: 10, Issue: 3, Article Number: 160, ISSN: 2073-4352, 2020;
138. Visa, A., Maranescu, B., Lupa, L., Crisan, L., Borota, A. New Efficient Adsorbent Materials for the Removal of Cd(II) from Aqueous Solutions, NANOMATERIALS, Volume: 10, Issue: 5, Article Number: 899, PubMed ID: 32397122, eISSN: 2079-4991, 2020;
139. Vlase, D., Mosoiu, C., Vlase, G., Lazau, R., Vlase, T. Comparative analyses of Roman mortars belonging to different ancient periods from Drobeta-Turnu Severin region, JOURNAL OF THERMAL ANALYSIS AND CALORIMETRY, Volume: 141, Issue: 3, Pages: 991-998, ISSN: 1388-6150, eISSN: 1588-2926, 2020;
140. Voicu, A., Duteanu, N., Voicu, M., Vlad, D., Dumitrascu, V. The rcdk and cluster R packages applied to drug candidate selection, JOURNAL OF CHEMINFORMATICS, Volume: 12, Issue: 1, Article Number: 3, PubMed ID: 33430987, ISSN: 1758-2946, 2020;
141. Zub, C.I., Stratan, A., Dubina, D. Prequalification of a set of buckling restrained braces: Part II - numerical simulations, STEEL AND COMPOSITE STRUCTURES, Volume: 34, Issue: 4, Pages: 561-580, ISSN: 1229-9367, eISSN: 1598-6233, 2020.

## EXECUTIVE UNIT FOR FINANCING HIGHER EDUCATION, RESEARCH, DEVELOPMENT AND INNOVATION - UEFISCDI AWARDS - GRANTED PATENTS

1. Savin, V., Boncalo, O., Declercq, D. Stopping criterion for decoding Quasi-Cyclic LDPC codes, EPO, EU 3373488 B1, 06.05.2020;
2. Savin, V., Boncalo, O., Declercq, D. Stopping criterion for decoding Quasi-Cyclic LDPC codes, USP, Patent no. US 10651872 B2, 12.05.2020
3. Craciunescu, C.M., Budau, V., Mitelea, I. Actuator with thermo-magnetic control of position, OSIM, RO 128675 B1, 28.02.2020;
4. Gontean, A.S., Cernaianu, M.O., Intelligent Control Device for Light Switches, OSIM, RO 129498 B1, 28.02.2020;
5. Bănică, R.N., Kellenberger, A.R., Ursu, D.H., Cseh, L., Linul, P., Vaszilcsin, N. Process for the synthesis of silver nanowires coated with low melting point metal nanoparticles, selected from indium and tin, OSIM, RO 132480 B1, 30.04.2020;
6. Pană, A. Control method for an automatic capacitive compensator meant to improve the power factor and to balancing the load in three-phase four-wire electrical networks, OSIM, RO 131297 B1, 30.09.2020;
7. Poșta D.S., Hădărugă N.G., Peț E., Poșta G.M., Peț I., Camen D.D., Hădărugă D.I. Manufacturing process of rooting product based on willow (genus Salix L.) extract, OSIM, RO 131178 B1, 30.01.2019.

## PROJECTS SUPPORTED BY PUBLIC FUNDS



# National Research Projects

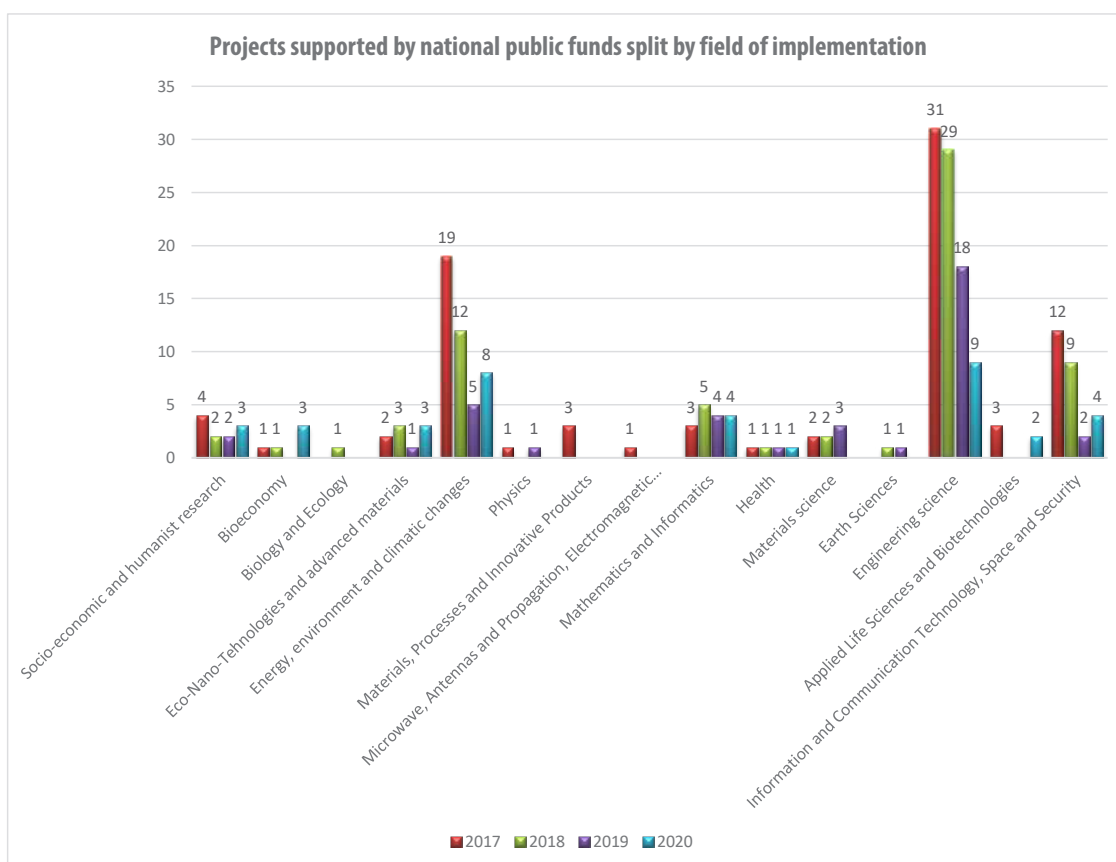
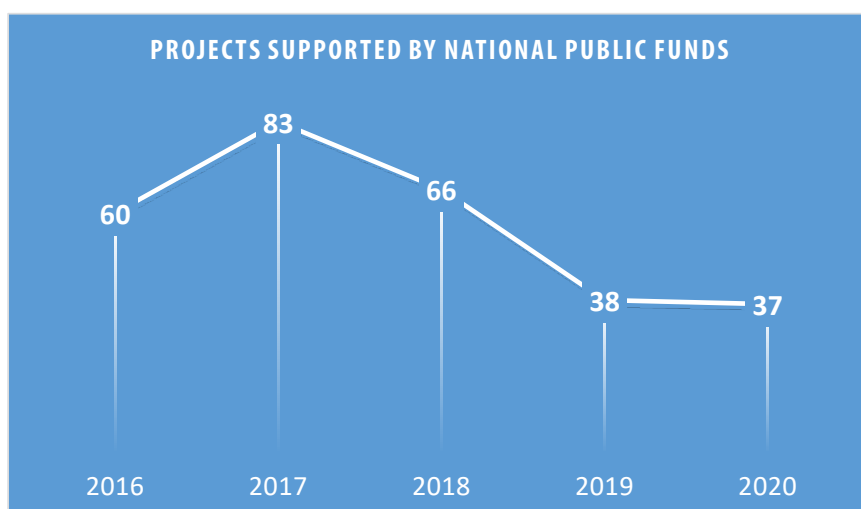


## PROJECTS SUPPORTED BY NATIONAL PUBLIC FUNDS IMPLEMENTED BY UPT 2020

Fields	Total number of projects	Number of projects presented
Social and Economic sciences	3	2
Eco-Nano-Tehnologies and advanced materials	3	3
Energy, environment and climatic changes	8	8
Mathematics and Informatics	4	4
Health	1	1
Bioeconomy	3	3
Applied Life Sciences and Biotechnologies	2	2
Engineering science	9	9
Information and Communication Technology, Space and Security	4	4
<b>Total</b>	<b>37</b>	<b>36</b>



## EVOLUTION OF PROJECTS SUPPORTED BY NATIONAL PUBLIC FUNDS IMPLEMENTED BY UPT 2016 - 2020





## PRESENCE - PRIVACY-ENABLED, SECURED INTERACTIONS BETWEEN VEHICLES AND SMART ELECTRONIC DEVICES

### Goal of the project:

The main target of the project is the design, analysis and implementation of security and privacy mechanisms for mediating access to in-vehicle functionalities by using intelligent mobile devices instead of classical RF and/or mechanical vehicle keys that are rigid and are lacking in terms of configurability and functionalities. The design of such security solutions is challenged by limitations on computational capabilities of existing components, e.g., in-vehicle controllers, as well as by the potential insecurity of smartphones.



### Short description of the project:

PRESENCE addresses the security of the newly emerged ecosystem of modern vehicles that interact with intelligent mobile devices, e.g., smart-phones.

### Project implemented by

Politehnica University Timișoara

### Implementation period:

2018-2020

### Main activities:

Our project calls for the use of security enforcing technologies (e.g., NFC security cards) and modern device pairing techniques by harvesting environmental data (e.g., accelerometer data) to provide a secure and usable solution. Privacy enhancing technologies also need to be put in place in order to protect the users in front of corrupted cloud owners. As deployment platform we target Android, the mobile OS with the largest installed base. We also test the computational feasibility of the proposed solutions on a commonly employed controller for car BCMs.

Main project objectives:

1. Design, analysis and implementation of security protocols.
2. Security enforcing technologies (e.g., NFC cards).
3. Ecosystem-based device association (e.g., accelerometer data).
4. Cloud-based access control.
5. Connectivity to in-vehicle control units.



## Results:

More than 15 research papers in relevant workshops and journals in the field addressing new concepts in vehicle access control supported by practical deployments on real-world components have been published. The list includes the following 6 Q1 journals:

- [1] Bogdan Groza, Tudor Andreica, Adriana Berdich, Pal-Stefan Murvay, Horatiu Gurban, PRESTVO: PRivacy Enabled Smartphone-based access To vehicle On-board units, IEEE Access, 2020.
- [2] Bogdan Groza, Adriana Berdich, Camil Jichici, Rene Mayrhofer, Secure Accelerometer-Based Pairing of Mobile Devices in Multi-Modal Transport, IEEE Access, vol. 8, 2020.

[3] Bogdan Groza, Lucian Popa, Pal-Stefan Murvay, CANTO - Covert Authentication with Timing channels over Optimized traffic flows for CAN, IEEE Transactions on Information Forensics and Security, accepted 2020.

[4] Bogdan Groza, Lucian Popa, Pal-Stefan Murvay, Highly Efficient Authentication for CAN by Identifier Reallocation with Ordered CMACs, IEEE Transactions on Vehicular Technology, 2020.

[5] Bogdan Groza, Lucian Popa, Pal-Stefan Murvay, TRICKS - time TRiggered Covert Key Sharing for Controller Area Networks, IEEE Access, vol. 7, 2019.

[6] Bogdan Groza, Pal-Stefan Murvay, Identity-Based Key Exchange on In-Vehicle Networks: CAN-FD & FlexRay, Sensors, 22, 2019.

## Applicability and transferability of the results:

Replacing traditional keys with smartphones appears like a natural step for achieving increased usability and an improved user experience. Industry application of the designed protocols and implemented functionalities for car access control by modern smartphones is immediate.

## Financed through/by

CNCS-UEFISCDI PN-III-P1-1.1-TE-2016-1317, 2018-2020

## Research Centre

Department of Automation and Applied Informatics

## Research team

Habil. PhD. Eng. Bogdan Groza  
PhD. Eng. Stefan Murvay  
PhD. Eng. Horatiu Gurban  
Eng. Tudor-Sebastian Andreica  
Eng. Camil Jichici  
Eng. Adriana Berdich  
Eng. Lucian Popa

## Contact information

Prof. Bogdan GROZA, PhD  
Faculty of Automatics and Computers  
Department of Automation and Applied Informatics  
Address: Bd. V. Parvan nr. 2, Timisoara  
Phone: (+40) 256 403 242  
E-mail: bogdan.groza@aut.upt.ro  
Web: <http://www.aut.upt.ro/~bgroza/projects/presence/index.html>

## SECURITY ENHANCEMENTS AND VULNERABILITY ASSESSMENT FOR INDUSTRY-STANDARD NETWORKS (SEVEN)

### Goal of the project

Most attacks on industry-standard networks rely on vulnerabilities. In this context, the SEVEN project aims to assess vulnerabilities in protocols not yet analyzed and to increase the security of industrial networks by proposing mechanisms to assure basic security objectives (e.g. authenticity, confidentiality or key management). The project also focuses on the design of intrusion detection systems. Finally, we also consider a performance impact evaluation of the introduction of the designed security solutions.

### Short description of the project

Vulnerability evaluation and development of protection mechanisms for in industry-standard networks.

### Project implemented by

Pal-Ștefan MURVAY (Project leader)  
Bogdan GROZA (Mentor)

### Implementation period

02/05/2018-30/04/2020

### Main activities

The project is structured around three main activities.

1. The first main activity focuses on vulnerability assessment of industry-standard communication protocols. Our goal is to identify industry-standard communication-protocols that were not analyzed from a security perspective and identify potential vulnerabilities. Our first approach for enhancing the security of industry-standard communication protocols is the development of mechanisms for assuring basic security objectives such as: authenticity, confidentiality or key management.
2. A second approach focuses on designing intrusion detection mechanisms for the early identification of attack attempts.
3. Finally, we intend to provide an evaluation of the performance impact of the proposed mechanisms.

### Results

The first phase of the SEVEN project focused on the identification of vulnerabilities in two industry-standard protocols, i.e., FlexRay and DeviceNet. The findings have been published as part of two conference papers:

- [1] Pal-Ștefan Murvay, Bogdan Groza, Practical security exploits of the FlexRay in-vehicle communication protocol, presented at The 13th International Conference on Risks and Security of Internet and Systems (CRISIS 2018), 2018.
- [2] Pal-Ștefan Murvay, Bogdan Groza, A brief look at the security of DeviceNet communication in industrial control systems, presented at The second Central European Cybersecurity Conference (CECC 2018), 2018.

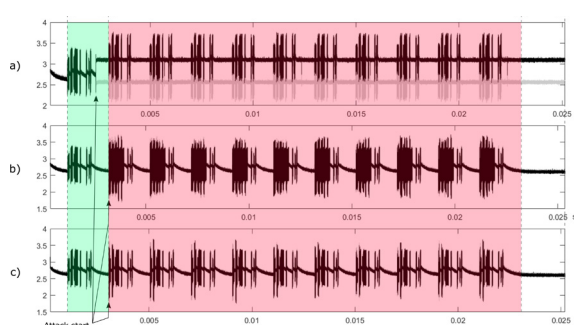


Figure 1. Three variants of the DoS attack for the entire communication.

We dedicated several lines of work to designing security mechanisms for enhancing the security of industry-standard protocols. The results obtained cover both secure communication mechanisms and intrusion detection systems for the Controller Area Network and FlexRay protocols. Papers presenting these results have been published in conference proceedings or journals:

[3] Pal-Stefan Murvay, Bogdan Groza, Accommodating Time-Triggered Authentication to FlexRay Demands, presented at The third Central European Cybersecurity Conference (CECC 2019), 2019.

[4] Camil Jichici, Bogdan Groza, Pal-Stefan Murvay, Integrating Adversary Models and Intrusion Detection Systems for In-Vehicle Networks in CANoe, presented at The 12th International Conference on Security for Information Technology and Communications (SECITC 2019), 2019.

[5] Pal-Stefan Murvay, Bogdan Groza, TIDAL-CAN: differential Timing based Intrusion Detection And Localization for Controller Area Network, accepted for publication in IEEE Access, 2020.

## Applicability and transferability of the results

Our results add to the already known vulnerabilities of communication protocols used in industrial applications. Knowledge of the vulnerabilities is an important building block of designing proper security mechanisms for these communication protocols.

The proposed security mechanisms are efficient in preventing a series of spoofing and replay attacks as well as in the detection of attack attempts. These mechanisms focus on FlexRay, which was developed for the automotive industry and Controller Area Network, a communication protocol widely used both in the automotive domain and industrial control systems.

## Financed through/by

This work was supported by a grant of the Romanian Ministry of Research and Innovation, CNCS - UEFISCDI, project number PN-III-P1-1.1-PD-2016-1198, within PNCDI III

## Research Centre

Department of Automation and Applied Informatics

## Research team

- Assist. Prof. Stefan MURVAY, PhD
- Prof. Bogdan GROZA, PhD

## Contact information

Assoc. Prof. Pal-Ştefan MURVAY, PhD  
Faculty of Automatics and Computers  
Department of Automation and Applied Informatics  
Address: Str. Vasile Pârvan, No. 2, Postal Code 300223, Timisoara  
Phone: (+40) 256 403 242  
E-mail: stefan.murvay@upt.ro  
Web: <http://www.aut.upt.ro/~pal-stefan.murvay/>

## NATURE-INSPIRED MODELING AND OPTIMIZATION TECHNIQUES OF FUZZY CONTROL SYSTEMS WITH MECHATRONICS APPLICATIONS

### Goal of the project

The aim of this project is to demonstrate efficiency and prove the viability of an innovative tuning approach for fuzzy control systems using nature-inspired algorithms in control structures modeling and optimization stages. In this framework, combining nature-inspired optimization algorithms with fuzzy control structures, will have a significant impact on the performance of fuzzy control systems.

### Short description of the project

The nature-inspired optimization algorithms will be employed in solving optimization problems that minimize discrete-time objective functions expressed as integral or sum-type quadratic performance indices.

### Project implemented by

Politehnica University Timișoara

### Implementation period

19.10.2018 – 18.10.2020

### Main activities:

The main activities are:

1. Development of efficient control solutions for different processes by bypassing the higher derivative calculations;
2. Takagi-Sugeno fuzzy controllers' optimization through minimization of several objective functions;
3. Development of performant solutions with a reduced implementation cost;
4. Experimental validation of proposed control solutions;
5. Achievements dissemination in high visibility journals and conferences;
6. Successful project management administration.

### Results

The main results are related to development of nature inspired algorithm-based solutions for solving optimization problems of fuzzy systems will be disseminated at national and international levels as: four papers published in Thomson Reuters Web of Science (formerly known as ISI Web of Knowledge) publications and four presentations at international conferences.

### Applicability and transferability of the results

The results obtained during this contract belong exclusively to Politehnica University Timișoara.

### Financed through/by

Executive Agency for Higher Education, Research, Development and Innovation Funding

### Research Centre

Faculty of Automation and Computers

### Research team

- Eng. Radu-Codruț DAVID, PhD
- Prof. eng. Stefan PREITL, PhD

### Contact information

Eng. Radu-Codruț DAVID, PhD  
Faculty of Automation and Computers  
Department of Automation and Applied Informatics  
Address: Bd. V. Parvan 2, 300223 Timișoara, Romania  
Phone: (+40) 722 254450  
E-mail: davidradu@gmail.com  
Web: aut.upt.ro

## DATA-DRIVEN CONTROLLERS FOR SHAPE MEMORY ALLOYS SYSTEMS (DDCSMASYST)

### Goal of the project

Analysis, design and implementation of control solutions with nonlinear data-driven controllers (MFC, MFAC, ADRC, VRFT and IFT) in combination with other modern control algorithms in order to improve the CS performance and validate the new CSs with the proposed nonlinear controllers through experiments on laboratory equipments related to Shape Memory Alloys (SMA), and other various laboratory equipment with SMA as actuators.

### Short description of the project

Nonlinear controllers whose parameters are tuned using experiments are developed and validated with experiments on laboratory equipments related to Shape Memory Alloys (SMA), and other various laboratory equipment with SMA as actuators.

### Project implemented by

- As.Dr.Ing. Raul-Cristian ROMAN – responsible for outlining the research goals, modeling of experiments, simulation and data validation, writing scientific manuscripts, overall project
- Prof.Dr.Ing. Stefan PREITL – mentor for the project director, research goals
- Prof.Dr.Ing. Radu-Emil PRECUP – mentor for the project director, theoretical expert advisor regarding algorithm theory

### Implementation period

17.08.2020 – 16.08.2022

### Main activities

1. The analysis, the design and the implementation of nonlinear data-driven controllers (MFC, MFAC, ADRC, VRFT and IFT) in combination with other modern control algorithms in order to improve the CS performance.
2. Validation of the new CSs with the proposed nonlinear controllers through experiments performed on laboratory equipments related to Shape Memory Alloys (SMA), and other various laboratory equipment with SMA as actuators.
3. Applying the new CSs with data-driven controllers through external partners.
4. Publication of results in visible conference and journal papers.
5. Solving issues related to project management.

### Results

The research team published two conference papers currently indexed in the international data bases IEEExplore (link and link). The proceedings of the previous editions of these conferences are indexed in WoS.

### Applicability and transferability of the results

With the support of our partner from the University of Ottawa, the new CSs with nonlinear data-driven controllers presented in IJCCC journal and at 2020 IEEE International Conference on Systems, Man, and Cybernetics (SMC) and 2020 24th International Conference on System Theory, Control and Computing (ICSTCC) are in the validation process at Ontario Centers of Excellence.

### Financed through/by

UEFISCDI

### Research Centre

Automatic Systems Engineering Research Centre

### Research team

- As.Dr.Ing. Raul-Cristian ROMAN – project leader
- Prof.Dr.Ing. Stefan PREITL – mentor

### Contact information

As.Dr.Ing. Raul-Cristian ROMAN  
Faculty of Automation and Computers, Department of Automation and Applied Informatics, Bd. V. Parvan 2  
300223, Timisoara  
Phone: +40 256403240  
Mobile: +40 728069445  
E-mail: raul-cristian.roman@upt.ro  
Web: <http://www.aut.upt.ro/~raul.roman/>

## AGENT-BASED INTERACTION MODELS WITH TEMPORAL ATTENUATION FOR OPINION POLL PREDICTION

### Goal of the project

Improving the accuracy of opinion poll prediction by means of agent-based complex network modelling, with the integration of temporal attenuation to model the decaying strength of agent-agent interactions. To this end, we propose the following objectives:

- 1) Develop a novel temporal tolerance agent-based interaction model to improve the state of the art in terms of understanding how the temporal patterns of interaction between individuals influence the distribution of opinion at macro-scale.
- 2) Define cost-optimal temporal spreading strategies for improving diffusion coverage in social networks.
- 3) Enhance opinion poll prediction using temporal attenuation through votes injected in the social network by selected seeders, active for a predefined time frame.
- 4) Implement a mobile simulation application for opinion injection and poll estimation. We corroborate all expected research results, with direct applicative socio-economic impact, by developing a simulation application for further validation via crowdsourcing.

### Short description of the project

This project comes to push the boundaries of scientific understanding forward, on several levels, in terms of better predicting the spread of opinion over large social temporal networks, with applicability in opinion poll prediction.

### Project implemented by

Associate Prof. Alexandru TOPÎRCEANU – project director. Roles of: outlining the research goals, modeling of experiments, simulation, and data validation, writing scientific manuscripts, overall project management.

Prof. Mihai UDRESCU – mentor for the project director, research goals, revising scientific manuscripts.

Mihai ARDELEAN, PhD student – mobile application development, under director's supervision.

Adrian MILITARU, MSc student – data acquisition and processing, under director's supervision.

### Implementation period

August 2020 – July 2022 (24 months)

### Main activities

In order to reach the final research objective – that of improving the accuracy of opinion poll prediction – a number of activities are planned. We start from developing a novel temporal tolerance agent-based interaction model to understand how the patterns of interaction between individuals influence the distribution of opinion at macro-scale.

We build upon our previously introduced tolerance model (Topirceanu et al., PeerJ Comp Sci, 2016), corroborated with state of the art, and augment it by adopting an original perspective on temporal dynamics

Next, we consider that opinion should not be considered fixed in time and space, but rather opinion should be injected at specific locations in the topology, for limited amounts of time, and that each spreader agent implies a cost of operation (Figure 1a,b).

Consequently, we enhance opinion dynamics prediction using temporal attenuation (TA) previously introduced in (Topirceanu et al., Social Netw. Analys. Mining, 2020) (see Figure 1c-e).

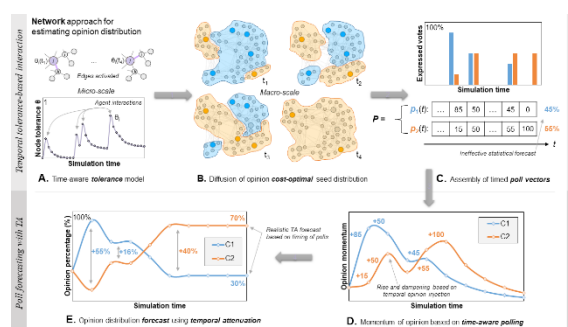
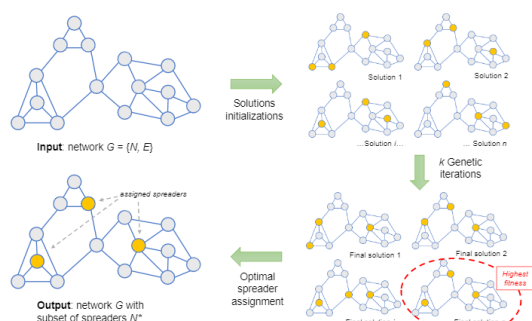


Figure 1 - Overview of the main objectives for creating a dynamic agent-based opinion injection simulation model which can better forecast opinion distribution in a large social network. Agents react to individual interactions in their vicinity by increasing their immediate tolerance threshold; poll vectors are further processed using temporal attenuation, and opinion momentum is computed based on the timing of polls in the network. The opinion distribution is computed based on its momentum, highlighting that forecasts using TA.

## Results

We have currently introduced the GenOSOS computational intelligence framework. GenOSOS is able to determine a near optimal placement of opinion spreaders in a complex network, ensuring spatial heterogeneity. See Figure below.



Currently two proceedings papers (to appear in WoS):

- Topirceanu, A. (2020, December). Analyzing the Impact of Geo-Spatial Organization of Real-World Communities on Epidemic Spreading Dynamics. In International Conference on Complex Networks and Their Applications (pp. 345-356). Springer, Cham.
- Topirceanu, A. (October, 2020), "Genetically Driven Optimal Selection of Opinion Spreaders in Complex Networks", In 2nd International Conference on Machine Learning and Intelligent Systems (MLIS 2020), In Press, published by IOS Press in Frontiers in Artificial Intelligence and Applications, 2020. (to be indexed)

Also submitted:

- A manuscript under review in Expert Systems with Applications (Q1, IF=5.45)
- A manuscript under review in Scientific Reports (Q1, IF=3.99)

## Applicability and transferability of the results

Current state of the art in forecasting employs multilevel regression and post-stratification (MRP). However, the MRP method is often cumbersome to apply, requiring economic indices and detailed demographics to be accurate. Alternatively, we propose to elaborate on the concept of temporal attenuation (TA), which models the timed oscillation of poll data as opinion momentum. For this, we propose a research methodology based on computer simulation of information diffusion, on large datasets, using novel agent-based models.

The expected results of this project are directly applicable in the industry context, like political and marketing research. For example, web marketing and recommender systems are increasingly popular for disseminating influence, as there is a need of scientific support for strategies to maximize revenue, applicable on social networking platform like Facebook or Twitter. Altogether, the project outputs can minimize marketing investment, and maximize the impact of a campaign.

## Financed through/by

Romanian National Authority for Scientific Research and Innovation (UEFISCDI), project number PN-III-P1-1.1-PD-2019-0379

## Research centre

- CCCTI: Research Centre for Computers and Information Technology (UPT)
- ACSA: Advanced computing systems and architectures research group

## Research team

- Director — Associate Prof. Alexandru TOPÎRCEANU
- Mentor — Prof. Mihai UDRESCU

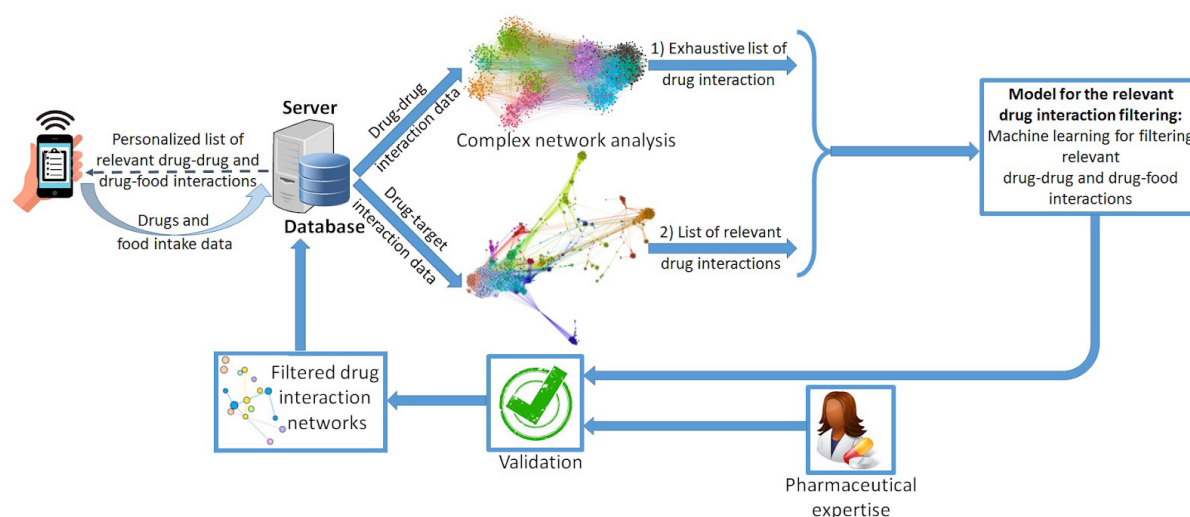
## Contact information

Associate Prof. Alexandru TOPÎRCEANU, PhD  
 Department of Computer and Information Technology  
 Address: 2, Vasile Părvan Bvd., 300223, Timișoara  
 Phone: +40 256 403261  
 E-mail: alexandru.topirceanu@cs.upt.ro  
 Web: <http://staff.cs.upt.ro/~alex/>  
 Project website: <https://sites.google.com/view/upt-pollstream/home>

## COMPLEXITY SCIENCE FOR PRECISION PHARMACY: PREDICTING RELEVANT DRUG INTERACTIONS USING COMPLEX NETWORK ANALYSIS (HYPERION)

### Goal of the project

A drug-drug interactome (DDI) is a complex graph, where the node is a drug, and an edge represents a drug-drug interaction. DDIs are analyzed with algorithmic and statistical methods to predict previously unaccounted interactions. Our objective is to build a network-based model that selects only the individually-relevant drug interactions and then issues corresponding alerts. Our personalized drug interaction prediction model will mitigate alert fatigue. The end product will be a prototype of the smartphone-based personalized alert system, for relevant drug interactions.



### Short description of the project

Drug-drug interactions (DDI) may cause therapeutic failure. Avoiding harmful DDI is crucial in medical practice.

### Project implemented by

- “Victor Babes” University of Medicine and Pharmacy Timisoara (coordinator),
- Politehnica University Timisoara (partner)

### Implementation period

02.11.2020–31.10.2022

### Main activities

1. Building the initial drug-drug interaction network and the drug-drug similarity network
2. Performing the complex network analysis and processing on Politehnica University Timisoara and University of Medicine and Pharmacy Timisoara servers
3. Pharmacological validation of network modeling
4. Building a supervised machine learning model for selecting the relevant drug-drug and drug-food interactions
5. Adjusting the filtered drug interaction network according to the validated machine learning model
6. Mobile application development

## Results

Our project's expected results are

- (i) the validated drug-drug interaction and drug-drug similarity networks, in Gephi and Python/NetworkX, using data from the DrugBank database
- (ii) the validated machine learning model for predicting the relevance (i.e., strength) of drug interactions at server-level, and (iii) the prototype smartphone software for personalized drug interaction alert.

## Applicability and transferability of the results

The starting point of our project covers the TRL2-specific requests, as all project's objectives consists of theoretical models.

Both drug-drug interaction and drug-drug similarity networks with data from DrugBank, built in Gephi and NetworkX correspond to TRL3, as they represent analytical and experimental critical function.

The mobile application prototype for personalized drug interaction alert represents a laboratory-validated system (TRL4). We will experimentally demonstrate the integration of our system by testing it with data gathered from the medical prescriptions database. We will identify potential customers (patients with chronic diseases, pharmacists, and doctors).

## Financed through/by

UEFISCDI, PNIII-P2-Subprogramul 2.1. Competitivitate prin cercetare, dezvoltare și inovare—Proiect experimental-demonstrativ 2019

## Research centre

Research Center in Computer and Information Technology (CCCTI)

## Research team

- Prof. Mihai Udrescu, Ph.D.
- Assoc. Prof. Alexandru Topîrceanu, Ph.D.
- Assist. Prof. Alexandru Iovanovici, Ph.D.
- Eng. Sebastian-Mihai Ardelean, Ph.D. Student

## Contact information

Prof. Mihai UDRESCU, PhD  
Department of Computer and Information Technology  
Address: 2 Vasile Pârvan Blvd, 300223, Timisoara  
Phone: (+40) 256 403 278  
Mobile:  
E-mail: [mihai.udrescu@cs.upt.ro](mailto:mihai.udrescu@cs.upt.ro)  
Web: <http://hyperion.cs.upt.ro/>

## INTEGRATED AND SUSTAINABLE PROCESSES FOR ENVIRONMENTAL CLEAN-UP, WASTEWATER REUSE AND WASTE VALORIZATION – SUSTENVPRO

### Goal of the project

The goal of complex project SUSTENVPRO is to increase the institutional performance in the ENVIRONMENT field of a consortium of 5 public research organizations with recognized research performances and one R&D National Institute under consolidation, through an integrative approach which supports/develop the existent research competencies of each partner and transfer capacities of results with applicative and innovative potential envisaging the elimination of priority pollutants from water using innovative advanced water/ wastewater treatment processes and waste recovery.

### Short description of the project

The complex project **SUSTENVPRO** consisted of 5 research component projects (PC):

PC 1. Complex evaluations of priority pollutants present in various water matrixes and risk identification on the ecosystems and human health;

PC 2. Water treatment processes optimization and development of innovative materials for the priority pollutants removal;

PC 3. Valorization of biomass resources for the development of innovative processes for wastewater treatment and priority pollutants removal;

PC 4. Metallic waste valorization for innovative wastewater treatment process development and removal of priority pollutants;

PC 5. Sustainability assessments of water/ wastewater treatment and waste valorization processes based on life cycle assessment.

### Main activities

-Developing and validating an innovative approach oriented to analysis, preventing and correcting the environmental risks associated with the presence of priority pollutants in various matrices of water use;

-Development of efficient innovative water treatment and advanced wastewater treatment processes in order to eliminate priority organic and inorganic pollutants in the anthropic water cycle;

-Development of new innovative materials (polymeric or composite materials) with properties designed according to the characteristics of the priority pollutants;

-Utilization of materials from organic (biomass) and inorganic waste (metallic waste) in innovative wastewater treatment processes for removing priority pollutants and recirculating / reusing water;

-Sustainability assessment of processes and products through Life Cycle Assessment tool.

### Results

-Research workplaces;

-New/significantly improved technologies /procedures;

-New/significantly improved research services;

-New research and technology consultancy services (uploaded on the ERRIS platform);

-Research services by sharing the research infrastructure among project partners (A1 and A2 research vouchers);

-Knowledge transfer to water operator through C voucher;

-Research papers published in ISI-ranked journals;

-Communications at national and international scientific events (conferences, exhibitions);

-Dissemination and technology transfer workshops;

-(Initiation /Intermediary /Final) Project workshops;

-RDI common program (in agreement with the institutional development plan of every partner).

### Project implemented by

The project is implemented by 4 universities and two national R&D institutes:

**Coordinator:** "Gheorghe Asachi" Technical University of Iasi;

**Partners:** Politehnica University of Bucharest; "Alexandru Iona Cuza" University of Iasi; Politehnica University Timișoara; "Petru Poni" Institute of Macromolecular Chemistry Iasi; National Research and Development Institute for Environmental Protection, Bucharest.

### Implementation period

2018 - 2020

## Applicability and transferability of the results

- Transferability of research results between consortium partners;
- Technological transfer of advanced water/wastewater treatment technologies/procedures to public and private economic environment (regional water operators, environmental companies, private companies in the water/waste field etc.); knowledge transfer to regional water operator through C voucher within the project framework tested at pilot scale as treatability study for concrete applications in drinking water treatment;
- Good practice guide for circular economy in water field for sustainability consulting company, non-profit organization, environmental agencies.

## Financed through/by

Executive Agency for Higher Education, Development and Innovation Funding (UEFISCDI)

## Research centre

Research Centre in Environmental Science and Engineering

## Research team

- UPT Project Responsible: Prof.dr.eng. MANEA Florica
- Scientific Researcher, level I : PODE Rodica
- Scientific Researcher, level III: COCHECI Laura
- Scientific Researcher, level III: POP Aniela
- Scientific Researcher, level III: VODA Raluca
- Scientific Researcher, level III: BACIU Anamaria
- Development engineer: IGHIAN Lacrima-Crysty
- Development engineer: DELCIOIU Claudia

## Contact information

Prof. Florica MANEA, PhD  
Faculty of Industrial Chemistry and Environmental Engineering  
Department of Applied Chemistry and Engineering of Inorganic Compounds and Environment  
Address: Str.V. Parvan, No.6 300223, Timisoara  
Phone: (+40) 256 403069  
Mobile(+40)724506095  
E-mail: florica.manea@upt.ro  
Web: <http://sustenvpro.dimm.tuiasi.ro/>

## 3D POROUS DIMENSIONALLY STABLE ANODE - INTEGRATED PARTICULATE ELECTRODE - ELECTROCHEMICAL FILTERING SYSTEM FOR ADVANCED TREATMENT OF CYTOSTATICS-CONTAINING WATER

### Goal of the project

The **goal** of the present project is to develop an innovative **three-dimensional (3D) Porous Dimensionally Stable Anode – integrated Particulate Electrode -Electrochemical Filtering System** for advanced water treatment, which will be validated at the lab-scale for advanced treatment of cytostatics-containing water. The system **will be flexible and enable for an advanced treatment of water/wastewater characterized by a wide range of contaminants (organics and inorganics)** by combination of advanced electrooxidation with adsorption/catalysis processes within one reactor.

### Short description of the project

This project falls within the targeted area of **Environment and Climate Change and Depollution Technologies** according with the goals of Romanian National Plan for RDI 2015-2020.

### Project implemented by

The project is implemented by one university, one research institute and one private company.

**Coordinator:** Politehnica University of Timisoara

**Partners:** National Institute for R&D in Electrochemistry and Condensed Matter Timisoara; S.C. BeeSpeed Automatizari SRL

### Implementation period

2020-2022

### Main activities

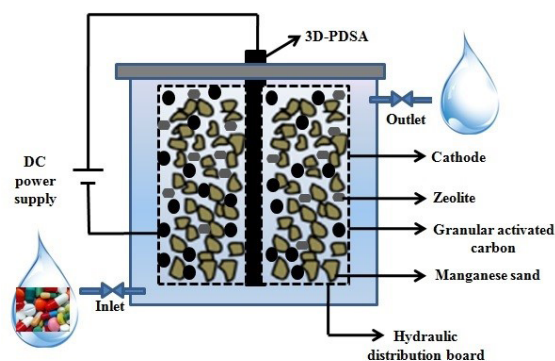
I. Synthesis and characterization of new porous dimensionally stable anodes. Design of an innovative three-dimensional (3D) porous dimensionally stable anode–integrated particulate electrode–electrochemical filtering system

II. Synthesis and characterization of new porous dimensionally stable anodes. Optimization of particulate electrode composition. Design and fabrication of an innovative three-dimensional (3D) porous dimensionally stable anode – integrated particulate electrode - electrochemical filtering system

III. Testing electrochemical filtering system in removal and degradation and mineralization of cytostatics from water.

### Results

- Lots of porous DSA type electrode materials;
- Morpho-structural and electrochemical characteristics of the electrode materials;
- Various compositions of the particulate electrode;
- Design of innovative three-dimensional (3D) porous dimensionally stable anode–integrated particulate electrode–electrochemical filtering system;
- Innovative three-dimensional (3D) porous dimensionally stable anode–integrated particulate electrode–electrochemical filtering system;
- Functional and operational characteristics of innovative three-dimensional (3D) porous dimensionally stable anode–integrated particulate electrode–electrochemical filtering system;
- Scientific-technical report for each stage;
- 1 patent request;
- 4 ISI-ranked scientific articles;
- 6 oral presentations and 8 poster presentations at national and international conferences.



## Applicability and transferability of the results

- Transferability of research results between consortium partners;
- Technological transfer of advanced water/wastewater treatment technologies/procedures to public and private economic environment (regional water operators, environmental companies, private companies in the water/waste field etc.)

## Financed through/by

Executive Agency for Higher Education, Development and Innovation Funding (UEFISCDI)

## Research centre

Research Centre in Environmental Science and Engineering

## Research team

### *Politehnica University of Timisoara- Coordinator*

- Prof. Dr. eng. Florica MANEA-project director
- Lecturer Dr. eng. Aniela POP
- Assoc. Prof. Dr.eng. Raluca VODA
- PhD stud. Claudia DELCIOIU
- PhD stud. Sergiu VASILIE
- Eng. Lacrima-Crysty IGHIAN

### *National Institute for Research and Development in Electrochemistry and Condensed Matter Timisoara (INCEMC) - Partner 1*

- Dr. eng. Corina ORHA-P1 responsible
- Dr. Carmen LAZAU
- Dr. eng. Cornelia BANDAS
- PhD stud. Mina Ionela POPESCU
- PhD stud. Mircea Daniel NICOLAESCU

### *SC. BeeSpeed Automatizari SRL - Partner 2*

- Eng. Constantin Adrian TUDORAN-P2 responsible
- Assoc. Prof. Dr. eng. Alexandru HEDES
- Assoc. Prof. Dr. eng. Valentin CIUPE
- PhD stud. Liviu-Danut VITAN

## Contact information

Prof. Florica MANEA, PhD  
Faculty of Industrial Chemistry and Environmental Engineering  
Department of Applied Chemistry and Engineering of Inorganic Compounds and Environment  
Address: Str.V. Parvan No.6 300223, Timisoara  
Phone: (+40) 256 403069  
Mobile: (+40) 724506095  
E-mail: florica.manea@upt.ro  
Web: PN-III-P2-2.1-PED-2019-4492 - Facultatea de Chimie Industrială și Ingineria Mediului (upt.ro)

## SMART PHOSPHORESCENT PIGMENTS FOR PERSISTENT GLOW-IN-THE-DARK SAFETY MARKINGS

### Goal of the project

The goal of the research project is to obtain smart phosphorescent pigments via an energy-efficient method and test them in making persistent glow-in-the-dark safety markings.

To achieve this goal, the project involves active research and development of efficient  $\text{SrAl}_2\text{O}_4: \text{Eu}^{2+}, \text{Dy}^{3+}$  phosphorescent pigments and adequate organic matrixes to incorporate the obtained pigments (TRL3). In a second phase, both components (pigment and organic matrix) will be integrated in the form of a glow-in-the-dark coating and tested for compatibility (TRL4).

### Short description of the project

An energy-efficient method is used to make phosphorescent pigments designed for glow-in-the-dark safety markings.

### Project implemented by

Polytechnica University Timișoara, Faculty of Industrial Chemistry and Environmental Engineering, department CAICAM

### Implementation period

August 2020 – June 2022

### Main activities

The following activities are involved to achieve the project goals:

- recipes design and combustion synthesis of  $\text{SrAl}_2\text{O}_4: \text{Eu}^{2+}, \text{Dy}^{3+}$  phosphor pigments;
- pigments characterization, results interpretation and recipes optimization;
- choosing a compatible organic matrix for pigments incorporation;
- preparation of organic matrix – pigment disperse systems with various pigment content, to establish the optimal proportions;
- coatings application and characterization. Results interpretation and parameters optimization;
- testing in laboratory conditions of the pigment-matrix system functionality;
- results dissemination and project management.

### Results

The results will include, but are not limited to:

- sets of investigation reports, optimized pigments recipes and synthesis protocols;
- sets of investigation reports and selected organic matrix specimens.
- manuscript submitted for publication in an ISI-ranked journal, paper presentation within an international conference, diploma paper, project website, periodic research report for UEFISCDI;
- preparation recipes, working procedures, two components (pigment-matrix) specimens;
- coatings specimens, set of investigation reports, optimized coating application protocol;
- manuscript accepted for publication in an ISI-ranked journal, paper presentation within an international conference, "Inorganic Pigments Technology" special course topic, project website update, periodic research report for UEFISCDI, OSIM patent request.

### Applicability and transferability of the results

The resulted pigment-matrix systems can be used as persistent glow-in-the-dark safety marking systems in the transportation (automotive and aircraft or railway industry), public spaces and buildings, road signage, etc. Different pigment-matrix systems may be used for different application supports.

The research results will also be disseminated as conference presentations and articles in ISI publications to increase project visibility. The know-how achieved within the project development will also be used to coordinate a diploma paper. The implementation team will apply for a patent request to protect the results obtained within the project for future transfer to the industry.

## Financed through/by

The project is financed by the The Executive Unit for Financing Higher Education, Research, Development and Innovation (UEFISCDI), P2 Program - Increasing the competitiveness of the Romanian economy through RDI/ Demonstration experimental project (PED)

## Research centre

Research Center for Inorganic Materials and Alternative Energies

## Research team

The research team is composed by

- the principal investigator
  - Radu LAZĂU,
- two experienced researchers
  - Cornelia PĂCURARIU and Robert IANOȘ
- and a technician
  - Aylin CĂPRARU.

## Contact information

Assoc. Prof. Raduloan LAZĂU, PhD  
Faculty/Department Address: Vasile Pârvan Blvd., No. 6, Postal Code 300223, Timisoara  
Phone: (+40) 256 404168  
Mobile: 0040723346836  
E-mail: radu.lazau@upt.ro  
Web: [http://www.upt.ro/Informatii\\_UPT\\_1581\\_ro.html](http://www.upt.ro/Informatii_UPT_1581_ro.html)

## NEW “GREEN” TECHNOLOGY FOR ADVANCED WATER TREATMENT BASED ON FUNCTIONALIZED POLYSULFONES/IONIC LIQUIDS MEMBRANES (GREENTECHMEMBR)

### Goal of the project

The goal of this project is to develop new supported liquid membranes (SLMs) and polymer inclusion membranes (PIMs), which will be used as medium separations in an innovative membrane treatment unit (MTU), which will be tested and validated for the advanced treatment of aqueous solutions, containing both organic and inorganic pollutants. Our approach involves the development of membranes based on quaternized polysulfones (PSFQs) and various ionic liquids (ILs), with improved features and performances, so that by integrating those into MTU, the functionality and expected performance of the entire assembly can be fulfilled.

### Short description of the project

We aim to develop new functionalized polysulfones/ionic liquids membranes, for testing, and validation in a water treatment unit.

### Project implemented by

- “Petru Poni” Institute of Macromolecular Chemistry Iasi (ICMPP) – project coordinator
- Politehnica University Timisoara, Faculty of Industrial Chemistry and Environmental Engineering (UPT) – project partner

### Implementation period

03.08.2020–29.07.2022

### Main activities

- Optimization of properties in solution in order to obtain ionic liquids-based polysulfone membranes;
- Formulation and design of ionic liquids-based polysulfone membranes (SLMs, PIMs);
- Optimization of properties in solid state in order to obtain ionic liquids-based polysulfone membranes applicable in microfiltration process;
- Design and development of the membrane treatment unit (MTU) by integrating the optimized experimental demonstrator (SLM, PIM) into a final product;
- Validation of the laboratory technology through specific tests;
- Dissemination of the results.

### Results

The modeling of new membrane materials with increased efficiency in microfiltration processes was performed by the optimal combination of PSFQ functionalized with various ionic liquids. Thus, by the method of solution pouring, polysulfonic membranes with controlled thickness were obtained. By mixing/including polysulfonic solutions (PSFQ) with selected ionic liquids in different ratios the PIM membranes were obtained, and the SLM membranes were made by depositing/immersing the PSFQ membranes already obtained in the selected ionic liquids.

The membrane treatment unit (MTU) was designed / built for a variable flow of raw water, and the configuration of the unit by integrating the experimental demonstrator (SLM, PIM membranes) in the proposed technological installation was made to operate in optimal conditions for their application. In microfiltration processes, aiming to determine the efficiency of the membranes obtained in water treatment processes.

### Applicability and transferability of the results

- A solid transfer of knowledge occurred during the collaboration between the partners involved in the research.
- Application of the developed membranes in the advanced treatment of waters and waste waters.
- Transfer of the membrane treatment unit from the lab-scale application to large-scale advanced treatment.

## Financed through/by

This work was supported by a grant of the Romanian Ministry of Education and Research, CCCDI - UEFISCDI, project number PN-III-P2-2.1-PED-2019-3013, within PNCDI III.

## Research centre

- Research Centre in Environmental Science and Engineering
- Research Institute for Renewable Energy

## Research team

### *(ICMPP) – project coordinator:*

- Dr. Anca FILIMON – project director
- Dr. Adina Maria DOBOS
- Dr. Alexandra BARGAN
- Dr. Mihaela Dorina ONOFREI
- PhD student Alexandru ANISIEI
- PhD student Oana Dumbrava

### *(UPT) – project partner:*

- Assoc. Prof. Dr. Eng. Lavinia LUPA - UPT – project responsible
- Prof. Dr. Eng. Petru NEGREA
- Lecturer Dr. Eng. Laura COCHECI
- PhD student Samuel Nick ȚOLEA

## Contact information

Assoc. Prof. Lavinia LUPA, PhD  
Faculty of Industrial Chemistry and Environmental Engineering  
Department of Applied Chemistry and Engineering of Inorganic  
Compounds and Environment  
Address: Str.V. Parvan, No.6 300223, Timisoara  
Phone: (+40) 256 403059  
Mobile(+40)762236301  
E-mail: [lavinia.lupa@upt.ro](mailto:lavinia.lupa@upt.ro)  
Web: <https://icmpp.ro/greentechmembr/>

## BIOCATALYTIC SYNTHESIS OF NEW POLYESTERAMIDES AS NANOCARRIERS FOR BIOACTIVE COMPOUNDS

### Goal of the project

The goal of the project is to develop a demonstration model of a new biocatalytic approach to synthesize polyesteramides, based on renewable sources and suitable as nanosized carriers for bioactive compounds. Therefore, the project is focused on two main directions (i) biocatalytic polymerization and (ii) particle technology. The validation of the model will be accomplished through the effectiveness of the polymeric material in specific encapsulation of a bioactive product, together with the demonstration of its biodegradability.

### Short description of the project

The main objective is to develop the biobased synthetic route for biocatalytic synthesis of new polyesteramides, starting from amino acids and  $\epsilon$ -caprolactone, or hydroxy acids and  $\epsilon$ -caprolactam, using green solvents. The stabilization of the employed enzymes will be performed by substrate-directed immobilization, including covalent binding onto magnetic particles and magnetic sol-gel entrapment. The selectivity of different lipases, proteases and esterases will be evaluated in terms of catalytic efficiency, to increase the productivity of the process. Several amino acids and hydroxy acids will be tested as co-monomers, and the optimal reactions conditions will be determined by experimental design. The reaction engineering will target the effect of different process parameters on the structure and properties of the synthesized polyesteramides. The structural analysis and assessment of the physico-chemical properties of the reaction products will be accomplished by advanced analytical techniques. The synthesized oligoesters will be used as starting materials for novel nanoparticles effective as bioactive compounds carriers.

### Project implemented by

Politehnica University Timișoara

### Implementation period

03.08.2020-29.07.2022

### Main activities

Stage 1 (2020) – Enzymatic synthesis of novel oligoesteramides/ polyesteramides of epsilon-caprolactone and epsilon-caprolactam.

Activity 1.1. Investigation of lipases and proteases from various microbial sources as biocatalysts for polyesteramide synthesis

Activity 1.2. The effect of process parameters on the composition of the reaction product

Activity 1.3. Characterization of reaction products by MALDI-TOF MS, NMR, FT-IR

Activity 1.4. Tailor-made immobilization of lipases, esterases and proteases to obtain active biocatalysts in polymerization reactions

Activity 1.5. Characterization of the immobilized lipases and reaction engineering

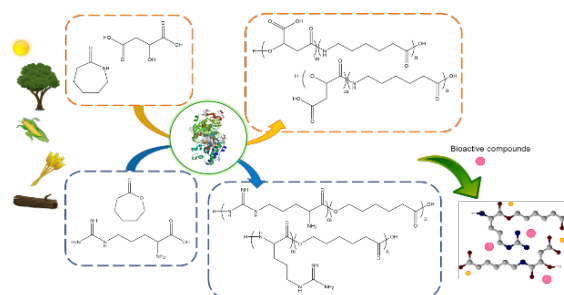


Figure 1. Green synthetic pathway for synthesis of novel polyesteramides from bio-based raw materials

## Results

The main results of the first stage were:

- the development of the experimental protocol for enzymatic synthesis of polyesteramides;
- the methodology for identifying the components of the polymerization product by MALDI-TOF MS and NMR;
- the development of a substrate-directed immobilization protocol for each type of the studied enzymes;

Visit also: <http://chim.upt.ro/ro/cercetare/proiecte-de-cercetare/286-pn-iii-p2-2-1-ped-2019-2638>.

## Financed through/by

Romanian Ministry of Education and Research, CCCDI – UEFISCDI, project code PN-III-P2-2.1-PED-2019-2638, project No. 272PED/2020, within PNCDI III

## Research centre

Research Centre in Organic, Macromolecular and Natural Compounds  
Chemistry and Engineering

## Research team

- Project leader: Prof. Dr. Eng. Francisc Peter
- Researchers:
  - Ş.I. dr. ing. Anamaria Todea
  - Ş.I. dr. ing. Cristina Paul
  - Ş.I. dr. ing. Iulia Maria Păușescu
  - Ş.I. dr. ing. Valentin Badea
- Dr. Ing. Emese Biró
- Postdoctoral researcher:
  - Asist. dr. chim. Diana Maria Dreavă
- PhD Students:
  - Drd. Ing. Ioana Cristina Benea
  - Drd. Ing. Ionut-Mihai Tănase

## Contact information

Prof. Francisc PETER, PhD  
Faculty of Industrial Chemistry and Environmental Engineering  
Department of Applied Chemistry and Engineering of Organic and Natural Compounds  
Carol Telbisz, 6, 300001, Timisoara  
Phone: (+40) 256 404216  
Mobile: +40745647530  
E-mail: francisc.peter@upt.ro  
Web: <http://www.chim.upt.ro/ro/cb-profile/100-francisc-peter-upt-ro>

## INTELLIGENT AND ACTIVE SYSTEMS IN FOOD PACKAGING BASED ON BIOPOLYMERS AND NOVEL FLAVYLIUM DYES

### Goal of the project

The main scope of the project is developing a model for production of new materials used in food packaging systems which must include compounds that through their properties can emphasize different possible transformations of the packaged food. The packaging systems must fulfill mandatory conditions that should highlight possible food transformations in time under different conditions. This would be accomplished by inserting in the package material compounds with photochromic properties whose color is changing with pH value and temperature variation.

### Short description of the project

The project will address the development of new packaging materials starting with computational methods and synthesis of new dyes and polymers.

### Project implemented by

Politehnica University Timișoara

### Implementation period

01.11.2020 – 31.10.2022

### Main activities

#### Stage 1 – Design of flavylum dyes

**Activity 1.1.** – Design of novel flavylum dyes structures

**Activity 1.2.** – Geometry optimization and reactivity descriptors calculations for proposed structures

**Activity 1.3.** – Evaluation of photochromic properties of the proposed dyes

**Activity 1.4.** – Evaluation of antioxidant activity of proposed dyes

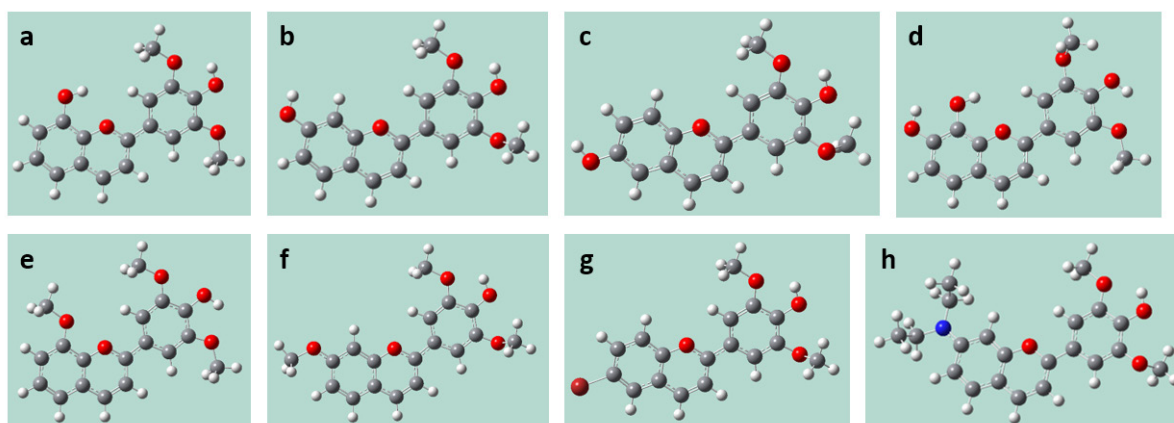
**Activity 1.5.** – Toxicity evaluation of the proposed compounds by theoretical methods

**Activity 1.6.** – Analysis of theoretical computations and selection of proposed dyes structures

### Results

The results of the first stage:

– Geometry optimization of the designed dyes



**Fig. 1.** The optimized structures of a set of flavylum salts at DFT/6-31G+(d,p) level of theory

- antioxidant and photochromic properties theoretical evaluation

**Table 1.** The calculated excitation energies, E (eV) of a set of flavylum dyes

Compound	Calculated absorption wavelength $\lambda$ (nm)	Excitation energies E (eV)
1	482.1 (HOMO $\rightarrow$ LUMO)	2.571
2	456.6 (HOMO $\rightarrow$ LUMO)	2.715
3	465.1 (HOMO $\rightarrow$ LUMO)	2.666
4	476.3 (HOMO $\rightarrow$ LUMO)	2.603
5	474.7 (HOMO $\rightarrow$ LUMO)	2.612
6	462.4 (HOMO $\rightarrow$ LUMO)	2.681

- a list of proposed compounds for synthesis with all the computed properties, ordered by the two type of activities: antioxidant and photochromic.  
- a scientific paper sent for publication

## Financed through/by

Romanian Ministry of Education and Research, CCCDI – UEFISCDI,  
project number PN-III-P2-2.1-PED-2019-3037

## Research centre

Research Center for Chemistry and Engineering of Organic,  
Macromolecular and Natural Compounds

## Research team

- Assoc. Prof. Mihai MEDELEANU, PhD  
- Lecturer Iulia PĂUȘESCU, PhD  
- Lecturer Valentin BADEA, PhD  
- Lecturer Anamaria TODEA, PhD  
- Eng. Ionuț TĂNASE, PhD student  
- Eng. Ionuț Bîtcă, PhD student

## Contact information

Assoc. Prof. Mihai MEDELEANU, PhD  
Faculty of Industrial Chemistry and Environmental Engineering/  
Department of Applied Chemistry and Organic and Natural  
Compounds Engineering  
Address: Str. C. Telbisz, No. 6, Postal Code: 300001, Timisoara  
Phone: (+40) 256 404 219 / (+40) 256 403 061  
Mobile: (+40) 725 890 915  
E-mail: mihai.medeleanu@upt.ro  
Web: <https://www.chim.upt.ro/ro/cb-profile/94-mihai-medeleanu-upt-ro>

## CONTINUOUS-FLOW SYSTEM BIOREACTOR FOR THE ENZYMIC KINETIC RESOLUTION OF NOVEL CHIRAL SECONDARY HETEROCYCLIC ALCOHOLS- PN-III-P2-2.1-PED-2019-3414

### Goal of the project

The goal of the project is to develop a demonstration model for quantitative resolution of racemic mixture of novel secondary alcohols with biologic potential activity. The validation of the experimental system will be accomplished through the effective obtaining of the enantiomers in quantities of the order of grams whose biological activity will be evaluated and compared with that of the racemic mixture.

### Short description of the project

The aim of this project is to develop, at laboratory scale, a continuous-flow system bioreactor for quantitative kinetic enzymatic resolution of racemic mixtures of novel chiral secondary heterocyclic alcohols, with potential biological activity, which will be synthesized within this project.

After the synthesis of the new secondary heterocyclic alcohols (R,S)-1-(aryl/methyl)-2-[(4,5-diaryl-4H-1,2,4-triazol-3-yl)thio] ethan-1-ols as racemate, optimal conditions of enzymatic kinetic resolution will be established for each substrate, using selected microbial lipases and various reaction media.

The realization of the enzymatic kinetic resolution will be done using a continuous flow bioreactor followed by the isolation and purification of the products with high enantiomeric purity.

The realization of the enzymatic kinetic resolution will be done using a continuous flow bioreactor followed by the isolation and purification of the products with high enantiomeric purity.

The validation of the experimental system will be accomplished through the effective obtaining of the enantiomers, whose biological activity, after assigning their absolute configuration, will be evaluated and compared with that of the racemic mixture where they come from.

### Project implemented by

Politehnica University Timișoara

### Implementation period

03.08.2020-29.07.2022

### Main activities

**Stage 1–** Synthesis, purification and spectroscopic characterization of intermediates used to obtain new chiral heterocyclic secondary alcohols.

Activity.1.1. Synthesis, purification and spectroscopic characterization of the corresponding N-(aryl) hydrazine carbothioamides – Part 1.

Activity.1.2. Synthesis, purification and spectroscopic characterization of the corresponding 2-benzoyl-N-arylhydrazine -1-carbothioamides – Part 1.

Activity 1.3– Synthesis, purification and spectroscopic characterization of the corresponding 4-aryl-5-phenyl-4H-1,2,4-triazole-3-thiols – Part 1.

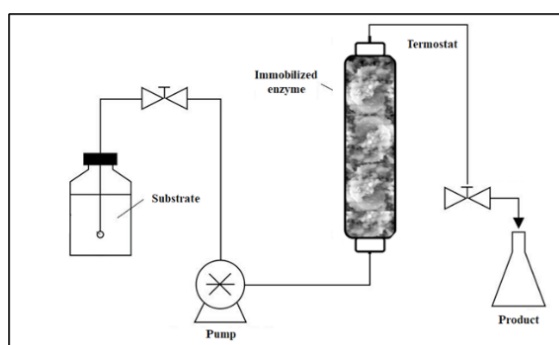


Figure 1. The proposed continuous flow system using packed-bed column bioreactor

## Results

The results of the first stage were:

- development of an experimental synthesis protocol for N-(aryl)hydrazinecarbothioamide in gram amounts and spectroscopic characterization;
- development of an experimental synthesis protocol for benzoyl(acyl)-N-arylhydrazine-1-carbothioamide in gram amounts and spectroscopic characterization;
- development of an experimental synthesis protocol for 4-aryl-5-phenyl(alkyl)-4H-1,2,4-triazol-3-thiol in gram amounts and spectroscopic characterization;
- development of an experimental synthesis protocol for 1-(aryl)-2-[(4-aryl-5-aryl(alkyl)-4H-1,2,4-triazol-3-yl)thio]ethan-1-one in gram amounts and spectroscopic characterization.

## Financed through/by

Research Centre in Organic, Macromolecular and Natural Compounds Chemistry and Engineering

## Research centre

Research Centre in Organic, Macromolecular and Natural Compounds Chemistry and Engineering

## Research team

- Project leader: Lecturer Dr. Eng. Valentin Badea
- Reasearchers:
  - Professor Dr. Eng. Francisc Peter
  - Lecturer Dr. Vasile Bercean
  - Lecturer Dr. Eng. Anamaria Todea
  - Lecturer Dr. Eng. Iulia Maria Păușescu
  - Lecturer Dr. Eng. Valentin Laurențiu Ordodi
  - Assis. Dr. Chem. Diana Maria Aparaschivei
  - Research Assistant Eng. Ion Burcă

## Contact information

Lecturer Valentin BADEA, PhD  
Faculty of Industrial Chemistry and Environmental Engineering  
Department of Applied Chemistry and Engineering of Organic and Natural Compounds  
Carol Telbisz, 6, 300001, Timisoara  
Phone: (+40) 256 404243  
Mobile: (+40) 742 044969  
E-mail: valentin.badea@upt.ro  
Web: <http://chim.upt.ro/ro/cercetare/proiecte-de-cercetare/289-pn-iii-p2-2-1-ped-2019-3414>

## NEW SOL-GEL-MAGNETIC BIOCATALYSTS USED FOR THE ENZIMATIC HYDROLYSIS OF LIGNOCELLULOSIC BIOMASS

### Goal of the project

The main goal of the project is the obtaining of new immobilized enzymatic biocatalysts, customized by new sol-gel entrapment techniques, used for the hydrolysis of certain types of lignocellulosic biomass.

### Short description of the project

The major cause of environmental pollution is due to emissions generated by burning of fossil fuels. The known crude oil reserves are going to disappear in short time and the oil crisis in recent years, together with the rising of air pollution levels has shown the need for the replacement of fossil fuels with cleaner biofuels, obtained from a range of organic renewable raw materials.

The first step in conversion of lignocellulosic biomass is the pretreatment for the release of cellulose from the network formed with lignin and to increase the yield of fermentable sugars. There are many methods of pretreatment, but they are energy consumable and pollute the environment.

In this sense the project proposes an innovative approach on studies regarding biomass pretreatment and enzymatic hydrolysis of cellulose in an integrated system that can improve the exploitation of biomass components and the reuse of the biocatalyst. It is desired to provide novel biocatalysts, immobilized cellulases customized by new sol-gel entrapment techniques, used in the hydrolysis of certain types of lignocellulosic biomass.

By immobilization, stability and reusability of cellulases are significantly improved, a key issue for increasing the amount of fermentable sugars and to reduce process costs.



Figure 1. Types of lignocellulosic biomass (hard wood, soft wood, wheat straw, cardboard, mixture).

### Project implemented by

Politehnica University Timișoara

### Implementation period

15/09/2020-14/09/2022

### Main activities

**Stage 1 (2020)** – Pretreatment of lignocellulosic biomass using unconventional methods.

Activity.1.1. Comparative evaluation of different pretreatment techniques.

Activity.1.2. Establishing the optimal conditions for the selected pretreatment techniques.

### Results

The main results of the first stage were:

- the development of lignocellulosic biomass pretreatment protocols;
- the optimization of the enzymatic hydrolysis reaction parameters;
- the development of an optimized lignocellulosic biomass pretreatment protocol.

Also visit project website:

<https://chim.upit.ro/ro/cercetare/proiecte-de-cercetare/248-pn-iii-p1-1-te-2019-1179>

## Financed through/by

Romanian Ministry of Education and Research, CNCS - UEFISCDI, project code PN-III-P1-1.1-TE-2019-1179, project number TE 94 / 2020 within PNCDI III

## Research centre

Research Centre in Organic, Macromolecular and Natural Compounds Chemistry and Engineering

## Research team

Project leader:

- Lecturer Ana Cristina PAUL, PhD

Researchers:

- Lecturer Gerlinde RUSU, PhD

- Lecturer DVM Simona MARC

- RA chem. Corina VASILESCU (PhD student)

## Contact information

Contact information

Lecturer Ana Cristina PAUL, PhD

Faculty of Industrial Chemistry and Environmental Engineering

Department of Applied Chemistry and Engineering of Organic and Natural Compounds

Carol Telbisz, 6, 300001, Timisoara

Phone: (+40) 256 404234

Mobile: (+40) 740 200384

E-mail: [cristina.paul@upt.ro](mailto:cristina.paul@upt.ro)

Web: <https://chim.upt.ro/ro/cb-profile/98-cristina-paul-upt-ro>

## GREEN CHEMISTRY ROUTE FOR THE ENZYMATIC CASCADE SYNTHESIS OF BIODEGRADABLE OLIGOESTERS- PN-III-P1-1.1-TE-2019-1573

### Goal of the project

The main goal of the project is to demonstrate a new concept for valorization of vegetable oils, mainly of castor oil by developing new oligo-esters containing -OH functions or aromatic rings, in a system of three cascade enzymatic reactions. The proposed reaction system involves an innovative three cascade reaction system catalyzed by two enzymes of different classes: (i) hydrolysis of triglycerides, (ii) glycerol oxidation and (iii) synthesis of oligoesters. The enzyme stabilization will be performed by covalent binding and the selectivity will be evaluated in terms of maximal catalytic efficiency, to increase the productivity of the process. The reaction products will be characterized in detail by several analytical techniques for structure confirmation and assessment of the physico-chemical properties and their biodegradability rate will be evaluated by two methods. The synthesized monomers and oligoesters will be used as starting materials for novel organogels preparation.

### Short description of the project

The main objective of the project is to obtain new oligoesters in one-pot system starting from castor oil and bio-based furan monomers by a complete green route, using a combination of two enzymes. All the purposed reactions will be mediated by tailor-made immobilized enzymes that are non-toxic, recyclable and eco-friendly biocatalysts, by using green solvents or solventless systems. The resulted biodegradable oligoesters will present new functionalities and properties.

### Project implemented by

Politehnica University Timișoara

### Implementation period

15/09/2020-14/09/2022

### Main activities

Stage 1 (2020) - Enzymatic synthesis and optimization of glycerol conversion in glyceric and tartronic acids.

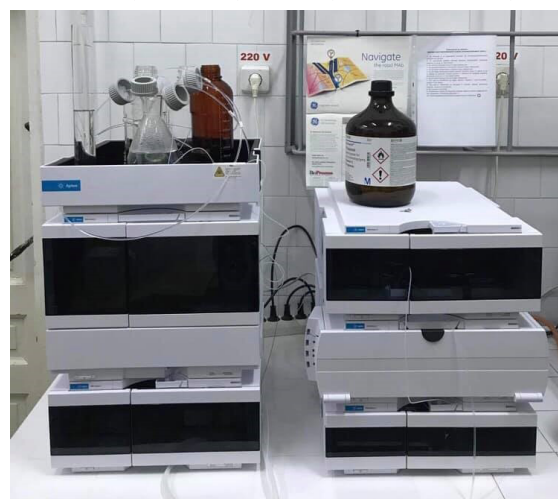
Activity 1.1. Screening of laccases from different microbial sources in order to establish the types of products under different reaction conditions.

Activity 1.2. Screening of the initiator for the enzymatic oxidation reaction.

Activity 1.3. Characterization of reaction products by FT-IR and NMR methods

Activity 1.4. Tailor-made immobilization of laccases with high efficiency and stability for the synthesis of hydroxy acids derived from glycerol.

Activity 1.5. Characterization of the immobilized catalyst in terms of thermal stability, pH stability, reusability in several reaction cycles.

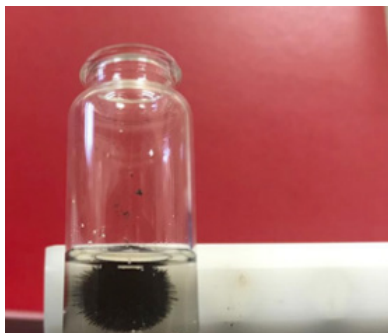


**Figure 1.** HPLC system for the analysis of reaction products (purchased using financial support from the project)

### Results

The results of the first stage:

- Development of experimental methodology for enzymatic synthesis of glyceric acids using laccases.
- Development of the immobilization protocol for covalent binding of laccases.



**Figure 2.** Laccase immobilized onto magnetic nanoparticles.

Visit also: <http://chim.upt.ro/ro/cercetare/proiecte-de-cercetare/285-pn-iii-p1-1-1-te-2019-1573>

### Financed through/by

Romanian Ministry of Education and Research, CNCS - UEFISCDI, project code PN-III-P1-1.1-TE-2019-1573, project No. TE 101/2020, within PNCDI III

### Research Centre

Research Centre in Organic, Macromolecular and Natural Compounds Chemistry and Engineering

### Research team

Project leader:

- Ş.I. dr.ing. Anamaria Todea

Postdoctoral researchers:

- Ş.I. dr. ing. Iulia Maria Păușescu

- Conf. dr. ing. Ionuț Valentin Ledeț

- Asist. dr. chim. Diana Maria Dreavă

PhD Students:

- Drd. Ing. Ioan Bîtcă

- Drd. Ing. Ioana Cristina Benea

- Drd. Ing. Ionuț Mihai Tănase

Students:

- Andreea Petrovici

### Contact information

Lecturer Anamaria TODEA, PhD

Faculty of Industrial Chemistry and Environmental Engineering

Department of Applied Chemistry and Engineering of Organic and Natural Compounds

Carol Telbisz, 6, 300001, Timisoara

Phone: (+40) 256 404216

Mobile: +40766693101

E-mail: [anamaria.todea@upt.ro](mailto:anamaria.todea@upt.ro)

Web: <http://www.chim.upt.ro/ro/cb-profile/107-anamaria-todea-upt-ro>

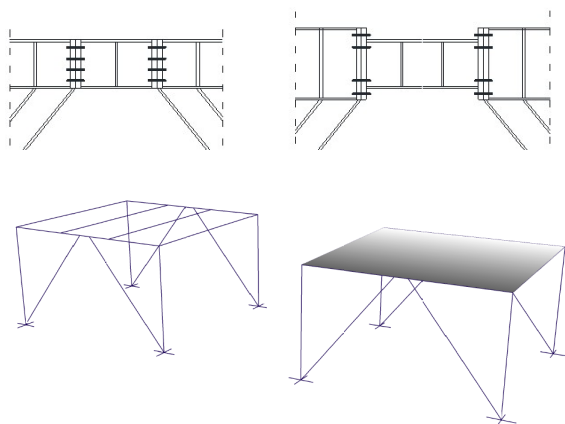
## ADVANCING RE-CENTRING ECCENTRICALLY BRACED FRAMES: NEW LINK TYPOLOGIES AND INFLUENCE OF REINFORCED CONCRETE SLAB (ARNIS)

### Goal of the project

To reduce the costs and downtime of a structure hit by an earthquake, removable links and re-centering capacity concepts may be implemented in a dual eccentrically braced structure. The project aims at extending the validation of re-centering capability and link replacement feasibility on extended end-plate typologies and also investigate more detailed the global and local influence of three-dimensional reinforced concrete slab panels, as well as reinforced concrete slab repair.

### Short description of the project

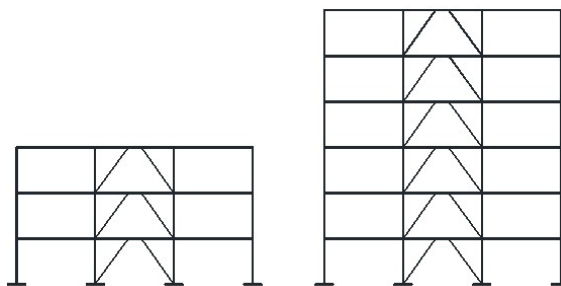
It studies the re-centering capability using new link typologies and the concrete slab influence.



- Experimentally testing isolated links assemblies in two solutions: flush end-plate bolted link and extended end-plate bolted link, at natural scale (1:1), both of them with and without concrete slab above the link (8 tests) – proposed for 2019;
- Experimentally testing a 3D portal frame, with/without concrete, with damaged/repared slab (4 tests) – proposed for 2020;
- Calibrating numerical models post-test – proposed for 2019 and 2020;
- Seismic performance and behavior factors numerical assessment – proposed for 2020.

### Results

In 2018 – prototype structures design, re-centering capability validation and link removal procedure description.



### Project implemented by

Politehnica University Timișoara (UPT) – Civil Engineering Faculty – Steel Structures and Structural Mechanics Department

### Implementation period

10.10.2018 – 09.10.2020

### Main activities

- Designing prototype structures with two height levels: medium rise (P+2E) and higher rise (P+5E), with differently connected links (flush/extended end-plate), extending the bolted links removal procedure and re-centering capability – done in 2018;

Proposed for 2019 and 2020:

- Design of experimental specimens;
- Material behavior curves;
- Links experimental results – describe local behavior;
- Frames experimental results – describe global behavior;
- Calibrated numerical models for links;
- Values of behavior factors for structures.

Obtained results will be presented in project deliverables and scientific papers at international conferences/journals.

## Applicability and transferability of the results

Increase the application potential of the system both at national and international levels: by improved connections (larger behavior factor obtained), improved knowledge on the effect of reinforced concrete slab and repair of the slab.

Solutions providing self-centering of the structure are technically demanded and require specialized knowledge, careful maintenance and high initial cost. Alternatively, a conventional design can be employed, but with the dissipative members realized to be removable allowing their replacement when damaged and reducing the repair costs.

## Financed through/by

Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI)

## Research centre

Research Centre for Mechanics of Materials and Structural Safety - CEMSIG

## Research team

- Assist. Mirela Adriana CHESOAN, PhD (project manager)
- Assoc. prof. Aurel STRATAN, PhD

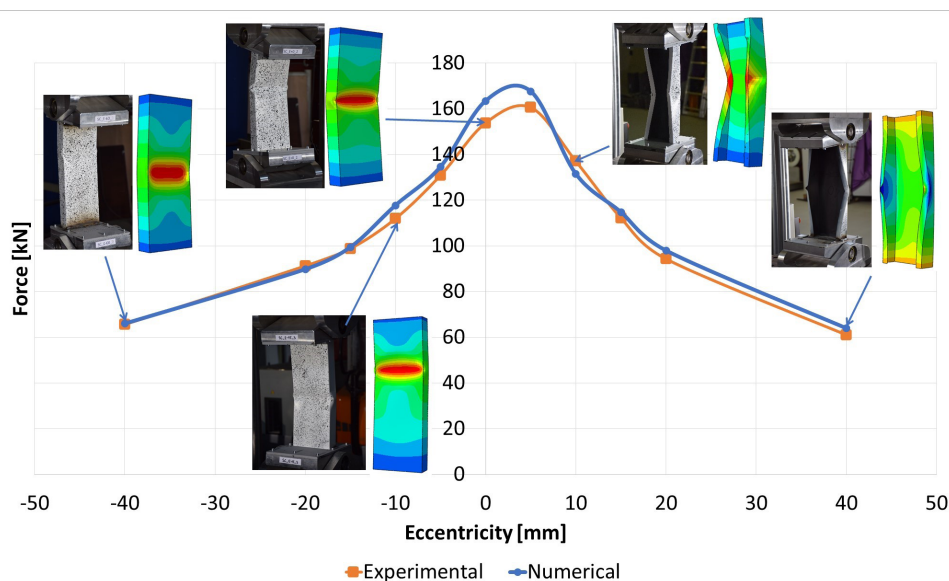
## Contact information

Assist. Mirela Adriana CHESOAN, PhD  
Faculty of Civil Engineering  
Department of Steel Structures and Structural Mechanics,  
Ioan Curea Street No.1, 300224, Timișoara  
Phone: +40 (0) 256 403 925  
E-mail: [adriana.chesoan@upt.ro](mailto:adriana.chesoan@upt.ro)  
Web: [https://www.ct.upt.ro/centre/cemsig/arnis\\_en.htm](https://www.ct.upt.ro/centre/cemsig/arnis_en.htm)

## STRUCTURAL DESIGN TOOL FOR COLD-FORMED STEEL STRUCTURES (CFSEXPERT)

### Goal of the project

The project will develop innovative design software tools for cold-formed steel members and structures. The calculation processes are prepared for practising engineers and integrated with easy-to-use modelling and analysis tools to provide complete design solutions.



### Short description of the project

The project aims to develop a calculation core for the design of structures composed of cold-formed steel (CFS) members, which will be implemented in three different structural softwares: CFSExpert Structure, CFSExpert Member and CFSExpert Engine.

### Project implemented by

- ConSteel Solutions Ltd., Hungary
- GORDIAS Ltd., Romania
- Politehnica University of Timișoara, Romania

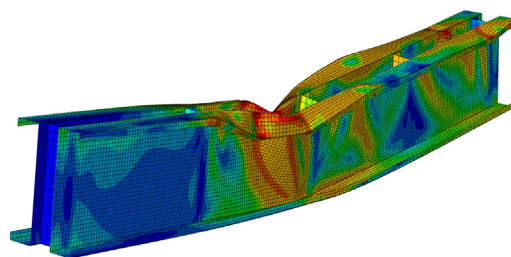
### Implementation period

04.01.2020–31.12.2021

### Main activities

- Review of existing analyses and standard design methods of CFS members and structures and identification of their limitations;

- Development of an advanced integrated analysis and of a design method for CFS members;
- Validation of the advanced CFS design methods via experimental and numerical tests;
- Experimental tests on:
  - (1) minor and major eccentric compression of lipped channels;
  - (2) back-to-back plain and lipped channels in bending;
  - (3) Z-purlins with overlapping over intermediate supports and restrained by sheeting;
- Implementation of the advanced CFS design methods into a complete design package.



## Results

The goal of the project is to develop straightforward software tools for engineers to use in their projects including cold-formed sections of general shape, according to a design based on Eurocode 3 – Part 1.3 concept.

The software is based on an innovative design process which integrates the specific modern mechanical analysis of CFS members (Constrained Finite Strip Method - cFSM) with existing and newly developed design procedures.

The software tools will be launched at three levels for different types of target users having the same calculation core including the developed new innovative design methodology.

The main R&D result of the project is in this special calculation core, but for the support of an efficient marketing and sales process it is also aimed to implement it into three different types of software realization.

The CFSExpert Structure is a design package implemented into the ConSteel 3D analysis and design software as an additional module for the design of cold-formed sections within a general 3D steel structural model.

The CFSExpert Member is a stand-alone software configuration to handle a single element, with simply supported or continuous statical system, with specific graphical input and output features limited to cold-formed profiles.

The CFSExpert Engine is a “black-box” calculation engine, without graphical user interface, but having standard easy-to-use input-output interface suitable for implementing into any existing or new-to-develop specific design software tools.

## Applicability and transferability of the results

The CFSExpert software packages will fill a market gap of missing complete design tools supporting the complex design of CFS structures accordingly we expect great interest from structural engineering companies.

The companies already having CFS products can accelerate their design process and widen their product range using this software. The greater part of our possible market consists of those companies which realize new possibilities in using CFS in their structures by using this software.



## Financed through/by

This work was supported by a grant of the Romanian Ministry of Research and Innovation, CCCDI – UEFISCDI, project number EUROSTARS-2019-EI113493 – CFSExpert, within PNCDI III

## Research centre

- Research Center for Mechanics of Materials and Structural Safety (CEMSIG),
- Politehnica University of Timișoara

## Research team

- Prof. Viorel UNGUREANU, PhD
- Sen. lect. Ioan BOTH, PhD
- Sen. lect. Mircea BURCĂ, PhD
- Florin BODEA, PhD stud.
- Andrei GÎRBACEA, PhD stud.
- Antonio Andrei CRISTIAN, PhD stud.

## Contact information

Prof. Viorel UNGUREANU, PhD  
Faculty of Civil Engineering  
Department of Steel Structures and Structural Mechanics  
Ioan Căruța No. 1, 300224, Timișoara  
Phone: (+40) 256 403912  
Mobile: (+40) 740 137640  
E-mail: viorel.ungureanu@upt.ro

## SAFETY OF BUILDING WALLS AND CLADDINGS AGAINST ACCIDENTAL EXPLOSIONS SAFE-WALL

### Goal of the project:

Explosions produced in urban or industrial areas are low-probability but high-impact events. When they occur in the immediate vicinity of buildings or other constructions, the explosions can pose a high risk to the structural resistance and to the occupants (risk of injury or death). The goal of this project is to provide more robust envelope solutions for the protection of occupants against the direct effects (pressure wave) and secondary hazards (local failures, fragmentation, flying debris) resulting from an explosion.

### Short description of the project

The demonstration-building model includes several typologies of wall elements attached to a 3D steel frame structure. The building is tested against far-field and near-field explosions. The fixing/anchoring systems of the walls to the building are also investigated to validate their performance under extreme loading.

### Project implemented by

The project is implemented by a partnership between:

- Politehnica University Timisoara UPT, project coordinator Prof. dr.ing. Florea Dinu;
- National Institute for Research and Development in Mine Safety and Protection to Explosion INSEMEX Petrosani, responsible ing. Robert Laszlo;
- Technical University of Cluj-Napoca UTCN, responsible SL.dr.ing. Mihai Senila.

### Implementation period

2020 – 2022

### Main activities

#### WP1: Preliminary analyses, design and fabrication of experimental specimens

- Preliminary analysis of building envelope under external explosions
- Design of experimental full-scale wall specimens for explosion tests, substructure specimens for static test, and small-scale specimens from materials and components
- Fabrication of full-scale specimens, material coupons and connection components

#### WP2: Experimental program

- Experimental tests on materials and components
- Full-scale static tests on wall sub-structures
- Full-scale blast tests on wall-frame structure systems

#### P3: Validation of a full-scale building envelope under blast loading in laboratory environment

- Validation of full-scale blast test model in laboratory environment
- Numerical simulations on external wall systems with enhanced protection against explosive threats

#### WP4: Project management and dissemination

### Results:

#### Preliminary analysis

Preliminary numerical simulations were performed on the full-scale building model to determine the explosion parameters (incident and reflected pressure/impulse) as a function of explosive charge size and position (see Fig. 1).

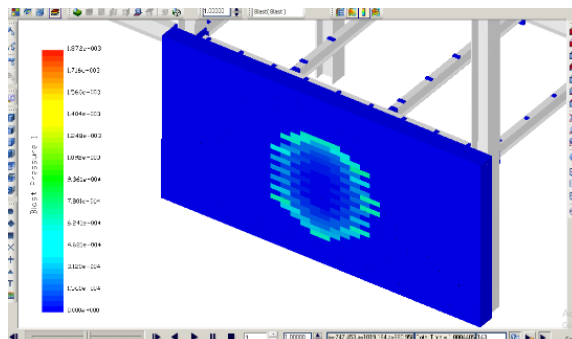


Fig. 1 Pressure distribution on the front wall from a charge located of 1.00 m

## Design and fabrication of experimental specimens

The design of the wall specimens was done considering the non-accidental load requirements (dead load, wind load, others). The expected pressure/impulse from blast was used to evaluate the most probable damage level under the explosion. Four types of most common solutions were considered, see Fig. 2. The wall system will be mounted on an existing 3D steel frame structure, see Fig. 3 and Fig. 4. Static tests will be performed on similar wall elements to determine the capacity under normal loading conditions, see Fig. 5).

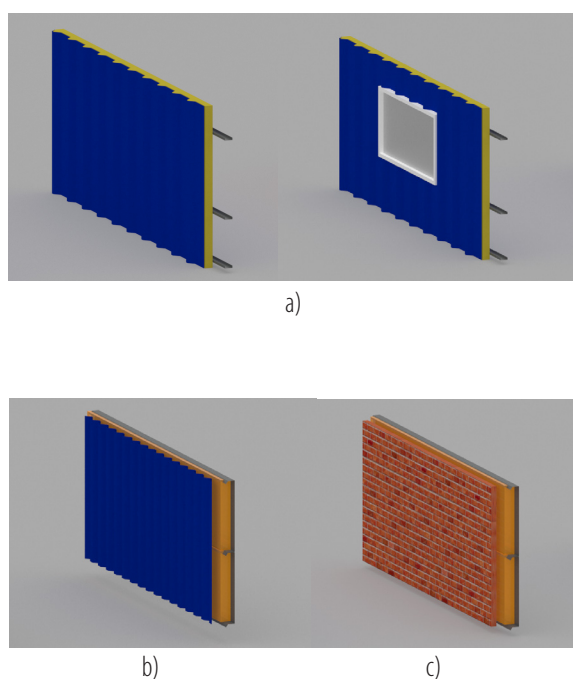


Fig. 2 Wall systems:

- a) multi-skin sandwich panels with horizontal lipped rails (with and without windows);
- b) multi-skin wall, with liner tray (cassette), insulation and outer steel cladding;
- c) multi-skin wall, with liner tray (cassette), insulation and brick cladding



Fig. 3 Existing 3D steel frame structure

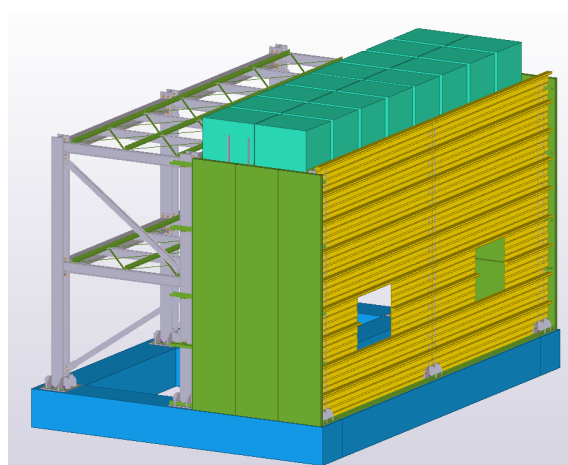


Fig. 4 The 3D frame model with the facade system for blast test

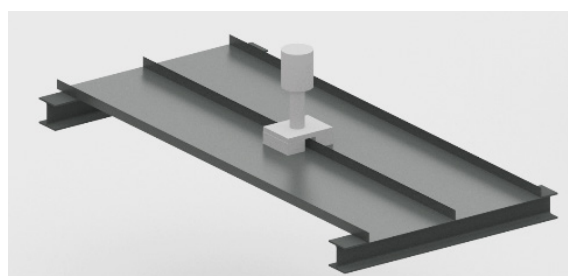


Fig. 5 Static test on wall elements

## Applicability and transferability of the results

- Experimental validation of the response of an integrated building system in laboratory environment represents the bridge from the scientific research to the practical application (structural engineering).
- The qualification of acceptance criteria for wall components and connections under blast loading environment is an important step toward the codification and implementation of such systems in practice, guarantying improved performance and capacity to provide protection in case of extreme events.

## Financed through/by

Romanian National Authority for Scientific Research and Innovation, project number PN III 279PED/2020 (PN-III-P2-2.1-PED-2019-1765), Safety of buildings walls and claddings against accidental explosions SAFE-WALL (2020-2022).

## Research centre

The Research Center for Mechanics of Materials and Structural Safety  
- CEMSIG

## Research team (from UPT)

- Prof.dr.ing. Florea DINU (Coordinator)
- Prof.dr.ing. Dan DUBINA, member of the Romanian Academy
- Prof.dr.ing. Viorel UNGUREANU
- Prof.dr.ing. Adrian CIUTINA
- Prof.dr.ing. Daniel GRECEA
- SL.dr.ing. Calin NEAGU
- SL.dr.ing. Ioan MARGINEAN
- Drd.ing. Jakab DOMINIQ
- Drd.ing. Dan CONSTANTINESCU

## Contact information

Prof. Florea DINU, PhD  
Faculty of Civil Engineering, Department of Steel Structures and Structural Mechanics CMMC, Str. Ioan Curea, No. 1, 300224, Timisoara  
Phone: (+40) 256 403 912  
Mobile: (+40) 722 460 349  
E-mail: florea.dinu@upt.ro  
Web: <https://www.ct.upt.ro/centre/cecsig/safe-wall.htm>

## INTELLIGENT CONTROL SYSTEMS WITH GENERALIZABLE BEHAVIOUR FROM LEARNED PRIMITIVES

### Goal of the project

The project proposal aims at the continuous development of a hierarchical primitives-based learning concept for intelligent control systems (CSs). The idea is to induce feedback CSs with a generalization capability towards tracking tasks, inspired by intelligent living beings who can extrapolate learned optimal behavior to new unseen tasks without learning by repetitions. The framework operates on three levels. The project's main goals are: to improve existing issues and to experimentally validate the hierarchical learning framework on different ubiquitous tracking tasks.

### Short description of the project

The framework operates on three levels:

- L1) low level feedback CS design in model-free style to ensure reference tracking, disturbance rejection and indirect CS linearization;
- L2) learning tracking tasks (in terms of CS reference input + controlled output pairs, called primitives) by repeated executions via data-driven Iterative Learning Control (ILC), over the feedback CS, in terms of a given optimal criterion;
- L3) extrapolate the learned optimal tracking behavior to new tracking tasks, without needing repetitions.

### Project implemented by

Assoc. Prof. Mircea-Bogdan RĂDAC, PhD  
Eng. Alexandra-Bianca BORLEA  
Eng. Timotei LALA

### Main activities

Main improvement activities are centered around making the above framework impactful, by:

- a) ensure strong CS linearization at lower level, in an output reference model tracking problem setting, since the generalizability of the learned tracking behavior relies on the superposition principle of the linear CS;
- b) ensure learning convergence at level L2 via ILC, while reducing the number of dedicated gradient experiments;
- c) deal with tracking tasks of different time lengths (shorter/longer) than that of the learned primitives and with operational constraints.

### Results

Development of a hierarchical learning framework that is able to generalize an optimally learned behavior to new unseen tasks. The publication of papers in leading journals, participation and presentation of papers in international academic conferences, three scientific reports (two intermediate and a final one).

### Applicability and transferability of the results

Validation of the proposed framework on a diversity of systems is expected to open new application areas to the next generation of autonomous, adaptive and intelligent planning and control systems (possible applications in UAVs and drones maneuvering, autonomous driving, robotic arms).

### Financed through/by

UEFISCDI PN-III-P1-1.1-TE-2019-1089, 2020-2022

### Implementation period

01.09.2020 – 31.08.2022

### Research Centre

Department of Automation and Applied Informatics

### Research team

- Assoc. Prof. Mircea-Bogdan RĂDAC, PhD
- Eng. Alexandra-Bianca BORLEA, MSc
- Eng. Timotei LALA

### Contact information

Assoc. Prof. Mircea-Bogdan RĂDAC, PhD  
Faculty of Automatics and Computers  
Department of Automation and Applied Informatics  
Address: Str. Vasile Pârvan, No. 2, Postal Code 300223, Timisoara  
Phone: (+40) 256 403 240  
E-mail: mircea.radac@upt.ro  
Web: www.mbradac.info/te2019.html

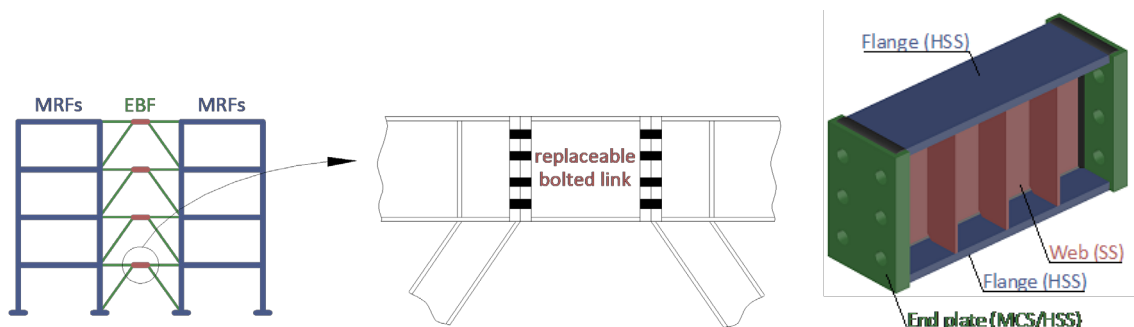
## HYBRID REPLACEABLE LINKS FROM STAINLESS AND HIGH-STRENGTH STEEL (HYLINK) TREATMENT

### Goal of the project:

The project aimed at development of a novel hybrid stainless steel replaceable link for re-centring eccentrically braced frames. Considering that the ductility of the replaceable link and the adequate resistance of the bolted connection are key requirements for the global seismic performance of the system, the goal of the project consists in numerical and experimental investigations of the hybrid link behaviour, in order to assess the benefits induced by the use of high-performance steels.

### Short description of the project

The project aims at investigating numerically and experimentally a novel link, fabricated from high-performance steel.



### Project implemented by

- Universitatea Politehnica Timișoara (UPT)
- National R&D Institute for Welding and Material Testing (ISIM)

### Implementation period

2020 – 2022

### Main activities

- Development of welding processes for joining dissimilar steels: stainless steel to high strength steel (SS/HSS), stainless steel to mild carbon steel (SS/MCS) and mild carbon steel to high strength steel (MCS/HSS).
- Characterisation of low-cycle fatigue (LCF) behaviour of stainless steel (SS), high strength steel (HSS) and mild carbon steel (MCS).
- Characterisation of low-cycle fatigue (LCF) behaviour of welded joints with dissimilar steel SS/MCS and SS/HSS.
- Experimental validation of inelastic cyclic performance of hybrid replaceable links.
- Development of a design recommendations for hybrid replaceable links.

These specific objectives will be accomplished through numerical and experimental investigations on low cycle fatigue response of materials, welded joint components and structural components (hybrid links).

### Results

Result indicators which quantify the project achievements:

- Development of informative documents, research reports and design guidelines for hybrid replaceable links;
- Project outcomes will be disseminated through publication in conference proceedings and journal papers;
- Dissemination of project results through the website with free access to the users.

### Applicability and transferability of the results

Considering that the potential for using austenitic stainless steel in applications requiring large ductility has been previously recognised, the present research project aims at promoting stainless steel for a wider adoption in structural applications.

## Financed through/by

This work is supported by a grant of the Romanian Ministry of Education and Research, CCCDI - UEFISCDI, project number PN-III-P2-2.1-PED-2019-5427, within PNCDI III.

## Research Centre

The Research Centre for Mechanics of Materials and Structural Safety  
– CEMSIG

## Research team

- Prof. Aurel STRATAN
- PhD student Anna PRODAN
- Lect. Ioan BOTH
- Acad. Dan DUBINA

## Contact information

Prof. Aurel STRATAN  
Faculty of Civil Engineering / Department of Steel Structures and  
Structural Mechanics: Ioan Cărea Street No.1, 300224, Timisoara  
Phone: (+40) 256 403 923  
Mobile: (+40) 746 161 762  
E-mail: aurel.stratan@upt.ro

## NEW HYBRID DC-DC SWITCHING CONVERTER FAMILIES WITH APPLICATIONS IN BATTERY CHARGING SYSTEMS FOR ELECTRIC VEHICLES AND SOLAR ENERGY CONVERSION

### Goal of the project

The project proposes three new dc-dc hybrid converter families suitable for solar energy processing and battery charging systems.

### Short description of the project

Synthesis, analysis, simulation and practical validation of three new hybrid converter families with emphasis on two topologies from each family.

Therefore, in total 6 new converters will be investigated.

Two converters out of the six will be used for energy conversion in two applications: a battery charging system from the single phase mains as a solution in automotive industry and a solar energy conversion system comprising a PV panel and also including MPPT control.

### Project implemented by

Politehnica University Timișoara  
Department of Applied Electronics,  
Project Director:  
Ioana-Monica POP-CĂLIMANU

### Implementation period

01.09.2020-28.02.2022

### Main activities

A1. Ć-SC family. Theoretical development of the Ć-SC family. Topologies operation validation by simulation and experimental prototypes for 2 converters.

A2. S-SC family. Theoretical development of the S-SC family. Converters operation validation by simulation and hardware test for 2 converters.

A3. SN-SC family Theoretical development of the SN-SC family. Topologies validation by simulation and experimental prototypes for 2 converters.

A4. Comparative study of the 6 new developed topologies and final decision about the converter that is best suited in the battery charging system and in the solar energy system.

A5. Battery charger system based on the proposed converter topology. Design of the current mode control and charging profiles. Measurements and evaluation of the system performance.

A6. Design and practical implementation of the solar energy conversion system and its MPPT control; LabView programs for long term monitoring of system behavior in different environmental conditions.

### Results

In the first year of the project 3 papers were published in the following journal and international conferences:

1. Pop-Calimanu I-M, Balint M, Lascu D. A New Hybrid Ćuk DC-DC Converter with Coupled Inductors. Electronics. 2020; 9(12):2188. <https://doi.org/10.3390/electronics9122188>
2. I. -M. Pop-Calimanu, C. Alexandru-Adrian and M. Pop-Calimanu, "A New Quadratic Step-Down Converter," 2020 International Symposium on Electronics and Telecommunications (ISETC), Timisoara, Romania, 2020, pp. 1-4, doi: 10.1109/ISETC50328.2020.9301118
3. G. -M. Jude, I. -M. Pop-Calimanu and F. Renken, "A New Step-Up Converter With Coupled Inductor," 2020 International Symposium on Electronics and Telecommunications (ISETC), Timisoara, Romania, 2020, pp. 1-4, doi: 10.1109/ISETC50328.2020.9301041.

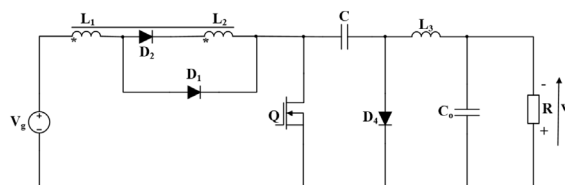


Fig. 1. The novel proposed hybrid Ćuk-type dc-dc converter with coupled inductors.

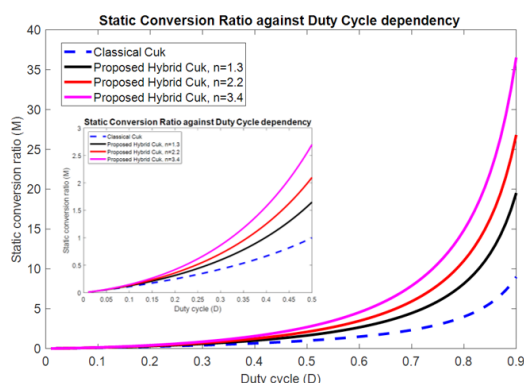


Fig. 2. Static conversion ratio against duty cycle

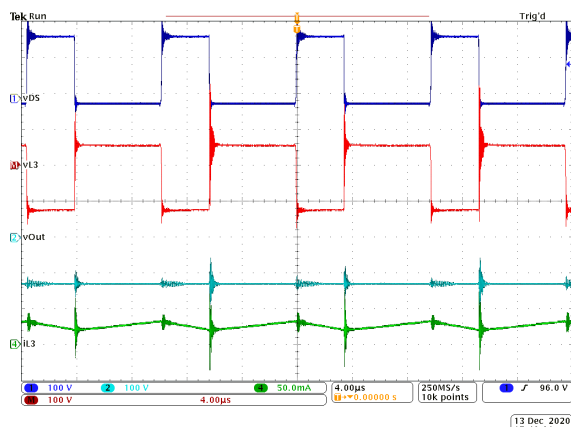


Fig. 3. Main waveforms

## Applicability and transferability of the results

- Charging system for electric vehicles
- Solar energy processing and possible integration in Smart Grids and Smart Homes –
- Implementation in the automotive industry – Continental Automotive Timisoara or Vitesco Technology Engineering Romania

## Financed through/by

Unitatea Executiva pentru Finantarea Invatamantului Superior, a Cercetarii, Dezvoltarii si Inovarii (UEFISCDI) Programul 1 – Dezvoltarea sistemului național de cercetare-dezvoltare  
Subprogramul 1.1 – Resurse umane/Proiecte de Cercetare  
Postdoctorală, PN-III-P1-1.1-PD-2019, 184450 RON.

## Research Centre

TIntelligent ElectronicSystems  
<https://erris.gov.ro/Centrul-de-Cercetari-SEI>

## Research team

Project Director:  
– Ioana-Monica POP-CALIMANU  
Mentor:  
– Dan-Florentin LASCU

## Contact information

Associate prof. Ioana-Monica Pop-Calimanu, PhD  
Faculty of Electronics, Telecommunications and Information Technologies  
Department of Applied Electronics  
Address: Blvd. Vasile Parvan., No. 2, 300223, Timisoara  
Phone: (+40) 256 403 347  
Mobile: (+40) 741 182 224  
E-mail: ioana-m.pop@upt.ro

## GETICA-INTELLIGENT, INDEPENDENT AND AUTOMATED GREENHOUSE WITH SELECTIVE ABSORPTION OF SOLAR RADIATION USING DYE-SENSITIZED SOLAR CELLS (DSSCS)

### Goal of the project

For the first time, GETICA project proposes to develop and validate an energy independent and combined fully automated greenhouse standalone prototype based on DSSCs.

Our team aims to implement a completely autonomous greenhouse in which plants can grow without human intervention. Moreover, it will be sought reducing production cost of the greenhouse using 3D printing of the modular roofs and a low-cost maintenance given by near zero energy input from conventional sources and decreasing the water consumption in irrigation.

In this context, GETICA project aims to demonstrate the economic sustainability of this smart greenhouse based on DSSC in the real agriculture.

### Short description of the project

Our project involves the implementation of a prototype for an autonomous greenhouse that can provide all the necessary conditions for a proper growth of plants without the need for human intervention.

For this, the greenhouse has numerous sensors that record and analyze environmental conditions such as temperature, humidity, wind speed and direction, etc.

Depending on the data read from the sensors, the necessary measures will be taken in order to ensure the suitable environmental conditions for the plants (irrigation pumps or fans can be started, the roof can be closed or opened).

### Project implemented by

- National Institute for Research and Development in Electrochemistry and Condensed Matter
- Faculty of Electronics, Telecommunications and Informational Technologies, Politehnica University Timișoara
- SYMPH ELECTRONICS

### Implementation period

17.11.2020 – 31.10.2022

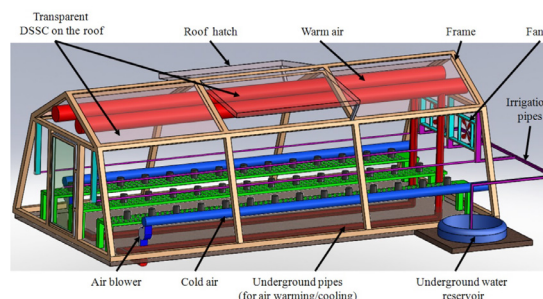
### Main activities

The main activities in our project are:

- Define a block diagram for the greenhouse
- Establish the environmental conditions that must be monitored
- Establish the optimal dimensions for the greenhouse
- Design the resistance structure of the greenhouse
- Design the roof of the greenhouse
- Find methods to reduce manufacturing costs and maintenance costs
- Greenhouse implementation
- Control unit implementation
- Thermal simulation of photovoltaic cells

### Results

The proposed greenhouse has transparent DSSC on the roof, fans, irrigation pipeline, underground pipelines, air blower, etc.



## Applicability and transferability of the results

The implemented prototype offers an intelligent system for autonomous plant growth and for their monitoring using various sensors to record environmental conditions.

Moreover, our solution reduces the manufacturing costs and the maintenance costs.

## Financed through/by

Ministry of Research and Innovation, CNCS - UEFISCDI,  
Project number: PN-III-P2-2.1-PED-2019-2091

## Research Centre

Politehnica University Timișoara (UPT)  
Department of Applied Electronics

## Research team

- Prof. univ. GONTEAN Aurel – Ștefan
- Eng. RICMAN Radu
- Eng. COVACI Corina
- Eng. ILIEȘ Elisei Ștefan
- Student MARINCA Magdalena Patricia

## Contact information

Prof. Aurel - Ștefan GONTEAN, PhD  
Faculty of Electronics, Telecommunications and Informational Technologies,  
Department of Applied Electronics  
Address: Str. Vasile Parvan, No.2,  
300223, Timișoara  
Mobile: +40 745 121 383  
E-mail: aurel.gontean@upt.ro

## RANGE OF PROTOTYPES OF AUTOMATIC CAPACITIVE COMPENSATORS DESIGNED TO IMPROVE THE POWER FACTOR AND LOAD BALANCING IN LOW VOLTAGE ELECTRICAL NETWORKS

### Goal of the project

The project aims at two of the most important measures to increase the performance of electrical power distribution networks: reactive power compensation and load balancing. The aim of the project is to raise the level of technological maturity from TRL4 to TRL6 of an innovative load balancing solution in three-phase low voltage distribution networks, by using an automatically unbalanced capacitive compensator. It allows the two goals to be achieved simultaneously: improving the power factor and balancing the equivalent load.

### Short description of the project

Currently the solution is materialized in the form of a demonstrative experimental model, successfully completed through a previous partnership between UPT (coordinator) and ICPE (partner).  
<https://www.sites.google.com/site/caeredjt/>

### Project implemented by

- ICPE S.A. of Bucharest — coordinator;
- Politehnica University of Timișoara — partner.

### Implementation period

May 2020 — April 2022

### Main activities

Starting from the identification of this innovative product as having a significant market potential, ICPE is this time the project coordinator and aims to develop it together with the same partner, UPT, to the prototype level. The new project mainly contains industrial research activities:

- transfer of intellectual property rights from UPT to ICPE;
- technical and economic analysis followed by the design, construction and commissioning of a range of prototypes (real-scale compensators) with rated reactive powers of 50, 150, 250 kvar;
- testing the range of prototypes in operating conditions similar to the real ones;
- optimization of algorithms to improve functional characteristics;
- validation of the components of the prototype range.

### Results

The first stage (May 2020 - Dec. 2020) entitled "Studies on constructive solutions and trends for establishing new solutions for automatic capacitive compensator" has as main activities the choice of new solutions for automatic unbalanced capacitive compensator and testing of experimental models of assemblies and subassemblies in order to validate the proposed solutions. The results of this first stage are the following:

1. Study on constructive solutions and trends;
2. Design experimental models for assemblies and subassemblies;
3. Experimental models for assemblies and subassemblies;
4. Test results of experimental models for assemblies and subassemblies; .

### Applicability and transferability of the results

The market segment initially targeted by the new product is that of customers in the category of electrical power distribution operators. The large-scale installation of balancing capacitor banks in secondary distribution networks will make a massive contribution to reducing their own technological consumption and increasing the quality of electrical power supplied to consumers. As the benefits of the new product become known to more and more customers, as the quality of electrical power supplied in secondary distribution networks depreciates, more and more distribution operators and large consumers of electrical will be forced to adopt methods and means of limiting asymmetry disturbances and so the new product will impose itself on the market as the optimal solution.

## Financed through/by

The Government of Romania, Ministry of Education and Research, through Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI) National Plan for Research - Development and Innovation for the period 2015-2020 (PNCDI III), project code: PN-III-P2-2.1-PTE-2019-0694 contract no. 41PTE/2020

## Research Centre

Analysis and Optimization of Operating Regimes of Electrical Power Systems

## Research team

### UPT - partner

- Adrian PANĂ – in charge
- Florin MOLNAR-MATEI
- Alexandru BĂLOI
- Attila SIMO
- Ilona BUCATARIU
- Felicia BĂLOI
- Raul-Cristian ROMAN
- Loredana-Nicoleta PAVEN

## Contact information

Prof. Adrian PANĂ, Ph.D.  
Faculty of Electrical and Power Engineering, Department of Electrical Power Engineering, Str. V. Parvan, No. 2, 300223, Timisoara  
Phone: (+40) 256 403 420  
Mobile: (+40) 740 275 891  
E-mail: [adrian.pana@upt.ro](mailto:adrian.pana@upt.ro)  
Web:  
<https://www.et.upt.ro/ro/departaments/electroenergetica>

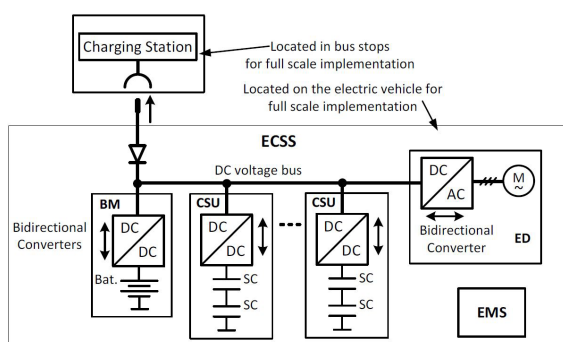
## ENERGY CONVERSION SYSTEM FOR AN ELECTRIC CITY BUS/MICROBUS, WITH SUPERCAPACITOR ENERGY STORAGE AND SUPERHIGH POWER DENSITY DRIVE (ECON-BUS)

### Goal of the project

The project main objective is to develop a small-scale laboratory demonstration model of an energy conversion and storage system for a public transport electric vehicle (bus / minibus), which is charged during stopping at stations. The system will be composed of a high torque density electric drive, powered by a high power density inverter associated with an energy storage unit based on supercapacitor cells, charged/discharged by DC-DC converters connected to a common voltage bus.

### Short description of the project

The laboratory demonstration model of the energy conversion and storage system is designed and implemented based on preliminary research and digital simulation results. The model is validated in various operating modes, through extensive experimental tests. The dissemination of the obtained results is considered in order to find companies interested in potential industrial implementation.



### Project implemented by

- Romanian Academy, Timisoara branch (Coordinator) &
- University Politehnica of Timisoara (Partner)

### Implementation period

17/08/2020 – 15/04/2022

### Main activities

- Development and test of the simulation models for the system components (2020)
- Extensive simulation testing of the entire conversion and storage system (2020)
- Design of the energy conversion and storage system (2021)
- Implementation of the demonstration model (2021)
- Design and implementation of the test bench for the demonstration model (2021)
- Extensive testing of the demonstration model (2021/2022)
- Patenting (2021/2022)
- Dissemination of the project results in scientific and academic environment (2021/2022)
- Industrial, scientific and in mass-media results dissemination (2021/2022)

### Results

In the first stage of the project (2020) the individual simulation models of the electric drive system and of the DC-DC converter used for charging/discharging supercapacitors were developed and tested, as well as a model for determining the global power and energy data, for the energy conversion and storage system.

The electric drive simulations were carried out for both the 1:1 scale (100kW) and the reduced 1:20 scale (5kW) that will be used to implement the laboratory demonstration model.

Two topologies were evaluated for the DC-DC converter. As with the electric drive, the design and simulation data were obtained for 1:1 scale (100kW) and for 1:20 scale (5kW).

All simulation results showed that the selected electric drive and both DC-DC converter are suitable for the application.

## Applicability and transferability of the results

An important component of the project is the activity of disseminating the results, which will be done in the final stage. In addition to transferring essential information related to the obtained results to the scientific and academic community, detailed test reports will be submitted to the industry. If there will be no conditions for industrial implementation, the project research team will consider obtaining a new research grant to bring the TRL to a higher level.

## Financed through/by

PNCDI III, Contract no. 307PED/2020; project code PN-III-P2-2.1-PED-2019-5230

## Research Centre

Research Centre for Smart Energy Conversion and Storage

## Research team

- Prof. Nicolae Muntean
- Acad. Ion Boldea
- Prof. Nicolae Tutelea
- Prof. Gheorghe-Daniel Andreescu
- CSII Ileana Torac (Romanian Academy, Timisoara branch)
- CSI Sebastian Muntean (Romanian Academy, Timisoara branch)
- Assoc. Prof. Octavian Cornea
- Assist. Prof. Ana Popa
- Assist. Dan-Cornel Hulea
- Assist. Liviu-Danut Vitan
- Assist. Adrian Martin
- Ph.D. student Mihaita-Constantin Gireada

## Contact information

Assoc. Prof. Octavian CORNEA, PhD  
Faculty of Electrical and Power Engineering  
Department of Electrical Engineering,  
Address: Vasile Parvan Blvd, No. 2, 300223 Timisoara  
Phone: (+40) 256 403450  
Mobile: +40725214189  
E-mail: octavian.cornea@upt.ro  
Web: <http://www.et.upt.ro/index.php?lang=en>

## SMART MICROACTUATORS WITH LAYER-OPTIMIZED ARCHITECTURE - SMAL

### Goal of the project

The SMAL Project aims to use the models developed in our research group for bimorph and trimorph architectures with at least one layer that undergoes a temperature-dependent phase transformation, in order to manufacture cantilever-type microactuator demonstrators with enhanced displacement, for use in micro electromechanical systems.

### Short description of the project

The project aims to generate sensing and actuation at micro and nano level by taking into account the change in the thermoelastic properties during a phase transformation in active layer(s). The materials considered as phase transformation active layers are shape memory alloys, that will be deposited by magnetron sputtering in various bi and multimorph layered architectures. The stress developed in such cantilever-type architectures is reflected in the actuation by bending (which depends on the thermoelastic properties of the shape memory alloy layer(s) and the one(s) of the passive (non-transforming) layer, usually used as a substrate). The demonstrators will be manufactured in bimorph and trimorph architectures and will be tested to determine the materials integrity as well as the functional output (e.g. actuation and curvature) with the results used for further optimization.

### Implementation period

2020-2022

### Main activities

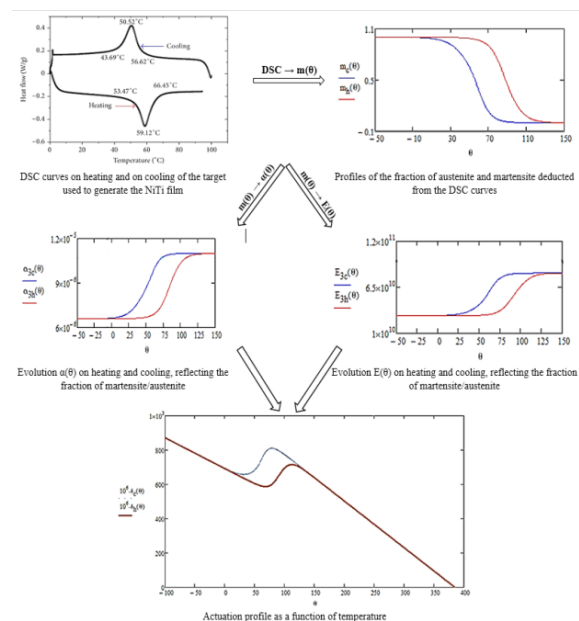
The demonstrators will be manufactured based on the analysis of the models developed by the members of the project team. The design of the bimorphs will be made in various architectures, with different deposition temperatures in order to verify the models over a larger temperature range. Magnetron sputtering will be used to generate the shape memory alloy films on several substrates, thus expanding the range of thermoelastic stresses that can be generated in the selected architectures (film/substrate). Multilayers will also be designed, taking into account the corresponding phase transformation features for each layer (e.g. transformation temperatures).

### Project implemented by

Politehnica University Timisoara, Romania

### Results

Models developed for analysis of different architectures based on shape memory alloy films.



### Applicability and transferability of the results

The technical solutions developed in the project have the potential to be applied the micro-opto-electro-mechanical systems.

## Financed through/by

PN-III-P2-2.1-PED-2019-0619-1

## Research Centre

Smart Materials and Structures Laboratory  
<https://eeris.eu/ERIF-2000-000R-4315>

## Research team

Politehnica University Timisoara:

Prof. Corneliu M. CRACIUNESCU

Prof. Ion. MITELEA

Conf. Aurel ERCUTA

Ph D. student Vlad BOLOCAN

Ph D. student Andrei NOVAC

## Contact information

Prof. Corneliu CRACIUNESCU, PhD, Habil.

Faculty of Mechanical Engineering Department Materials and  
Manufacturing Engineering

Address: Bd. Mihai Viteazul, No. 1. 300026, Timisoara

Phone: (+40) 256 403 655

E-mail: [corneliu.craciunescu@upt.ro](mailto:corneliu.craciunescu@upt.ro)

## THE RELATIONSHIP BETWEEN ENERGY INVESTMENTS, SHOCKS IN ENERGY PRICES AND THE MACROECONOMY IN THE EU COUNTRIES - EIP-MACRO

### Goal of the project

Energy prices record high fluctuations increasing market uncertainty. The central role of oil prices in influencing consumption, investments and macroeconomic policies requires special attention. In this context, the main goals of the project are: (i) to analyse the investment behaviour and TFP of energy sector companies using firm-level data; (ii) to investigate the non-linear interactions between oil prices and the macroeconomy; (iii) to assess the environmental impact of energy policies, EU regulations and renewable energy consumption.

### Short description of the project

The project aims to provide a deeper understanding of the energy and environmental economics issues, analyzing the interactions between energy prices and the macroeconomy.

### Project implemented by

Politehnica University of Timisoara

### Implementation period

02.05.2018 – 30.04.2020

### Main activities

- a) Development of research on three directions:
  - determinants of investments and TFP of energy companies
  - macroeconomic impact of oil price shocks
  - environmental impact of energy policies.
- b) Econometric analyses and generation of results
- c) Dissemination of results in conferences and high-ranked journals.

### Results

- a) 3 Research stages for young researchers (University of Poitiers, University of Augsburg, International School for Social and Business Studies)
- b) 11 Conference participations
- c) 1 organized research workshop  
<https://sites.google.com/view/infer-timisoara-2019/home>.

### d) 11 ISI journal papers:

1. Grecu, E., Aceleanu, M.I. and Albulescu, C.T. (2018). The economic, social and environmental impact of shale gas exploitation in Romania: A cost-benefit analysis, *Renewable and Sustainable Energy Reviews*, 93, 691-700. (Q1)
2. Albulescu, C.T. and Pépin, D. (2018). Monetary integration, money demand stability and the role of monetary overhang in forecasting inflation in CEE countries, *Journal of Economic Integration*, 33(4), 841-879 (EMCI).
3. Albulescu, C.T., Kang, S.H., Tiwari, A.K. and Yoon, S-M. (2019). FDI, income, and environmental pollution in Latin America: Replication and extension using panel quantiles regression analysis, *Energy Economics*, 84, Article 104504. (Q1)
4. Kang, S.H., Tiwari, A.K., Albulescu, C.T. and Yoon, S-M. (2019). Exploring the time-frequency connectedness and network among crude oil and agriculture commodities V1, *Energy Economics*, 84, Article 104543. (Q1)
5. Albulescu, C.T., Riza, D., Raheem, I.D. and Tiwari, A.K. (2019). Does economic policy uncertainty connect financial markets? Evidence from oil and commodity currencies, *Energy Economics*, 83, 375-388. (Q1)
6. Tiwari, A.K., Adewuyi, A.O., Albulescu, C.T. and Wohar, M.E. (2020). Empirical evidence of extreme dependence and contagion risk between main cryptocurrencies, *The North American Journal of Economics and Finance*, 51, 101083. (Q3)
7. Grecu, E., Albulescu, C.T., Părțăchi, I.P., Stancu, S. and Trașcă, D.L. (2020). Output, uncertainty and fuel prices in the EU countries, *Economic Computation and Economic Cybernetics Studies and Research*, 1, 15-30. (Q3)
8. Albulescu, C.T., Artene, A.E., Luminosu, C.T. and Tamasila, M. (2019). CO2 emissions, renewable energy production and environmental regulation in the EU countries, *Environmental Science and Pollution Research*, 27, 33615-33635 (Q2)

9. Albulescu, C.T., Bouri, E., Roubaud, D. and Tiwari A.K. (2020). Quantile causality between banking, stock and real estate securities returns in the US, *The Quarterly Review of Economics and Finance*, 78, 251-260 (Q3)
10. Albulescu, C.T., Tiwari, A.K., Ji, Q. (2020). Copula-based local dependence between energy, agriculture and metal commodity markets, *Energy*, 202, 117762 (Q1)
11. Albulescu, C.T., Oros, C. (2020). Inflation, uncertainty and labor market conditions in the US, *Applied Economics*, 52, 5770-5782. (Q3)

e) 2 book chapters

1. Sirbu, R.M., Albulescu, C.T. (2020). Carbon emissions, energy consumption and managing investment in renewable energy, in: *Innovation in Sustainable Management and Entrepreneurship*, G. Prosteian, J.J.L. Villahoz, L. Brancu, G. Bakacsi (eds.), Publisher: Springer, 14, ISBN 978-3-030-44710-6.
2. Albulescu, C.T., Miclea, S., Tamasila, M., Vartolomei, M. (2020). Financial Constrains and the Structure of the Firm's Investment: An Application to the Scientific R&D Industry from the Largest EU Countries, in: *Innovation in Sustainable Management and Entrepreneurship*, G. Prosteian, J.J.L. Villahoz, L. Brancu, G. Bakacsi (eds.), Publisher: Springer, 18, ISBN 978-3-030-44710-6.

## Financed through/by

Executive Unit for Financing Higher Education, Research, Development and Innovation - UEFISCDI

## Applicability and transferability of the results

The results of the project have both a micro- and a macro-level applicability. In the first case, the strategic management of companies activating in the energy field will benefit from a deeper understanding of elements influencing the level of investment in the industry. In the second case, national and international regulators and policy makers receive information about the impact of shocks in energy prices on inflation and exchange rate, but also about the effectiveness of environmental regulation and the role of renewable sources in reducing CO2 emissions at EU level.

## Research Centre

Research Center in Engineering and Management

## Research team

- Prof. Claudiu ALBULESCU, PhD (Principal Investigator)
- Lect. Alin ARTENE, PhD
- Lect. Caius LUMINOSU, PhD
- Lect. Șerban MICLEA, PhD
- Maria BOATCĂ-BARABAȘ, PhD student
- Roxana SÎRBU, PhD student

## Contact information

Prof. Claudiu ALBULESCU, PhD  
 Faculty of Management in Production and Transportation,  
 Management Department, Remus Street, no. 14, 300191, Timișoara  
 Phone: (+40) 256 404 035  
 Mobile: (+40) 743 089 759  
 E-mail: claudiu.albulescu@upt.ro  
 Web: <https://sites.google.com/site/eipmacrote2016/home>

## ECONOMIC POLICY UNCERTAINTY, ENVIRONMENTAL AND ENERGY POLICIES AND THEIR MACRO-FINANCIAL IMPLICATIONS IN THE EU - EPUEER-MFI

### Goal of the project

As a response to growing environmental concerns, the interest for identifying the economic elements that prevent the environmental degradation increased. At the same time, the economic and financial impact of environmental and energy policies gained the interest of researchers and policy makers. Against this background, the purpose of this project is to investigate how the policy-induced economic uncertainty impacts the producers, consumers and portfolio investment behavior, influencing thus the relationship between environment, energy use and macro-financial variables.

### Short description of the project

The project aims to test the connection between policy uncertainty, energy and finance, considering their environmental impact

### Project implemented by

Politehnica University of Timisoara

### Implementation period

01.09.2020-31.08.2022

### Main activities

- a) Development of research on three directions:
  - (i) the impact of uncertainty and energy security on oil and financial assets prices connection,
  - (ii) the role of environmental regulations and renewables on carbon emissions,
  - (iii) the effect of policy-induced uncertainty and energy price shocks on bank stability.
- b) Literature review and data collection
- c) Econometric analyses and discussions on empirical results
- d) Dissemination of results in conferences and high-ranked journals.

### Results

- a) 5 papers under review in ISI journals, out of which, 3 accepted papers:
  1. Albulescu, C.T. (2020), COVID-19 and the United States financial markets' volatility, Finance Research Letters. (Q1)

2. Albulescu, C.T., Miclea, S. (2020), How does the national human capital index influence the total factor productivity of the Romanian R&D firms? Human Systems Management. (ESCI)
3. Albulescu, C.T., Mina, M., Oros, C. (2020), Oil-US Stock Market Nexus: Some insights about the New Coronavirus Crisis, Economics Bulletin. (ESCI)
- b) 6 participations in international conferences:
  1. 22th INFER Annual Conference, University Pris 13, Paris, France.
  2. 11th Global Conference on Business and Social Sciences, Bangkok, Thailand.
  3. 36th IBIMA Conference, Granada, Spain.
  4. The 14th International Management Conference "Managing Sustainable Organizations", Bucharest, Romania.
  5. 12th International Conference "Globalisation and Higher Education in Economics and Business Administration", "A.I. Cuza" University, Iasi, Romania.
  6. 33rd EBES Conference, Madrid, Spain.
- c) project website:  
<https://sites.google.com/view/epueer-mfi-te2019/home>

### Applicability and transferability of the results

The results of the project have noteworthy implications for international investors and policymakers. In the first case, the investors will learn how the commodity and financial markets are connected and how the economic policy uncertainty will affect their risk management and portfolio optimization strategy. In the second case, national and international regulators and policymakers receive information about the impact of shocks in energy prices on macroeconomic variables, but also about the effectiveness of environmental regulation and the role of renewable sources in reducing carbon emissions at EU level.

## Financed through/by

Executive Unit for Financing Higher Education, Research,  
Development and Innovation – UEFISCDI

## Research Centre

Research Center in Engineering and Management

## Research team

Prof. Claudiu ALBULESCU, PhD (Principal Investigator)

Lect. Caius LUMINOSU, PhD

Lect. Șerban MICLEA, PhD

Assist. Prof. Lavinia MIHALI, PhD

Assist. Prof. Andra DIACONESCU, PhD

Roxana SÎRBU, PhD student

## Contact information

Prof. Claudiu ALBULESCU, PhD

Faculty of Management in Production and Transportation,  
Management Department, Remus Street, no. 14, 300191, Timișoara

Phone: (+40) 256 404 035

Mobile: (+40) 743 089 759

E-mail: [claudiu.albulescu@upt.ro](mailto:claudiu.albulescu@upt.ro)

Web: <https://sites.google.com/view/epueer-mfi-te2019/home>

## INCREASING THE INSTITUTIONAL PERFORMANCE OF THE POLITEHNICA UNIVERSITY TIMIȘOARA BY STRENGTHENING THE R & D AND TECHNOLOGICAL TRANSFER CAPACITY IN THE FIELD OF “ENERGY, ENVIRONMENT AND CLIMATE CHANGE”

### Goal of the project

The overall objective of the PERFORM-TECH-UPT project is to increase the institutional performance of the Polytechnic University of Timisoara (UPT), by developing the R & D capacity of the Research Institute for Renewable Energy, a structure of UPT, by expanding and consolidating its activities in the field of intelligent specialization Energy, Environment and Climate Change, to serve the innovation requirements of economic operators from Romania West Development Region, respectively by intensifying the collaboration and visibility at national and international level.

### Short description of the project

The PERFORM-TECH-UTP project is dedicated to the institutional development of UPT through targeted activities on human resources, research and development infrastructure and international visibility.

### Project implemented by

Politehnica University Timișoara

### Implementation period

October 16<sup>th</sup>, 2018 – December 10<sup>th</sup>, 2020 (26 months)

### Main activities

- Project management and coordination
- Acquisition of significant R&D equipment and services
- Financial support for attending prestigious international conferences
- Stimulate the publication of articles in WOS indexed journal, located in the Q1
- Stimulation of the doctoral research activity of the last year of internship for the successful completion of the experimental part of the thesis
- Identifying funding opportunities for research and the development of successful applications
- Development of a portfolio of new products / technologies / methods / systems / services or significantly improved
- Selection of postdoctoral researchers in the field of the project
- Integration and testing of purchased equipment within research centers / laboratories
- Creating the site [www.research.upt.ro](http://www.research.upt.ro)

### Results

- Creation of a multidisciplinary research platform capable of meeting the needs and requirements of economic operators including in priority economic sectors, such as “energy and environmental management”, part of the Industrial Policy Direction named “Innovation, technological development and added value” (according to the National Competitiveness Strategy 2014–2020).
- The development of a highest level research infrastructure in the field of “Energy, environment and climate change”, which will enable the participation of UPT’s RDI staff in projects of national and international scale to be dynamic.
- The increase in the number of publications in high impact journals, that is in the first two quartiles, but also in the international recognition, by winning awards at large-scale scientific events and inventics exhibitions.
- Financing of minimum 20 support grants for the participation of researchers at prestigious international conferences.
- Project based employment of 3 researchers.
- Funding of 4 doctoral internships, to successfully complete the experimental part of the doctoral thesis.
- Creation of the site [www.research.at.upt.ro](http://www.research.at.upt.ro) containing information about the university research infrastructure, and about the services that the UPT can offer in the area of RDI.
- Financing of 20 grants in order to stimulate the publication of scientific articles in first quartile WOS journals.
- Organization of 2 workshops.



## Financed through/by

Ministry of Education, "Program 1 - Development of the National Research and Development System, Subprogram 1.2 - Institutional Performance", National Plan for Research, Development and Innovation for the period 2015-2020 (PNCDI III), Institutional Development Project - CD Excellence Funding Project.

## Research centre

1. Research Institute for Renewable Energy
2. Research Centre for Smart Energy Conversion and Storage
3. Research Centre for Mechanics of Materials and Structural Safety
4. Research Centre for Processing and Characterization of Advanced Materials
5. "Ștefan Nădăsan" Research Laboratory for Strength, Integrity and Durability of materials, structures and conductors.

## Research team

- Assoc. Prof. Liviu CĂDARIU-BRĂILOIU, PhD
- Prof. Eng. Viorel-Aurel ȘERBAN, PhD
- Prof. Eng. Viorel UNGUREANU, PhD
- Prof. Eng. Nicolae MUNTEAN, PhD
- Prof. Eng. Liviu MARȘAVINA, PhD
- Prof. Eng. Petru NEGREA, PhD
- Assoc. Prof. Eng Bogdan RADU, PhD

## Contact information

Assoc. Prof. Liviu CĂDARIU-BRĂILOIU, PhD  
Department of Mathematics  
Address: Piața Victoriei, No. 2, Postal Code 30006, Timișoara  
Phone: (+40) 256 403100  
Mobile: (+40) 725 890983  
E-mail: [liviu.cadariu-brailoiu@upt.ro](mailto:liviu.cadariu-brailoiu@upt.ro)  
Web: <http://www.performtech.upt.ro/>

## INOVATIVE METHOD FOR LANDFILLING OF MUNICIPAL SOLID WASTE INCINERATION RESIDUES BY STABILIZATION/SOLIDIFICATION INTO COAL FLY ASH ROCK MATRIX RESULTED FROM DENSE SLURRY TECHNOLOGY

### Goal of the project

The project goal is treatment of MSWI residues by stabilization/solidification by means of using a binder matrix. The aim of this process is to create new compounds in a stabilized form that encompassing the harmful elements, which are non-hazardous or less hazardous than the raw (initial) material.

Project includes a series of experiments for embedding the MSWI residues into the coal fly ash rock matrix with the support of the preview research results. There will be done a small scale landfill disposal, in order to investigate the leaching behavior on environmental conditions for tracking the pollutants concentrations migration into environment.

### Short description of the project

The project concept is based on using fly ash and desulphurization products related to coal incineration as a binder material to stabilize through solidification process the pollutants (heavy metals mostly) contained in MSWI residues.

### Main activities

The main activity of the project is to assess the discharge behavior of the experimental landfill disposal exposed into environmental conditions.

In this demand the following activity were foreseen:

- Construction of the experimental demonstrator.
- Evaluate the waste characteristics.
- Construction of the experimental landfill disposal according to the proposed technology.
- Leaching and percolation sampling.
- Lab analyses of experimental samples. Data recording.
- Processing and analyses of the experimental data.
- Interpretation of experimental data.
- Model the environmental behavior of the waste.
- Validate the model by calibration with the results from laboratory tests and field experiments and by comparing it to natural analogues.

### Implementation period

01.05.2018 – 30.04.2020

### Project implemented by

Politehnica University Timișoara

### Results

**Stage I (2018) – Up-grading the existing lab demonstrator. Technical design. Purchasing of equipment.**

- 1.1 Preparation of design documents.
- 1.2 Designing installations for upgrading the experimental demonstrator in accordance with the proposed technology.
- 1.3 Elaboration of technical datasheets for equipment purchasing.
- 1.4 Launch of the public procurement procedure in accordance with the legislation in force.
- 1.5 Reception of purchased equipment. Equipment payment.

**Stage II (2019) – Construction of experimental demonstrator (upgrade). First run. Testing. Lab analyses**

- 2.1 Integration on technological assembly

## Applicability and transferability of the results

The solidification/stabilization method of different types of toxic residues consists of using a binder matrix, which is non-pollutant for the environment with the aim to encapsulate the harmful chemical compounds.

In this regard most of the applied technologies are using cement based binder matrix material which is an expensive material in comparison with coal fly ash and associated flue gas desulphurization (FGD) by-products related to coal power plants.

In fact the coal fly ash and FGD by-products are residues that end into open landfill disposal, which means that are costs free.

More than that is well known that cement factory worldwide are using coal fly ash as material basis for different types of cements, for their cementitious properties given by the pozzolanic compounds like silica ( $\text{SiO}_2$ ), alumina ( $\text{Al}_2\text{O}_3$ ), and iron oxide ( $\text{Fe}_2\text{O}_3$ ) that exceeds over 80% of the fly ash composition.

The new proposed technology based on using fly ash and desulphurization by-products related to coal incineration as a binder material according to solidification/stabilization method, will eliminate the costs with the cement, which could bring considerable economical savings.

From environmental point of view the incineration residues (fly ash and FGD by-products) related to coal incineration can be used as binder material according to the proposed concept of solidification/stabilization method, with the aim to prevent ground water pollution by leaching phenomenon developed on open landfill disposals by dense slurry technology.

## Financed through/by

Executive Agency for Higher Education, Research, Development and Innovation Funding – UEFISCDI /  
PN-III-P1-1.1-PD-2016-1093

## Research centre

Research Institute for Renewable Energies – ICER

## Research team

### Research contract director /Coordinator:

– Eng. Mihail Reinhold WÄCHTER, PhD

### Mentor:

– Prof. Daniel DAN, PhD

## Contact information

Eng. Mihail Reinhold WÄCHTER, PhD

Faculty of Mechanical Engineering

Address: Blvd. Mihail Viteazu, No.1, 300222, Timisoara

Mobile: (+40) 742 171 963

E-mail: wachter\_reinhold@yahoo.com

Web: [https://www.ct.upt.ro/centre/reco/wir-stab-01\\_ro.htm](https://www.ct.upt.ro/centre/reco/wir-stab-01_ro.htm)

## FREE RUNNER FOR SWIRLING FLOW CONTROL AT THE OUTLET OF HYDRAULIC TURBINES

### Goal of the project

The main objective of the project is to design and investigate a new concept by using a free runner downstream on the main hydraulic runner turbine. The free runner concept supposes that rotates at the runaway speed with vanishing mechanical torque. The main purpose is to redistribute between the shaft and the periphery the total pressure and the moment of momentum such that the flux of total pressure and the moment of momentum are not altered. Moreover the free runner does not modify the operating point.

### Short description of the project

The research topic deals with the fundamental aspects of the decelerated swirling flows in conical diffusers, applied to the flow in the draft tube cone of hydraulic turbines. The variable demand on the energy market, as well as the limited energy storage capabilities, requires a great flexibility in operating hydraulic turbines. When the hydraulic turbine operates far from the best efficiency point, the flow downstream the runner becomes unstable (with formation of a precessing spiral vortex in the draft tube cone). The decelerated swirling flow and the precessing spiral vortex are responsible for severe pressure fluctuations which reduce the operating regime and diminish performances. The project propose a new concept in order to control the flow by adding a free runner downstream the hydraulic runner turbine. The free runner will be designed taking into account the flow from the exit of the main turbine runner, such that at the inlet of the conical diffuser a uniform flow should enter. Numerical and experimental investigations will evaluate the new concept in order to minimize the effects of hydraulic instabilities.

### Project implemented by

Politehnica University Timișoara

### Implementation period

02.11.2020 – 03.10.2022

### Main activities

The main activities are programed as follows:

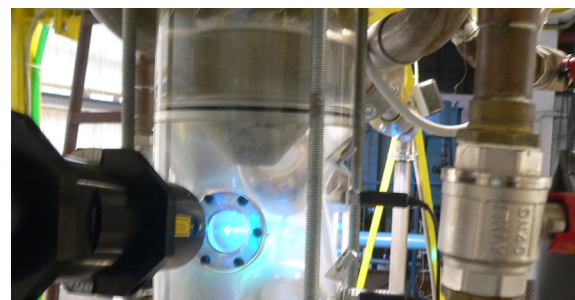
Activity 1. Flow field analysis in the draft tube cone of the swirl apparatus using Laser Doppler Velocimetry – first year 2020.

Activity 2. 3D hydrodynamic design of the free runner blades and mechanical design for the free runner rotating system; Numerical simulation of the swirl apparatus with the new concept of free runner – second year 2021.

Activity 3. Implementation and first tests of the free runner system. Experimental investigations of the free runner performances – third year 2022.

### Results

The project will develop a free runner which can be mounted downstream of the turbine runner in order to diminish the hydraulic instabilities.



First results concentrated on the experimental investigations of the velocity profiles in the divergent part of the swirl apparatus. Therefore the LDA velocity profiles measured at the exit of the runner will be used as design inlet conditions for the free runner blades new concept..



## Applicability and transferability of the results

The results obtained from this project can be implemented in the hydraulic turbines in order to operate in safety conditions far from the best efficiency point.

## Financed through/by

UEFISCDI, P1 Human Resources Program, Research Projects to Stimulate Young Independent Teams (TE)

## Research centre

Research Centre for Engineering of Systems with Complex Fluids

## Research team

- Lecturer Alin BOSIUC, PhD
- Eng. Timotei ARDELEAN, PhD Student
- Eng. Raul SZAKAL, PhD Student
- Eng. Constantin TANASA, CS II
- Associate Prof. Adrian STUPARU, PhD
- Prof. Romeo SUSAN-RESIGA, PhD

## Contact information

Lecturer Alin BOSIUC, PhD  
Faculty of Mechanical Engineering  
Department of Mechanical Machines, Equipment and Transportation  
Address: Mihai Viteazu Blvd, No. 1, Postal Code 300222, Timisoara  
Phone: (+40) 256 403692  
Mobile: (+40) 727 988895  
E-mail: [alin.bosioc@upt.ro](mailto:alin.bosioc@upt.ro)  
Web: <http://mh.mec.upt.ro/freerunnerflow>

## RESEARCH CONCERNING CHARACTERIZATION AND IMPROVEMENT OF THE ELECTROMAGNETIC ENVIRONMENT IN MODERN CARS

### Goal of the project

- Assessment of the electromagnetic environment in modern vehicles: technical and legal aspects;
- Assessment and analysis of measuring and testing methods and of equipment involved in Automotive EMC;
- Implementation of novel test and measurement methods in Automotive EMC and improvement of the testing repeatability
- Applications of metamaterials to Automotive EMC.

### Short description of the project

This project is component of the complex project *Hybrid Platform for Communication in Visible Light and Augmented Reality for the Development of Intelligent Systems for Assistance and Active Security of Vehicles*, 21PCCDI / 2018.

### Project implemented by

Politehnica University Timișoara,  
Faculty of Electronics, Communications and Information Technology,  
Department of Measurements and Optical Electronics

### Implementation period

18.05.2018 - 16.11.2020

### Main activities

1. Characterization of the electromagnetic environment in vehicles:
  - Near field and far field measurement;
  - Spectral occupancy measurement.
2. Improvement of repeatability of Automotive MC tests
  - Assessment of devices and equipment involved;
  - Interlaboratory testing and comparisons
  - Far-field prediction from near-field measurements data;
  - Prediction of far-field radiation from current measurement.
3. Methods of reduction of conducted and radiated emissions;
  - Resonance analysis of systems that fail EMC tests;
  - Applications of metamaterials: filtering, suppressing of cavity oscillations, screening with frequency selective surfaces.

### Results

#### 2018-2020

- Documentations and reports concerning assessment of electromagnetic field in modern cars;
- Documentations and reports concerning EMC Automotive inter-laboratory comparisons, chamber validation and equipment assessment;
- Documentation and reports concerning applications of periodic structures in the Automotive EMC field;
- 35 published papers on:
  - Application of Frequency Selective Surfaces ;
  - Conduction and radiated immunity (Fig. 1);
  - ALSE chamber validation;
  - Stripline measurements in Automotive EMC;
  - Near field measurements and applications to emission reduction;
  - Frequency selective surfaces;
  - Antenna simulation and measurement (Fig. 2)
  - Spectrum occupancy measurement in the different frequency ranges (Fig. 3);

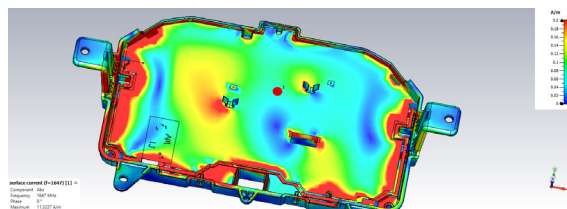


Fig. 1. Radiated immunity tests: DUT simulation

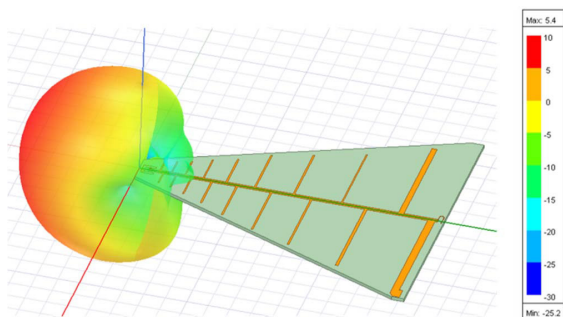


Fig. 2. Antenna simulation

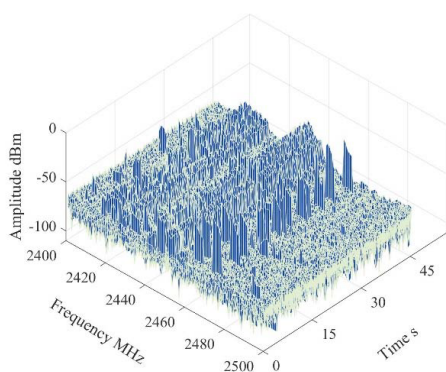


Fig. 3. Spectrum occupancy

## Applicability and transferability of the results

Results obtained in this research might be useful to:

- EMC laboratories, mainly related to Automotive industry;
- EMC professionals;
- EMC research community;
- EMC standards elaboration;
- Legal authorities that regulate spectrum occupancy;
- Professionals working in Automotive design.

## Financed through/by

UEFISCDI

## Research centre

ICER - Research Institute for Renewable Energy

## Research team

- Aldo de SABATA
- Cornel BALINT
- Septimiu MISCHIE
- Cora IFTODE
- Andrei SILAGHI

## Contact information

Prof. Aldo DE SABATA, PhD  
 Faculty of Electronics, Communications and Information Technology  
 Department of Measurements and Optical Electronics  
 Address: Bd. V. Pârvan, No. 2, Postal Code 300223, Timisoara  
 Phone: (+40) 256 403370  
 E-mail: aldo.de-sabata@upt.ro  
 Web: <http://www.meo.etc.upt.ro/>

## FUZZY CONTROLLERS FOR SHAPE MEMORY ALLOYS SYSTEMS (FUZZYSMA)

### Goal of the project

Analysis, design and implementation of adaptive fuzzy control solutions which include combination of fuzzy control, adaptive control, gain-scheduling control and sliding mode control in order to improve the Control System (CS) performance and validate the new CSs with the proposed adaptive fuzzy controllers through experiments on laboratory equipments related to Shape Memory Alloys (SMA), and other various laboratory equipment with SMA as actuators.

### Short description of the project

Adaptive fuzzy control algorithms are developed and validated with experiments on laboratory equipments related to Shape Memory Alloys (SMA), and other various laboratory equipment with SMA as actuators..

### Project implemented by

Lect. Claudia-Adina Bojan-Dragoș - carries out all management activities and all activities that involve theoretical approaches.

Prof. Stefan Preitl - assists the PI in the management of the activities.

Lect. Alexandra-Iulia Szedlak-Stinean - is in maternity leave in the first year of the project and she will carry out activities that involve simulation and experimental approaches on processes that include SMA actuators in the second year.

Assist. Raul-Cristian Roman - carries out activities that involve hardware and software implementations and solve numerical problems.

M.Sc. Elena-Lorena Hedrea - carries out activities that involve theoretical research and experimental approaches on processes that include SMA actuators.

### Implementation period

15.09.2020 – 14.09.2022

### Main activities

1. The analysis of the theoretical framework with regard to the controlling of processes that include SMA actuators.
2. The development and implementation of new three new adaptive fuzzy control algorithms for nonlinear SMA processes.
3. The validation of the proposed control algorithms as controllers for real-world processes that include SMA, with the support of the external partners (Continental Automotive Timișoara, Airbus Helicopters Romania – through direct connections timely consolidated, Ontario Centres of Excellence – through our Ottawa team partner).
4. The dissemination of results focused on high visibility journals and important conferences.
5. Solving the project management issues.

### Results

The research team works on the publishing journal papers indexed in Clarivate Analytics Web of Science (WoS, with one of the previous names ISI Web of Knowledge) (link) and on the publishing of conference papers currently indexed in the international data bases IEEEExplore (link and link). The proceedings of the previous editions of these conferences are indexed in WoS..

### Applicability and transferability of the results

With the support of our partner from the University of Ottawa, the new CSs with adaptive fuzzy controllers will be in the validation process at Ontario Centers of Excellence..

### Financed through/by

UEFISCDI

### Research Centre

Automatic Systems Engineering Research Centre

### Research team

- S.I.dr.ing. Claudia-Adina BOJAN-DRAGOȘ - Project Leader
- Prof.dr.ing. Stefan PREITL - Member
- S.I.dr.ing. Alexandra-Iulia SZEDLAK-STINEAN - Member
- As.dr.ing. Raul-Cristian ROMAN - Member
- As.drd.ing. Elena-Lorena HEDREA - Member

### Contact information

S.I.Dr.Ing. Claudia-Adina Bojan-Dragoș

Politehnica University of Timișoara

Faculty of Automation and Computers

Department of Automation and Applied Informatics, Bd. V. Parvan 2  
RO-300223 Timișoara

Romania

Phone: +40-256403240 (cabinet)

Fax: +40-256403214

E-mail: claudia.dragos@upt.ro

Web: <http://www.aut.upt.ro/~claudia.dragos/>

## INSPECTION OF HIGHLY SCATTERED AND ARTIFICIALLY ILLUMINATED UNDERWATER SCENES USING OPENROV TRIDENT

### Goal of the project

Optical systems of the existing ROV's (including OpenROV Trident) are quite limited when dealing with deep and turbid underwater scenes that require artificial illumination. Despite of the recent efforts, existing single-image underwater techniques exhibit significant limitations in the presence of highly scattered water and/or artificial ambient illumination. As a result real time pre-processing (to enhance visibility of such scenes) of the captured video stream is a must. This project proposes a radically novel paradigm that provides the basis for more direct, interactive and efficient underwater studies, while reducing the associated costs.

### Short description of the project

This project aims to develop an effective underwater image enhancement techniques that can be employed in real time by the affordable ROV Trident..

### Implementation period

1.11.2020-30.10.2022

### Financed through/by

UEFISCDI

### Research team

- Cosmin Ancuti
- Horia Balta
- Kis Arpad
- Codruta O. Ancuti

### Contact information

Cosmin Ancuti  
University Politehnica Timisoara,  
ETcTI  
2 Vasile Parvan Blvd., 300223, Timisoara, Romania  
Tel: (+40)-0256-403363  
Fax: (+40)-0256-403295  
E-mail: cosmin.ancuti@upt.ro

## INTELLIGENT CONTROL SYSTEM FOR CONTINUOUS CASTING BASED ON WATER FLOW CONTROL IN THE SECONDARY COOLING

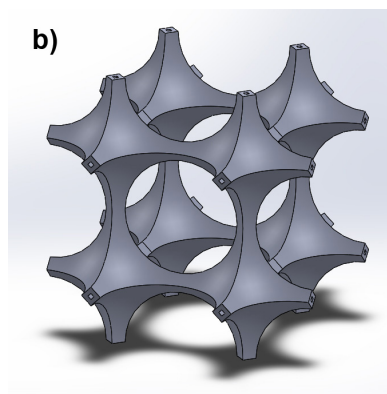
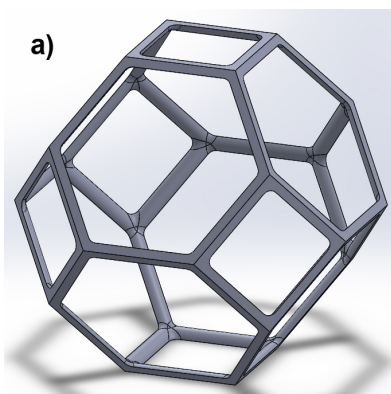
### Goal of the project:

This project deals with the development of metamaterial structures composed tessellations of mainly two types of open cells: truncated hexahedron tessellation (the Kelvin structure,

a) and hollow sphere tessellation

b). The structures will be modelled using computer aided design software and their mechanical properties will be evaluated using finite element analysis software.

When the desired geometries will be developed, the CAD file will be exported to a rapid prototyping machine for manufacturing.



### Short description of the project:

This project addresses a subject in the field of innovative materials and it deals with the design and manufacturing of structures composed of engineered materials whose properties are not found in nature (metamaterials). The metamaterials proposed for this project will consist of cellular polymeric lattices, whose properties will be controlled through geometric parameter manipulation (strut thickness, cell size and shape). The main applications of these structures will be as cushioning and protective layers meant to absorb the deformations and impact energy of personal protective equipment. The project has two main stages. The first stage consists of the design and simulation of the structures in order to determine the optimal parameters in terms of mechanical properties. The second stage of the project will deal with the manufacturing of the structures through rapid prototyping and the experimental determination of their mechanical characteristics. The comparison between the estimated and experimentally determined properties will validate the designs of the structures, allowing for complex geometry modelling for actual safety equipment applications.

### Project implemented by

Politehnica University Timișoara

### Implementation period:

1.5.2018 – 30.4.2020

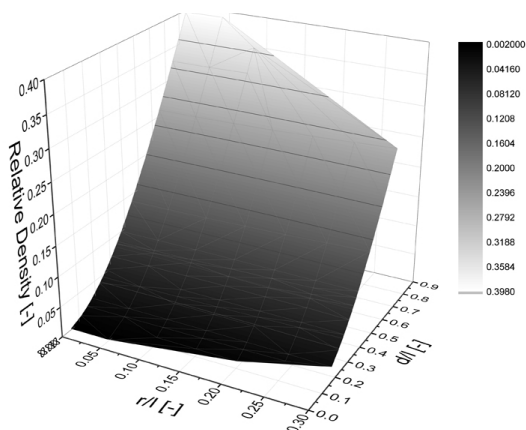
### Main activities:

01. Literature survey concerning metamaterial structures and additive rapid prototyping techniques.
  - A1.1. Literature study concerning mechanical metamaterial structures
  - A1.2. Literature study concerning rapid prototyping techniques for polymers
02. Development of parametrical metamaterial structures
  - A2.1. Design of metamaterial structures based on Kelvin cells
  - A2.2. Design of metamaterial structures with hollow sphere cells
03. Numerical evaluation of the mechanical properties of the developed metamaterial structures
  - A3.1. Determination of the mechanical properties of the polymers used in rapid prototyping
  - A3.2. Evaluation of the static mechanical properties of the developed structures
  - A3.3. Evaluation of the impact and energy absorption properties of the developed structures
  - A3.4. Optimization of metamaterial structures

- 04. Manufacturing of metamaterial structures
  - A4.1. Parameter adjustment for structure manufacturing through rapid prototyping
  - A4.2. Manufacturing of designed structures through additive rapid prototyping
- 05. Experimental determination of the mechanical characteristics of the manufactured structures
  - A5.1. Elaboration of static tests in compression on the manufactured structures
  - A5.2. Elaboration of static tests in bending on the manufactured structures
  - A5.3. Elaboration of fatigue tests in compression on the manufactured structures
  - A5.4. Elaboration of impact tests on the manufactured structures
- 06. Structure validation and product component design
  - A6.1. Comparison of results and simulation optimization
  - A6.2. Design of safety equipment components based on metamaterial structures
  - A6.3. Numerical analysis of the designed components' behavior in impact applications

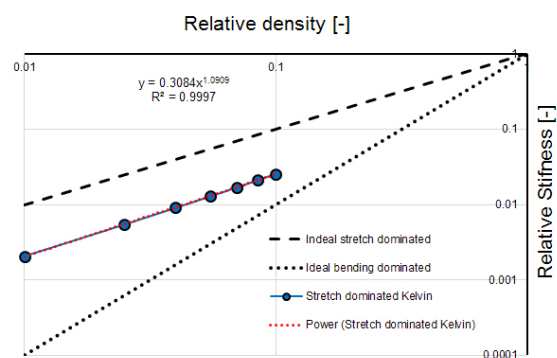
## Results:

After the first year of implementation, several structures were generated, and the variation of relative stiffness with the structure parameters was investigated.



The geometries were imported into a finite element analysis software and the relative stiffness and relative strength variation with relative density was determined.

Partial results were published in an article entitled "A parametric study of the mechanical properties of open-cell Kelvin structures" and presented at the international conference AMS18



## Applicability and transferability of the results:

The results obtained from this project can be implemented in safety equipment, for various types of industries, such as civil engineering (helmets), sports (protective equipment such as helmets, shin guards, padding), automotive (motorcycle suits) and defense (body and vehicle armor)

## Financed through/by

UEFISCDI

Programul 1 - Dezvoltarea sistemului național de cercetare-dezvoltare

## Research Center

1. Laboratorul Ștefan Nădășan, Politehnica University Timișoara
2. Medical Engineering Research Center, Politehnica University Timișoara
3. ICER - Research Institute for Renewable Energy, Politehnica University Timișoara

## Research team

- Eng. Dan-Andrei ȘERBAN, PhD
- Prof. Eng. Nicolae FAUR, PhD

## Contact information

Eng. Dan-Andrei ȘERBAN, PhD  
 Faculty of Mechanical Engineering  
 Department of Mechanics and Strength of Materials,  
 Address: 1 Miei Viteazu Blvd., Postal Code 300222, Timișoara  
 Phone: (+40) 256 403 741  
 Mobile: (+40) 721 866 598  
 E-mail: dan.serban@upt.ro  
 Web: <http://www.dserban.com/PD13-2018/>

## SMART BUILDINGS ADAPTABLE TO THE CLIMATE CHANGE EFFECTS (CIA\_CLIM)

### Goal of the project

The specific objective of the project is centred on the increase of energy efficiency of buildings, by using smart facades with low-thermal transfer and smart energy efficiency through building automatization and solar energy collectors, through a modular laboratory demonstrative application. The resulted system, the smart house, is conceived thus to minimize the input energy for maintenance.

### Short description of the project

The four component projects are focusing on two principal research directions:

- (i) use of smart facades with the low-thermal transfer, actively integrated for the enhancement of internal comfort and possessing a passive control of energy and
- (ii) smart energy efficiency through building automatization and solar energy collectors.



### Project implemented by

Politehnica University of Timișoara as coordinator (CO), in collaboration with

- Technical University of Civil Engineering of Bucharest (UTCB, P1),
- Technical University of Cluj-Napoca (UTCN, P2),
- National Institute for R & D in Electrical Engineering Bucharest (ICPE – CA, P3) and
- National Institute of R & D for Electrochemistry and Condensed Matter Timișoara (INCEMC, P4)

### Implementation period

01.03.2018 – 30.06.2021

### Main activities

*Project 1* investigates the mechanical properties of cellular materials used as thermal insulations in smart façade systems, through mechanical compression, bending and toughness fracture testing.

*Project 2* is focused on obtaining, characterizing and testing of high-property materials used for smart facades as thermal insulation materials and as support for special property layers: photo-catalytic layers and with reduced absorption/reflexion of UV-VIS-IR radiation.

*Project 3* investigates the implementation of the electric power distribution in direct current for individual households or in small communities (smart-grid), with renewable energy sources integration.

*Project 4* implements the knowledge and data resulted from projects no. 1-3 through a modular laboratory demonstrative application. The project will perform an integrated study on the influence of the facades and the energetic contribution to the internal comfort of the building.

### Results

- Determination of mechanical properties of cellular materials used as thermal insulations in smart façade systems;
- Production, characterization and testing of high-property materials used for smart facades as thermal insulation materials and as support for special property layers;
- Implementation of the electric power distribution in direct current for individual households or in small communities (smart-grid), with renewable energy sources integration, finalizing with an experimental platform;
- Modular laboratory demonstrative application for the implementation of project results, performing a global study regarding the influence of the facades and the energetic contribution to the internal comfort of the building.



## Applicability and transferability of the results

In the construction domain, the energy represents the key-point in achieving efficient buildings. All the results obtained in the frame of the project are expected to be of interest for the economic environment, from manufacturers to contractors. Design guidelines and recommendations will be provided.

## Financed through/by

The project is supported by a grant of the Executive Unit for Financing Higher Education, Research, Development and Innovation (UEFISCDI), project number PN-III-P1-1.2-PCCDI-2017-0391 / grant agreement 30PCCDI/2018.

## Research Centre

- ICER – The Research Institute for Renewable Energy, UPT (CO);
- “St. Nadasan” Research Laboratory for Strength, Integrity and Durability of materials, structures and conductors, UPT (CO);
- Research Center of Environmental Science and Engineering, UPT (CO);
- Intelligent Control of Energy Conversion and Storage Research Center, UPT (CO);
- ACTEX – Integrated Platform of Research and Development for the Behaviour of Structures under Extreme Actions, UPT (CO);
- CAMBI – Advanced Research Center for Ambiantal Quality and Building Physics, UTCB (P1);
- EEC – Energy Efficiency in Buildings, UTCB (P1);
- RLSDEPE – Research Laboratory and Sustainable Development in Electronics and Power Electronics, UTCN (P2);
- Department for Efficiency in Conversion and Consumption of Energy, ICPE – CA (P3);
- Renewable Energies – Photovoltaics – Laboratory, INCEMC (P4);
- Chemical and Electrochemical Synthesis Department, INCEMC (P4).

## Research team

The research team is composed by 90 researchers of the five institutions.

## Contact information

Prof. Viorel UNGUREANU, PhD  
Faculty of Civil Engineering  
Department of Steel Structures and Structural Mechanics  
Address: Str. Ioan Curea, No. 1, 300224, Timișoara  
Phone: (+40) 256 403912  
Mobile: (+40) 740 137640  
E-mail: viorel.ungureanu@upt.ro  
Web: <https://www.icer.ro/cercetare/proiecte-de-cercetare/cia-clim>

## DATASET AND IMAGE DEHAZING TECHNIQUES FOR HIGHLY DISTORTED HAZY SCENES

### Goal of the project

The main objective of this project is to design effective image dehazing techniques but also an image interpretation framework that are robust to haze, including the challenging cases where the sources of light and impairment are non-uniformly distributed over the scene. As a federating objective, our project aims at implementing dehazing methods that are suited to dense and non-homogeneous hazy scenes.

### Short description of the project

This project aims to build up an image dataset including pairs of hazy and haze-free scenes, for which hazy scenes include real, dense, and non-homogeneous haze and to develop several image dehazing techniques.

### Implementation period

1.11.2020- 30.10.2022

### Financed through/by

UEFISCDI

### Research team

- Codruta Ancuti
- Kis Arpad
- Cosmin Ancuti

### Contact information

Conf. Codruta ANCUTĂ  
Universitatea Politehnica Timișoara  
Facultatea de Electronică, Telecomunicații și Tehnologii  
Informaționale, B312  
2 Vasile Parvan Blvd., 300223, Timișoara, Romania  
Tel: (+40)-0256-403364  
Fax: (+40)-0256-403295  
E-mail: codruta-o.ancuti@upt.ro



# International Research Projects

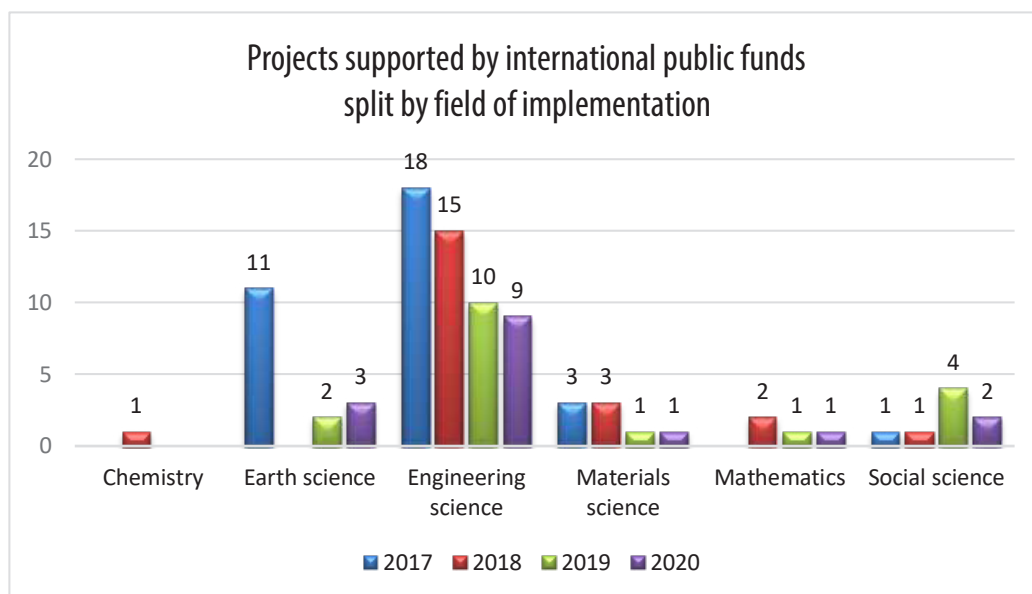
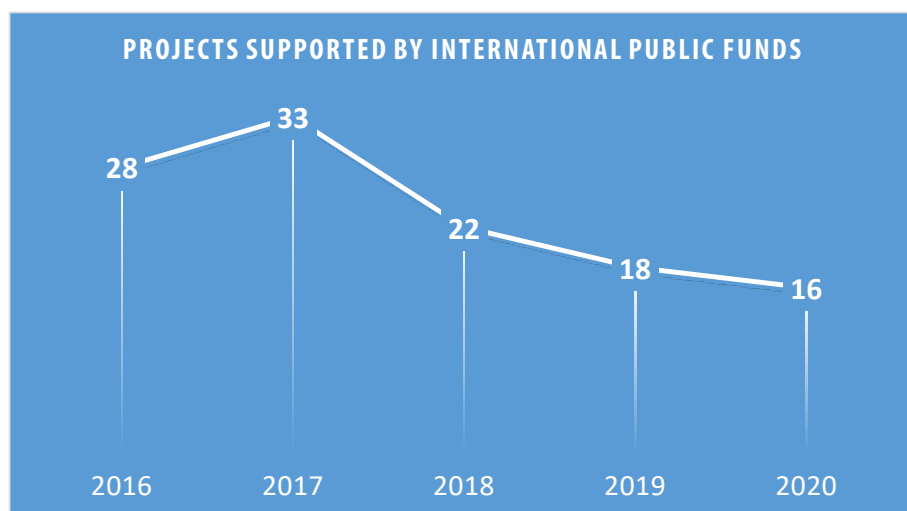


## PROJECTS SUPPORTED BY INTERNATIONAL PUBLIC FUNDS IMPLEMENTED BY UPT 2020

Field	Total number of projects	Number of projects presented
Earth science	3	-
Engineering science	9	6
Materials science	1	1
Mathematics	1	1
Social science	2	2
<b>Total</b>	<b>16</b>	<b>10</b>



## EVOLUTION OF PROJECTS SUPPORTED BY INTERNATIONAL PUBLIC FUNDS IMPLEMENTED BY UPT 2016 - 2020





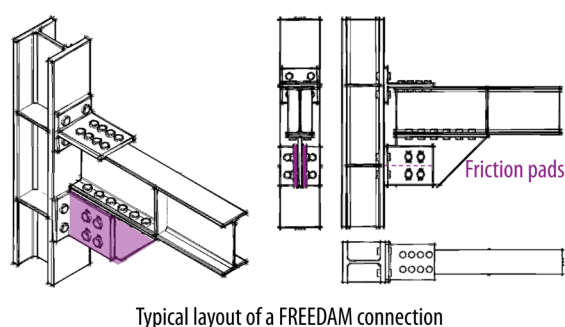
## VALORISATION OF KNOWLEDGE FOR FREE FROM DAMAGE STEEL CONNECTIONS (FREEDAM-PLUS)

### Goal of the project

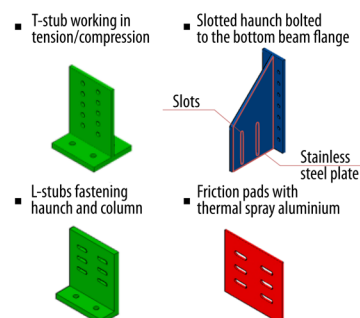
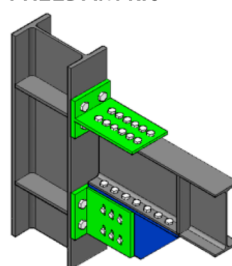
The project aimed at valorisation, dissemination and extension of the results of previous investigations regarding the design and testing of innovative connections equipped with friction dampers able to withstand without any damage severe seismic events, to a wide audience of academic institutions, engineers and architects, construction companies, and steel producers by producing informative documents, design guidelines and organizing seminars, webinars and workshops.

### Short description of the project

The project developed design guidelines for innovative connections equipped with friction dampers.



### FREEDAM kit



### Project implemented by

- Università degli Studi di Salerno (UNISA)
- Università degli Studi di Napoli Federico II (UNINA)
- Université de Liège (ULIEGE)
- Universidade de Coimbra (UC)
- Universitatea Politehnica Timișoara (UPT)
- Convention Européenne de la Construction Metallique ASBL (ECCS)
- National Technical University of Athens (NTUA)
- České Vysoké Učení Technické v Praze (CVUT)
- Institut National des Sciences Appliquées de Rennes (INSA RENNES)
- Technische Universiteit Delft (TU DELFT)
- Univerza v Ljubljani (UL)
- Universitet po Arhitektura Stroitelstvo i Geodezija (UASG)
- Universitat Politecnica de Catalunya (UPC)
- Rheinisch-Westfälische Technische Hochschule Aachen (RWTH AACHEN)

### Implementation period

01/07/2020-30/06/2022

### Main activities

- Development and translation of the informative documents concerning the connections equipped with friction dampers, from English into 12 additional languages.
- Development of pre-normative design recommendations on FREEDAM connections.
- Development of a design handbook for building structures equipped with FREEDAM connections.
- Software and mobile app development, allowing to select prequalified solutions from FREEDAM standardised connections.
- Organization of seminars, webinars and workshops for disseminating the gained knowledge in EU, EU associated and non-EU Countries.
- Development of a web site with free access to the users in order to promote the obtained results.
- Preparation of videos about the benefits of FREEDAM solutions, for an You-Tube channel.

## Results

The pre-normative design recommendations for the seismic resistant steel beam-to-column joints equipped with FREEDAM devices are being considered for the implementation in the next version of the European seismic design code.

Additionally, the set of technological and constructional requirements within EN 1090-2 suitable for friction devices will be produced. Informative material concerning the connections equipped with friction dampers will be prepared in 12 languages to reach not only academic and scientific communities but mostly structural engineers and architects, construction companies, steel producers, providing them with all available tools (design and manufacture guidelines, codified design procedures, software and mobile app tools for practitioners, website, YouTube channel, etc.).

## Financed through/by

Research Fund for Coal and Steel  
Grant agreement RFCS-02-2019  
Project number 899321

## Research Centre

The Research Centre for Mechanics of Materials and Structural Safety  
— CEMSIG

## Applicability and transferability of the results

- Use of the design guidelines with simplified procedures for designing steel beam-to-column connections equipped with friction dampers, which could significantly reduce seismic damages. The produced design recommendation and criteria will be used in setting up limits of applicability between EN 1993:1-8 and EN 1998-1 concerning the design of seismic resistant steel beam-to-column joints equipped with FREEDAM device.
- Increased structural safety against the seismic hazard in large parts of Europe.
- Improvement in life cycle costs and sustainability due to the reduction of losses caused by seismic hazards.

## Research Team

- Acad. Dan DUBINA
- Prof. Aurel STRATAN
- PhD student Anna PRODAN

## Contact information

Acad. Dan DUBINA  
Faculty of Civil Engineering / Department of Steel Structures and Structural Mechanics: Ioan Curea Street No.1, 300224, Timisoara  
Phone: (+40) 256 403 911  
Mobile: (+40) 740 137 610  
E-mail: dan.dubina@upt.ro

## PROVISIONS FOR GREATER REUSE OF STEEL STRUCTURES - PROGRESS

### Goal of the project

The PROGRESS project will provide methodologies, tools and recommendations on reusing steel-based components from existing and planned buildings. The project particularly targets the design for deconstruction and reuse of envelopes, load-bearing frames, trusses and secondary elements of single-storey buildings framed in steel. This building type has broad applicability as industrial, commercial, sports, exhibition, warehouse facilities, and shows most potential in suitability for reuse and viability for circular economy business models. The whole life benefits of reusable single-storey steel buildings will be quantified from environmental and economic viewpoints. The outcomes will be extensively disseminated in particular among manufacturers, designers, contractors and researchers.



### Short description of the project

The main objective of the proposal is to develop products, systems, methods and protocols that facilitate reuse of various components of steel-framed single-storey buildings. The proposed project addresses both deconstruction and reuse of existing buildings and how new buildings can be designed, constructed and documented to facilitate future reuse. Its scope includes: (a) primary structures (frames), (b) secondary structures, (c) envelope components and hybrid multi-material systems.

### Project implemented by

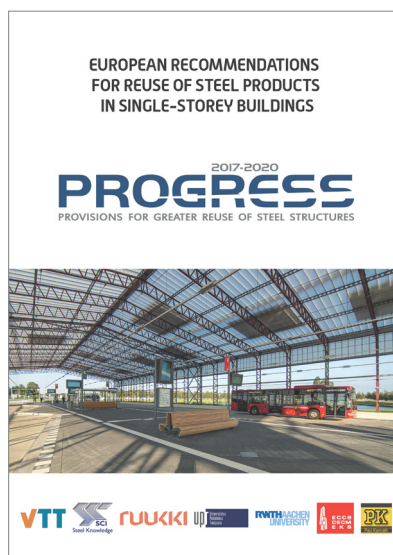
VTT Technical Research Centre of Finland Ltd., (VTT, Finland)

### Implementation period

01.06.2017-30.05.2020

### Main activities

- review of the experiences from the successful reuse and deconstruction projects collected by the project partners and from the practitioners in the building industry;
- propose methods for the assessment of suitability of materials and elements for the reuse, including recommendations for their modification/adaptation to fit in the new design;
- propose technical recommendations for the increase of reusability of the components to be provided on component and building design levels.
- propose novel hybrid solutions for envelopes of single-storey buildings, either new buildings or renovation projects, that improves the thermal performance of the entire building, service life of envelopes and reusability of solutions themselves;
- propose a methodology to quantify and declare the environmental benefits of reused elements, resulting in recommendations on the circularity and LCA methodology;
- provide benchmark for demolition, classification and testing/verification protocols developed on a real deconstructed building including the laboratory tests to identify mechanical and chemical properties of the materials;
- design case studies to cover the most common reuse situations.



## Results

The outcomes of the project will include recommendations to:

- Reduce the technical barriers to reuse through establishing the quality verification procedures for the structural elements and envelopes of deconstructed low-rise buildings to be reused;
- Simplify the implementation of reusable components through recommendations for design for deconstruction and reuse, and for design using reclaimed elements as well as for safe and efficient deconstruction activities;
- Support the product manufacturers', facility owners' and designers' decision making by recommended methodology to calculate the environmental impact and cost of steel components reusing;
- Develop an online reused steel trading portal to co-ordinate the supply and demand for reused steel-based components;
- Develop novel types of hybrid solutions for envelopes in order to improve the thermal performance of a building, extend the service life of an envelope and maximize the reuse potential of components.

## Financed through/by

Research Fund for Coal and Steel, EU, grant agreement No 747847

## Research Centre

Research Center for Mechanics of Materials and Structural Safety (CEMSIG), Politehnica University of Timișoara

## Applicability and transferability of the results

The majority of existing steel low-rise buildings can be deconstructed into elements such as cold-formed or hot-rolled sections, sheets, panels, frames or truss girders. These components have very high reuse potential, but require verification of the material quality, dimensions and tolerances in order to be included in new building projects. The future reuse of modern buildings, however, may be different, because those structures are increasingly designed as systems and their design information can be easily maintained for instance as a building information model (BIM).

## Research team

- VTT Technical Research Centre of Finland Ltd., (VTT, Finland)
- Steel Construction Institute (SCI, UK)
- Ruukki Construction Oy (Ruukki, Finland)
- RWTH Aachen University (RWTH, Germany)
- Universitatea Politehnica Timișoara (UPT, Romania)
- European Convention for Constructional Steelwork (ECCS, Belgium)
- Paul Kamrath Ingenieurrückbau GmbH (PKIR, Germany)

## Contact information

Acad. Dan DUBINA, PhD  
Faculty of Civil Engineering / Department of Steel Structures and Structural Mechanics  
Phone: (+40) 256 403920  
Mobile: (+40) 740 137610  
E-mail: dan.dubina@upt.ro  
Web: www.ct.upt.ro

Prof. Viorel UNGUREANU, PhD  
Faculty of Civil Engineering / Department of Steel Structures and Structural Mechanics  
Research Institute for Renewable Energy (ICER-TM)  
Address: Str. Ioan Cărea, No. 1, 300224, Timișoara  
Phone: (+40) 256 403912  
Mobile: (+40) 740 137640  
E-mail: viorel.ungureanu@upt.ro  
Web: www.ct.upt.ro

## EASTERN EUROPEAN TWINNING ON STRUCTURAL INTEGRITY AND RELIABILITY OF ADVANCED MATERIALS OBTAINED THROUGH ADDITIVE MANUFACTURING (SIRAMM)

### Goal of the project

The overall goal of the SIRAMM project is to significantly strengthen research in the Additive Manufacturing (AM) field at the University Politehnica Timisoara. To achieve this aim, SIRAMM will build upon the existing science and innovation base of UPT, creating a network with two internationally-leading counterparts at EU level: Norwegian University of Science and Technology (Norway) and the University of Parma (Italy).

### Project objectives

- In the long term, the project aims at laying the foundations for creating a pole of excellence on AM in Eastern Europe. For this reason, other two partners from low R&I performing countries, the University of Belgrade (Serbia) and the Institute of Physics of Materials, Academy of Sciences (Czech Republic) will also take part in this Twinning project.
- To reach its goals, this 3-year project will be focused on the implementation of knowledge transfer activities such as workshops and staff exchange, training events (i.e. summer schools, seminars) for early stage researchers, and dissemination and communication actions (i.e. web site, videos, open access publications, public engagement activities) for different audiences. To keep maintaining the knowledge transfer well beyond the duration.

### Implementation period

01.10.2019 – 30.09.2022

(project was suspended due to COVID between 15.04.2020 – 14.10.2020)

### Results

- Increased research excellence of the coordinating institution and the other widening partners,
- Enhanced reputation, attractiveness and networking channels of the partners,
- Training and professional development of a new generation of scholars,
- Growth of industrial sector,
- Increasing awareness in the general public.

### Publications

#### Journal Papers:

- Marsavina, L., Linul, E. (2020). Fracture toughness of rigid polymeric foams: A review. *Fat. & Fract. of Eng. Mat. & Struct.*, 43, 2483-2514.
- Brighenti, R., Li, Y., Vernerey, F.J. (2020). Smart polymers for advanced applications: a mechanical perspective review. *Frontiers in Materials*, 7(196), 1-18.
- Linul, E., Marsavina, L., Stoia, D. I. (2020). Mode I and II fracture toughness investigation of Laser-Sintered Polyamide. *Theoretical and Applied Fracture Mechanics*, 106, 102497.
- Stoia, D. I., Marsavina, L., Linul, E. (2020). Mode I Fracture Toughness of Polyamide and Alumide Samples obtained by Selective Laser Sintering Additive Process. *Polymers*, 12(3), 640.

#### Conference Papers:

- Valean, C., Marsavina, L., Mihai, M., Luinul, E., Razavi, J., Berto, F. (2020). Effect of manufacturing parameters on tensile properties of FDM printed specimens. *Structural Integrity Procedia*, 26, 313-320.
- Galatanu, S-V., Scano, M., Pietras, D., Pirvulescu, L-D., Porcu, M.C., Marsavina, L., Sadowski, T. (2020). Bending behavior of AM50 Magnesium alloy under static and dynamic loading. *Structural Integrity Procedia*, 26, 269-276.
- Milovanović A., Sedmak A., Grbović A., Milosević M., Golubović Z. (2020) Influence of second-phase particles on fracture behaviour of pla and advanced pla-x material. In: 4th International Conference on Structural Integrity and Durability, September 15 - 18, 2020, Dubrovnik, Croatia.

- Milovanović A., Sedmak A., Grbović A., Golubović Z., Mladenović G., Čolić K., Milosević M. (2020) Comparative analysis of printing parameters effect on mechanical properties of natural PLA and advanced PLA-X material. 1st Virtual European Conference on Fracture (VECF1), Procedia Structural Integrity, 28, 1963–1968.
- Vălean C., Marsavina L., Marghitas M., Linul E., Berto F., Razavi J., Brighenti R. (2020) The effect of crack insertion in FDM printed PLA materials on Mode I and Mode II fracture toughness. 1st Virtual European Conference on Fracture (VECF1), Procedia Structural Integrity, 28, 1134–1139.

## Financed through/by

European Commission, H2020-WIDESPREAD-2018-03 (action: CSA) under the grant agreement No. 857124



## Research centre

"St. Nadasan" Research Laboratory for Strength, Integrity and Durability of materials, structures and conductors.

## Research team

1. Coordinator: University Politehnica Timisoara (UPT), Romania
2. Faculty of Mechanical Engineering, University of Belgrade (UBG), Serbia
3. Institute of Physics of Materials, Academy of Sciences of the Czech Republic (IPM), Czech Republic
4. University of Parma (UniPR), Italy
5. Norwegian Univ. of Science and Technology (NTNU), Norway



## Contact information

Prof. Liviu MARSAVINA, PhD  
 Department Mechanics and Strength of Materials  
 Address: Blvd. M. Viteazu, No.1, 300222, Timisoara, Romania  
 Phone: (+40) 256 403577  
 Mobile: (+40) 726 397635  
 E-mail: liviu.marsavina@upt.ro  
 Web: <http://www.siramm.unipr.it/>

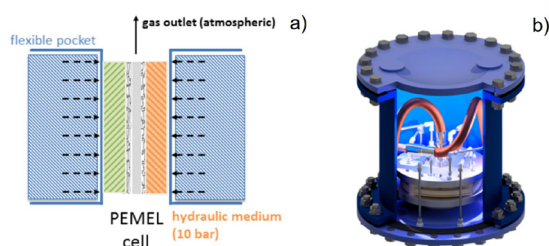
## NOVEL MODULAR STACK DESIGN FOR HIGH PRESSURE PEM WATER ELECTROLYZER TECHNOLOGY WITH WIDE OPERATION RANGE AND REDUCED COST (PRETZEL)

### Goal of the project

Green hydrogen produced by electrolysis might become a key energy carrier for the implementation of renewable energy as a cross-sectional connection between the energy sector, industry and mobility. Proton exchange membrane electrolyzer (PEMEL) is the preferred technology for this purpose, still costs, efficiency, lifetime and operability need to be optimized. The aim of PRETZEL project is to develop a new PEMEL that provides significant improvements in efficiency and operability to satisfy emerging market requirements.

### Short description of the project

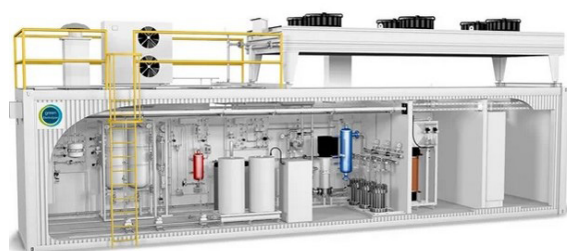
The central objective of PRETZEL is to develop a new PEMEL for hydrogen production, upscaling a patented design approach based on hydraulic cell compression.



Principle of homogeneous hydraulic cell compression (a) and stack design for hydraulic compression (b).

The system will operate with a maximum energy consumption of 25 kWh, with a production capacity of 4.5 m<sup>3</sup> H<sub>2</sub> / h at rated power, at a pressure of 100 bar and water temperature of 90°C.

All subsystems needed to properly operate a PEMEL stack will be integrated in a housing, equipped with a hydrogen detection and ventilation system.



Schematic drawing of a PEMEL system as container solution by iGas energy.

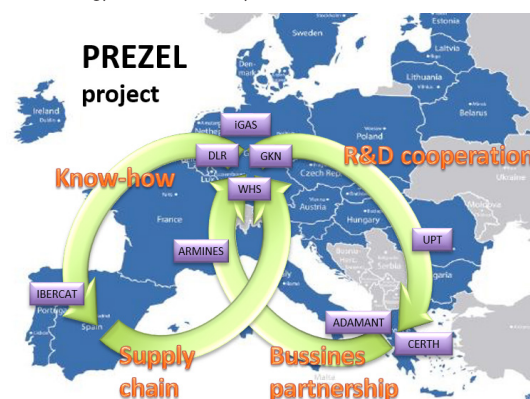
### Project implemented by:

#### Project Coordinator:

- German Aerospace Center, Stuttgart, Germany (DLR)

### EU Partners:

- Westphalian University of Applied Sciences, Germany (WHS)
- Association for Research and Development of Industrial Methods and Processes, France (ARMINES)
- Politehnica University Timișoara, Romania (UPT)
- Adamant Composites Ltd., Greece
- GKN Sinter Metals Engineering GmbH, Germany (GKN)
- Centre for Research and Technology Hellas, Greece (CERTH)
- Soluciones Catalíticas IBERCAT, Spain
- iGas energy GmbH, Germany



"PRETZEL"-like shape passing over the geographical location of all PRETZEL partners representing the long-term collaboration in know-how, supply chain, business partnership and R&D.

### Implementation period

01.01.2018 – 31.12.2020

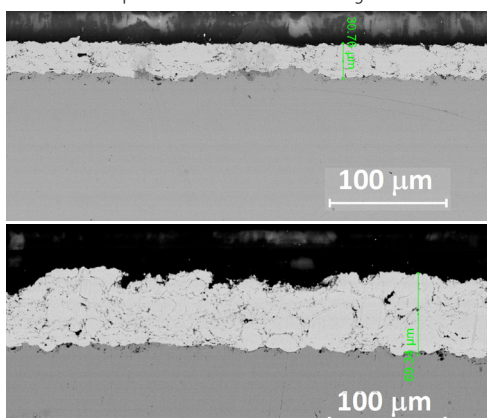
### Main activities

UPT's main activities in PRETZEL are the investigation of newly developed bipolar plates (BPP), as cost-efficient alternative for the classical titanium BPP, consisting of highly corrosion resistant Nb-coatings deposited by vacuum plasma spraying (VPS) on copper pole plates in regard of:

- **Corrosion resistance** evaluation in simulated PEMEL environment, at 90°C and O<sub>2</sub> saturated solution, including accelerated stress tests at constant potential of 2 V applied for 6 hours
- **Interfacial contact resistance (ICR)** versus compaction force measurement
- **Structure and morphology** of BPP before and after accelerated stress tests

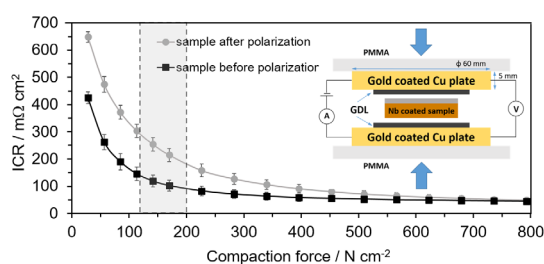
## Results

- A 30 µm thick Nb coating fully protects the copper substrate against corrosion in simulated PEMEL environment, showing excellent corrosion resistance properties, with  $i_{corr}$  lower than 0.1 µA cm<sup>-2</sup>.
- Cross-section images show no signs of corrosion, nor the formation of pinholes beneath the coating.



Cross section FE-SEM images of Nb-coatings after accelerated stress test.

- ICR decreases with compaction force up to 45 mΩ cm<sup>2</sup>. In the range of 120 to 200 N cm<sup>-2</sup>, which is the common pressure applied for assembling commercial PEM electrolyzer stacks, ICR decreases from 130 to 90 mΩ cm<sup>2</sup>.



Interfacial contact resistance at different compaction forces.

## Applicability and transferability of the results:

- **System:** Development and validation of a 25 kW PEM electrolyzer system with hydrogen output pressure of 100 bars or higher.
- **Cell components:** Reduction of Ir catalyst loading compared to the state-of-the-art, by the use of new aerogel supports.
- **Protocols:** development of complete protocols for BPP testing, including stress test, corrosion resistance and ICR.

## Financed through/by

Fuel Cell and Hydrogen 2 Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement No 779478.

## Research Centre

Research Institute for Renewable Energy (ICER-TM), UPT

## Research team

- Assoc. Prof. Andrea KELLENBERGER, PhD
- Prof. Nicolae VASZILCSIN, PhD
- Assoc. Prof. Narcis DUTEANU, PhD
- Assist. Prof. Mircea Laurentiu DAN, PhD
- Prof. Adina NEGREA, PhD
- M.Sc.Eng. Delia DUCA,
- Eng. Anuta SERAC

## Contact information

Prof. Andrea KELLENBERGER, PhD  
 Faculty of Industrial Chemistry and Environmental Engineering  
 Department of Applied Chemistry and Engineering of Inorganic Compounds and Environment  
 Bd. V. Parvan, No. 6, 300223, Timisoara  
 Phone: (+40) 256 404 178  
 Mobile: (+40) 726 448 966  
 E-mail: andrea.kellenberger@upt.ro  
 Web: <http://pretzel-electrolyzer.eu/>

## COMBINATORIAL DESIGN OF NOVEL BIPOLAR PLATE COATINGS FOR PROTON EXCHANGE MEMBRANE ELECTROLYZERS (CODE-PEM)

### Goal of the project



The CoDe-PEM project aims to contribute towards the development of affordable PEM electrolysis systems with the development of lower cost coating materials for bipolar plates and sinters. In order to lower the costs, a reduction in use of expensive materials and the introduction of new low(er) cost materials are key elements. In addition, new materials should allow for fast and low-cost manufacturing processes, such as stamping of BPP flow structures.

### Short description of the project

In order to achieve its goals, the CoDe-PEM Project will:

- Accelerate innovation research of novel coating compositions by the use of combinatorial exploration.
- Improve efficiency and reduce time of testing and characterisation of BPPs by the use of advanced electrolyser test cell
- Identify factors affecting the durability of BPP materials based on in situ experiments and post mortem failure analysis.
- Raise public awareness concerning the importance and advantages of using hydrogen based clean energy and the potential for growth in a healthy and sustainable economy.

### Project implemented by:

Politehnica University Timisoara, Romania  
SINTEF Industry, Norway

### Implementation period

2019–2023

### Main activities

- Coating development via combinatorial exploration
- Ex-situ characterization of coatings and coated substrates
- Bipolar plates design, testing and evaluation
- Dissemination and public awareness activities

### Results

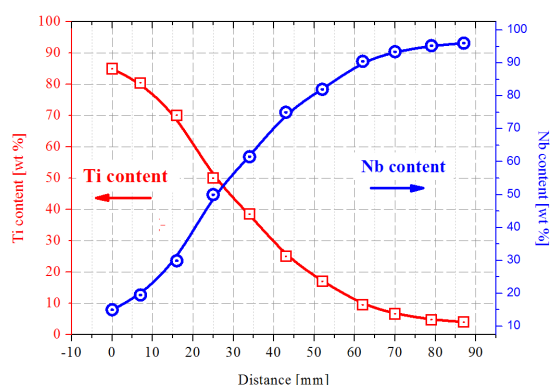
System for deposition of compositional spread libraries installed in Politehnica University Timisoara



Test cell developed in SINTEF



Compositional map of a binary library manufactured in Politehnica University Timisoara



Partner's meeting in SINTEF



## Applicability and transferability of the results:

. The technical solutions developed in the project have the potential to reduce the costs for hydrogen generated via proton exchange membrane electrolysis.

## Financed through/by

**Iceland  
Liechtenstein  
Norway grants**

*uefiscdi*  
Executive Agency for Higher  
Education, Research, Development  
and Innovation Funding

**EEA Grants 2014-2021**  
administered by UEFISCDI.

More information about EEA Grants can be found here:  
[www.eeagrants.org/](http://www.eeagrants.org/) and [www.eeagrants.ro](http://www.eeagrants.ro)

## Research Centre

### Politehnica University Timisoara:

- Combinatorial exploration group
- Fuel cell group

### SINTEF Industry:

- New energy solutions group
- Corrosion and tribology group

## Research team

### Politehnica University Timisoara:

- Prof. Corneliu M. CRACIUNESCU
- Prof. Nicolae VASZILCSIN
- Prof. Ion. MITELEA
- Conf. Aurel ERCUTA
- Conf. Andrea KELLENBERGER
- Lect. Mircea DAN
- Ph.D. student Delia DUCA
- Ph D. student Mihaela LABOSEL
- Ph D. student Vlad BOLOCAN
- Ph D. student Andrei NOVAC

### SINTEF Industry:

- Dr. Anders ØDEGÅRD
- Dr. Sigrid LÆDRE
- Dr. Alejandro OYARCE
- Eng. Ole E. KONGSTEIN
- Eng. Ann-Karin KVERNBRÅTEN

## Contact information

Prof. Corneliu CRACIUNESCU, PhD, Habil.  
Faculty of Mechanical Engineering Department Materials and  
Manufacturing Engineering  
Address: Bd. Mihai Viteazul, No. 1. 300026, Timisoara  
Phone: (+40) 256 403 655  
Mobile:  
E-mail: [corneliu.craciunescu@upt.ro](mailto:corneliu.craciunescu@upt.ro)  
Web: <https://www.sintef.no/projectweb/codepem//>

## PHOTOVOLTAIC SYSTEMS FOR IMPROVING THE ENERGY EFFICIENCY IN SOME PUBLIC BUILDINGS

### Goal of the project

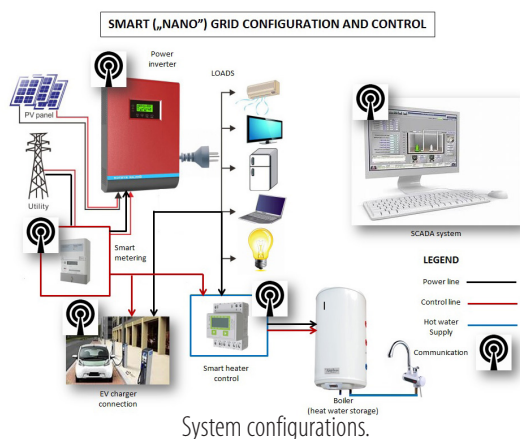
The goal of the project is the design and implementation of PV systems in public buildings in Ghironda town, including smart power monitoring (SCADA) for energy conversion evaluating and control, using "smart grid" technologies. The systems work without injection of energy in the power grid. The additional energy will be stored in domestic hot water or will be used to charge electric vehicles.

### Short description of the project

The project aims is to increase the capacity to deliver renewable energy, by integration of the PV systems, in order to reduce the power consumption from fossil fuels.

### Project implemented by:

The project Promoter is Ghironda City Hall, having as partners: POLITEHNICA University of Timișoara, Romania, and Western Norway Research Institute.



### Main activities

1. Power consumption measurements in each location for identifying the necessary electrical energy;
2. Dimensioning the installed power (peak power) of each PV system, according to the energy demands;
3. Dimensioning the storage (the installations for heat water production) for each location;
4. Integrating (design) "smart grid" technologies in order to maximize the efficiency, avoid the injection of electrical energy in the grid;
5. Integrating (design) smart power monitoring (SCADA) systems for evaluating and control the energy conversion, with a central unit and distributed automation;
6. Acquisition and installation of the PV system, including the automation and supervising elements;
7. Testing and monitoring the installations in order to obtain maximum efficiency and reliability;
8. Disseminating the results in workshops, with potential other beneficiaries, and in international conferences with compatible subjects.

### Results

- 8 PV systems with an installed PV capacity of 49 kWp, design and implementation;
- 60 MWh/year estimated PV electrical energy production;
- Annual CO<sub>2</sub> emission reduction estimated at 19.8 tons per year;
- Smart power monitoring and control of entire system using "smart grid" technologies;
- Life cycle assessment for all proposed solar energy harvesting installations.

### Implementation period

2019-2023

## Applicability and transferability of the results:

The project has an applicative purpose, through the integration of PV electrical energy production systems in some public buildings, in an “intelligent way”, using “smart grid” technologies.

The project can be an example of the transformation of a commune into a green energy pole as a compulsory and necessary measure for a consolidated economic development, minimizing the impact on the environment and implicitly increasing the quality of life of the inhabitants.

## Financed through/by

EEA and Norway Grants

## Research Centre

“Intelligent Control of Energy Conversion and Storage”, part of the “Research Institute for Renewable Energies”.

## Research team

- Prof. Nicolae MUNTEAN – UPT team leader;
- Assoc. Prof. Octavian CORNEA;
- Assoc. Prof. Ciprian ȘORANDARU;
- Assist. Prof. Dan HULEA
- Assist. Prof. Dănuț VITAN

## Contact information

Prof. Nicolae MUNTEAN, PhD  
Faculty of Electrical and Power Engineering  
Dept. of Electrical Engineering  
Str.V. Pârvan, No. 2 300223, Timisoara  
Phone: (+40) 256 403450  
Mobile: (+40) 744 636064  
E-mail: nicolae.muntean@upt.ro  
Web: www.et.upt.ro

## DANUBE URBAN BRAND + BUILDING REGIONAL AND LOCAL RESILIENCE THROUGH THE VALORIZATION OF DANUBE'S CULTURAL HERITAGE (DANURB+)

### Goal of the project

To stop socio-economic shrinkage DANURB+ creates a dense network of stakeholders and projects along the Danube implementing EUSDR actions in the peripheral and border regions along the river. The main objective is the capacity building for local stakeholders to enable them to cooperate locally and interregionally for the valorization of their Danube related heritage with local actions under a unified brand strong enough to increase local prosperity and international tourist attractiveness.

### Short description of the project

DANURB+ aims to reactivate underused cultural heritage and resources in shrinking settlements along the Danube.

### Project implemented by:

The partnership consists of 19 partners and 23 associated strategic partners from 6 countries: Hungary, Slovakia, Croatia, Bulgaria, Romania, and Serbia.



### Implementation period

01-07-2020 – 31-12-2022

### Main activities

As shrinking urban situations often entail the decay of the built environment, creating an economical vicious circle, the ambition of the project is to initiate 6 local physical interventions (building, public space) selected according to their potential positive effect on the whole urban development and in close collaboration with the local communities. The objective is to provide planning, technical measurement, and documentation, so that those pilot sites are ready for funding application. The project aims at the creation of a Quality Label, an enlarged Danube Cultural Promenade, an Atlas, audio guided tours, a documentary movie, and guidelines for educational programs to raise awareness of the local values.

### Results

A significant aspect is the creation of a database reflected in an Atlas of the Danube regions, focusing on settlements, culture and local values and conducting an analysis of local heritage with the potential to facilitate the development of the region. Also, together with partners, UPT will be the developer of a regional development strategy, complemented by local plans and technical documentation for a local objective, to access external financing.

### Applicability and transferability of the results:

As DANURB+ aims to reactivate underused cultural heritage to increase local prosperity and international tourist attractiveness in shrinking settlements its stakeholder network building framework and methodology are easily transferable to other cities in a similar situation.

## Financed through/by

Co-funded by the European Union through the Joint Secretariat of the Danube Transnational Programme

## Research team

- Conf. Dr. Arh. Ana-Maria BRANEA
- Conf. Dr. Arh. Marius GAMAN
- Sl. Dr. Arh. Gabriela DOMOKOS-PASCU
- Asist. Dr. Arh. Stefana BADESCU
- Asist. Drd. Arh. Mihai DANCIU
- Arh. Robert BUDAU
- Arh. Alexandru TODIRICA

## Contact information

Assoc. Prof. Ana-Maria BRANEA, PhD  
Faculty of Architecture and City Planning/Department of Architecture  
Address: Str.Traian Lalescu, No.2/A Postal Code 300223, Timisoara  
Phone: (+40) 256 404020  
Mobile: 0732154919  
E-mail: ana-maria.branea@upt.ro  
Web: <http://www.arh.upt.ro/>

## ENGAGED AND ENTREPRENEURIAL EUROPEAN UNIVERSITY AS DRIVER FOR EUROPEAN SMART AND SUSTAINABLE REGIONS (E<sup>3</sup>UDRES<sup>2</sup>)

### Goal of the project

E<sup>3</sup>UDRES<sup>2</sup> is a European Universities Consortium focusing on

- Co-Innovate Smart and Sustainable European Regions
- Co-Ideate a Future University for future-skilled learners
- Co-Create a European Multi-University Campus

E<sup>3</sup>UDRES<sup>2</sup> co-creates outstanding ideas and concepts for future universities for future-skilled learners, integrates challenge-based education, mission-oriented research, human-centred innovation as well as open and engaged knowledge exchange as interrelated core areas and establishes an exemplary multi-university campus across Europe.

# E<sup>3</sup>UDRES<sup>2</sup>

Engaged and Entrepreneurial European University as  
Driver for European Smart and Sustainable Regions

### Short description of the project

The project is one of the 41 consortiums selected for funding as part of the European Commission Initiative towards creating a number of European Universities.

### Implementation period

2020 - 2023

### Main activities

The E<sup>3</sup>UDRES<sup>2</sup> learning trajectory creates entrepreneurial and engaged professionals committed to designing and implementing the future roads of their regions. To be able to achieve this, E<sup>3</sup>UDRES<sup>2</sup> organises six I-Living Labs for educators and 30 I-Living Labs for learners of all ages and levels of prior knowledge. These I-Living Labs are divided into three categories addressing either the challenges linked to well-being & ageing, circular economy, or the role of the human being in an AI society.

E<sup>3</sup>UDRES<sup>2</sup> sees research and innovation as the most efficient educational tools to ensure that learners will be equipped with the future-proof hard, soft and innovation skills to fully participate and take responsibility in the "novel worlds" that our regions and Europe will become during the next decades: novel technologies, novel stakeholders, novel challenges, and novel societies will definitely emerge.

WP1: Management

WP2: Future Universities

WP3: Learners

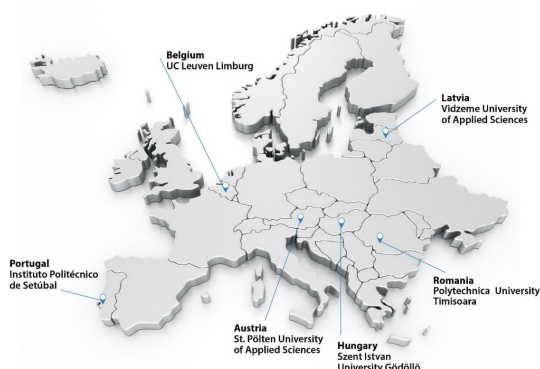
WP4: Researchers

WP5: Innovators and Entrepreneurs

WP6: Sustainability and Dissemination

### Project implemented by:

- University of Applied Sciences St. Polten, Austria
- Politehnica University of Timișoara, Romania
- Polytechnic Institute of Setúbal, Portugal
- Szent Istvan University Godollo Hungary
- University College Limburg, Belgium
- Vidzemes University, Latvia



## Results

- Scenarios for a future university, as vision for 2030
- E<sup>3</sup>UDRES<sup>2</sup> 2030 Blueprint (Vision for the University of the Future)
- I-Living Labs: Educators for the future (development of 36 transnational I-Living Labs)
- Creation of 3 Research & Development Innovative (R&Di) networks: circular economy, well being & active ageing, human contributions to AI
- Knowledge Exchange Strategy on Innovation for Smart and Sustainable Regions
- Empower Regional Innovation Ecosystems
- Science Engagement
- Open Access
- Annual E<sup>3</sup>UDRES<sup>2</sup> conferences and workshops
- Long-term strategy for sustainability of the alliance

## Applicability and transferability of the results:

E<sup>3</sup>UDRES<sup>2</sup> promotes the development of small and medium-sized cities and their rural environments into smart and sustainable regions and shapes a prosperous future with the best possible quality of life for a self-determined people in a progressive European society. The project aims to develop further co-operation applications under Horizon Europe, Erasmus+ KA2, Marie Curie doctoral consortiums and other international funded calls.

## Financed through/by

European Commission, EPP-EUR-UNIV-2020

## Research team

- Florin Dragan, PhD
- Radu VasIU, PhD
- Liviu Marsavina, PhD
- Radu Emil Precup, PhD
- Daniel Dan, PhD
- Diana Andone, PhD
- Alexandru Iovanovici, PhD
- Razvan Bogdan, PhD
- Attila Simo, PhD
- Valentin Ciupe, PhD
- Nicolae Muntean, PhD
- Sergiu Galatanu, PhD
- Mihaela Crisan-Vida, PhD
- Alin Totorean, PhD
- Calin Adrian Popa, PhD
- Claudiu Albulescu, PhD
- Flaviu Frigura, PhD
- Victoria Cocota
- Alexandru Iliescu, student
- Mihai Mutiu, external advisor
- Florin Ciocan, external advisor

## Contact information

Prof. Radu VASIU, PhD  
Department of Communications  
Address: Pta. Victoriei, nr. 2, 300006 Timisoara  
Phone: (+40) 256 403324  
Mobile: (+40) 722 516555  
E-mail: radu.vasiu@upt.ro

## MITIGATION OF THE RISK OF PROGRESSIVE COLLAPSE IN STEEL AND COMPOSITE BUILDING FRAMES UNDER EXCEPTIONAL EVENTS (FAILNOMORE)

### Goal of the project

Recent events such as natural catastrophes or terrorism attacks have highlighted the necessity to ensure the structural integrity of buildings under exceptional events so as to mitigate the risk of progressive collapse; the main objective being to save lives (occupants and members of emergency services) and to reduce collateral effects.

The overall objective of the project is the preparation of scientific background material, derivation of design guidelines, preparation of study cases and production of dissemination materials (design manual, PowerPoint presentations). The manual can be considered as a reference document for the practical design of structures for which the structural integrity has to be ensured under exceptional events.

### Project implemented by

The project is implemented by a partnership of 14 European Universities and Industrial partners:

- Université de Liège (coordinator);
- Universidade De Coimbra;
- Imperial College of Science Technology and Medicine;
- Universität Stuttgart;
- Università Degli Studi Di Trento;
- Politehnica University Timisoara;
- Ceske Vysoke Ucení Technické V Praze;
- Politechnika Rzeszowska Im Ignacego Lukasiewicza Prz;
- Technische Universiteit Delft;
- Universitat Politècnica De Catalunya;
- Institut National Des Sciences Appliquées De Rennes;
- Convention Européenne De La Construction Metallique Asbl;
- Feldmann + Weyand GmbH;
- ArcelorMittal Belval & Differdange Sa.



### Implementation period

2020 – 2022

### Short description of the project

The proposed project, which involves European centers of expertise in the area of robustness, brings together extensive knowledge acquired on various related aspects, i.e. risk analysis, loading scenarios, mechanical responses of structures, and components subject to extreme loading conditions such as impact, earthquake and explosions.

### Main activities

#### WP1: Development of a consistent design approach for robustness

- Collection of all relevant information documents available worldwide on all the relevant “robustness” and accidental loading events issues (Fig. 1, Fig. 2);

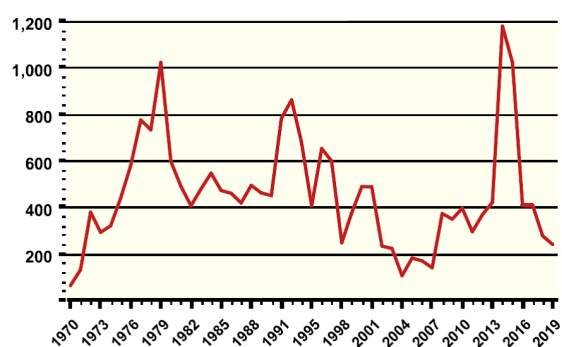


Fig. 1 Occurrence of explosions associated with terrorist attacks between 1970 and 2019 in Europe (GTD, 2019)



Fig. 2 Accidental explosion produced by improper storage of large quantities of ammonium nitrate, Beirut, August 2020

- Integration of the knowledge based on different research works into a full-consistent design approach for robustness.

## WP2: Derivation of design guidelines, application to study cases and preparation of the dissemination material (English version)

- Drafting of a fully-consistent set of up-to-date and practice-orientated design recommendations;
- The applicability will be demonstrated through the preparation of four worked examples.

## WP3: Translation and editing of the dissemination material

- Translation of deliverables in 9 other European languages.

## WP4: Dissemination activities

- Organization of training workshop
- Organization of post-project dissemination

## Results

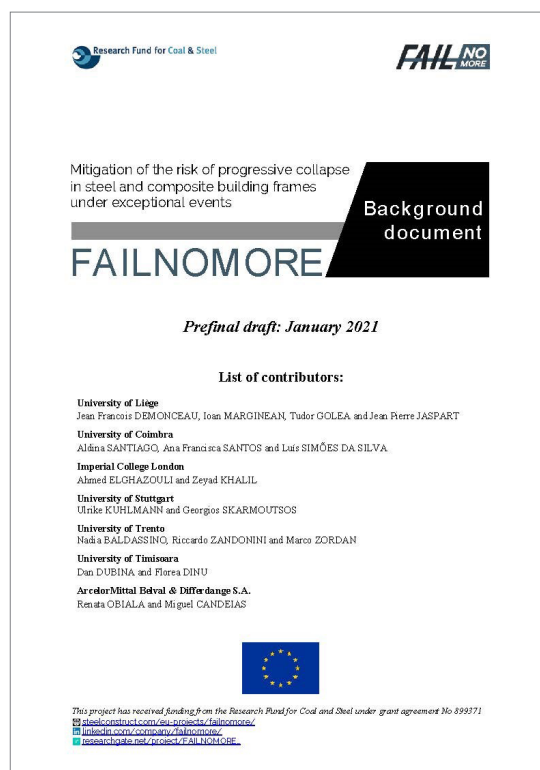
### Comprehensive overview of the project and preparation of the technical background material

- Collection of worldwide reports of ongoing and recently-finalized research projects related to structural robustness;
- Codes and recommendations related to risk analysis, definition of scenarios, design guidelines, local response of structural elements under impact and blast, global response of buildings following a local damage, possibly including dynamic effects.

### Development of a consistent design approach for robustness of steel and composite buildings

A fully consistent and scientifically founded design approach including the general philosophy and the design models was developed.

A complete scientific background document was drafted. The document will be used as a reference for the preparation of the design guidelines.



## Applicability and transferability of the results

The derivation of a full consistent set of practice orientated design guidelines and relevant worked examples are useful tools for construction professionals including designers, fabricators and control officers, within a clear and easy-to-apply format.

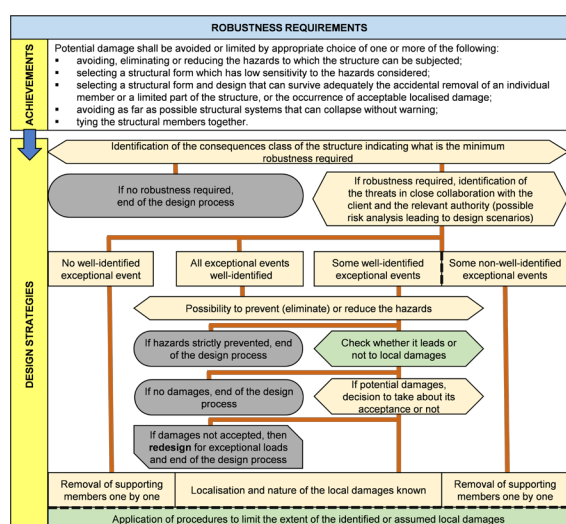


Fig. 3 General flowchart of the design process

## Financed through/by

Research Fund for Coal and Steel: Grant agreement number RFCS 899371 / 2020, European Union.

## Research Centre

The Research Center for Mechanics of Materials and Structural Safety  
- CEMSIG

## Research team

- Prof.dr.ing. Dan DUBINA, member of the Romanian Academy (Responsible from UPT)
- Prof.dr.ing. Florea DINU
- SL.dr.ing. Ioan MARGINEAN
- Drd.ing. Dominiq JAKAB

## Contact information

Prof. Dan DUBINA, PhD  
Faculty of Civil Engineering, Department of Steel Structures and Structural Mechanics CMMC, Str. Ioan Curea, No. 1, 300224, Timisoara  
Phone: (+40) 256 403 917  
Mobile: (+40) 740 137 610  
E-mail: dan.dubina@upt.ro  
Web: <https://www.ct.upt.ro/centre/cemsg/safe-wall.htm>

## CONTRIBUTIONS TO CODIMENSION $k$ BIFURCATIONS IN DYNAMICAL SYSTEMS THEORY

### Goal of the project

The overall project objectives are to produce new knowledge in the area of codim  $k$  bifurcations for continuous and discrete (smooth and non-smooth) dynamical systems and provide training in this area of research to early stage researchers.

### Short description of the project

The project objectives are planned to be achieved during secondments.

### Project implemented by

1. Politehnica University of Timisoara (Coordinator)
2. Autònoma University of Barcelona
3. Obuda University
4. West University of Timisoara
5. University of Craiova
6. Acmit GmbH, Austria
7. University North Carolina, USA
8. Shanghai Jiao Tong University, China
9. University of Sao Paulo, Brazil
10. Queen's University, Canada
11. University of Bio-Bio, Chile

### Implementation period

1 April 2018 – 31 March 2022

### Main activities

1. Study degenerate Bautin bifurcations;
2. Study degenerate Hopf-Hopf bifurcations;
3. Study other codimension  $k$  bifurcations in continuous (smooth) systems;
4. Study other codimension  $k$  bifurcations in discrete (smooth) systems;
5. Study codim  $k$  bifurcations in non-smooth systems;
6. Study bifurcations in non-smooth systems with impacts.

### Results

#### Published articles:

1. G. Tigan et al., Bifurcation diagrams in a class of Kolmogorov systems, *Nonlinear Analysis: Real World Applications* 56, 103154, 1–14, 2020.
2. J. Ginoux, J. Llibre, C. Valls, Dynamics and Darboux integrability of the  $D_2$  polynomial vector fields of degree 2 in  $\mathbb{R}^3$ , *Mathematical Physics, Analysis and Geometry* 24, 2021.

### Financed through/by

Horizon2020-2017-RISE-777911, "Dynamics"

### Research team

- J. Llibre,
- J. Torregrosa,
- G. Tigan,
- L. Kovacs,
- T. Haidegger,
- S. Mihalas,
- D. Constantinescu,
- R. Oliveira,
- X. Zhang
- C. Vidal
- A. Buică

### Contact information

Conf. Gheorghe TIGAN, PhD  
Department of Mathematics,  
Pta Victoriei, No.2, 300006, Timisoara  
Phone: (+40) 256 403098  
E-mail: gheorghe.tigan@upt.ro  
<http://www.gsd.uab.cat/dynamicsh2020>

## PROJECTS SUPPORTED BY PRIVATE FUNDS



## PROJECTS SUPPORTED BY PRIVATE FUNDS IMPLEMENTED BY UPT 2020

Field	Total number of projects	Number of projects presented
Environment	28	-
Transport, telecommunications and other infrastructures	35	3
Education	1	-
Energy	3	2
Industrial production and technology	37	9
Engineering and technological sciences	3	-
<b>Total</b>	<b>107</b>	<b>14</b>

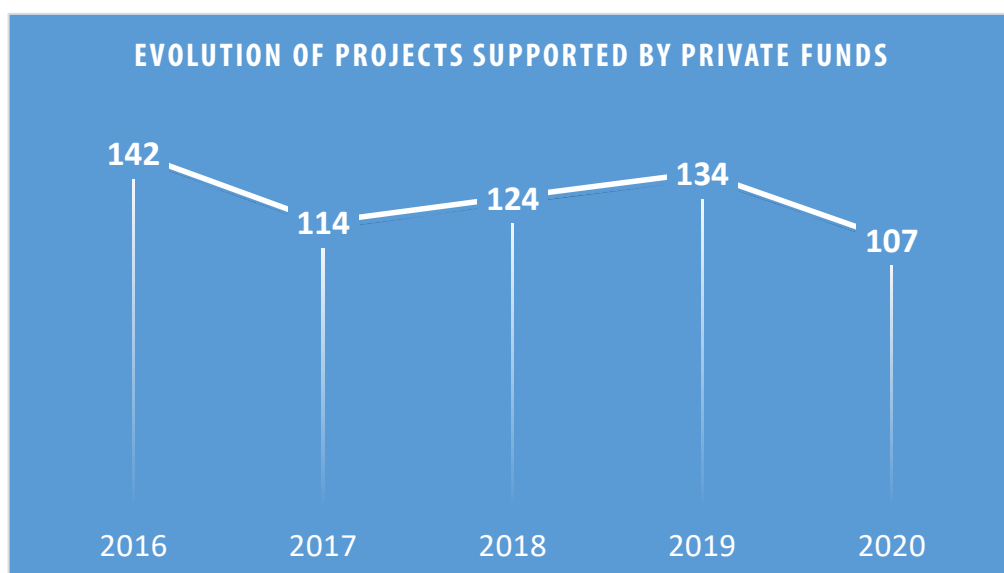


## EVOLUTION OF PROJECTS SUPPORTED BY PRIVATE FUNDS CONTRACTED BY UPT 2016 - 2020

A series of inter-institutional collaborations have crucially influenced UPT's ranking classification exercise between 2016 and 2020.

Two main categories of institutional collaborations are to be noted: inter-university collaborations and collaborations with enterprises. Each of them has clearly established, mutually-shared objectives: mutual support, know-how transfer, and cooperation objectives for a common output.

UPT has always maintained a close relationship with the community, with the external environment, this relationship being its own reason to exist. Beyond the actual research and formal education, the research accomplished through technological transfer has been a constant concern for the University departments, faculties and management structures, which is reflected in the number of contracts with private companies.



This chapter presents a selection of the research contracts with third parties.



## CONSULTING FOR THE USAGE OF MACHINE LEARNING FOR MACHINE VISION APPLICATIONS

### Goal of the project

Machine learning consists of scientific study of algorithms and statistical models that computer systems use to effectively perform a specific task. Machine learning algorithms are used in a wide variety of applications (as computer vision is) where it is infeasible to develop an algorithm of specific instructions. Data mining is a field within machine learning, and focuses on exploratory data analysis through unsupervised learning. In its application across business problems, machine learning is also referred to as predictive analytics.

EVT has developed machine vision products, which not only allow precise and error-free image processing, but also products, which are one step ahead of the market. The machine vision software EyeVision by EVT is a product, which due to easy-handling is able to adopt to various applications. The research trends for it follow to enhance easy programming, easy-handling, versatility, extensibility and to get fast solutions.

### Short description of the project

EyeVision is a complete image processing package for every possible field of application. EyeVision is connecting a powerful, hardware platform independent software for Windows and Linux with a wide range of hardware for image capture and digital I/O.

All industrial inspection tasks are done fast and effective by the all-in-one image processing software EyeVision.

### Implementation period

01.04.2018 – 01.04.2020

### Main activities

- Image Processing largely involves several processes to gain information from source data, such as for example image recognition and pattern matching. With the usual methods for image processing one can for example count objects, measure, inspect or read coded information. Image processing nowadays is used in nearly every science and engineering disciplines. One domain for image processing is the quality control at production processes such as automotive engineering, electrical and semiconductor industries, food industry and pharmaceutical industry.
- We focused on research and development of the hardware platform independent software for Windows and Linux – technical. We offer consultancy in the field of all-in-one image processing software.
- Consulting services for using applications at Machine Learning for Machine Vision.

### Results

- Machine Vision Software for VisionSensors, SmartCameras and PC Systems – EyeVision the one software for all Hardware Platforms.
- For programmers a PlugIn Interface was made, which supports easy to integrate software modules.
- The software supports all major interfaces for cameras e.g. USB, FireWire, GigE, CL, CoaXPress and analog.

### Applicability and transferability of the results

- A build in WebServer for easy remote control as well as interfaces to SAP Oracle and SQL.
- EyeVision Software is available.

### Financed through/by

EVT Eye Vision Technology GmbH, Karlsruhe Germany

### Research team

– Prof. Ivan BOGDANOV, PhD

### Contact information

Prof. Ivan BOGDANOV, PhD  
Faculty of Electronics, Telecommunications and Information Technology  
Department of Applied Electronics  
Address: Bvd. Vasile Parvan, No.2, 300223, Timisoara  
Phone: (+40) 256 403 338  
E-mail: ivan.bogdanov@upt.ro

## TECHNICAL-SCIENTIFIC ANALYSIS REGARDING THE POSSIBILITY OF FUEL AND NOXES REDUCTION OF DIESEL ENGINES THAT EQUIPP S.C. SANGO WATER CO S.A. PERSONS TRANSPORT VEHICLES

### Goal of the project

The aim of the project is to identify the technical solutions that can be implemented on a target group of vehicles in order to reduce the fuel consumption as well as the emissions exhausted during their operating regimes.

### Short description of the project

Within the project, the fuel consumption of a group of vehicles was analyzed based on pollution standards and real operating conditions.

### Implementation period

01.10.2019-24.05.2020

### Project implemented by

The project will be implemented by S.C. Sango Water Co S.A.

### Main activities

- Identification of real test conditions.
- Determining the fuel consumption for the buses in the target group.
- Measurement and verification of results.

### Results

- The factors that lead to a reduction in fuel consumption at a target group of buses were identified
- Technical solutions for optimizing fuel consumption have been proposed.

### Applicability and transferability of the results

The obtained results led to the identification of technical solutions to reduce fuel consumption, and implicitly, the pollution degree, so that the emission values to fall within the limits imposed by pollution standards.

### Financed through/by

S.C. SANGO WATER Co S.A.

### Research Centre

Research Centre for Thermal Machines and Equipments, Transportation and Environmental Pollution Control,

### Research team

- Daniel OSTOIA,
- Arina Negoitescu,
- Adriana Tokar,
- Dan Negoitescu,
- Ion Silviu Borozan,
- Dan Tokar

### Contact information

Prof. Daniel OSTOIA, PhD  
Faculty for Mechanical Engineering  
Research Centre for Thermal Machines and Equipments,  
Transportation and Environmental Pollution Control,  
Address: Mihai Viteazu No. 1, Postal Code 30222, Timisoara, Romania  
Phone: (+40) 256 403672  
Mobile: (+40) 722827957  
E-mail: daniel.ostoia@upt.ro

## STUDY FOR SMALL HYDROPOWER PLANTS ON BÂRZAVA RIVER, AS LOCALLY ADAPTED SOLUTION FOR INVESTMENT IN RENEWABLE ENERGY AND PUBLIC UTILITIES INFRASTRUCTURE

### Goal of the project

The study is mainly concerned by the implementation of extension of the water supply and the domestic sewerage network for the area of tourist resorts of local interest Secu, Reșița municipality, construction of non-motorized pedestrian and bicycle track to the Secu resort area and providing a protective tube for the electrical cables, lighting, internet, telephony, etc., for the Secu station area.

### Short description of the project

Following analysis, the project identifies two accomplishment scenarios from which the technical-economical optimum solution for the extension of the water supply and the domestic sewerage network and the construction of non-motorized track for the Secu tourist resort area.

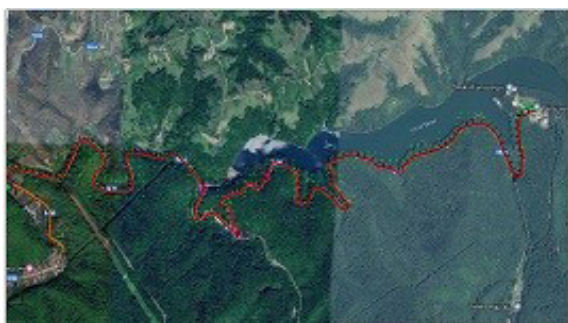
### Implementation period

2019-2020 (19 months)

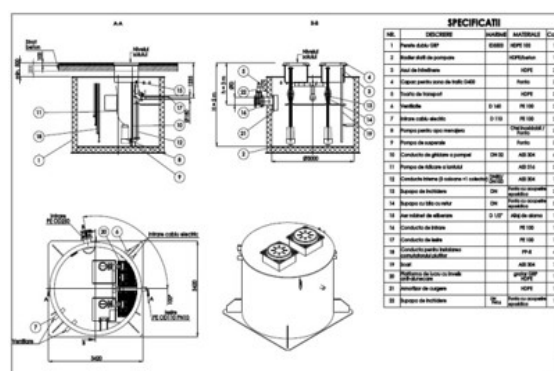
### Financed through/by

Reșița Municipality

### Main activities



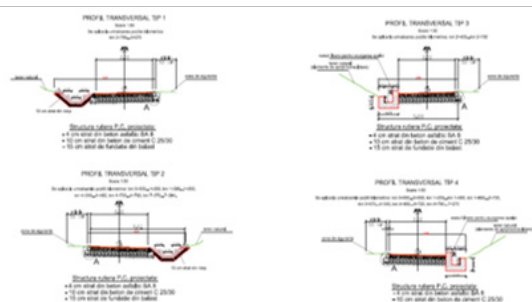
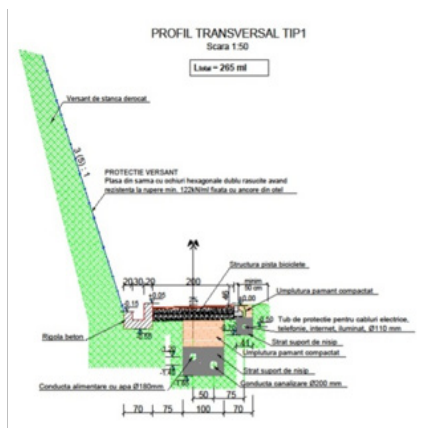
The extension of the drinking water supply network of the objective will be made of PE-HD, PE100, PN16, with De 180 mm, on a length of approximately  $L = 7,469$  m. 2 tanks with the volume of  $V = 200$  m<sup>3</sup> each will be provided, a pumping station for the tank R1 and a pumping station for the tank R2.



The extension of the sewerage network of the objective implies:

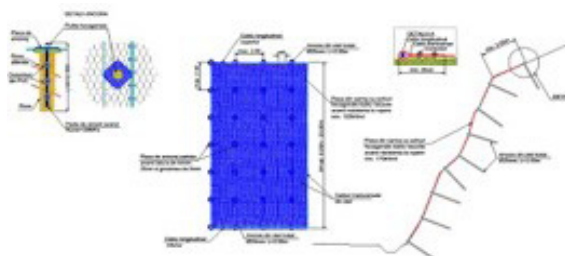
- wastewater discharge pipe from PE-HD, PE100, PN10, with De 200 x 11.9 mm in length of 3,903 m from the wastewater pumping station at the highest point on the route;
- wastewater discharge pipe from PE-HD, PE100, PN16, with 180 x 16.4 mm in length of 4,170 m from the highest point on the route to the existing manhole on Rozelor Street.

On the location of the track bikes, according to the situation plan and the transversal profile, a corrugated protection tube made of PE-HD with De 110 mm is positioned for the protection of the existing or future cables of telephony, electrical, internet, lighting, etc. The total length of the protection tube is 7,394 m.



The projected route of the runway runs over a length of 7,394 m, on the administrative territory of Reșița municipality, Caraș-Severin county.

It serves the inhabitants of the area as well as the tourists who generate the bicycle traffic in the area.



On the projected water-canal route, respectively the bicycle track, in the areas where the existing road is close to the slope, given the width of the bicycle track, respectively of the imposed safety zones, including gutters, demolition works are required in the slope, the total length (cumulated by sectors) being about 1,625 m.

## Results

Ensuring the traffic of tourists by bicycle and the degree of comfort in the tourist resort Secu through the water and sewerage system.

### Applicability and transferability of the results

Providing a water supply and sewerage system for the Secu tourist resort and the bicycle track for tourists.

## Research team

- Albert Titus CONSTANTIN,
- Constantin FLORESCU,
- Ion MIREL,
- Marin MARIN,
- Ioan ȘUMĂLAN,
- Ciprian COSTESCU,
- Cristian STĂNILOIU,
- Serban –Vlad NICOARA,
- Alina POPESCU – BUSAN,
- Mircea VIȘESCU, Marius ADAM,
- Dan PÎRVULESCU,
- Ioana-Alina CREȚAN,
- Liliana COTOARBĂ

## Contact information

Assist. Prof. Albert Titus CONSTANTIN, PhD  
Faculty of Civil Engineering  
Department of Hydrotechnical Engineering  
Address: 1A George Enescu Street, 300022, Timișoara, Romania  
Phone: (+40) 256 404091  
Mobile: +40 720 059 371  
E-mail: [albert.constantin@upt.ro](mailto:albert.constantin@upt.ro)  
<https://www.ct.upt.ro/en/hidro/index.htm>

## FEASIBILITY STUDY FOR DANUBE SHORE DEVELOPMENT ON MOLDOVA NOUĂ, CARAȘ-SEVERIN COUNTY

### Goal of the project

The situation considered by the present feasibility study regards the territory under the responsibility of Moldova Veche Border Police on the Danube left shore in Caraș-Severin County, institution endowed with several speed boats and floating barges as required for fulfilling its local specific missions. Still, one of the major logistical problems resides in the lack of proper mooring, locating and stationing space for the water equipment, operations that at this moment are improperly and unsatisfactory performed. Thus, according to the professional request elaborated by the beneficiary through technical specifications, the main general objective of the study was to establish the feasible options for designing a docking quay of about 50 m in length furnished with mooring (pontoon also) and boats landing equipment, with an operating/monitoring office, a fuel mobile station and a power transformation station..

### Short description of the project

Following a thorough analysis, the project identifies three accomplishment scenarios from which the technical-economical optimum solution was pointed out.

Mainly, for each considered technical design scenario, there were followed the analysis of vulnerabilities that may affect the investment, the situation of expected utilities and the analysis of consumption, respectively the sustainability of achieving the objective. Afterwards, specific conclusions were drawn on the financial investment (expenditure summary, total items, quantities of machinery and technological equipment, general cost estimation). The optimum and so recommended technical accomplishment scenario was presented in an argumentative way.

### Project implemented by:

Timișoara Border Police Territorial Inspectorate

### Implementation period

2020–2021 – 18 months

### Main activities

Following the analysis of the existing situation, it was found that due to the lack of spaces arranged for floating means in Moldova Nouă area, the border river navy basing is improperly done.

The study of the location particularities with respect to the needs of the beneficiary led to the identification, proposal and presentation of the three technical-economic options for achieving the investment objective.

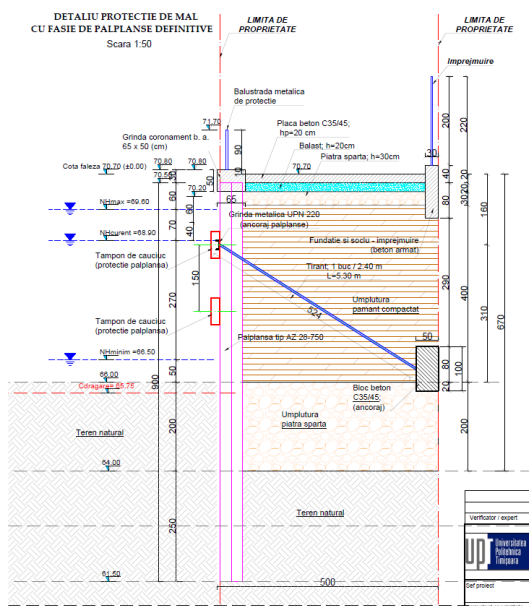


Land use general plan

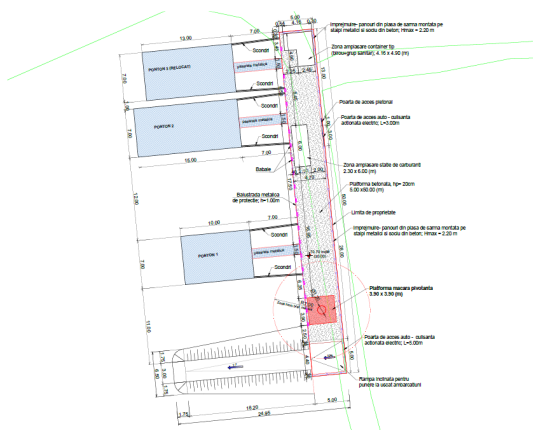
By individually and comparatively analysis of the viable options, it turned out to be optimal, both from a technical point of view and from the impact produced in the area, but also from a financial point of view, the alternative that provides the support of the quay bank through lost metal sheet-piles.



Sheet-piles quay wall – model



At the same time, the proposed arrangement option provides also for the disposition of the docking pontoons and of the constructive elements, as well as of the equipment for landing the boats, so as to ensure the development of the specific exploitation operations performed by the beneficiary.



Nevertheless, the profile of the riverbed in the arranged shore area was bathymetrically analyzed and following a specific river engineering study of the alluvial evolution, special corrective measures were proposed in order to ensure the access of ships under various water level conditions.

## Results

Following the analysis of the studied feasible options and aiming to make the most of the technical-economic, financial, sustainability and risks, the optimum practical solution for arranging the Danube shore on the sector of the dedicated plot to meet the needs of the beneficiary was chosen.

### Applicability and transferability of the results

The solution presented is sustainable, environmentally friendly and possible to be implemented in the shortest possible time, and that can also be fulfilled at a lower cost.

## Financed through/by

Ministry of Internal Affairs – Romanian Border Police, Timișoara  
Border Police Territorial Inspectorate

## Research Centre

Research Center in Hydrotechnics and Environmental Protection

## Research team

- Albert Titus CONSTANTIN, assoc.prof.dr.eng.
- Șerban-Vlad NICOARĂ, lect.dr.eng.
- Constantin FLORESCU, prof.dr.eng.
- Gabriel ELEȘ, assoc.prof.dr.eng.
- Alina-Ioana POPESCU-BUȘAN, assist.prof.dr.eng.
- Ioana-Alina CREȚAN, assist.prof.dr.eng.
- Adia GROZAV, assist.prof.dr.eng.
- Mircea VIȘESCU, assist.prof.dr.eng.
- Cristian Adrian GÎRBACIU, lect.dr.eng.
- Alexandra RUSU
- Violeta ȘUMĂLAN, eng.
- Liliana COTOARBĂ, PhDstud.eng.
- Dănuț TOKAR, PhDstud.eng

## Contact information

Albert Titus CONSTANTIN, assoc.prof.PhD  
Faculty of Civil Engineering  
Department of Hydrotechnical Engineering  
Address: 1A Splaiul Spiru Haret, 300022, Timișoara, Romania  
Phone: (+40) 256 404091  
Mobile: +40 720 059 371  
E-mail: albert.constantin@upt.ro  
<https://www.ct.upt.ro/en/hidro/index.htm>

## FEASIBILITY STUDY - BRANCHING AND WASTEWATER COLLECTION PLANT NAIDĂȘ, CARAȘ - SEVERIN COUNTY, CORRESPONDING TO C.F. NUMBER: 30061, 30062, 30063, 30064, 30065, 30066, 30067, 30068, 30069, 2528

### Goal of the project

The investment objective aims at extending the domestic sewerage network of the SPF location with connection to the existing sewerage network of the PTF location on a length of 397 m to connect the objectives from the SPF location, which are currently connected to a drainable basin.

### Short description of the project

Domestic sewage network designed for the collection of domestic wastewater and its discharge into a newly designed treatment plant. The existing evacuation of the treatment plant in the Năidășel emissary is no longer possible due to the drastic evacuation conditions imposed by Apele Române. Discharge of treated water will be made in the river Nera by using a pumping station, a discharge pipe and a mouth of discharge.

On the proposed sewerage network there are 15 manholes and 2 road underpasses through horizontal drilling through a steel protection tube with Dn 350 mm.

The designed treatment plant is sized for 45 consumers.

The pumping station is equipped with 2 (1 + 1R) submersible electric pumps having:  $Q = 3 \text{ l/s}$ ,  $H = 40 \text{ mCA}$  and  $P = 4 \text{ KW}$ .

### Project implemented by:

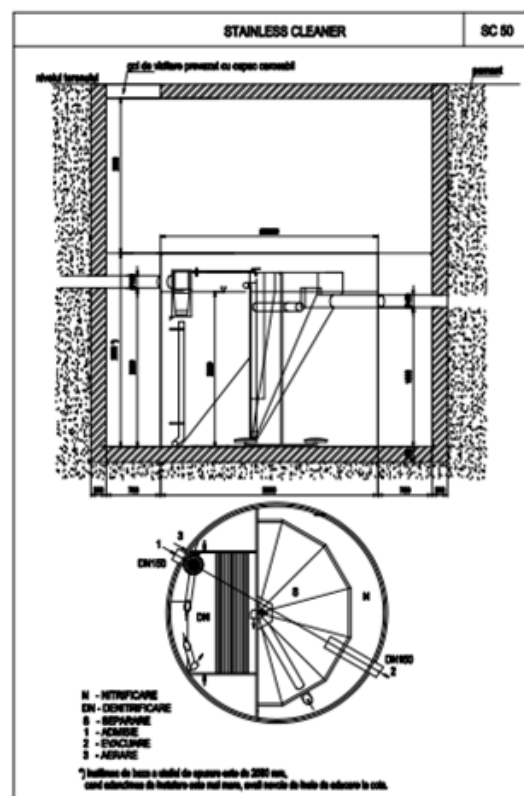
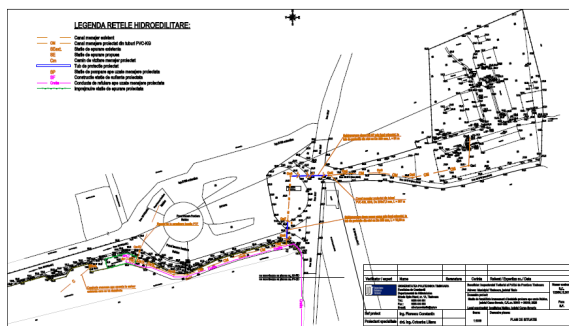
Timișoara Border Police Territorial Inspectorate

### Implementation period

2020–2021 – 18 months

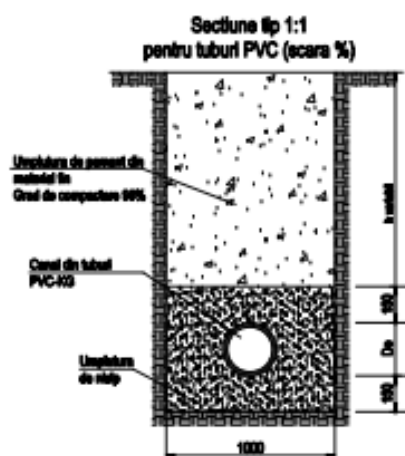
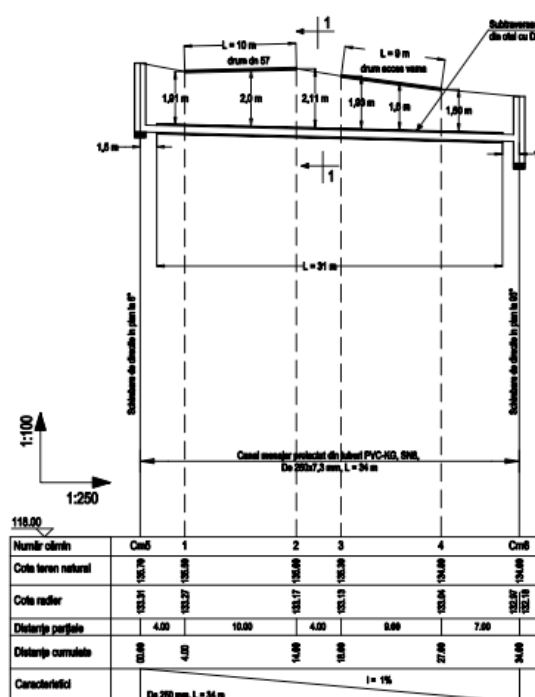
### Main activities

Sewerage network designed from PVC-KG pipes, SN8 with De 250 mm in length of 397 m which will be located on the public domain.



The designed discharge pipe is made of PE-HD, PN6, 90x5.1 mm in length  $L = 2,330 \text{ m}$  and will be located on the public domain.

On the designed discharge pipe were provided manhole valves, road underpasses by horizontal drilling through a steel protection tube with Dn 200 mm, reassurance chimney and an overpass with anchoring on an existing bridge with a venting - deaeration device.



## Results

Giving up of the drainage basin located within the SPF and the replacement of the existing treatment plant with a new one that meets the new needs and that has an advanced technology for domestic wastewater treatment.

## Applicability and transferability of the results

Collection, transport, treatment and disposal of domestic wastewater from the Romania-Serbia border point, Naidas.

## Financed through/by

Ministry of Internal Affairs – Romanian Border Police, Timișoara Border Police Territorial Inspectorate

## Research Centre

Research Center in Hydrotechnics and Environmental Protection

## Research team

- Constantin FLORESCU, prof.dr.eng.
- Albert Titus CONSTANTIN, assoc.prof.dr.eng.
- Gabriel ELEȘ, assoc.prof.dr.eng.
- Cristian STĂNILOIU, lect.dr.eng.
- Liliana COTOARBĂ, PhD eng.
- Violeta ȘUMĂLAN, eng.
- Alexandra RUSU

## Contact information

Constantin FLORESCU, Professor, PhD  
 Faculty of Civil Engineering  
 Department of Hydrotechnical Engineering  
 Address: 1A Spiru Haret Street, 300022, Timișoara, Romania  
 Phone: (+40) 256 404091  
 Mobile: +40 22418160  
 E-mail: constantin.florescu@upt.ro  
<https://www.ct.upt.ro/hidro/index.htm>

## ACCURATE GUIDANCE OF A DRONE IN A HIGH CROP FOR STREAMLINE PLANT SPRAYING OPERATIONS

### Goal of the project

Design and execution of a drone that navigates autonomously in a high crop field with 2m/s spraying 15 liters of chemical substance.

### Short description of the project

The drone has the following autonomous functions:

- to navigate towards the target area
- to navigate along the crop plants and spray the substance
- to return to base dock

In research activity, the team made efforts to reduce dramatically the total costs using low price components, compensating their performance with more complex algorithms.

### Implementation period

03.2020- 03.2022

### Main activities

- Design of autonomous navigation algorithms by image and GPS processing: plant line follower, change the plant line, target point and return point finding.
- Design of integrated manual commands
- Mechanical design of drone
- Mechanical design of spraying accessories (tank, pump, nozzles, tubes, etc)
- Integration, starting up.

### Results

A 42 kg and 3.2 m diameter drone that can carry 15 liters of chemicals, that is 18 kg payload.

### Applicability and transferability of the results

The interest for drones in the agricultural field is very high, and the low price is a criterion for selling. The beneficiary conducted a study and identified a number of potential customers for the drones.

### Financed through/by

CARPATHIAN BERRIES SRL Company

### Research Centre

ICER (Renewable Energy Research Institute)

### Research team

- Lect. Sorin NANU PhD
- Lect. Ciprian DUGHIR PhD.
- Student Adrian TUCUDEAN

### Contact information

Lect. Sorin Nanu, PhD  
Faculty Automation and Computer Science/Department Automation and Applied Informatics  
Address: Str.V.Parvan 2. 300223, Timisoara  
Phone: (+40) 256 403235  
Mobile: 0726713893  
E-mail: sorin.nanu@upt.ro

## DEFINING AUTOMATIC TESTING STRATEGIES AND THEIR IMPLEMENTATION SOLUTIONS FOR SOFTWARE VALIDATION / TESTING FOR ASTON MARTIN AND RENAULT ALPINE PROJECTS

### Goal of the project

Defining strategies for automating the testing process for instrument clusters followed by proposing solutions for their implementation for different functionalities. The proposed solutions are evaluated based on metrics that include coverage and test duration.

### Short description of the project

The research project analyzes the impact of identifying a test automation strategy and its implementation on the duration and testing results of various versions of software dedicated to instrument clusters.

### Implementation period

01.03.2020 – 31.12.2020

### Main activities

1. Identify software testing environment requirements for instrument clusters
2. Proposing a unitary architecture of test and development sequence development files
3. Defining the test automation strategy and integrating with the available testing tools
4. Defining and validating performance criteria for automation
5. Implementation of automatic testing at the level of functionality and validation based on performance criteria
6. Study of the possibility of automatic generation of automated tests based on standard requirements and specific configuration files.

### Results

1. Analysis report of general and specific aspects for the automation of instrument cluster testing.
2. Proposed and validated structure for a generic automated test specification file
3. Validation of the automatic test specification implemented for Garage functionality
3. Validation of the automatic test specification implemented for the Service functionality
4. Application for extracting and analyzing test results
5. Performance report with conclusions and directions for expanding the implementation

### Applicability and transferability of the results

The automated test specifications implemented and validated for Garage and Service functionalities are used in the full or regression test cycles of the various instrument cluster models.

Validation of the automated testing specifications implemented for two functionalities is the foundation for extending the implementation for all instrument cluster functionalities.

### Financed through/by

SC CONTINENTAL AUTOMOTIVE ROMANIA SRL, TIMISOARA.

### Research team

– Assoc. Prof. Ioan LIE, PhD

### Contact information

Assoc. Prof. Ioan LIE, PhD  
Faculty of Electronics, Telecommunications and Informational Technologies, Department of Applied Electronics  
Address: Room B115, 1st Floor, Bd. Vasile Parvan, nr. 2, 300223 Timisoara, Romania Phone: (+40) 256 403 336  
Mobile: (+40) 722734581  
E-mail: ioan.lie@upt.ro  
Web: ea.etc.upt.ro

## HMECS - HPC MEMORY ERRORS CORRECTION SOLUTION

### Goal of the project

The goal of the project is to find the most favorable way to get reliable data from an unreliable non-volatile memory, providing complete robustness for critical applications. The target is represented by all kinds of non-volatile memories, including MRAM memories.

### Short description of the project

Development of innovative solutions for error correction codes used for non-volatile memories in high-performance computing systems.

### Implementation period

09.12.2020 – 23.12.2021

### Main activities

The main activities in our project are:

- Build a Linux functional setup for initial experiments
- Analyze the errors in current and future NVMs
- Analyze and simulate the error correction codes used in NVMs
- Analyze performance of various ECCs
- Develop the algorithm
- System simulation
- Build a demonstrator
- Issue a patent request

### Results

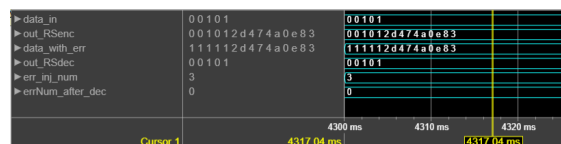
A FPGA Linux Python setup was built based on a Xilinx EK-U1-ZCU104 board.

A simple ECC test project was simulated in Vivado. It is implemented using two free IPs from Xilinx (ECC and VIO IPs).

Two simple project (a counter and a peak detector) were implemented in MATLAB/ Simulink in order to generate VHDL code. The final VHDL code is well written, documented and easy to understand.

We studied the types of non-volatile memories used in automotive and we compared their characteristics.

The Reed-Solomon code was simulated in Simulink and Vivado.



We communicated with a Verilog Flash memory model through a Vivado simulation.

### Applicability and transferability of the results

Developed solutions for error correction codes can provide a reliable storage using current Flash memories.

They also can allow the use of less expensive memories and can extend the lifetime of the memory-based products.

### Financed through/by

Continental Automotive Timișoara

### Research team

- Prof. univ. GONTEAN Aurel – Ștefan
- Eng. ILIEȘ Elisei Ștefan
- Student MARINCA Magdalena Patricia

### Contact information

Prof. Aurel - Ștefan GONTEAN, PhD  
Faculty of Electronics, Telecommunications and Informational Technologies,  
Department of Applied Electronics  
Address: Str. Vasile Parvan, No.2,  
300223, Timișoara  
Mobile: +40 745 121 383  
E-mail: aurel.gontean@upt.ro

## USING FPGA FOR INTELLIGENT PROCESSING OF DATA FROM AN IMAGE SENSOR

### Goal of the project

The goal of the project is to use an FPGA to configure an OmniVision image sensor, but also to retrieve and process data from it. Another important purpose of this project is to find a suitable method to write a value in the OTP memory of the image sensor in various setups

### Short description of the project

In this project we aim to configure an image sensor in order to display the video stream from the camera module on a monitor and to automate the writing of certain data in an OTP memory.

### Implementation period

15.07.2020 – 23.12.2020

### Main activities

The main activities we focused on are the following:

- Build the necessary setup.
- Image sensor configuration via i2c protocol
- Process data from the image sensor and display video stream from the camera module on a monitor
- Write a value in an OTP memory using Aardvark I2C Host Adapter
- Write a value in an OTP memory using Raspberry Pi
- Development of a graphical interface to facilitate the writing of an OTP memory
- Portable solution for flashing in any remote area

### Results

We built a setup with an image sensor, a development board and a computer with Linux operating system.

The image sensor was configured using a .xml script and the image transmitted by it was displayed on a monitor and saved in .raw format.

Using a Raspberry Pi to write data in an OTP memory and to read data from it, we were able to develop a method that allows remote programming of the memory.

In order to make the method for flashing even easier, we developed a graphical interface using the python language. In this way we obtained a portable and user friendly solution.

### Applicability and transferability of the results

FPGA-based systems offer the possibility of fast and intelligent processing of data from different image sensors. The portable solution for flashing allows configurations or updates for devices even after the completion of the manufacturing process.

### Financed through/by

Continental Automotive Timișoara

### Research team

- Prof. univ. GONTEAN Aurel – Ștefan
- Eng. BĂRBULESCU Corneliu
- Eng. ILIEȘ Elisei Ștefan
- Student MARINCA Magdalena Patricia

### Contact information

Prof. Aurel – Ștefan GONTEAN, PhD  
Faculty of Electronics, Telecommunications and Informational Technologies,  
Department of Applied Electronics  
Address: Str. Vasile Parvan, No.2,  
300223, Timișoara  
Mobile: +40 745 121 383  
E-mail: aurel.gontean@upt.ro

## ADVANCED INTEGRATION OF RLC MEASUREMENT METHODS IN THE TAKAYA APT 9411 AND 1400F

### Goal of the project

The goal of this project is to avoid the apparition of FP erroneous measurements, for circuit-mounted L and C components, by integration between an LCR meter with the FP. This application was implemented with the help of a partner company which provided the required equipment: the Takaya APT 1400F [10] and the BK Precision 891 LCR meter

### Short description of the project

Advanced integration of RLC measurement methods in order to avoid the apparition of FP erroneous measurements.

### Project implemented by:

- Universitatea Politehnica Timișoara
- Alfa Test S.R.L.

### Implementation period

19.02.2020 – 31.10.2020

### Main activities

The proposed software component was developed using NI LabVIEW. It includes two independent applications. The Frequency Response App (FRA) and The Measurement App (MA). The integration was developed and tested under laboratory conditions at the Alfa Test SRL headquarter in Timișoara, Romania. Final testing, deployment and validation were performed at the beneficiary headquarters in Sibiu, Romania. Experimental results demonstrate that the proposed integration performs as expected. In the case of accidental replacement of inductors with components of wrong values, provided results show exact confirmation of the fault.

### Results

The main novelties of our work arise from the characteristics of flexibility, customization according to user needs and performances of a prototype integration solution which solved an engineering challenge issued by one of the most important automotive manufacturers in Romania and world-wide.

This concept was an industry validated solution for integrating off-the-shelf instrumentation (in this case LCR – BK Precision 891) in the Takaya FP machines. Following the integration method, other types of external instrumentation can be used to expand the technical capabilities of the Takaya FP machine. Statistical measurement accuracy evaluation demonstrates the appropriateness of such a solution, in the project industrial context.

### Applicability and transferability of the results

All the results from this project were transferred to the beneficiary Alfa Test S.R.L. One student oriented laboratory was developed using the results from this project.

### Financed through/by

Alfa Test S.R.L.

### Research Centre

Faculty of Electronics, Telecommunications and Information Technologies

### Research team

- S.I. dr. ing. Dughir Ciprian-Ovidiu-Miron – director
- Conf. dr. ing. Ionel Raul-Ciprian – member
- S.I. dr. ing. Mățiu-Iovan Liliana – member
- Anca Rogoz – member

### Contact information

Assoc. Prof. Ciprian-Ovidiu-Miron DUGHIR, PhD  
Faculty of Electronics, Telecommunications and Information Technologies /Department of Measurements and Opoelectronics  
Address: Bl. V. Pârvan, No. 2a, 300223, Timisoara  
Phone: (+40) 256 403 365  
E-mail: ciprian.dughir@upt.ro  
Web: www.dughir.ro



## ELECTRICAL DISTRIBUTION NETWORKS TECHNOLOGICAL LOSSES EVALUATION BASED ON POST-CALCULATION METHODS

### Goal of the project

Technical losses evaluation for Electrica Muntenia Nord Distribution System Operator has been performed. Analytical methods and power flow computing methods have been applied. Real data have been used and operating conditions specific to the power producers, renewable sources, power consumption.

### Short description of the project

An algorithm is developed for technical losses assessment..

### Project implemented by:

- Servelect Cluj-Napoca &
- Electrica Muntenia Nord Distribution System Operator

### Implementation period

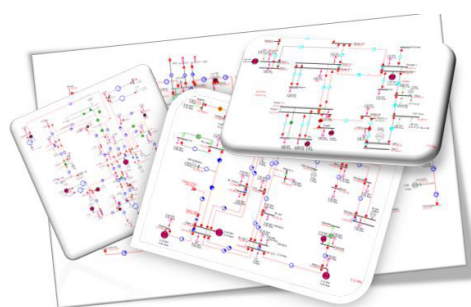
2020

### Main activities

The study was conducted for Electrica Muntenia Nord Distribution System Operator. The analyses have been divided for several voltage levels, distribution branches and equipment type. Different scenarios for the distribution network operator have been taken into consideration highlighting the optimal operating conditions.

### Results

- Methodologies developed for technical losses evaluation in case of different voltage levels;
- Electrical distribution network simulation model at 110 kV and 20 kV voltage levels, analyses, recommendations;
- Technical losses' reduction methods.



### Applicability and transferability of the results

The developed methodologies for technical losses evaluation are able to be applied in case of any distribution network operator.

### Financed through/by

Servelect Cluj-Napoca, total value: 17850 RON

### Research Centre

Power Systems Analysis and Optimization Research Centre

### Research team

- Prof. Stefan KILYENI, PhD
- Assoc. Prof. Constantin BARBULESCU, PhD
- Bittenbinder Alex, PhD Student
- Lecturer Annamaria KILYENI, PhD

### Contact information

Prof. Stefan KILYENI, PhD  
Faculty of Electrical and Power Engineering  
Head of Power Systems Analysis and Optimization Research Centre  
Power Systems Department:  
Bd. V. Parvan, No. 2, 300223, Timisoara  
Phone: (+40) 256 403 416  
E-mail: stefan.kilyeni@upt.ro  
Web: www.et.upt.ro

## INTRODUCTION OF A UNITARY PROBLEM-SOLVING AND IMPROVEMENT SYSTEM OF THERMAL GALVANIZING PROCESSES

### Goal of the project

The goal of this project was to evaluate the company based on the SWOT Analysis and the Diagnostic Analysis, to develop a unitary system for solving problems and improving processes and its implementation at the level of the entire organization. The harmful emission absorption system was also evaluated technically and economically.

### Short description of the project

Specific methods of problem solving and process improvement have been introduced, which have been set up in a unitary system applicable to the entire company. SWOT Analysis and Diagnostic Analysis were performed to assess the existing situation and provide information for future actions.

### Implementation period

01.02.2020 – 30.04.2020

### Main activities

- Activity 1: Performing the SWOT and the Diagnostic Analysis.
- Activity 2: Evaluation, ranking and elimination of main defects.
- Activity 3: Develop a unitary system for solving problems and improving processes and implementation at the organizational level.
- Activity 4: Evaluation of harmful emission absorption system.

### Results

- The diagnostic analysis revealed that the company received the grade of satisfactory adaptation and that an offensive strategy was recommended.
- The improvement methods found focused on improving the products by reducing the number of main defects by 60%.
- The harmful emission absorption system was evaluated, the reduction in the acquisition costs of hydrochloric acid, the unacquired quantity being replaced by the acidic water resulting from the filtration.

### Applicability and transferability of the results

- The unitary system for solving problems and improving processes is currently implemented in all areas of the company.
- Following the implementation of the absorption system, the emissions with harmful impact on the environment are reduced to a minimum, Berg Banat SRL entering the category of companies with sustainable development.

### Financed through/by

S.C. BERG BANAT SRL, Timisoara



Fig.1 Retrieving parts from thermal galvanizing process

### Research Centre

Research Center in Engineering and Management, Faculty of Management in Production and Transportation, University Politehnica Timisoara

### Research team

- Assoc. Prof. Adrian Pavel PUGNA, PhD
- Lect. Prof. Sabina POTRA, PhD
- Assoc. Prof. Romeo NEGREA, PhD
- Eng. Dariana MICU
- Eng. Oana LUNGU

### Contact information

Assoc. Prof. Adrian Pavel PUGNA, PhD  
Faculty of Management in Production and Transportation/  
Management Department: Str. Remus No. 14, 300191, Timisoara  
Phone: (+40) 256 404041  
Mobile: (+40) 745 500 234  
E-mail: [adrian.pugna@upt.ro](mailto:adrian.pugna@upt.ro)  
Web: [www.mpt.upt.ro/cercetare/centrul-de-cercetare.html](http://www.mpt.upt.ro/cercetare/centrul-de-cercetare.html)

## DEVELOPMENT OF BUSINESS MODEL AND STRATEGY FOR S.C. ANISSU AMB S.R.L.

## Goal of the project

This project aims to define a sustainable business model to increase the company's competitiveness in the national and international business environment. At the same time, the development of the strategy is considered to increase the organizational capacity for sustainability and competitiveness.

### Short description of the project

Increasing the company's competitiveness in the national and international business environment.

## Project implemented by:

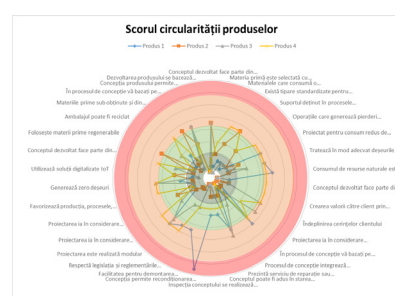
Faculty of Management in Production and Transportation,  
Management Department.

## Implementation period

25.07.2020 – 25.09.2020

## Main activities

- Outlining the apparel and shoes industry market at local and national level
- Identifying the main competitors and their profiles
- Identifying the conditions for increasing the capacity of apparel and shoes industry for sustainability
- Conditions for adaptation to international regulations
- Identifying potential international clients
- Outlining the conditions for increasing the circularity of products in the context of the circular economy
- Developing the strategy for increasing the company's competitiveness.



## Results

- Model for measuring product circularity
- Model for the sustainability of the apparel and shoes industry
- The strategy for increasing the company's competitiveness in the conditions of the circular economy.

### Applicability and transferability of the results

Ensuring an integrated business model to increase the company's competitiveness.

Financed through/by

S.C. ANISSU AMB S.R.L.

## Research team

- Assoc. prof. eng. Larisa IVAȘCU, Ph.D.
- Lecturer ec. Alin ARTENE, Ph.D.

## Contact information

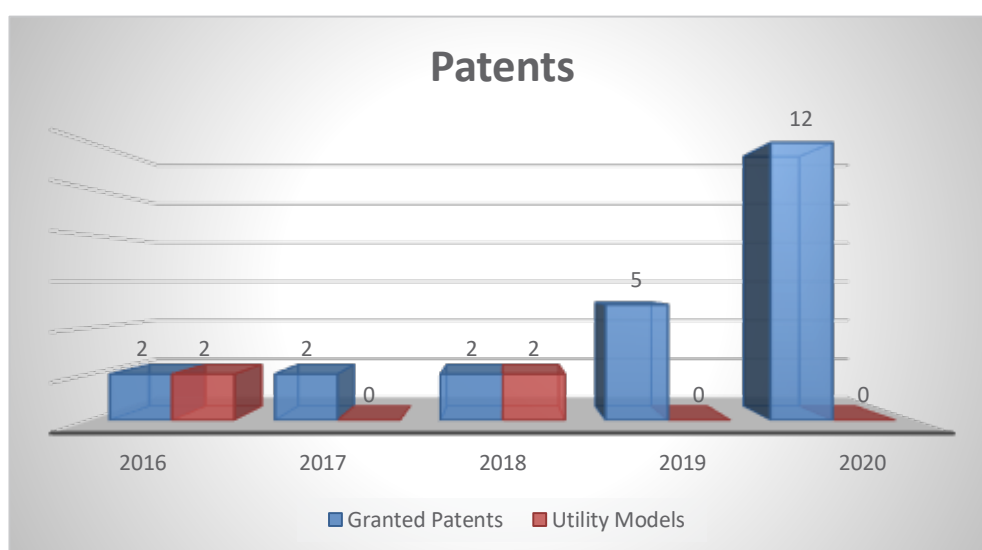
Assoc. prof. eng. Larisa IVAȘCU, Ph.D.  
Faculty of Management in Production and Transportation /  
Management Department  
Address: 14 Remus Str., 300191 Timișoara, Romania  
Phone: (+40) 256 40 42 84  
E-mail: [larisa.ivascu@upt.ro](mailto:larisa.ivascu@upt.ro)  
Web: [http://www.mpt.upt.ro/eng/research/research-center/  
members.html](http://www.mpt.upt.ro/eng/research/research-center/members.html)



# PATENTS



## EVOLUTION OF PATENTS UNDER AFFILIATIONS OF UPT 2016 - 2020



The innovative capacity of the Politehnica University Timisoara is supported by teachers and scientific researchers through patents and utility models invented, presented in this section.





## Granted Patents



INVENTORS: VALENTIN SAVIN, OANA BONCALO, DAVID DECLERCQ

PATENT NO. 3373488 / 2020

## STOPPING CRITERION FOR DECODING QUASI-CYCLIC LDPC CODES

(19)  (11)  EP 3 373 488 B1

(12) EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention of the grant of the patent: 06.05.2020 Bulletin 2020/19 (51) Int Cl.: H04L 1/00 (2006.01) H03M 13/11 (2006.01)

(21) Application number: 17159697.6 (22) Date of filing: 07.03.2017

(54) STOPPING CRITERION FOR DECODING QUASI-CYCLIC LDPC CODES  
ABBRUCHKRITERIUM ZUR DECODIERUNG VON QUASIZYKLISCHEN LDPC-CODES  
CRITÈRE D'ARRÊT POUR LE DÉCODAGE DE CODES LDPC QUASI-CYCLIQUES

(84) Designated Contracting States:  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

(43) Date of publication of application: 12.09.2018 Bulletin 2018/37

(73) Proprietors:  
• Commissariat à l'Energie Atomique et aux Energies Alternatives  
75015 Paris (FR)  
• Politechnica University of Timisoara  
300006 Timisoara (RO)  
• ENSEA - Ecole Nationale Supérieure de L'Electronique et de ses Applications  
95014 Cergy-Pontoise Cedex (FR)  
• CY Cergy Paris Université  
95011 Cergy-Pontoise Cedex (FR)

(72) Inventors:  
• SAVIN, Valentin  
38000 GRENOBLE (FR)  
• BONCALO, Oana  
300223 TIMISOARA (RO)  
• DECLERCQ, David  
95450 ABLEIGES (FR)

(74) Representative: Brevalex  
56, Boulevard de l'Embranchure  
B.P. 27519  
31075 Toulouse Cedex 2 (FR)

(56) References cited:  
US-A1- 2010 275 088 US-A1- 2016 336 964  
US-B1- 8 751 912

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

Printed by Jouve, 75001 PARIS (FR)

EP 3 373 488 B1

The present invention relates to the field of LDPC (Low-Density Parity Check) codes and concerns more particularly an early stopping criterion for decoding Quasi-Cyclic LDPC codes.

In the following, it will be assumed for the sake of simplification but without loss of generality, that the LDPC code is binary, that the code is defined over  $GF(2)$ . However, it will be clear for the man skilled in art that the invention equally applies to non-binary LDPC codes defined over  $GF(2^b)$  where  $b$  is an integer such that  $b > 1$ .


The idea underlying the present invention is to propose a new on-the-fly measure for terminating the decoding iterations of a layered LDPC decoder, for example a QC-LDPC decoder. This measure is used for defining a new family of stopping criteria, hereinafter referred to as In-Between Layers Partial Syndrome (IBL-PS).



INVENTORS: VALENTIN SAVIN, OANA BONCALO, DAVID DECLERCQ

PATENT NO. US 10651872 B2 / 2020

## STOPPING CRITERION FOR DECODING QUASI-CYCLIC LDPC CODES



US010651872B2

(12) **United States Patent**  
Savin et al.

(10) **Patent No.:** US 10,651,872 B2  
(45) **Date of Patent:** May 12, 2020

(54) **STOPPING CRITERION FOR DECODING QUASI-CYCLIC LDPC CODES**

(71) Applicants: COMMISSARIAT A L'ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES, Paris (FR); POLITECHNICA UNIVERSITY OF TIMISOARA, Timisoara (RO); ECOLE NATIONALE SUPERIEURE DE L'ELECTRONIQUE ET APPLICATIONS (ENSEA), Cergy-Pontoise (FR); CY CERGY PARIS UNIVERSITE, Cergy-Pontoise (FR)

(72) Inventors: Valentin Savin, Grenoble (FR); Oana Boncalo, Timisoara (RO); David Declercq, Abteiges (FR)

(73) Assignees: COMMISSARIAT A L'ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES, Paris (FR); POLITECHNICA UNIVERSITY OF TIMISOARA, Timisoara (RO); ECOLE NATIONALE SUPERIEURE DE L'ELECTRONIQUE ET APPLICATIONS (ENSEA), Cergy-Pontoise (FR); CY CERGY PARIS UNIVERSITE, Cergy-Pontoise (FR)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 33 days.

(21) Appl. No.: 15/913,427

(22) Filed: Mar. 6, 2018

(65) **Prior Publication Data**  
US 2018/026221 A1 Sep. 13, 2018

(30) **Foreign Application Priority Data**  
Mar. 7, 2017 (EP) ..... 17159697

(51) **Int. Cl.**  
H03M 13/11 (2006.01)  
H03M 13/00 (2006.01)  
H04L 1/00 (2006.01)

(52) **U.S. Cl.**  
CPC ..... H03M 13/1128 (2013.01); H03M 13/114 (2013.01); H03M 13/1105 (2013.01); (Continued)

(58) **Field of Classification Search**  
None  
See application file for complete search history.

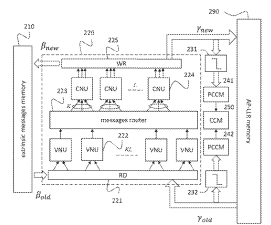
(56) **References Cited**  
U.S. PATENT DOCUMENTS  
8,751,912 B1 6/2014 Varnica et al.  
2009/065931 A1 \* 3/2009 Rovini ..... H03M 13/1137 714/758  
(Continued)

OTHER PUBLICATIONS  
European Search Report dated Aug. 11, 2017 in European Application 17 159 697.6, filed on Mar. 7, 2017.  
(Continued)

**Primary Examiner** — Justin R Knapp  
(74) **Attorney, Agent, or Firm** — Oblon, McClelland, Maier & Neustadt, L.L.P.

(57) **ABSTRACT**  
An in-between layer partial syndrome stopping (IBL-PS) criterion for a layered LDPC decoder. The IBL-PS syndrome is obtained by applying the parity checks  $(H_{i,j})$  of a couple of a first layer ( $i$ ) and a second layer ( $j+1$ ) on the variables after the first layer has been processed and before the second layer is processed by the decoder, the decoding being stopped if said in-between layer syndrome  $(s_{i,j+1})$  is satisfied for at least a couple of consecutive layers.

**16 Claims, 4 Drawing Sheets**



The present invention relates to the field of LDPC (Low-Density Parity Check) codes and concerns more particularly an early stopping criterion for decoding Quasi-Cyclic LDPC codes.

In the following, it will be assumed for the sake of simplification but without loss of generality, that the LDPC code is binary, that the code is defined over  $GF(2)$ . However, it will be clear for the man skilled in art that the invention equally applies to non-binary LDPC codes defined over  $GF(2^b)$  where  $b$  is an integer such that  $b > 1$ .

The idea underlying the present invention is to propose a new on-the-fly measure for terminating the decoding iterations of a layered LDPC decoder, for example a QC-LDPC decoder. This measure is used for defining a new family of stopping criteria, hereinafter referred to as In-Between Layers Partial Syndrome (IBL-PS).

Basically, the IBL-PS is a partial syndrome defined by two consecutive layers (bilayer). More specifically, if we denote  $\mathbf{H}_{r,r+1}$  the  $2L \times N$  sub-matrix of the parity-check matrix  $\mathbf{H}$  constituted by the concatenation of the matrices  $\mathbf{H}_r$  and  $\mathbf{H}_{r+1}$ , for  $r = 0, \dots, R-1$  (assuming that the layers are indexed modulo  $R$ , i.e. the layer following the layer  $R-1$  is the layer  $0$ ), the IBL-PS syndrome between layers  $r$  and  $r+1$  is defined as:

$$\mathbf{s}_{r,r+1} = \mathbf{H}_{r,r+1} \hat{\mathbf{x}}_r^T$$

where  $\hat{\mathbf{x}}_r = (\hat{x}_{r,1}, \hat{x}_{r,2}, \dots, \hat{x}_{r,N})$  is the hard decision vector (signs of AP-LLRs) after processing layer  $r$  and before processing  $r+1$ . It is important to understand that the IBL-PS is calculated on the same word (vector  $\hat{\mathbf{x}}_r$ ) output by the decoding of layer  $r$ .

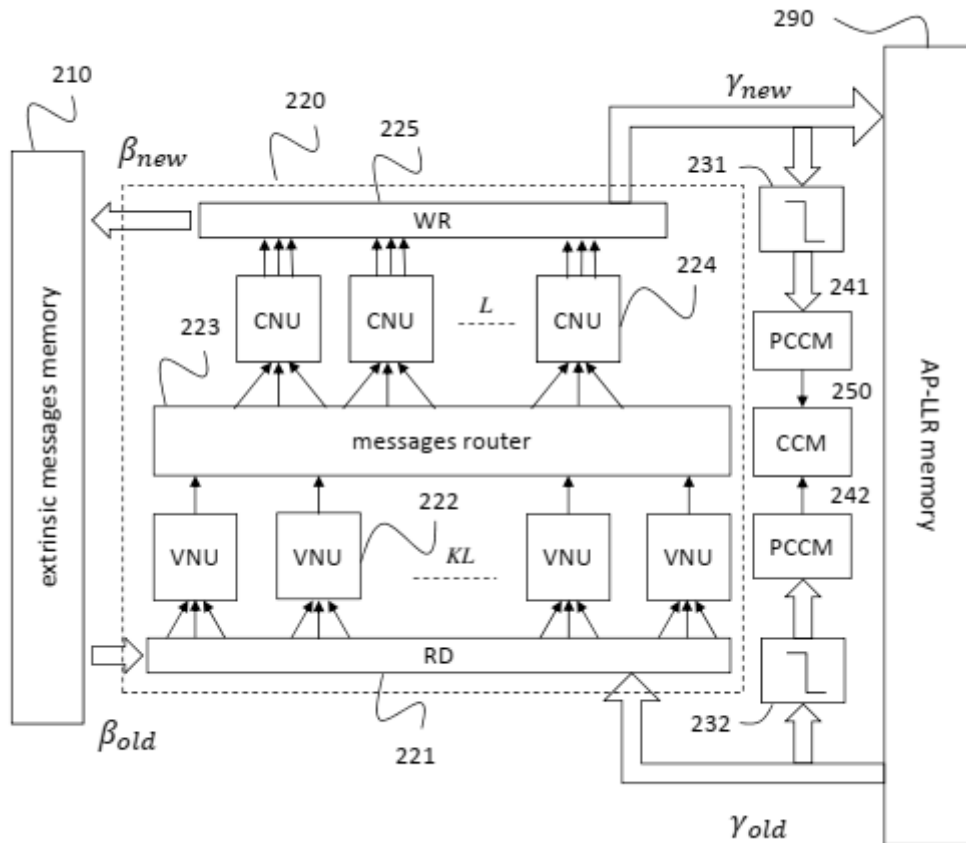
The IBL-PS criterion is defined by:

*if*  $\exists r \in \{0, \dots, R-1\}$  such that  $\mathbf{s}_{r,r+1} = \mathbf{0}_{2L}$  decoding stops

More generally, we define a family of stopping criteria involving a plurality of IBL-PS syndromes, denoted IBL-PS( $\theta$ ) where  $\theta \geq 1$  defined by:

*if*  $\exists r \in \{0, \dots, R-1\}$  such that  $\mathbf{s}_{r,r+1} = \mathbf{s}_{r+1,r+2} = \dots = \mathbf{s}_{r+\theta-1,r+\theta} = \mathbf{0}_{2L}$  decoding stops

In other words, if the IBL-PS syndromes calculated for a plurality of  $\theta$  consecutive layers are null, then the decoding is stopped. Within the family of stopping criteria IBL-PS( $\theta$ ), the minimum value for  $\theta$  is  $\theta = 1$ , and corresponds to the lowest latency case, since the decoder will stop as soon as any IBL-PS is satisfied. However, increasing the value of  $\theta$  will render the stopping criteria safer and safer.



INVENTORS: CRACIUNESCU CORNELIU MARIUS, BUDAU VICTOR, MITELEA ION

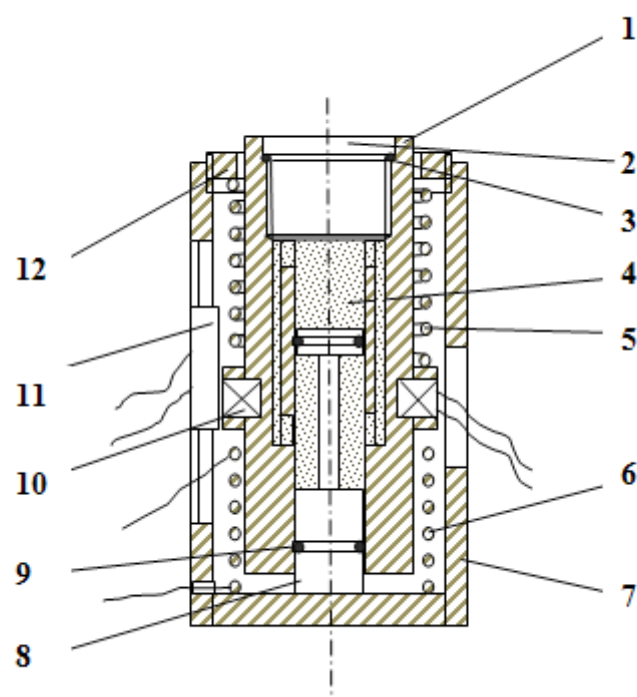
PATENT NO. 128675 / 2020

## ACTUATOR WITH THERMO-MAGNETIC CONTROL OF POSITION



The invention refers to an actuator which allows reaching distinct positions in non-motorized actuators, by combining the contribution of a shape memory alloy and a magnetorheological fluid.

According to the invention, the actuator with thermal and magnetic position control uses a movable rod (1) inside which a magnetorheological fluid (4) is transferred by a piston (8) during actuation by an antagonistic mechanism consisting of a spring (5) and a shape memory alloy spring (6) which rests on the actuator body (7). The locking of the actuator in a position, established by locating the position sensor (11), is achieved by modifying the characteristics of the magnetorheological fluid (4) under the action of the magnetic field produced by the electromagnet (10).



INVENTORS: GONTEAN AUREL ȘTEFAN, CERNAIANU MIHAIL OCTAVIAN

PATENT NO. 129498 / 2020

## INTELLIGENT CONTROL DEVICE FOR LIGHT SWITCHES



input mode for a few microseconds (depending on the clock frequency of the microcontroller) and read (1 logic if switch 1 is open, respectively 0 logic if 1 is closed). The few microseconds in which the indicator light is off are not noticeable to the user. The external resistor 9 limits the current through the output pin of the microcontroller.

The invention relates to a device for switches with light indicator, integrated in a lighting control system controlled by microcontroller, for the lighting of domestic or industrial rooms in order to reduce electricity consumption.

The intelligent control device for light-switched switches according to the invention consists of:

- some classic switches (with return) 1 equipped with some LED lights -LED- 2
- some connecting wires 3
- a control microsystem 4, with a (internal) resistor 6 of pull-up, configurable
- a power driver block 5
- photoresist sensors 7 and proximity sensors 8.
- a current limiting resistor 9

According to the scheme shown in figure 1, the microcontroller 4 will generate interruptions periodically, at 10 ms. This range is chosen for compatibility with European triac or IGBT lighting control systems, where a zero-crossing detector synchronizes the operation of the controller every 10 ms. For a DC lighting system, the 10 ms interval is generated by an internal microcontroller timer.

The I / O1 pin is configured in output mode; most of the time the output is in logic state 0 and the control LED 1 is off. When the warning light is desired, the output is set to logic 1.

A pull-up resistor (configurable, internal to most current microcontrollers) is connected internally to the I / O1 pin. Every 10 ms, the I / O1 pin is switched to

The selective control of the illumination of the indicator lights 2 is done by analyzing the following situations:

1. Analyzing natural light with an optical detector. A single external sensor, for example a photoresistor 7, informs one of the control systems of the external illumination level and depending on this level the decision is made to switch all the warning lights on or off. This (simple) approach does not solve the problem of differentiated switching on / off of the warning lights; but it has the advantage of low cost.
2. Analyzing the illumination of each room with an internal sensor, for example with a photoresistor 7, which informs the control system on the lighting level in the respective room. This approach allows

differentiated illumination of the indicator light in that room.

3. Detecting a person's approach with a PIR 8 proximity sensor that controls the indicator light. The additional presence of a light sensor 7 also eliminates the illumination of the light indicator during the day. In the case of an intelligent, multiprocessor system, distributed throughout the building and used for lighting control, the building will have a network of PIR 8 sensors and 7 light sensors in the rooms to control the lighting according to the specific conditions in each room. In this case the communication between the control systems is realized by means of a transceiver and a dedicated bus, using the I / OCOM pins of the microcontroller 4.

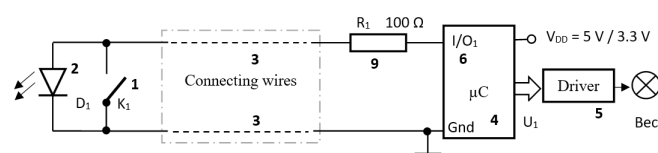


Figure 1. Block diagram of the device - 2-wire connection

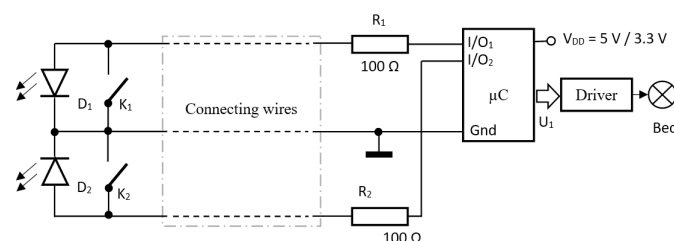


Figure 2. Block diagram of the device - 3-wire connection (allows light intensity control)

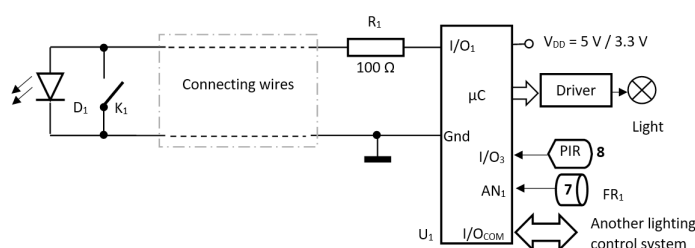


Figure 3. Complete device - 2-wire connection

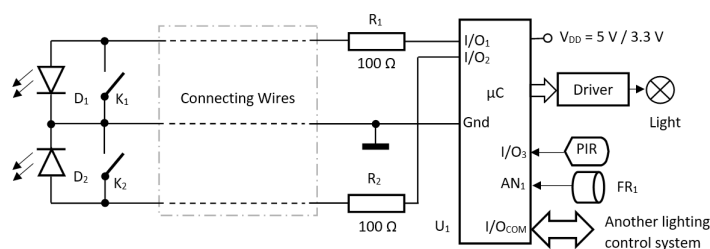


Figure 4. Complete device - 3-wire connection (allows light intensity control)

INVENTORS: BĂNICĂ RADU NICOLAE, KELLENBERGER ANDREA ROZALIA, URSU DANIEL HORAȚIU, CSEH LILIANA, LINUL PETRICĂ, VASZILCSIN NICOLAE

PATENT NO. 132480 / 2020

## PROCESS FOR THE SYNTHESIS OF SILVER NANOWIRES COATED WITH LOW MELTING POINT METAL NANOPARTICLES, SELECTED FROM INDIUM AND TIN



The invention relates to a synthesis method of silver nanowires decorated with low melting point metallic nanoparticles, such as indium or tin, which can be used for making conductive paths on supports in the the construction of solar cells or optoelectronic devices.

A great challenge in the actual research of solar-to-electricity conversion is the construction of flexible solar cells without using indium tin oxide (ITO). Silver nanowires (AgNWs) are a promising candidate to replace ITO due to their high electric conductivity and corrosion resistance, but there is still the issue of increased resistance on wire contacts.

The proposed solution, which is subject of one national patent, involves deposition of low melting point metallic nanoparticles on the surface of silver nanowires, allowing to weld the nanowires and to obtain a network with high electrical conduction paths.

This invention can be used in the field of solar cells or optoelectronic devices such as flexible light emitting diodes (LEDs), organic thin film transistors or electronic paper by depositing functionalized silver nanowires with low melting point metal nanoparticles on flexible substrates, followed by sintering them at low temperatures and obtaining high conductivity paths, necessary for the construction of such devices.

The technical problem of the invention is to develop a process for functionalizing silver nanowires with low melting point metal nanoparticles, in order to allow their sintering at low temperatures on various flexible or rigid supports. The developed process is simple, allows the deposition of metallic nanoparticles with low melting point directly on the surface of silver nanowires, by reducing the corresponding metal ions, without the need to use an intermediate molecule to allow their anchoring on the nanowires.

The process according to the invention consists in the fact that in a first stage the silver nanowires with diameters of 100...500 nm and lengths of over 20 micrometers are obtained, by the solvothermal technique, after which in a second stage on the synthesized silver nanowires quasispherical indium (In) or tin (Sn) nanoparticles with dimensions of 2...50 nm are deposited directly at temperatures of 25...90°C, resulting in silver nanowires functionalized with indium or tin nanoparticles that allow subsequent sintering at low temperatures.

The novelty of the invention is that the indium and tin nanoparticles used in the process of the invention have lower melting points than silver nanowires, so that subsequent sintering can be performed at a lower temperature.

The invention has the following advantages:

- (i) the functionalization of silver nanowires takes place by a simple process;
- (ii) allows the deposition of metallic nanoparticles with a low melting point directly on the surface of silver nanowires;
- (iii) the deposition of nanoparticles takes place directly, by reducing the corresponding metal ions, without the need to use an intermediate molecule to allow their anchoring on the nanowires;
- (iv) the indium and tin nanoparticles used in the process of the invention have lower melting points than silver nanowires, so that subsequent sintering can be performed at a lower temperature.

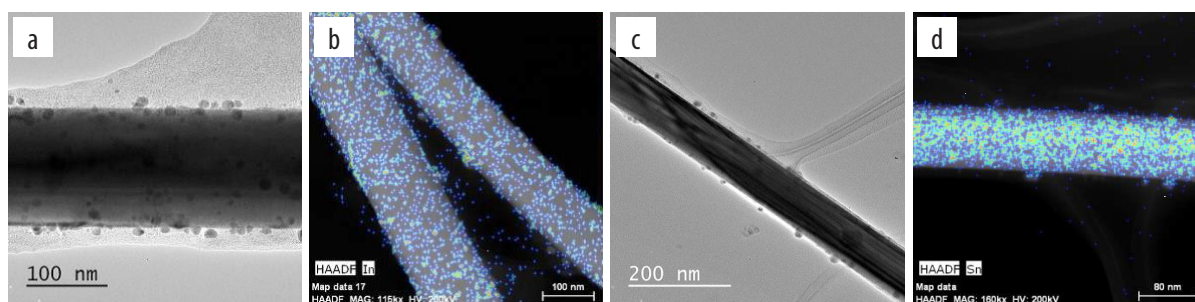


Fig. 1. TEM images and EDX mapping of silver nanowires decorated with low melting point metallic In (a, b) and Sn (c, d) nanoparticles.

**INVENTORS: PAVEL ȘTEFAN, BORZA IOAN, BRATU EMANUEL ADRIAN, DOBOSI IOAN SILVIU, GAINA PAULINA IOANA, STREIAN FELICIA, TALPOS-NICULESCU ȘERBAN**

**PATENT NO. 129343 / 2020**

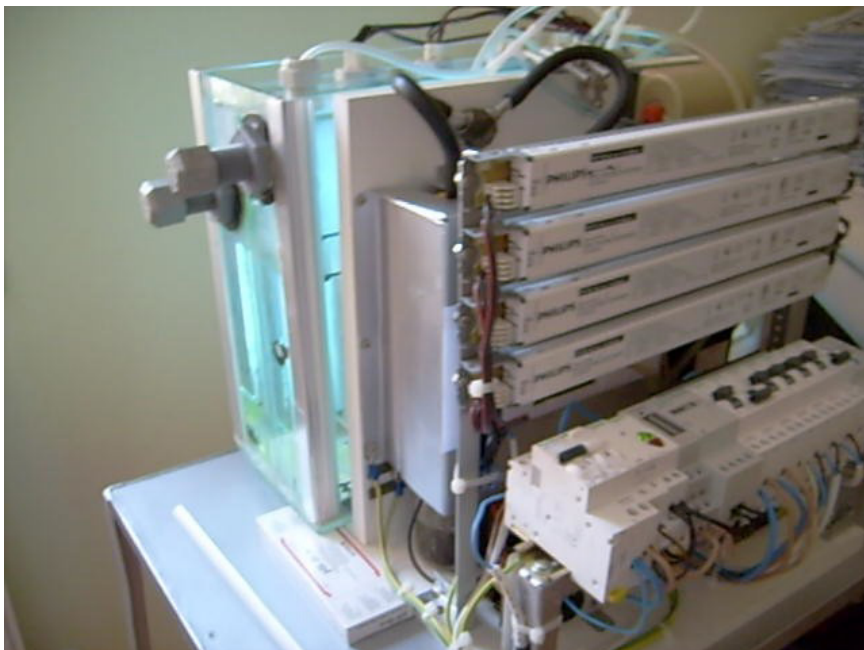
## WASTE WATER DECONTAMINATION SYSTEM IN THE DENTAL UNIT



The invention concerns a system for the decontamination and treatment of waste water in the dental unit, water that is to be purged in the sewers. The technical problems to be solved regard the creation of a system that could, once attached to the dental unit, the collection of the contaminated waste water, its treatment and sterilization, and, finally, the evacuation of the water under hygienic and safety conditions. The system must perform the tasks simultaneously and efficiently. The newly invented system to perform the decontamination of waste water from the dental unit, is composed of an assembly of closed and segmented (divided) recipients that are equipped with baffles that allow the injection of a air and ozone mix into a first set of decontamination activation cells, to be followed by further decontamination by UV germ-killing lamps (C class) in the next activation cells; and finally, evacuated into the sewer system when the physical, chemical and microbiological parameters are reached. The newly invented system for the decontamination of waste water from the dental unit presents the following advantages:

- Uses decontamination agents produces into the installation (ozone) and long term use devices (germ-killing UV lamps);
- The decontamination is efficient as it uses just approx. 1kW/hour electrical energy for 16 hours of functioning;
- The maintenance operations are very simple and require just the replacement of germ-killing UV lamps after 10,000-15,000 hours of functioning;

- The system can be easily monitored while working;
- Safety during functioning;
- Allows for the avoidance of environmental pollution resulting from the use of chlorine as disinfectant.



INVENTOR: PANĂ ADRIAN

PATENT NO. 131297 / 2020

## CONTROL METHOD FOR AN AUTOMATIC CAPACITIVE COMPENSATOR MEANT TO IMPROVE THE POWER FACTOR AND TO BALANCING THE LOAD IN THREE-PHASE FOUR-WIRE ELECTRICAL NETWORKS



If a single-phase capacitor connects between two of the phases of a three-phase electrical network, it will cause a reactive power absorption, in equal parts on the two phases, which is obvious. However, there will be an effect on the circulation of real power, the capacitor absorbing real power from the network on one of the phases and returning it to the network on the other phase. And this fact is, even for an electrical engineer, less obvious. It can be stated that a single-phase capacitor connected between two phases makes, in addition to a shunt capacitive compensation of the reactive power, a redistribution of the real power between the two phases of the network. These statements also apply to a three-phase assembly of single-phase capacitors connected in a delta connection. Such an assembly can be transformed into an unbalanced capacitive compensator, which in addition to improving the power factor, can balance the active and reactive load on the three phases of the network. In the case of a three-phase four-wires network, the compensator must also contain a circuit with the  $Y_n$  connection. When the concentrator (6) goes down, it detaches by cutting (punching, through contour) material from the strip, as sufficient amount to form the product to be manufactured.

The patented method is based on an original mathematical model that establishes the analytical relationships between the six equivalent susceptances of the two three-phase circuits of the compensator ( $\Delta$

and  $Y_n$ ) and the real and imaginary components of the load sequence currents. The method is applied for the control of an automatic capacitive compensator, having the following original elements:

- defines as input quantities of the control process, the rms values of the real and imaginary components of the sequence currents of the load,

- defines as control quantities of the control process, the compensation levels of the positive, negative and zero sequence components of the load currents,
- defines as output quantities of the control process, the values of the six equivalent susceptances of the compensator, calculated with analytical relations that establish the direct connection with the input quantities,
- uses in the control process a sequence of operating steps in order to obtain negative or zero values for the output quantities by iterative correction of the control quantities,
- adjusts the susceptances (capacities) of the compensator so as to obtain an optimal distribution of the capacitive reactive power of compensation between the two functions of the compensator, the one of improving the power factor and the one of load balancing,
- achieves the optimal distribution of the capacitive reactive power of compensation on the positive sequence between the two three-



Fig. 1. Functional experimental model  
(Electrical Networks Laboratory,  
Department of Electrical Power Engineering, UPT).

The experimental model and the patented method are the results of industrial research activities, funded by the Government of Romania, the Ministry of National Education, through Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI), within the program: PN-II-PT-PCCA-2013-4, UPT - ICPE

phase circuits of the compensator, provided the minimization of the number and value of the susceptances that must be canceled due to the fact that they cannot be brought in the capacitive domain.

The patented method is meant to be implemented through the medium of a specialized software in the control system of a three-phase capacitive compensator, consisting of single-phase power capacitor banks, included in two three-phase circuits, one in  $\Delta$  connection, the other in Yn connection, to allow a variable unbalanced three-phase capacitive compensation, in order to fulfill, in addition to the "classic" function of power factor improvement, that of balancing the load of the three-phase four-wire network.

The method is implemented in a functional experimental model (fig. 1). Figure 2 shows the recorded values of characteristic electrical quantities for three sections of the three-phase circuit of the experimental model: at the load terminals (a), at the compensator terminals (b) and at the terminals of the load-compensator assembly (c).

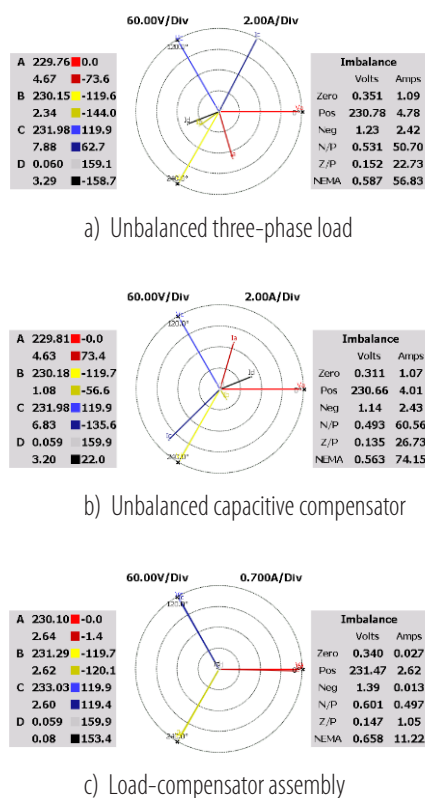


Fig. 2. Values of characteristic quantities for three sections  
of the three-phase circuit

S.A. partnership. Currently, the method is being implemented, on an industrial scale, in a series of prototypes, within a new project carried out in partnership with ICPE S.A., financed by the PN-III-CERC-CO-PTE-2-2019 program.

INVENTORS: MANEA FLORICA, POP ANIELA CARMEN, BACIU ANAMARIA SIMONA, REMES ADRIANA ILEANA

PATENT NO. 129026 / 2020

## ELECTRODE AND METHOD FOR FAST ELECTROCHEMICAL DETECTION OF ARSENIC (III) FROM AQUEOUS SOLUTIONS



The invention refers to the elaboration of an electrode and a process for the electrochemical detection of arsenic (III), a highly toxic pollutant from aqueous solutions. Also, the working electrode and the process of the invention can be used both for the detection of other pollutants from water (heavy metals and organic pollutants) and for other applications (the analysis of pharmaceutical products, food quality control and safety, clinical analysis).

The issue to be solved by the invention is to develop a product and a method based on the electrochemical method of fast detection of arsenic (III) from aqueous solutions using a relatively inexpensive electrode material, with a long operating time, exhibiting high electroanalytical performance: the lowest limit of detection, sensitivity, reproducibility, accuracy.

The electrode and the method of fast electrochemical determination of the arsenic (III) from aqueous solutions according to the invention consists of the use of an electrode called working electrode, a counter electrode in assembly with a reference electrode, which based on the anodic stripping method and using the square wave voltammetry technique allow the contact with the arsenic (III) contaminated water in the presence of an electrolyte, leading to the working electrode electrochemical response in the presence of the pollutant. The working electrode is a composite electrode obtained by dispersing carbon nanotubes in an epoxy matrix and then, electrochemically modified with silver nanoparticles.

The detection and determination of arsenic concentration is done by anodic stripping using the square wave voltammetry technique and consists of two stages described by the following reactions and operating parameters:

In stage 1, the cathodic reduction of the species As (III) to As (0), in accordance with the reaction  $\text{As}^{3+} + 3\text{e}^- \rightarrow \text{As}^0$ , occurring from the application of a potential of  $-0.4 \text{ V/SCE}$  for 120 seconds, which depends on the value of the potential applied and the reaction time having an effect on the electrochemical response of detection As (III) in the second stage;

In stage 2, the effective determination of the As (III) content in the solution, based on the electrochemical response obtained by the anodic stripping process, corresponding to the concentration of arsenic (III) in the solution to be analyzed, at the potential of  $-0.01 \text{ V/ESC}$ , during the square wave voltammetry scanning.

The electrode and the method of fast electrochemical detection of arsenic (III) from aqueous solutions according to the invention has the following advantages: very high electroanalytical characteristics (the lowest limit of detection, sensitivity, reproducibility, accuracy), low cost of materials used for the working electrode elaboration, long operating time (at least 1 year).

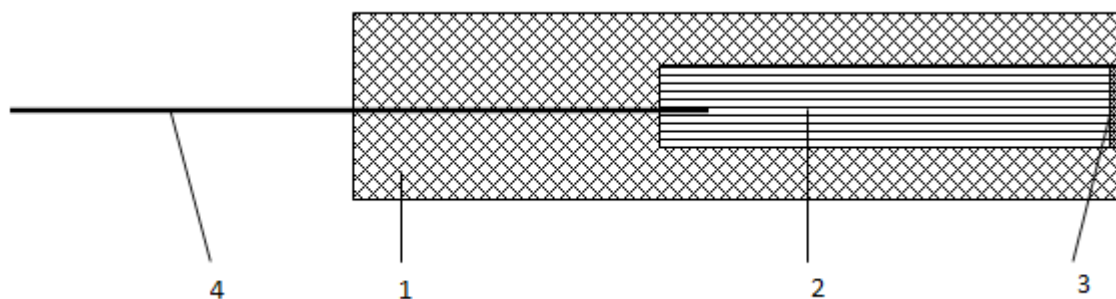


Figure 1. Schematic representation of the electrode

1 - cylinder holder,  
2 - the active cylinder consisting of carbon nanofibers dispersed into an epoxy matrix,

3 - a disc-shaped front side decorated by electrochemical deposition of silver nanoparticles,  
4 - copper wire to assure connection

INVENTORS: WÄCHTER MIHAIL REINHOLD, IOANA IONEL, NEGREA PETRU

PATENT NO. 131485 / 2020

## PROCESS FOR INTEGRATION OF DRY FLUE GAS DESULPHURISATION BY-PRODUCT INTO DENSE SLURRY MIXTURE FOR HYDRAULIC TRANSPORT THROUGH PIPELINE SYSTEMS



The technical problem of the invention is to provide a more efficient and less expensive process for integrating the dry desulfurization by-product into the dense slurry mixture recipe, by which the self-hardening time of the slurry and the hydraulic characteristics of the pipeline can be controlled.

The process of integrating the dry desulfurization by-product into the dense slurry mixture recipe for hydraulic transport through pipeline systems offers a technological solution for the management and storage in the coal fly ash landfill disposal of the desulfurization by-product resulting from the technological process of flue gas treatment for coal-fired power plants.

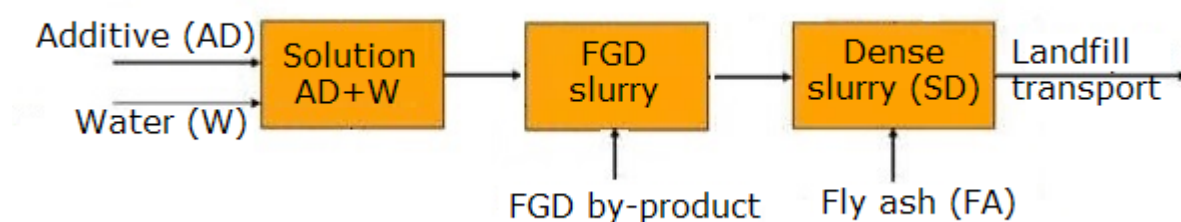
The dense slurry prepared according to the invention solves the problem of preparing the dense slurry mixture recipe which also encompasses the desulfurization by-product, resulting in a slurry fluid which can be hydraulically transported through pipes to the slag and ash landfill disposal specific to coal fired power plants.

The process does not influence the self-hardening properties of dense slurry, prevents the phenomenon of deposition on the pipe line walls, reduces the cost of transport and storage of desulfurization by-product, involves a low cost of implementation, are low energy consumption in operation compared to other methods and is environmental friendly.

The process for integrating the dry desulphurization by-product into the dense slurry mixture recipe for hydraulic transport through piping systems according to the invention uses an additive which simplifies the technological installation for stabilizing the desulphurization by-product and involves low energy consumption during operation.

The invention consists in a process for stabilizing the by-product of dry desulphurization by integrating it into a new dense slurry mixture recipe, which offers the possibility of transport and discharge into the landfill disposal through piping systems. Process flow diagram is depicted in Figure 1.

Figure 1



The process involves the use of a retardant additive in the dense slurry mixture recipe in order to control the rate of chemical cementation reactions, so as to maintain the optimal hydraulic piping properties of the dense slurry prepared after this process for a predetermined time. The delay time of the chemical cementation reactions must be long enough to ensure the time of preparation of the dense slurry in the facility as well as the time required for transport through pipes on the landfill disposal.

Following the results obtained experimentally for the recipe that does not use additives, it was found that the dense slurry comprising the by-product of dry desulfurization does not have hydraulic characteristics of hydraulic transport through pipes. The solidification time of the dense slurry in this case is less than 30 min, which led to the clogging of the pilot installation with which the experiment was performed, a fact highlighted in figure 2.

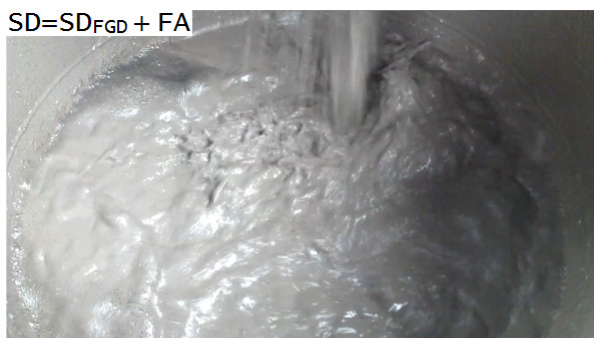
$$SD_{FGD} = (AD + W) + FGD$$



SD - after 15 min.



$$SD = SD_{FGD} + FA$$



SD - after 25 min.



Figure 2.

INVENTORS: WÄCHTER MIHAIL REINHOLD, IOANA IONEL, NEGREA ADINA GEORGETA

PATENT NO. 131486 / 2020

## PROCESS FOR TREATMENT MUNICIPAL SOLID WASTE INCINERATION RESIDUES BY SOLIDIFICATION/STABILIZATION INTO ASH ROCK



The technical problem of the invention is to achieve a more efficient and less expensive residue treatment process using a stabilizing binder existing in coal combustion residues, in a process that activates the chemical cementation reactions by intense hydraulic mixing, resulting an ecologically inert final product. The process of treating residues from the incineration of municipal solid waste by solidification-stabilization in ash rock is an ecological method of landfilling these types of residues, or residues with similar content and toxicity.

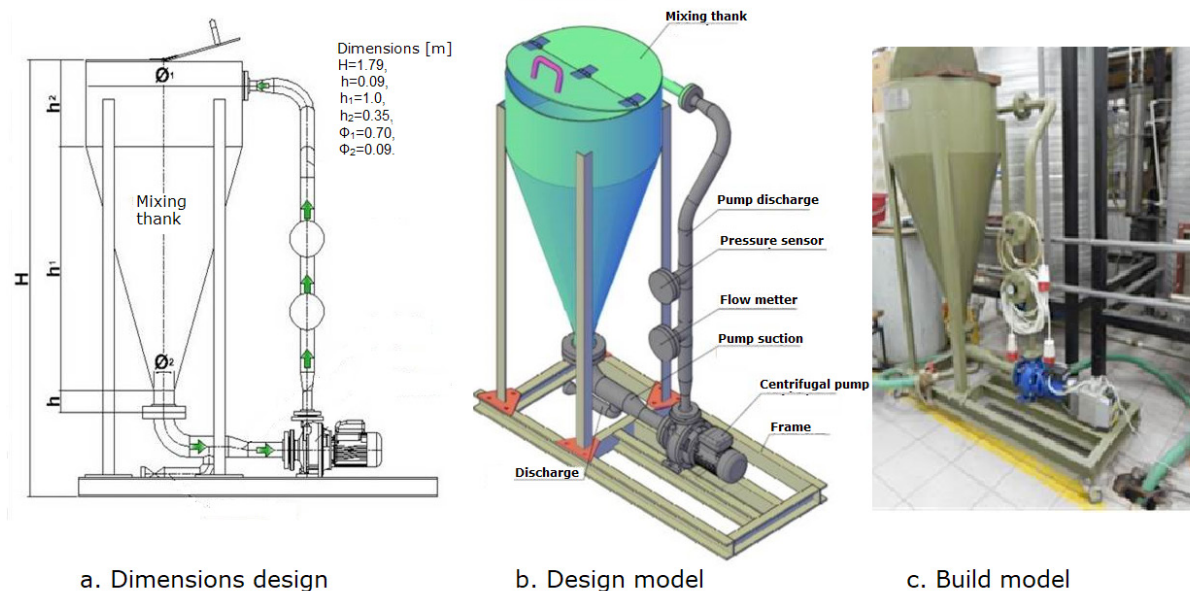
The material stored in the form of ash rock, protects the contamination of the environment by eliminating the migration of heavy metals in the soil and groundwater due to the leaching phenomenon. Based on this process, new concepts can be developed regarding the methods of landfilling waste related to the incineration of municipal solid waste.

The binder material used does not involve production costs. By applying this method, it is possible to deposit in the same landfill both the combustion residues related to the incineration of municipal solid waste and those from the combustion of coal. This eliminates the need to manage and monitor of one landfill disposal. The method can be easily implemented on an industrial scale.

The process for treating the residues from the municipal solid waste incineration by solidification -

stabilization in the ash rock, according to the invention, uses as stabilizing binder material the by-products from the combustion of lignite coal, represented by electro static precipitator fine ash (pozzolanic material) and desulfurization by-product FGD (calcium-based). The final product of the invention is ash rock, which incorporates and fixes in its structure, by chemical cementation reactions, the heavy metals contained in the toxic residues.

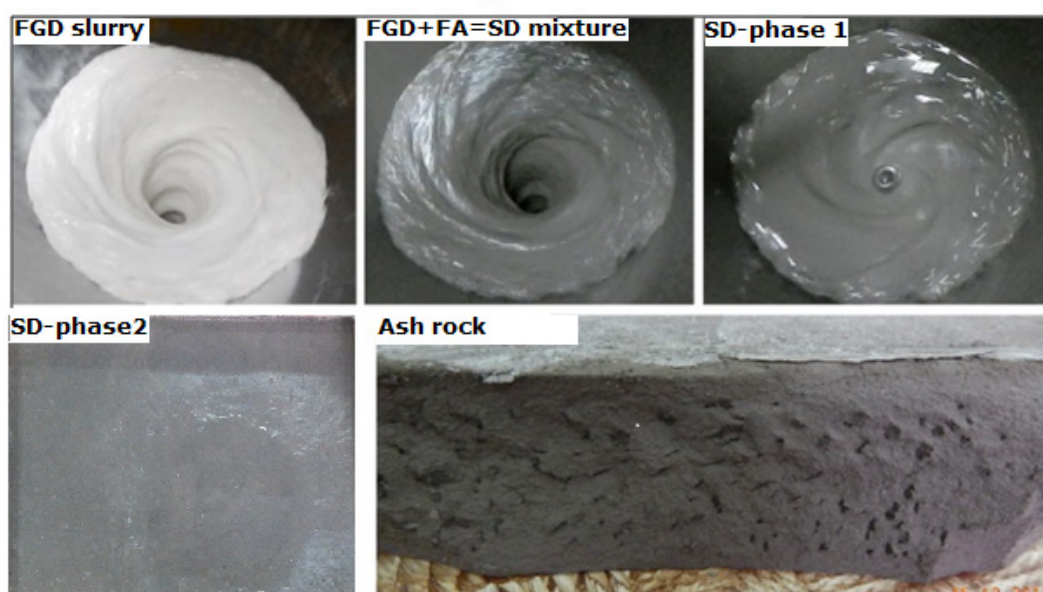
Figure 1.



The preparation of the dense slurry is achieved under hydraulic conditions which ensure the activation of the pozzolanic elements contained in the fly ash, and their chemical reaction with the calcium-based compounds contained in the FGD by-product. For this purpose, the mixture is made in the installation of Figure 1, by cycles of recirculation of the dense slurry with a centrifugal pump for slurries. The mixing tank through its specifically shape and the tangential direction of the pump discharge jet to the walls of the tank form a vortex which ensures a homogeneous mixture between the solid particles and water.

The process involves the production of a homogeneous bi-phasic fluid in the form of dense slurry with cementing properties, obtained by predetermined recipes for mixing water, binder material and toxic residues. The self-hardening properties of the dense slurry is based on the chemical cementation reactions, generated by the pozzolanic elements  $\text{SiO}_2$ ,  $\text{Al}_2\text{O}_3$  and  $\text{Fe}_2\text{O}_3$ ; and calcium-based compounds  $\text{CaO}$ ,  $\text{Ca(OH)}_2$ ,  $\text{CaSO}_3$  and  $\text{CaSO}_4$ ; contained in the coal fly ash, respectively in the by-products related to the flue gas desulphurization unit specific to the coal energy recovery process. Process stages are depicted in Figure 2.

Figure 2.



INVENTORS: GUI VASILE, ALEXA FLORIN, CALEANU CATALIN-DANIEL,  
POPA GHEORGHE-DANIEL, DAVID CIPRIAN, SIMION GEORGIANA

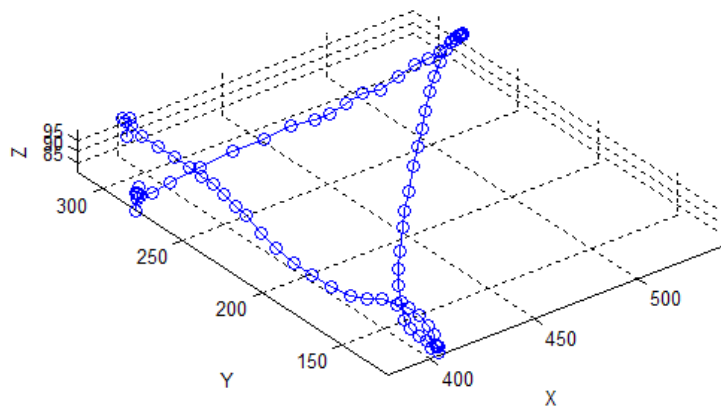
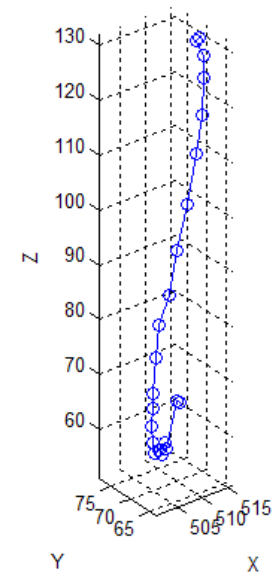
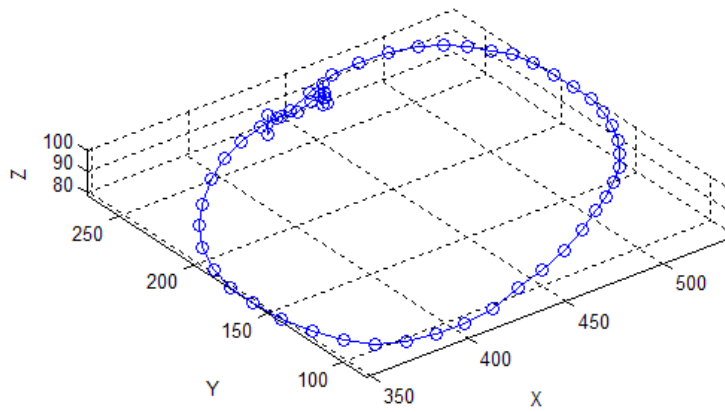
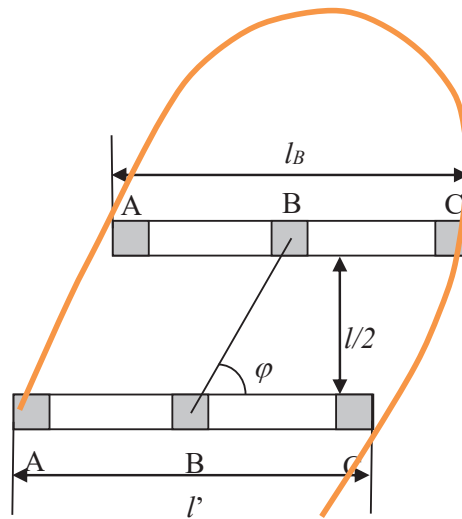
PATENT NO. 127779 / 2020

## METHOD FOR TRACKING THE HAND FINGERS FOR HUMAN-MACHINE COMMUNICATIONS MEANS



The invention relates to a method for tracking the hand fingers and human-computer communication means based on gestures made with the hand. According to the invention, the method consists in a series of operations for digitally processing the signal generated by a monocular video camera (1) connected to or included in a PC-type computer which allows the tracking of the extended fingers of a hand gesticulating on a complex background, at a distance variable in relation to the video camera (1), where the system is automatically initialized when the open hand is exposed in front of the video camera (1); for each finger there is generated a set of four parameters allowing the generation of 4D trajectory on the basis of 2D images.

The method has an advanced robustness in conditions of camouflage or partial occlusion of the hand. Its implementation on a computer for personal use, according to the invention, leads to a higher computational efficiency than the known methods.



INVENTORS: BANICA RADU, URSU DANIEL, MOSOARCA CRISTINA, RACU ANDREI, LINUL PETRICA, NYARI TEREZIA, SVERA PAULA, PASCARIU MIHAI-COSMIN, NEGREA PETRU, SASCA VIOREL ZOLTAN, HEDES ALEXANDRU

PATENT NO. 132634 / 2020

## PROCESS FOR THE SYNTHESIS OF $\text{PdS/Cd}_{1-x}\text{Zn}_x\text{S}$ VISIBLY ACTIVE PHOTOCATALYSTS USING LOW PURITY PRECURSORS



The invention relates to a method for obtaining a series of high efficiency chalcogenic photocatalysts,  $\text{Zn}_{1-x}\text{Cd}_x\text{S}$  (ZCS) and  $\text{PdS/Zn}_{1-x}\text{Cd}_x\text{S}$  (PZCS) by using waste from the battery industry.

Technical problem solved by the invention, as it results from the description, consists in obtaining high-efficiency, visibly active photocatalysts,  $\text{Zn}_{1-x}\text{Cd}_x\text{S}$  (ZCS) and  $\text{PdS/Zn}_{1-x}\text{Cd}_x\text{S}$  (PZCS), with a high degree of crystallinity, using low purity precursors from waste from the battery industry.

The process for obtaining high-efficiency, visibly active photocatalysts,  $\text{Zn}_{1-x}\text{Cd}_x\text{S}$  and  $\text{PdS/Zn}_{1-x}\text{Cd}_x\text{S}$ , according to the invention, eliminates the disadvantages of the known processes, in that a suspension based on impure cadmium hydroxide is obtained, steel of spent batteries such as  $\text{Ni-Cd}$ ,  $\text{ZnS}$ ,  $\text{PdCl}_2$  and deionized water;

The homogenized suspension is introduced into the autoclaving system, achieving a 70% degree of autoclave filling and subsequently the heating takes place at the synthesis temperature of  $200^\circ\text{C}$ , for 70 h.

As a source of cadmium (SC), it is used during the synthesis of ZCS and PZCS type photocatalysts, potassium cadmium hydroxide, 2.6% nickel, carbon and iron (less than 1%).  $\text{Cd}(\text{OH})_2$  was obtained in an earlier step by mechanical scraping of cadmium hydroxide from the steel fittings of spent Ni-Cd batteries.

Hydrothermal synthesis is used to increase the crystallinity of ZCS and PZCS photocatalysts, but also to ensure their high purity.

In fig. 1, an example of a photocatalytic experiment is presented, using 100 mg of photocatalytic Pd type analyzer (0.2% by mass  $\text{Cd}_{0.8}\text{Zn}_{0.2}\text{S}$  (PZCS) and simulated sunlight obtained with the aid an Oriel solar simulator equipped with AM 1.5 type radiation filter. The area of the illuminated surface was of about  $12.8 \text{ cm}^2$ . The irradiance was about  $100 \text{ mW} / \text{cm}^2$  and was determined using a calibrated silicon solar cells. The aqueous solution used as the reaction medium had a concentration of  $0.5 \text{ M Na}_2\text{S}$  and  $0.25 \text{ M Na}_2\text{SO}_3$ . The flow of hydrogen measured under standard conditions of temperature and pressure, released during the photocatalytic reaction carried out at  $60^\circ\text{C}$ , according to fig. 1, is over  $144 \text{ L} / \text{Kgcat}^*\text{h}$ .

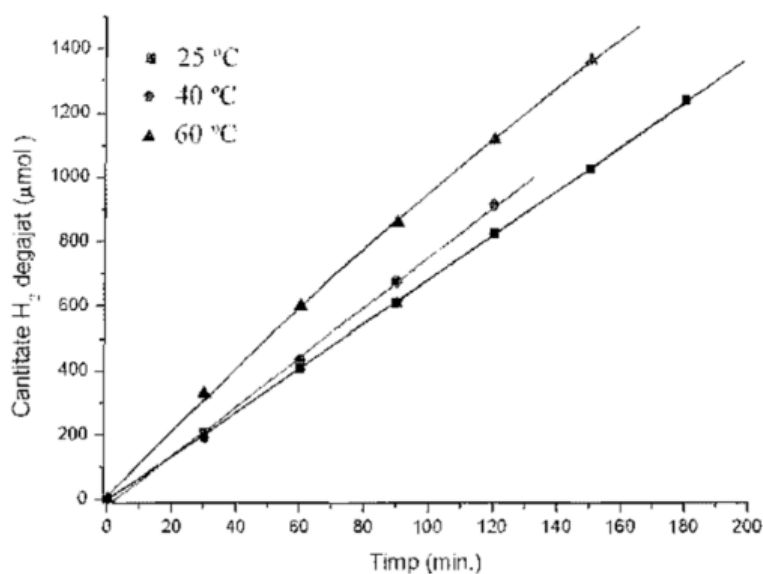


Fig. 1

## HONORARY MEMBERS



## EVOLUTION OF HONORARY MEMBERS OF UPT 2016 - 2020

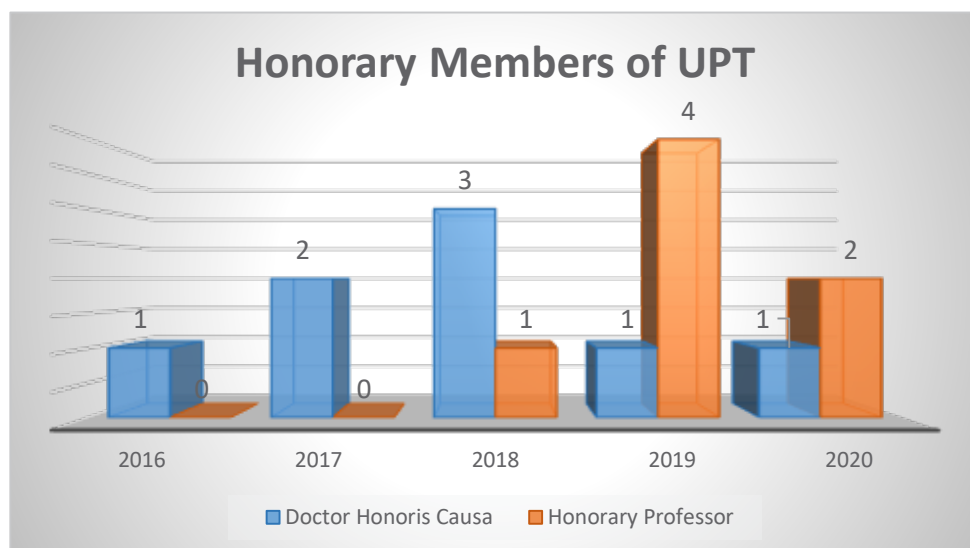
The conferring of honorary degrees is one way in which the University recognizes individuals distinguished by accomplishments consonant with the overarching mission of the University.

Nominees may be eminent scholars, scientists, artists, or professionals who have advanced their disciplines in important ways, or they may be individuals outside of the academic world who have made particularly distinguished contributions to society.

Politehnica University Timisoara recognizes scientific excellence by conferring the honorary degree of Doctor Honoris Causa and Honorary Professor to distinguished Researchers for their contribution to the development of UPT and continuous support.

The University strives for a robust pool of honorary degree recipients enriched by individuals from all backgrounds of engineering.

We also find it rewarding to honor individuals who have not already been publicly recognized by a number of other institutions.





## DOCTOR HONORIS CAUSA

### Professor Herman ROHLING, Technical University of Hamburg

Hermann Rohling was born on December 5, 1946 in Melle, Germany. Professor Hermann Rohling is a renowned specialist in the field of telecommunications, especially in the field of signal processing and estimation and decision theory, being a personality known and recognized worldwide for his contributions in these fields.

After studying mathematics at the Technical University Stuttgart, Professor Rohling initially worked as a research assistant at AEG-Telefunken Communications Engineering Research Institute in Ulm, in the fields of digital radar signal processing, statistical decision theory and signal theory, between 1977 and 1988. During this period, he wrote his doctoral thesis entitled "Adaptive Methoden zur Zielerkennung in Pulsradargeräten mit Dopplerprozessoren" which he defended in 1983 at the Technical University of Aachen. From April 1988 he became a professor at the Technical University of Braunschweig. There he was the head of the "Department of Signal Theory for Location and Information Technology" within the Institute of Telecommunications.

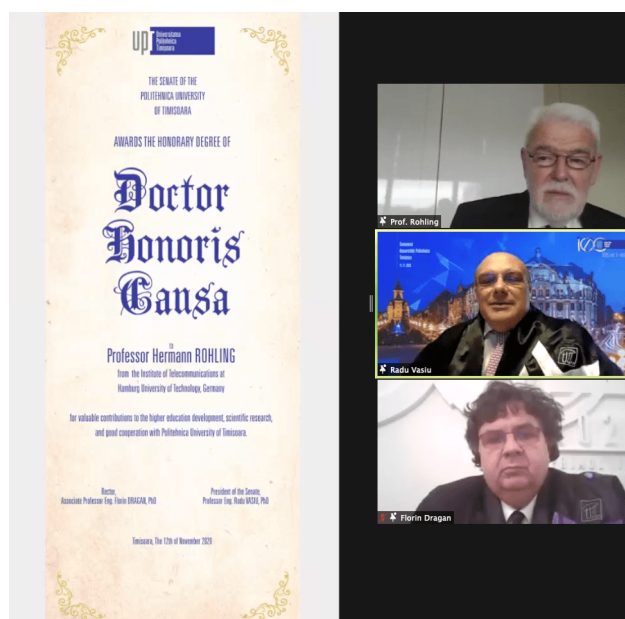
Professor Rohling moved to Technical University of Hamburg-Harburg, Germany (TUHH) eleven years later. Between July 2005 and September 2011 he was Vice President for Research at this technical university.

In October 2010, he took over the presidency of the German Institute of Navigation (DGON), whose Radar Technical Committee he had led since 1995. He has been an IEEE fellow since 2006.

Professor Rohling is the co-founder of the SMS Smart Microwave

Sensors GmbH and is involved in over 30 patents.

There is a long-term collaboration between UPT and TUHH both in the field of education, through various Erasmus-Socrates programs and in the field of research. Between the Communications departments of the two technical universities there is a close relationship of collaboration materialized by: mutual support of scientific events, student exchanges, collaboration on international research contracts. This collaboration began after the 1990s and materialized through a program Tempus. The collaboration continued through the careful selection of valuable students from the Communications department of UPT in order to prepare the diploma projects and doctoral theses at TUHH. After several years of working in Professor Rohling's research team, these former students were hired by international companies based in Germany or Romania and came to lead teams of highly regarded experts in the leading fields of the electronics industry and telecommunications, some of them operating even in Timișoara. The collaboration continued through an FP 7 grant, entitled "ARTRAC Advanced Radar Tracking and Classification for Enhanced Road Safety" number 284740 FP7, carried out in 2011-2014, led by Professor Hermann Rohling. On the occasion of this grant, Professor Rohling visited UPT again, giving lectures on the use of radar sensors in cars. Also, Professor Rohling was actively involved in organizing the 2014 edition of the International Symposium on Electronics and Telecommunications (ISETc) being one of the plenary speakers of the conference.



## HONORARY PROFESSOR

### Professor Daniela RUS, MIT - Massachusetts Institute of Technology, SUA

- Professor Daniela Rus was born in 1963 in Cluj-Napoca. She emigrated in the United States in the '80s, but she still holds a double citizenship Romanian and American.
- In 1993, Daniela Rus received her Ph.D. at Cornell University under the supervision of Professor John Hopcroft.
- Since 2003, prof. Daniela Rus is the "Andrew and Erna Viterbi" Professor of Electrical Engineering and Computer Science at Massachusetts Institute of Technology, Cambridge, Massachusetts, and director of the Computer Science and Artificial Intelligence Laboratory (CSAIL) since 2012. Daniela Rus is also the Deputy Dean of Research for the Schwarzman College of Computing at MIT since 2019.
- Prof. Rus is a member of the National Academy of Engineering and of the American Academy of Arts and Sciences and fellow of the Association for the Advancement of Artificial Intelligence (AAAI), fellow of the the Institute of Electrical and Electronics Engineer (IEEE), and fellow of the Association for Computing Machinery (ACM). She is also a recipient of a MacArthur Fellowship, a National Science Foundation Career award, and an Alfred P. Sloan Foundation fellowship. She is a recipient of the 2017 Engelberger

Robotics Award for Education from the Robotics Industries Association.

- Her statement on the future world is described as: "I imagine a future where robots are so integrated in the fabric of human life that they become as common as smart phones are today. The field of robotics has the potential to greatly improve the quality of our lives at work, at home and at play."
- Rus' research interests include robotics, mobile computing and programmable matter. She is known for her work on self-reconfiguring robots, shape-shifting machines that have the ability to adapt to different environments by altering their internal geometric structure. They do this on their own, without remote control, for locomotion, manipulation, or sensing purposes. She has shown that these self-reconfigurable machines could be used in many situations where the possible obstacles and constraints on movement could not ever be fully anticipated in preprogrammed control software (e.g., deep sea or planetary exploration).
- Professor Daniela Rus joined UPT as a keynote speaker at conference dedicated to digital education and artificial intelligence "Human and Artificial Intelligence for the Society of the Future".



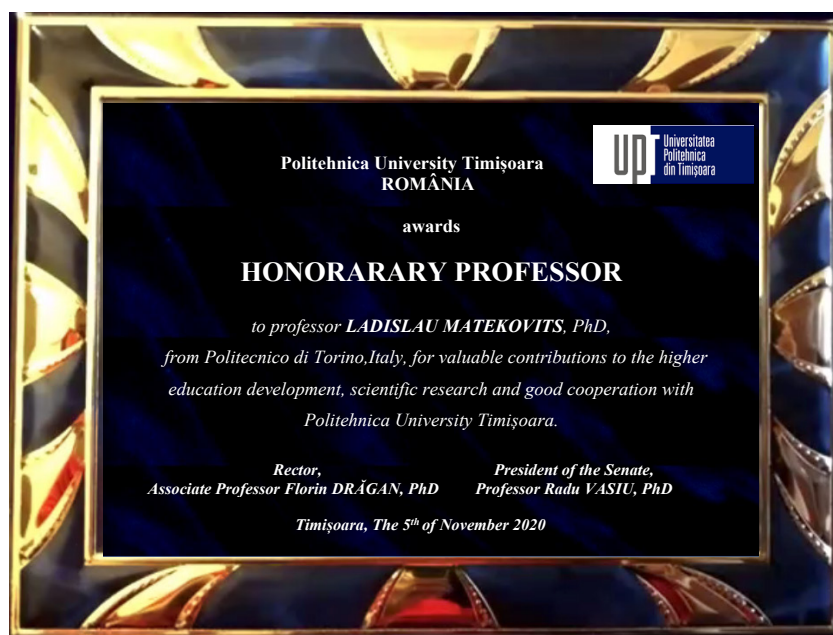
## HONORARY PROFESSOR

### Professor Ladislau MATEKOVITS, Politecnico di Torino University, Italy

- Ladislau MATEKOVITS was born in 1967, he graduated in 1992 the Bucharest Polytechnic Institute, Faculty of Electronics and Telecommunications, and the second degree of the same profile was obtained in 2002 from the Politecnico di Torino University.
- Since 1996 he has been employed at Politecnico di Torino in various positions (collaborator, technician, etc.), and since 2002 he has been permanently employed as a teacher.
- During his teaching career, Professor Ladislau Matekovits has demonstrated remarkable action in all modern educational cycles: bachelor's, master's, and PhD's degree. Among the subjects taught we can remember: Electromagnetic Fields, Complements of Electromagnetic Field, Antennas (bachelor), Electromagnetic Compatibility, Radio Planning (master), Metamaterials, Metasurfaces, Numerical Optimization (PhD).
- Professor MATEKOVITS' long-term collaboration with UPT/Faculty of Electronics, Telecommunications and Information Technologies has manifested itself on various levels: didactic, scientific, through joint programs and by supporting the organization of international scientific events.
- On the teaching level, Mr. Matekovits published two books

in Romanian, at the Politechnic Publishing House, one of Microwaves and Electromagnetic Compatibility and a collection of Microwave problems. The professor also supported the doctoral school through direct guidance and publication of scientific papers in common with the participation of PHD students from UPT. The Professor supported the conduct of the international traditional symposiums of Electronics and Telecommunications organized by UPT (ISETc) through direct participation with works in collaboration with professors and PhD students, through reviews of the proposed countries, and through presentation and/or organizing lectures in the plenary of the events at the latest editions.

- The programs carried out jointly were of the Socrates type and then Erasmus, since 2004 until now.
- Another type of collaboration was provided by the MCD type mobility programs granted by UEFISCDI to finance the movement of Romanian researchers from the diaspora to research institutions in Romania to support scientific research in the country. UPT, through the MEO department of the ETcTI faculty, has so far carried out three such programs with Mr. Matekovits as a guest.





# HABILITATION THESIS

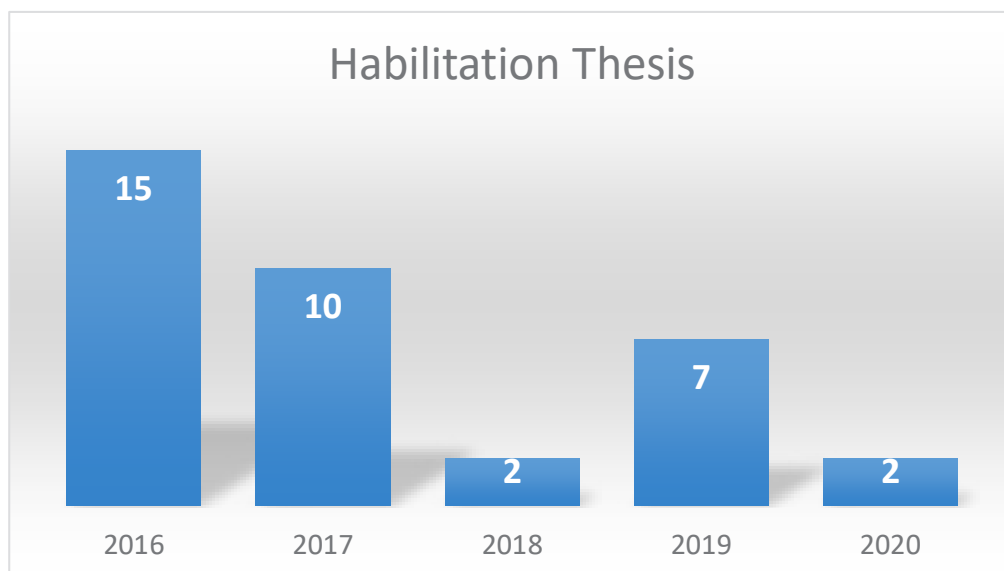


## EVOLUTION OF HABILITATION THESIS IN UPT 2016 - 2020

Habilitation (from Latin habilis “fit, proper, skillful”) is the highest academic qualification a scholar can achieve by his or her own pursuit.

In this chapter we present the habilitation thesis supported by teachers from Politehnica University Timisoara, both at UPT and, also, at other universities.

The habilitation thesis are presented in chronological order, according to institution where they were sustained.





## IMAGE ENHANCING TECHNIQUES BASED ON FUSION

Author: Codruta ANCUTĂ

### Abstract

The present habilitation thesis summarizes the research contributions of the candidate obtained between 2011 (when the candidate obtained the PhD) to this date.

The most significant research activity and the obtained results are presented structured in several parts that represent original contributions in the field of image processing and computational photography: image dehazing (day-time single image dehazing, night-time single image dehazing, dehazing evaluation dataset), underwater images enhancement, image decolorisation and single scale fusion technique for effectively merging images.

**I. Image dehazing** deals with the problem of enhancing the visibility in terms of color and details for images degraded by haze. In outdoor environments, haze phenomena appears when the light reflected from object surfaces is scattered due to the impurities of the aerosol, or due to the presence of fog and haze. The yielding hazy images are characterized by poor contrast, lower saturation and additional noise.

**II. Enhancing Underwater Images.** We describe an effective technique that is able to enhance underwater images. Our strategy derives the inputs and the weight measures only from the degraded version of the image. In order to overcome the limitations of the underwater medium we define two inputs that represent color corrected and contrast enhanced versions of the original underwater image/frame, but also four weight maps that aim to increase the visibility of the distant objects degraded due to the medium scattering and absorption. The enhanced images and videos are characterized by reduced noise level, better exposedness of the dark regions, improved global contrast while the finest details and edges are enhanced significantly. In addition, the utility of our enhancing technique is proved for several challenging applications (image matching, segmentation, etc.).

**III. Image decolorization (color-to-grayscale)** deals with the problem of converting a color image (with three-RGB-channels) into



a single channel image version. Often, the standard decolorization conversion is simply employed as the luminance channel of different color spaces. However, this simple global mapping disregards important chromatic information and therefore, in many cases, the output does not preserve the original appearance. Our grayscale transformation, designed in RGB color space and takes as individual inputs the three color channels (R, G, B). Our technique is guided by two weight maps that transfer in the final result the most significant information of each derived input (RGB color channels). In order to minimize artifacts introduced by the weight maps, our approach is designed in a multi-scale fashion.

The full thesis at:

[http://www.upt.ro/Informatii\\_teze-de-abilitare-sustinite\\_285\\_ro.html](http://www.upt.ro/Informatii_teze-de-abilitare-sustinite_285_ro.html)

### Habilitation Commission

**Prof.univ.dr.ing. Aldo DE SABATA**

Universitatea Politehnică Timișoara

**Prof.univ.dr.ing. Corneliu RUSU**

Universitatea Tehnică din Cluj-Napoca

**Prof.univ.dr.ing. Dinu COLTUC**

Universitatea "Valahia" din Targoviște

## WATER IN SUPRAMOLECULAR NANOSYSTEMS AND MATERIALS FOR FOODS, PHARMACEUTICALS AND COSMETICS

**Author: Daniel-Ioan HĂDĂRUGĂ**

### Abstract

The *Habilitation Thesis* is based on the author's research in food and pharmaceutical fields. Research results were published as original articles in highly esteemed journals from these fields, as well as book chapters in encyclopedias and monographs from internationally recognized publishers in the last five years (e.g., many articles in *Food Chemistry*, ISI 6.3/Q1 or book chapter in *Encyclopedia of Analytical Science*, Elsevier, 2019). Moreover, the research results were presented at high level international conferences in the field such as *International Conference on Water in Food (EFW)* – Reims, Helsinki, Leuven, Belgium and Prague, or *European Conference on Cyclodextrins (EuroCD)* – Asti, Antalya and Lille.

The thesis starts with the presentation of the main author's research results regarding the scientifically, professional and academic aspects in the field of "*Engineering of vegetable and animal resources*": an introduction related to biological and supramolecular systems, implications of water molecules in the obtaining, analysis and bioavailability of some biologically active compounds. The thesis continues with the synthesis and characterization of supramolecular nanosystems having applications in food, pharmaceutical and cosmetic fields, based on the scientific results obtained for molecular nanoencapsulation in natural and semi-synthetically modified cyclodextrins of unique biologically active compounds or mixtures with hydrophobic properties, as well as more hydrophilic natural antioxidants. In the next section is detailed the Karl Fischer titration method (KFT), which have important applications for selective determination of water in supramolecular nanosystems based on cyclodextrins and materials that can be used in food product development. The thermogravimetry-differential thermogravimetry (TG-DTG) and differential scanning calorimetry (DSC) thermal methods that are applicable to the obtained supramolecular nanosystems in order to evaluate the water/moisture content, the stability, releasing properties of volatile and degradation compounds have been emphasized. The correlation and multivariate statistical analyses of the above obtained data were presented in the final part. Both linear and multilinear regression, as well as classifying and grouping methods by multivariate statistical analysis – principal



component analysis (PCA) have been used. Relevant mathematical models on the water content, composition and KFT kinetic parameters for food ingredients and supramolecular nanosystems having food, pharmaceutical and cosmetic applications, as well as between the KFT and TG-DSC parameters were obtained.

The second section of the thesis is dedicated to the evolution and development plan for professional, scientifically and academic career. It was emphasized the development of the career in the field of engineering of vegetable and animal resources, the publications, international impact and visibility through the *Hirsch index* – 12, acting as *Guest Editor for Food Chemistry*, *Vice-president of Association EuroFoodWater* (Reims, France), activating in scientific and organizing committees of international conferences in the field (*EFW* and *EuroCD*), or as expert for international and national grants.

The full thesis at:

<https://www.usab-tm.ro/ro/scoli-doctorale-66/abilitare-11118>

### Habilitation Commission

**Prof. Dr. Olimpia-Alina IORDĂNESCU**

Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" from Timișoara

**Prof. Dr. Sevastița MUSTE**

University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca

**Prof. Dr. Camelia VIZIREANU**

"Dunărea de Jos" University of Galați

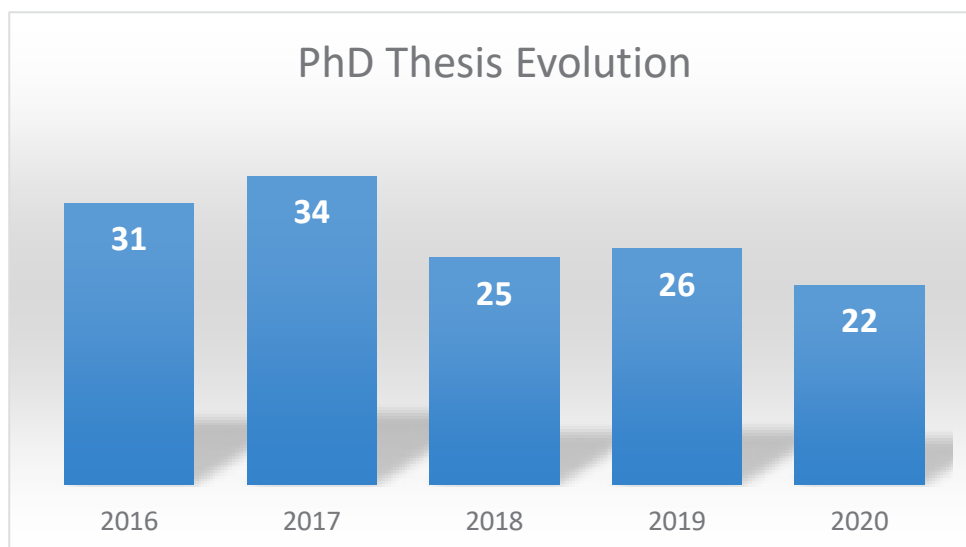
# PhD THESIS



## EVOLUTION OF PhD THESIS DEFENDED IN UPT 2016 - 2020

PhD students of UPT are those with a high degree of personal motivation that stems from their natural curiosity and love of intellectual pursuits. It is expected that after they obtain their degree they will metamorphose into scholars for whom also the temptation of researching new and exciting subjects is irresistible, or at least preferable to all other choices.

Doctoral programs usually encompass intensive training in research methods, including interviewing, surveys, questionnaires, clinical trials and laboratory experiments; later, those skills are put into practice when the doctoral candidate conducts fieldwork for his dissertation. Skills gained in qualitative and quantitative research methodology and statistical analysis are transferable to non-academic research environments, particularly for industrial research. In addition, employers outside of academia seek individuals with sound research skills to carry out projects at think tanks and research institutes in both the private and government sectors.



In this chapter we present a list of the PhD Thesis defended in Politehnica University Timisoara during 2020.



## Architecture

<b>Irina MOHORA</b> PhD adviser prof. C. DUMITRESCU	<i>Relația lumii vegetale cu spații destinate birourilor</i> ( Connection between greenery and workplaces )
<b>Brîndușa Raluca HAVAȘI</b> PhD adviser prof. T. O. GHEORGHIU	<i>Arhitectura și copiii. Spațiul ca mediu de educație a tinerilor</i> ( Architecture and children. The space as a youth education environment )
<b>Vladimir OBRADOVICI</b> PhD adviser prof. S. M. BICA	<i>Salvagardarea bisericii monument de lemn din Crivina de Sus. Rolul arhitectului într-un proces multidisciplinar</i> ( Saving the wooden church monument in Crivina de Sus. The role of the architect in a multidisciplinary process )

## Systems Engineering

<b>Cristian - Grigore ZIMBRU</b> PhD adviser prof. I. SILEA	<i>Soluții informatice pentru cercetarea variantelor și tiparelor genomice aplicând metode din ingineria sistemelor</i> ( In silico solutions for researching genomic variants and patterns applying systems engineering methods )
<b>Ovidiu GANA</b> PhD adviser prof. O. PROȘTEAN	<i>Probleme de modelare și conducere ale sistemelor electroenergetice solare</i> ( Problems of driving and modeling of the electroenergetic systems )
<b>Răzvan-Cătălin MICLEA</b> PhD adviser prof. I. SILEA	<i>Sisteme de creștere a siguranței traficului rutier în condiții meteo ce alterează vizibilitatea - cercetări și soluții</i> ( Systems to increase the safety of road traffic in weather conditions that alter visibility - research and solutions )

## Computers and Information Technology

<b>Sorin Liviu JURJ</b> PhD adviser prof. M. VLĂDUȚIU	<i>Alimentarea și evaluarea sistemelor bazate pe învățarea profundă utilizând energie verde</i> ( Powering and evaluating deep learning-based systems using green energy )
<b>Gabriel BARINA</b> PhD adviser prof. M. VLĂDUȚIU	<i>Analiza Computațională a Comportamentelor Emergente în Rețele</i> ( Computational Analysis of Emergent Behaviour in Collaboration Networks )
<b>Iulia ȘTIRB</b> PhD adviser prof. H. CIOCĂRLIE	<i>Reducerea consumului de energie și a timpului de execuție prin optimizarea comunicării între firele de execuție și prin localizarea echilibrată a datelor la execuția programelor paralele, pe sisteme NUMA</i> ( Optimization of performance and energy consumption by balanced data locality for the execution of parallel applications on numa systems )

## Chemical Engineering

<b>Paula Aurelia BORZA</b> PhD adviser prof. F. PETER	<i>Noi căi de sinteză pentru biocompuși folosind enzime native și imobilizate</i> ( New synthetic routes for biocompounds using native and immobilized enzymes )
<b>Bogdan Adrian MILITARU</b> PhD adviser prof. R. PODE	<i>Dezvoltarea unor procese de valorificare a cenușii de epurare</i> ( Development of processes for capitalization of sewage sludge ash )

## Civil Engineering and Building Services

<b>Adrian ȘMULEAC</b> PhD adviser prof. T. E. MAN	<i>Metode geospațiale în vederea realizării unui GIS pentru amenajările hidrotehnice și hidroameliorative</i> ( Geospatial methods in order to implement a GIS for hydrotechnical and hydroameliorative facilities )
<b>Iasmina APOSTOL</b> PhD adviser prof. M. MOȘOARĂ	<i>Vulnerabilitatea centrelor istorice la seism</i> ( Seismic vulnerability assessment of historical urban centers )
<b>Alexandra - Iasmina KELLER</b> PhD adviser prof. M. MOȘOARĂ	<i>O metodologie complexă de evaluare a șarpantelor istorice</i> ( A complex assessment methodology for historic roof structures )

## Civil Engineering

<b>Radu POPA</b> PhD adviser prof. S. DAN	<i>Contribuții la realizarea îmbrăcăminților rutiere rigide</i> ( Contributions to the construction of rigid road surface course )
--	---

## Electronic Engineering and Telecommunications

<b>Markus HERRMANN</b> PhD adviser prof. M.-E. OTEȘTEANU	<i>Detecția, estimarea și corecția traiectoriei pentru ghidarea robotului</i> ( Path detection, estimation and correction for robot guidance )
---	---

## Electrical Engineering

<b>Dan HULEA</b> PhD adviser prof. N. MUNTEAN	<i>Convertoare CC-CC bidirecționale cu raport de conversie extins pentru aplicații de stocare în supercondensatoare</i> ( Wide ration bidirectional DC-DC converters for supercapacitor storage applications )
--	---

## Engineering and Management

<b>Anca MOCAN</b> PhD adviser prof. A. DRĂGHICI	<i>Industria 4.0 pentru ergonomia depozitelor: Posibile aplicații ale tehnologiilor emergente</i> ( Industry 4.0 in warehouse ergonomics: Possible applications of emerging technology )
<b>Daniel PASCHEK</b> PhD adviser prof. A. DRĂGHICI	<i>Utilizarea inteligenței artificiale în managementul proceselor de afaceri - Cerință importantă, factor de succes și necesitate pentru afaceri în industria 5.0</i> ( Business Process Management Using Artificial Intelligence - An important Requirement, Success Factor and Business Need for Industry 5.0 )
<b>Alin - Lucrețiu - Dubcek GĂUREANU</b> PhD adviser prof. A. DRĂGHICI	<i>Managementul securității în muncă - perspective strategice în consolidarea culturii de securitate a muncii în întreprinderi</i> ( Occupational Safety and Health Management - Strategic Perspectives in Strengthening the Safety Culture in Enterprises )

## Mechanical Engineering

<b>Iosif LAZĂR</b> PhD adviser prof. I. BORDEAȘU PhD adviser prof. I. MITELEA	<i>Tehnici de optimizare a rezistenței la eroziune prin cavitație a unor aliaje Cu-Zn și Cu-Sn</i> ( Techniques for the optimization of the resistance to cavitation erosion of certain Cu-Zn and Cu-Sn alloys )
---	---

## Industrial Engineering

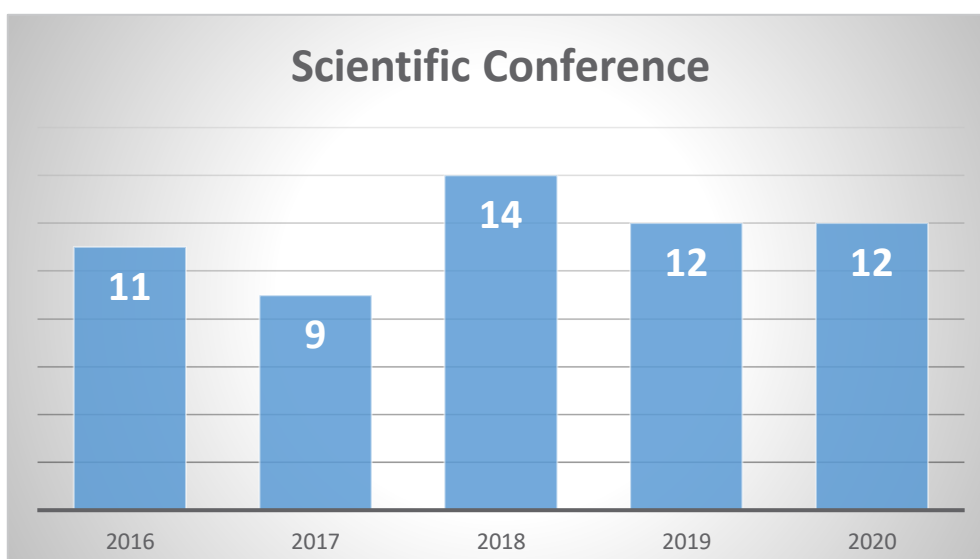
<b>Nicolae ISTRAT</b> PhD adviser prof. D. ȚUCU	<i>Abordarea sistemic-integrată a optimizării siguranței rutiere în județul Timiș</i> ( Systemic-integrated approach to road safety optimization in Timiș County )
--	---



## SCIENTIFIC CONFERENCES



## EVOLUTION OF SCIENTIFIC CONFERENCES 2016 - 2020







## Building Services and Environmental Comfort (ICCA 2020)

April 2 – 3, 2020, Timișoara, Romania

**Organizers:** AIIR – Romanian Association of Building Services;  
Politehnica University Timișoara – Civil Engineering and Installations Department;  
in association with REHVA, Danube ASHRAE Chapter, Research Center of Installations,  
Electrical Installations and Automation Society Romania

<http://www.aiir-timisoara.ro>

Knowing the comfort needs, being aware of the imperative of the protection of the environment and finding the current energy “deficiencies”, led to the organization of the 29-th Conference “Building Services and Environmental Comfort” with theme “The comfort provided by renewable energy sources”. Specialists of all classes, students, performers, designers, researchers, and teachers have published in this volume.

The key issues of renewable energy supply and proposals for solving them can be found in the 28 papers of authors from our country and from abroad, published in the conference volume.

Topics: ambient comfort, environmental protection, HVAC systems, energy efficiency, renewable energy, technical and economic parameters of the installations, the influence of the improper functioning of the facilities on human health, issues in facilities management and marketing.

The conference was attended by 46 authors who addressed topics such as renewable energy sources (solar energy, wind energy, soil, and environmental energy), air and water quality, technical sustainability, but also the influence / importance of human action in contact with environment. Researchers’ concerns closely related to future work/activity, have led to the development of valuable works with current topics and personal contributions to solve, gravitating in the areas of primary factors of life: air, water, heat, light, which fits perfectly with the words “Homo sanus in domo pulchra.”

Published papers by: The volume consisting of the conference’s papers was published by MATRIX Publishing (ISSN: 1842-9491).



## International Conference on Applied Sciences ICAS2020

May 20 – 22, 2020, Hunedoara, Romania (on-line)

**Organizers:** Politehnica University Timișoara and Unieversity of Banja Luka  
in cooperation with: Ministry for Scientific and Technological Development, Higher Education and Information Society of the Republika Srpska, Academy of Romanian Scientists, Academy of Sciences and Arts of the Republika Srpska, Academy of Technical Sciences of Romania – Timisoara Branch, General Association of Romanian Engineers – Hunedoara Branch and Association Universitaria Hunedoara

<http://icas.science/>

Event dedicated to the Centenary of the University Politehnica Timișoara and the Semi-Centenary of the Engineering Faculty of Hunedoara. The conference has been focused on several fields of application, operation and influence of the applied sciences and technologies on industry.

Topics of the conference covers a comprehensive spectrum of issues from:

1. **Fundamental Sciences:** Pure and Applied Mathematics, Physics, Chemistry, Numerical Approximation and Analysis, Computational Methods, Applied Statistics and others...
2. **Computers Engineering:** Modeling and Simulation, Software Engineering, Data Bases, and others...
3. **Electrical Engineering:** Circuits and Systems, Signal Processing, Electric Motors, Control Engineering, and others...
4. **Mechanical Engineering:** Mechanics, Mechatronics, Robotic Systems Engineering, Production Engineering, Constructions, Automotive and Traffic Engineering, Safety Engineering, Reliability, and others...
5. **Materials Engineering:** Metallic Materials, Composite Materials, Metal Alloys, Metallurgy, Heat Transfer, and others...

Publication of papers: The volume “Proceedings of ICAS2020” has been published in *Journal of Physics: Conference Series* vol. 1781 (2021).

## SACI 2020

IEEE 14th International Symposium on Applied Computational Intelligence and Informatics

### IEEE 14<sup>th</sup> International Symposium on Applied Computational Intelligence and Informatics (SACI 2020)

May 21 – 23, 2020, Timișoara, Romania

**Organizers:** Óbuda University, Budapest, Hungary, Politehnica University Timișoara, IEEE Chapter of Systems, Many, and Cybernetics Society, Romania

<http://conf.uni-obuda.hu/saci2020/>

SACI 2020 has featured several kinds of presentations, including invited talks, contributed papers and posters. The outcome of SACI 2020 is a better understanding of some leading research areas, as already Computational Intelligence and Informatics have demonstrated.

SACI 2020 has welcomed papers on the following topics:

- Computational Intelligence
- Intelligent Mechatronics
- Systems Engineering
- Intelligent Manufacturing Systems
- Intelligent Control
- Intelligent Robotics
- Informatics.

Published papers by:

IEEE Xplore Digital Library, please visit

<http://ieeexplore.ieee.org/search/searchresult.jsp?newsearch=true&queryText=SACI%202020>



### ErgoWork 2020 International Conference on Ergonomics and Workplace Management

June 18 – 20, 2020, Timișoara, Romania – On-line event

**Organizers:** Romanian Society on Ergonomics and Workplace Management (ErgoWork), Politehnica University of Timisoara, Romania, Technical University of Cluj-Napoca, Romania, Romanian Association of Workplace and Facility Management, Federation of European Ergonomics Societies, Hungary Hungarian Ergonomics Society, Serbia Ergonomics Society of Serbia, Croatian Ergonomics Society

<http://www.mpt.upt.ro/cercetare/conferinte/ergowork.html>

ErgoWork 2020 international scientific event was organized for creating a large national and international community of knowledge, practice and interests in the field of ergonomics and workplace management. The published papers were related to a large variety of topics as: industrial ergonomics, product and process ergonomics, workplace aesthetics and ergonomics (workplace design and modern architecture perspectives), biomechanics and modelling in ergonomics, occupational medicine, application of ergonomics, occupational health and safety management, sustainable workplaces, education and human resources management. The conference was supported by the Ergonomics and Human Factors Regional Educational CEEPUS Network (CIII-HU-1506-01-2021), <https://sites.google.com/view/ceepusergohf/home>

Publication of papers in 2 emergent ISI Thomson/Clarivate Analytics journal:

- 32 articles were published in ACTA TECHNICA NAPOCENSIS SERIES-APPLIED MATHEMATICS, MECHANICS AND ENGINEERING journal, special issue, Anca DRAGHICI (Guest Editor), 64(1-S1), 2021, <https://atna-mam.utcluj.ro/index.php/Acta/issue/view/52>
- 9 articles were published in HUMAN SYSTEMS MANAGEMENT journal, special issue “Changes and challenges of human systems management during and after the pandemic”, Anca DRAGHICI (Guest Editor), 39(4), pp. 469-472, 2020, <https://content.iospress.com/articles/human-systems-management/hsm209001?resultNumber=0&totalResults=12&start=0&q=Draghici+Anca&resultsPageSize=10&rows=10>

This research output has an Altmetric Attention Score of 33. This is our high-level measure of the quality and quantity of online attention that it has received. This Attention Score, as well as the ranking and number of research outputs shown below, was calculated when the research output was last mentioned on 09-12-2020.

33



## Aqua Circular 2020 - On-line Conference

October 7 - 8, 2020, on-line

**Organizers:** Aquademica Foundation, Aquatim SA, Aquaserv SA, Politehnica University of Timișoara, "Gheorghe Asachi" Technical University of Iași, Fraunhofer Institute for Interfacial Engineering & Biotechnology, Business Development Group, TRITECC, Zalmo Expert Consult, EIT Climate-KIC, NextGen, "Volatile" Project.

<https://aquademica.ro/on-line-conference-circular-water-2020/>

The conference has been focused on new innovative technologies, regional policies, barriers, new business models to follow in next years.

Topics of the conference covers a comprehensive spectrum of issues from:

1. Circular Economy in Sustainable Water Management
2. Public Services Management in the Circular economy
3. Environmental protection & Circular economy
4. Moving Water Industry towards to Circular economy
5. Circular economy & Water Security Nexus

Publication of papers:

Aquademica publication (on-line version)



## 8<sup>th</sup> International Conference on Advanced Materials and Structures - AMS 2020

October 7 - 9, 2020, Timișoara, Romania

**Organizers:** University Politehnica Timișoara ("Department of Materials Engineering and Manufacturing" and "Department of Mechanics and Strength of Materials") in collaboration with the Politehnica Foundation

[www.ams.upt.ro](http://www.ams.upt.ro)

The 8<sup>th</sup> International Conference on Advanced Materials and Structures - AMS'20 was organized by the University Politehnica Timișoara ("Department of Materials Engineering and Manufacturing" and "Department of Mechanics and Strength of Materials") with the support of the Politehnica Foundation. The AMS'20 conference was held between October 7-9, 2020 in Timișoara, Romania and it is the eighth of the scientific event. The AMS'20 conference celebrated the 100<sup>th</sup> anniversary of University Politehnica Timișoara foundation.

The conference included plenary sessions, oral and poster presentations, and social events.

The conference topics included:

- Advanced materials - amorphous, nano-structured materials, composites, cellular materials, biomaterials etc.
- Surface engineering
- Modern fabrication, additive manufacturing, joints and recycling technologies
- Materials damage under time-dependent-actions (fatigue, creep, impact, corrosion)
- Computational techniques for advanced engineering materials and structures

Publication of papers:

Proceeding of AMS'20 have been published in the Journal Materials Today: Proceedings (<https://www.journals.elsevier.com/materials-today-proceedings>). Materials Today: Proceedings (ISSN: 2214-7853) provides the materials science community with a fast and flexible route to the publication of research presented at national and international scientific conferences in the field of materials science, technology and engineering. Accepted proceedings are published on ScienceDirect.



## The X International Conference "Industrial Engineering and Environmental Protection"

October 8 – 9, 2020, Zrenjanin, SERBIA

**Organizers:** University of Novi Sad, Technical Faculty "Mihajlo Pupin", Zrenjanin, SERBIA, in cooperation with partners: University Politehnica Timisoara, Faculty of Engineering, Hunedoara, ROMANIA, University "St. Kliment Ohridski", Technical Faculty, Bitola, MACEDONIA, "Aurel Vlaicu" University of Arad, Faculty of Engineering, Arad, ROMANIA, University of East Sarajevo, Faculty of Mechanical Engineering East Sarajevo, BOSNIA & HERZEGOVINA and University of Giresun, Faculty of Engineering, Giresun, TURKEY

<http://www.tfzr.uns.ac.rs/iizs/>

### *Industrial Engineering*

- Mechanical Engineering
- Energetics And Process Technique
- Designing And Maintenance
- Oil And Gas Engineering

### *Environmental Engineering*

- Health And Environmental Protection
- Environmental Management
- Occupational Safety

Publication of papers:

– Proceedings of INTERNATIONAL CONFERENCE INDUSTRIAL ENGINEERING AND ENVIRONMENTAL PROTECTION (9 ; 2019 ; Zrenjanin), ISBN 978-86-7672-324-9, published by University of Novi Sad, Technical Faculty "Mihajlo Pupin", Zrenjanin, SERBIA (<http://www.tfzr.uns.ac.rs/iizs/files/IIZS%202019%20Proceedings.pdf>)

– Selected papers in ANNALS of Faculty Engineering Hunedoara — International Journal of Engineering, ISSN: 1584-2665, ISSN: 2601-2332, ISSN-L: 1584-2665, published by University Politehnica Timisoara, Faculty of Engineering, Hunedoara, ROMANIA, <http://annals.fih.upt.ro/>

– Selected papers in ACTA TECHNICA CORVINIENSIS — Bulletin of Engineering, e-ISSN: 2067-3809, published by University Politehnica Timisoara, Faculty of Engineering, Hunedoara, ROMANIA, <http://acta.fih.upt.ro/>



## 24<sup>th</sup> International Conference on System Theory, Control and Computing (ICSTCC 2020)

October 12 – 14, 2020, Sinaia, Romania

**Organizers:** Faculty of Automation, Computers and Electronics of University of Craiova; Faculty of Automatic Control and Computer Engineering of Gheorghe Asachi Technical University of Iasi; Faculty of Control Systems, Computers, Electrical and Electronics Engineering of "Dunarea de Jos" University of Galati; Faculty of Automation and Computers, Department of Automation and Applied Informatics and Department of Computers and Information Technology of Politehnica University of Timisoara

<http://ace.ucv.ro/icstcc2020/>

ICSTCC 2020 has featured several kinds of presentations, including invited talks, contributed papers and special sessions. The outcome of ICSTCC 2020 is a better understanding of some leading research areas, as already System Theory, Control and Computing have demonstrated.

ICSTCC 2020 has welcomed papers on the following topics:

- **Automation and Robotics:** Linear and Nonlinear Control System Design, System Identification and Process Modeling, Robust and Adaptive Control, Robotics and Intelligent Control, Applications and Case Studies in Automation and Robotics, Embedded Systems;
- **Computer Science and Engineering:** Distributed Systems and Software Engineering, Databases, Systems of Programs and Expert Systems, Web Services, Internet Security, Software Tools and Methods, Grid Computing, Artificial Intelligence, Computer Architectures;
- **Electronics and Instrumentation:** Modeling, Simulation and CAD Tools, Signal Processing and Communication Systems, Linear and Nonlinear Circuits and Systems, Evolutionary Electronics.

Publication of papers:

IEEE Xplore Digital Library, please visit <http://ieeexplore.ieee.org/search/searchresult.jsp?newsearch=true&queryText=ICSTCC%202020>



## MTM & Robotics 2020

The Joint International Conference of the XIII International Conference on Mechanisms and Mechanical Transmissions (MTM) and the XXIV International Conference on Robotics (Robotics)

October 21<sup>st</sup> – 23<sup>rd</sup>, 2020, Timișoara, Romania

**Organizer:** University Politehnica of Timișoara

<https://mctr.mec.upt.ro/mtm-robotics-2020/>

The aim of the joint conference is to bring together researchers, scientists, industry experts and PhD students involved in the general area of mechanisms, mechanical transmissions, robotics and mechatronics, to disseminate their latest research results and exchange views on the future research directions of these fields.

Topics

**MTM:** Mechanisms – analysis and synthesis; Dynamics of mechanisms and machines; Mechanical Transmissions; Biomechanics; Precision mechanics; Mechatronics; Micromechanisms and Microactuators; Computational and Experimental Methods; CAD in mechanism and machine design.

**Robotics:** Mechanical design of robot architecture; Parallel robots; Mobile robots; Micro and Nano robots; Sensors and actuators in robotics; Intelligent control systems; Biomedical engineering; Teleoperation, haptics, virtual reality.

Publication of papers:

Springer Nature Switzerland AG 2021, ISSN 2211-0984, ISSN 2211-0992 (electronic)

Mechanisms and Machine Science, ISBN 978-3-030-60075-4, ISBN 978-3-030-60076-1 (eBook)

<https://doi.org/10.1007/978-3-030-60076-1>



## 14<sup>th</sup> International Symposium on Electronics and Telecommunications (ISETC'20)

November 05 – 06, 2020, Timișoara, Romania

**Organizers:** • Faculty of Electronics, Telecommunications and Information Technologies, • Politehnica University Timișoara, • Association of Electronics and Telecommunication Engineering from Timișoara, in association with: • IEEE Romania, • Romania Communication Chapter, • Romania Joint Chapter Communications/IEEE Information Theory/Signal Processing Societies, • ASTR – Romanian Academy of Technical Sciences

<http://conference.etc.upt.ro/isetc2020/>

Since 1994, when the first edition of the International Symposium on Electronics and Telecommunications took place, the scientific event has grown from a national happening to an important international event, organized every two years. If in the beginning the papers were published in the Scientific Bulletin of the Politehnica University Timișoara, since 2010 the Symposium has become independent and the papers are published in a dedicated proceeding. Moreover, papers of 2010, 2012, 2014, 2016 and 2018 editions were included in IEEE eXplore and Clarivate Analytics Web of Sciences databases. We are proud that throughout these 26 years we faced a continuous increase both in quantity and in quality of the papers.

Topics of the conference covers following fields:

1. Advances on Intelligent Electronic Systems, 2. Artificial Intelligence and Computer Vision, 3. Instrumentation and Measurement, 4. Open Education and Emerging Technologies, 5. Power Electronics, 6. Signal Processing, 7. Telecommunications

During the conference 99 papers, written by 294 authors from 5 countries, were presented.

Unfortunately, due to the COVID pandemic situation, taking into consideration associated restrictions regarding travels, social distancing and people gathering, the Organizing Committees in agreement with technical sponsors and IEEE have decided to hold this edition of the ISETC conference, in order to assure under these circumstances, the safety and well-being of all participants, fully on-line. It is a new experience which hopefully will be interesting and exciting for the authors who have been chosen to publish their research results in the Proceedings of ISETC'20.

Proceedings of ISETC'20 were published in IEEE eXplore databases: <https://ieeexplore.ieee.org/xpl/conhome/9301024/proceeding>

International Conference  
Innovative Technologies  
for Joining  
Advanced Materials

**TiMA20**

Nov.26-27  
2020  
Timișoara  
Romania

The 11th International Conference “Innovative Technologies for Joining Advanced Materials”

## TiMA20

November 26–27, 2020, Timișoara, Romania (Online through the zoom platform)

**Organizers:** • Nicușor-Alin Sîrbu (Conference Chair) Phd.eng. – ISIM Timișoara (Romania)  
• Florin Drăgan Assoc.Prof.Ph.D.Eng. – Politehnica University Timișoara (Romania)  
• Vladimir-Ioan Crețu Prof.Ph.D.Eng. – Technical Sciences Academy of Romania – Timișoara Subsidiary (Romania)

[http://www.isim.ro/tima/tima20\\_home.php](http://www.isim.ro/tima/tima20_home.php)

The international conference has been focused on several fields of application, has featured several kinds of presentations, including invited talks, contributed papers and posters.

The conference topics were:

- New joining technologies • Coatings: advanced materials & innovative technologies • Modelling and simulation of welding and allied processes
- Specific problems in advanced materials joining • Advanced methods and new trends in NDT • Mechanical and structural characterization of advanced materials and joints • Quantitative non-destructive testing • Fracture mechanics of advanced materials • Damage of advanced materials under time-dependent-actions and remaining life assessment, fatigue, creep, corrosion, irradiation • Quality of welded joints and welded structures

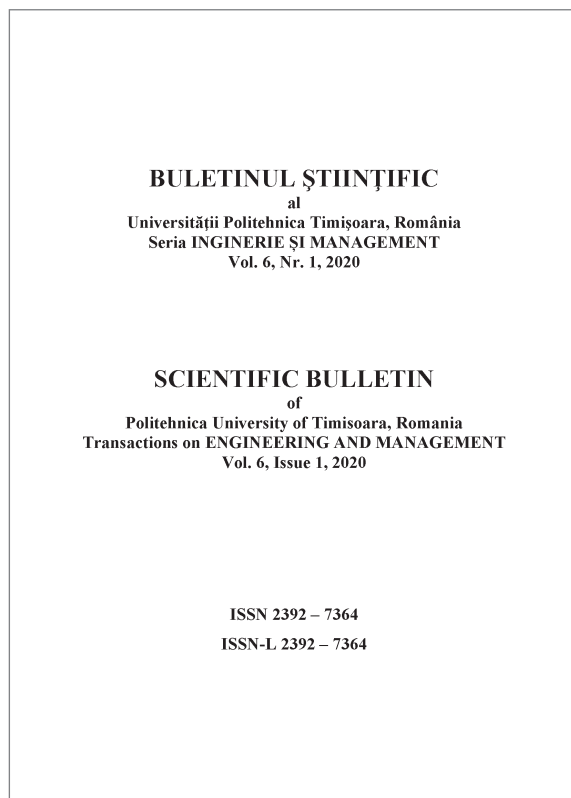
Publication of papers:

Conference proceedings will be published in Trans Tech Publications’ periodical ‘Key Engineering Materials’ (printed and online) and ‘Advanced Materials Research’ (online), selected materials, science related papers only, with Indexing and DOI. The periodical will be available in full text online at [www.scientific.net/KEM](http://www.scientific.net/KEM) and [www.scientific.net/AMR](http://www.scientific.net/AMR).

Conference proceedings will be indexed in major international database: SCOPUS, Ei Compendex, REAXYS Etc.

# SCIENTIFIC JOURNALS





## Transactions on Engineering and Management Volume 6, Issue 1, 2020

[www.mpt.upt.ro/cercetare/buletin-stiintific.html](http://www.mpt.upt.ro/cercetare/buletin-stiintific.html)

- The Scientific Bulletin of Politehnica University Timișoara, Transaction on Engineering and Management presents research results in the field of industrial management and business studies that are of significant impact on major contemporary issues.
- The journal welcomes submissions of theoretical, methodological, empirical, policy-oriented, as well as industrial papers in all the field. Additionally, it considers contributions that combine engineering and management studies with any other field of inquiry.
- SCIENTIFIC BULLETIN of Politehnica University Timișoara, Transactions on ENGINEERING AND MANAGEMENT is indexed: Index Copernicus, Google Scholar (under review), Ulrich (under review).



## Transactions on Hydrotechnics Volume 65 (79), Issue 1, 2020

<http://www.ct.upt.ro/buletinhidro/index.htm>

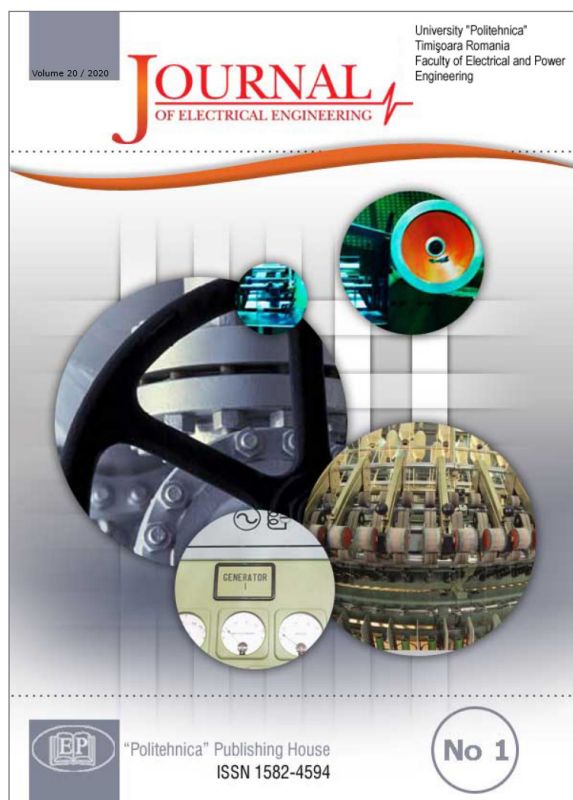
- The Scientific Bulletin of the Politehnica University Timișoara, Transactions on Hydrotechnics is coordinated since 1992 by the Faculty of Hydrotechnical Engineering. Published papers in the journal focus on engineering sciences, civil engineering, theoretical and applied hydraulic, mathematics and numerical modeling, hydrology and water management, hydrotechnical developments and constructions, land improvement (irrigations, drainage, erosion control), engineering and sustainable rural development, water supply and sewerage systems, wastewater treatment, hydraulic structures and technologies.
- The Journal is published entirely in English, with abstracts and keywords, with international exposure.
- "The revue is known for experts from home and abroad, is accredited and ranked in the "B+" CATEGORY Journal by CNCIS, and is indexed by EBSCO Publishing."



## Transactions on Modern Languages Volume 19, Issue 1, 2020

[www.sc.upt.ro/ro/publicatii/buletinul-stiintific/about](http://www.sc.upt.ro/ro/publicatii/buletinul-stiintific/about)

- The Transactions on Modern languages, published by the Department of Communication and Foreign Languages, has its origin in The Social Science and Humanities Series, started in 1991 under ISSN 1223-1959.
- The Transactions of Modern Languages publishes original papers in all areas of theoretical and applied linguistics: Linguistics, Translation and Interpreting Studies, Discourse Analysis, Pragmatics, Rhetoric, Terminology, LSP, Foreign Language Teaching.
- The journal is included in the CEEOL, Fabula and EBSCO data bases.



## Journal of Electrical Engineering Volume 20, Issue 1, Issue 3, Issue 4, Issue 5, 2020

[www.jee.ro/](http://www.jee.ro/)

- JEE continues the prestigious "Scientific Bulletin" of the Politehnica University Timisoara, Electrotechnical section, but in electronic form.
- It also aims to become a fully international archival journal.
- Its scope includes all issues of widespread generic interest to engineers who work in the field of electrical engineering.
- The **Journal of Electrical Engineering** is indexed by Scopus and IEE INSPEC.



Acta Technica Corviniensis - Bulletin of Engineering  
Volume 13, Issue 1, Issue 2, Issue 3, Issue 4, 2020

<http://acta.fih.upt.ro/>

- ACTA TECHNICA CORVINIENSIS - Bulletin of Engineering is an independent, free-access, online, international and multidisciplinary scientific publication edited by the Politehnica University Timișoara, Faculty Engineering Hunedoara and Faculty of Mechanical Engineering Timișoara.
- The Journal is focused on engineering sciences and other innovative allied research areas, in all fields of science and technology on the basis of its originality, importance and timeliness.
- ACTA TECHNICA CORVINIENSIS - Bulletin of Engineering is accredited and ranked in the "B+" CATEGORY Journal by CNCIS, and is indexed by Index Copernicus, Google Scholar, EBSCO Publishing, DOAJ, SCIRUS, EVISA, ProQuest, DRJI, CAS, BASE, ULRICHsweb - Global serials directory, Directory Indexing of International Research Journals, Electronic Journals Library etc.



Annals of Faculty Engineering Hunedoara  
International Journal of Engineering  
Volume 18, Issue 1, Issue 2, Issue 3, Issue 4, 2020

<http://annals.fih.upt.ro/>

- The Journal is a multi-disciplinary journal which covers all aspects of scientific, engineering and technical disciplines including applications of scientific inventions for engineering, technological and industrial purposes, advances in engineering, technology and science.
- The Journal is accredited and ranked in the B+ category by The National University Research Council's Classification of Romanian Journals, CNCIS, and is indexed by Index Copernicus, Google Scholar, EBSCO Publishing, DOAJ, SCIRUS, EVISA, ProQuest, DRJI, CAS, BASE etc.



Academic Journal of Manufacturing Engineering  
Volume 18, Issue 1, Issue 2, Issue 3, Issue 4, 2020

<https://www.ajme.ro>

- The Academic Journal of Manufacturing Engineering intends to provide the specialists in the manufacturing engineering field a possibility for sharing and exchanging results and information by publishing the results of their work.
- Academic Journal of Manufacturing Engineering is recognized as a B+ journal by the Romanian National Council of Scientific Research and indexed by Index Copernicus international database.

## JOURNAL OF ARCHITECTURE URBANISM AND HERITAGE

University Politehnica Timisoara Romania  
Faculty of Architecture and Urbanism  
Vol. III - Nr. 2/2020 [www.jauh.ro](http://www.jauh.ro)



  
Politehnica Publishing House

  
ISSN 2668-2249

Journal of Architecture, Urbanism and Heritage  
Volume 3, Issue 1, Issue 2, 2020

[www.jauh.ro/](http://www.jauh.ro/)

- The JOURNAL OF ARCHITECTURE, URBANISM AND HERITAGE, JAUH, is a peer-review academic journal which publishes original research papers and advances theory, research and practice in the fields of architecture and urban planning.
- The interdisciplinary scholarly publication is aimed at advancing conceptual, scientific, and applied understandings of Architecture, Interior design, Urbanism, Built environment and Preservation and heritage studies.
- Its articles include recent research findings, empirical research papers, theoretical and integrative review articles, book reviews and innovative new practices, creating a link between theory and practice, researchers and practicing professionals.



## Nonconventional Technologies Review Volume XXIV, Issue 1, Issue 2, Issue 3, Issue 4, 2020

[www.revtn.ro](http://www.revtn.ro)

- The Nonconventional Technologies Review is a scientific engineering publication of the Romanian Association for Nonconventional Technologies (ARTN), which has started in 1997, with quarterly appearances. The publication is addressed to all engineers and scientists interested in nonconventional technologies.
- Nonconventional Technologies Review is indexed in ProQuest, EBSCOhost, DOAJ, Google Scholar and Index Copernicus, and is classified as B+ according to the Romanian journal system.
- ISSN codes are: Print: ISSN 2359-8646; On-line: ISSN 2359-8654



# ISI PAPERS

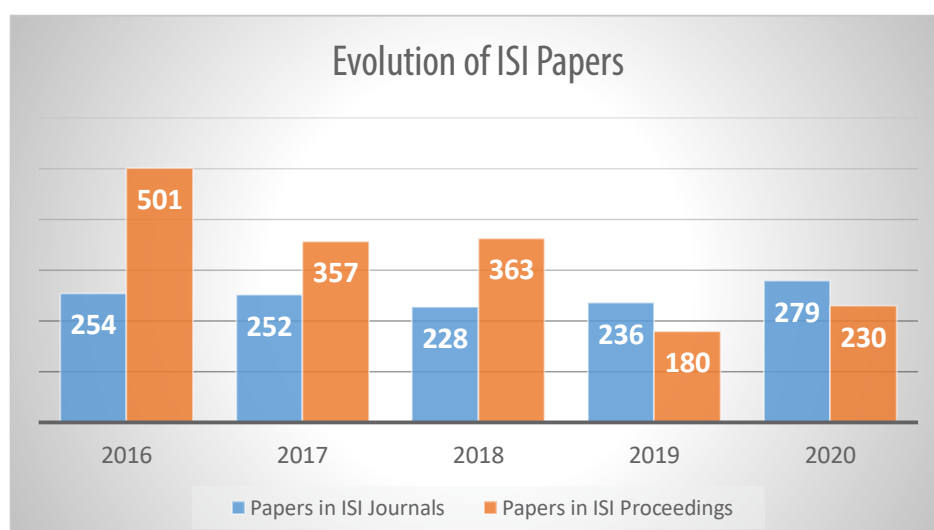
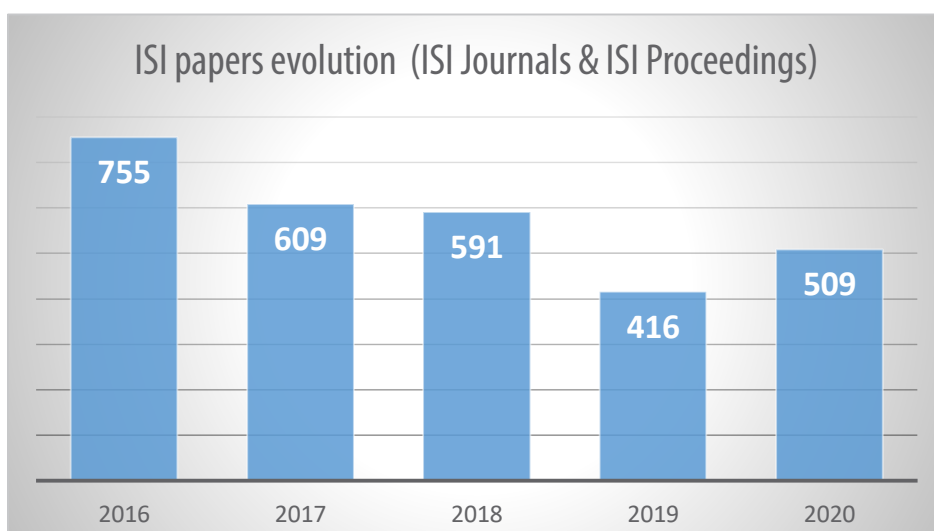


## EVOLUTION OF ISI PAPERS UNDER AFFILIATIONS OF UPT 2016 - 2020

Scientific writing and publication marks the endpoint of research that has been performed, completed, peer reviewed and accepted, and complements teaching and training.

In this chapter we present the publications/papers written by our professors, PhD students, researchers etc. These publications can be: papers published in ISI Journals or papers presented at Conference and indexed in ISI Proceedings.

The number of papers presented in the below figures is greater than the number of papers presented in previous Research Reports. This number varies from year to year because annually it increases the number of publications indexed in the ISI Clarivate Analytics database.



\* The data for 2020 was obtained from Web of Science - Clarivate Analytics in 5 November 2021



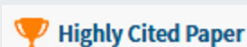
## *ISI Papers in highlight*



## Web of Science - Clarivate Analytics Highly Cited Papers

Selected from the most recent 10 years of data, Highly Cited Papers reflect the top 1% of papers by field and publication year. Highly Cited Papers help identify breakthrough research within a research field and are used within Web of Science to identify and refine the most influential research papers.

Boldea, I., Tutelea, L.N., Parsa, L., Dorrell, D. Automotive Electric Propulsion Systems With Reduced or No Permanent Magnets: An Overview, IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS, Volume: 61, Issue: 10, Pages: 5696-5711, ISSN: 0278-0046, eISSN: 1557-9948, 2014;  
Times Cited in Web of Science Core Collection: 365



Precup, R.E., Hellendoorn, H. A survey on industrial applications of fuzzy control, COMPUTERS IN INDUSTRY, Volume: 62, Issue: 3, Pages: 213-226, ISSN: 0166-3615, eISSN: 1872-6194, 2011;  
Times Cited in Web of Science Core Collection: 311



Sarbu, I., Sebarchievici, C. General review of ground-source heat pump systems for heating and cooling of buildings, ENERGY AND BUILDINGS, Volume: 70, Pages: 441-454, ISSN: 0378-7788, eISSN: 1872-6178, 2014;  
Times Cited in Web of Science Core Collection: 257



Gheju, M., Balcu, I. Removal of chromium from Cr(VI) polluted wastewaters by reduction with scrap iron and subsequent precipitation of resulted cations, JOURNAL OF HAZARDOUS MATERIALS, Volume: 196, Pages: 131-138, PubMed ID: 21955659, ISSN: 0304-3894, 2011;  
Times Cited in Web of Science Core Collection: 174



Sarbu, I., Sebarchievici, C. Review of solar refrigeration and cooling systems, ENERGY AND BUILDINGS, Volume: 67, Pages: 286-297, ISSN: 0378-7788, eISSN: 1872-6178, 2013;  
Times Cited in Web of Science Core Collection: 158



Sarbu, I., Sebarchievici, C. A Comprehensive Review of Thermal Energy Storage, SUSTAINABILITY, Volume: 10, Issue: 1, Article Number: 191, ISSN: 2071-1050, 2018;  
Times Cited in Web of Science Core Collection: 156



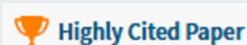
Highly Cited Papers received enough citations as of January/December 2020 to place them in the top 1% of their academic fields based on a highly cited threshold for the field and publication year.

\*The data was obtained from Web of Science - Clarivate Analytics in 30 March 2021

## Web of Science - Clarivate Analytics Highly Cited Paper

Selected from the most recent 10 years of data, Highly Cited Papers reflect the top 1% of papers by field and publication year. Highly Cited Papers help identify breakthrough research within a research field and are used within Web of Science to identify and refine the most influential research papers.

Ancuti, C.O., Ancuti, C., De Vleeschouwer, C., Bekaert, P. Color Balance and Fusion for Underwater Image Enhancement, IEEE TRANSACTIONS ON IMAGE PROCESSING, Volume: 27, Issue: 1, Pages: 379-393, PubMed ID: 28981416, ISSN: 1057-7149, eISSN: 1941-0042, 2018;  
Times Cited in Web of Science Core Collection: 126



Precup, R.E., David, R.C., Petriu, E.M. Grey Wolf Optimizer Algorithm-Based Tuning of Fuzzy Control Systems With Reduced Parametric Sensitivity, IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS, Volume: 64, Issue: 1, Pages: 527-534, ISSN: 0278-0046, eISSN: 1557-9948, 2017;  
Times Cited in Web of Science Core Collection: 123



Gheju, M., Balcu, I., Mosoarca, G. Removal of Cr(VI) from aqueous solutions by adsorption on MnO<sub>2</sub>, JOURNAL OF HAZARDOUS MATERIALS, Volume: 310, Pages: 270-277, PubMed ID: 26947189, ISSN: 0304-3894, eISSN: 1873-3336, 2016;  
Times Cited in Web of Science Core Collection: 110



Gavruta, L. Frames for operators, APPLIED AND COMPUTATIONAL HARMONIC ANALYSIS, Volume: 32, Issue: 1, Pages: 139-144, ISSN: 1063-5203, 2012;  
Times Cited in Web of Science Core Collection: 100



Rajak, D.K., Pagar, D.D., Menezes, P.L., Linul, E. Fiber-Reinforced Polymer Composites: Manufacturing, Properties, and Applications, POLYMERS, Volume: 11, Issue: 10, Article Number: 1667, PubMed ID: 31614875, eISSN: 2073-4360, 2019;  
Times Cited in Web of Science Core Collection: 75



Sarbu, I., Dorca, A. Review on heat transfer analysis in thermal energy storage using latent heat storage systems and phase change materials, INTERNATIONAL JOURNAL OF ENERGY RESEARCH, Volume: 43, Issue: 1, Pages: 29-64, ISSN: 0363-907X, eISSN: 1099-114X, 2019;  
Times Cited in Web of Science Core Collection: 48



Highly Cited Papers received enough citations as of January/December 2020 to place them in the top 1% of their academic fields based on a highly cited threshold for the field and publication year.

\*The data was obtained from Web of Science - Clarivate Analytics in 30 March 2021

## Web of Science - Clarivate Analytics Highly Cited Papers

Selected from the most recent 10 years of data, Highly Cited Papers reflect the top 1% of papers by field and publication year. Highly Cited Papers help identify breakthrough research within a research field and are used within Web of Science to identify and refine the most influential research papers.

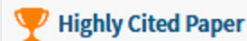
Istratie, R., Stoia, M., Pacurariu, C., Locovei, C. Single and simultaneous adsorption of methyl orange and phenol onto magnetic iron oxide/carbon nanocomposites, ARABIAN JOURNAL OF CHEMISTRY, Volume: 12, Issue: 8, Pages: 3704-3722, ISSN: 1878-5352, eISSN: 1878-5379, 2019;  
Times Cited in Web of Science Core Collection: 25



Fiedler, T., Al-Sahlani, K., Linul, P.A., Linul, E. Mechanical properties of A356 and ZA27 metallic syntactic foams at cryogenic temperature, JOURNAL OF ALLOYS AND COMPOUNDS, Volume: 813, Article Number: 152181, ISSN: 0925-8388, eISSN: 1873-4669, 2020;  
Times Cited in Web of Science Core Collection: 23



Tmusic, G., Manfreda, S., Aasen, H., James, M.R., Goncalves, G., Ben-Dor, E., Brook, A., Polinova, M., Arranz, J.J., Meszaros, J., Zhuang, R.D., Johansen, K., Malbeteau, Y., de Lima, I.P., Davids, C., Herban, S., McCabe, M.F. Current Practices in UAS-based Environmental Monitoring, REMOTE SENSING, Volume: 12, Issue: 6, Article Number: 1001, eISSN: 2072-4292, 2020;  
Times Cited in Web of Science Core Collection: 18



Precup, R.E., Teban, T.A., Albu, A., Borlea, A.B., Zamfirache, I.A., Petriu, E.M. Evolving Fuzzy Models for Prosthetic Hand Myoelectric-Based Control, IEEE TRANSACTIONS ON INSTRUMENTATION AND MEASUREMENT, Volume: 69, Issue: 7, Pages: 4625-4636, ISSN: 0018-9456, eISSN: 1557-9662, 2020;  
Times Cited in Web of Science Core Collection: 16



Linul, E., Marsavina, L., Valean, C., Banica, R. Static and dynamic mode I fracture toughness of rigid PUR foams under room and cryogenic temperatures, ENGINEERING FRACTURE MECHANICS, Volume: 225, Article Number: 106274, ISSN: 0013-7944, eISSN: 1873-7315, 2020;  
Times Cited in Web of Science Core Collection: 14

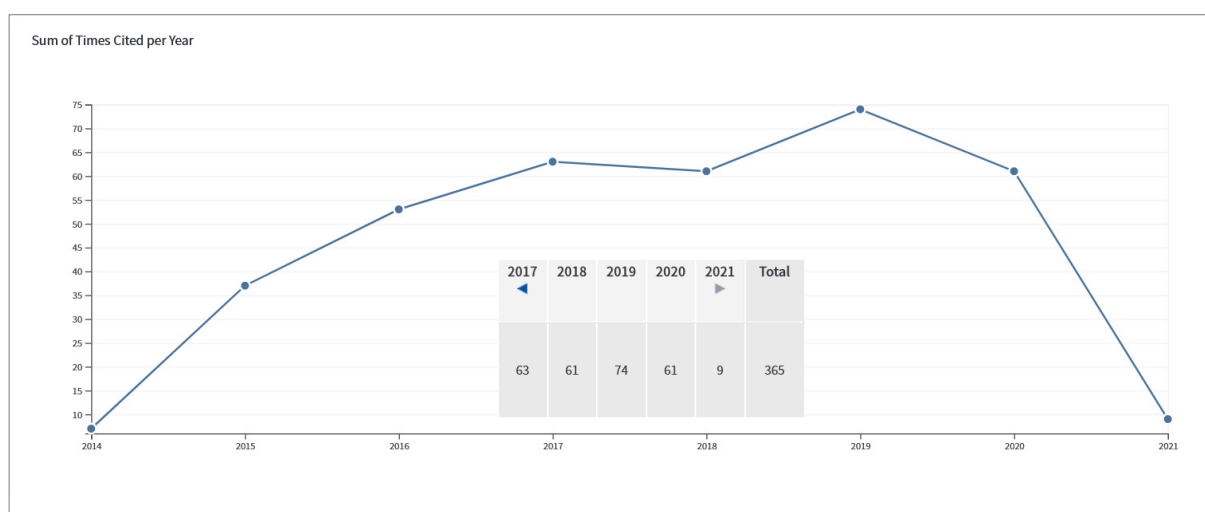


Highly Cited Papers received enough citations as of January/December 2020 to place them in the top 1% of their academic fields based on a highly cited threshold for the field and publication year.

\*The data was obtained from Web of Science - Clarivate Analytics in 30 March 2021

## Web of Science - Clarivate Analytics Highly Cited Paper

As of January/December 2020, this highly cited paper received enough citations to place it in the top 1% of the academic field of **Engineering** based on a highly cited threshold for the field and publication year.



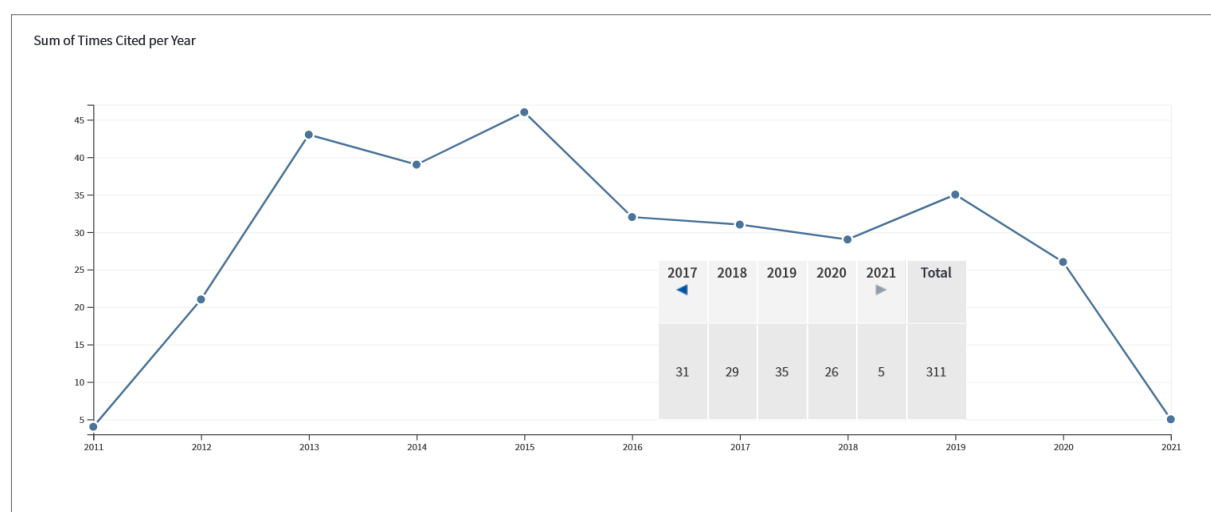
Boldea, I., Tutelea, L.N., Parsa, L., Dorrell, D. Automotive Electric Propulsion Systems With Reduced or No Permanent Magnets: An Overview, IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS, Volume: 61, Issue: 10, Pages: 5696-5711, ISSN: 0278-0046, eISSN: 1557-9948, 2014;  
Times Cited in Web of Science Core Collection: 365

**Abstract:** Hybrid and electric vehicle technology has seen rapid development in recent years. The motor and the generator are at the heart of the vehicle drive and energy system and often utilize expensive rare-earth permanent magnet (PM) material. This paper reviews and addresses the research work that has been carried out to reduce the amount of rare-earth material that is used while maintaining the high efficiency and performance that rare-earth PM machines offer. These new machines can use either less rare-earth PM material,

weaker ferrite magnets, or no magnets; and they need to meet the high performance that the more usual interior PM synchronous motor with sintered neodymium-iron-boron magnets provides. These machines can take the form of PM-assisted synchronous reluctance machines, induction machines, switched reluctance machines, wound rotor synchronous machines (claw pole or biaxially excited), double-saliency machines with ac or dc stator current control, or brushless dc multiple-phase reluctance machines.

## Web of Science - Clarivate Analytics Highly Cited Paper

As of January/December 2020, this highly cited paper received enough citations to place it in the top 1% of the academic field of **Computer Science** based on a highly cited threshold for the field and publication year.



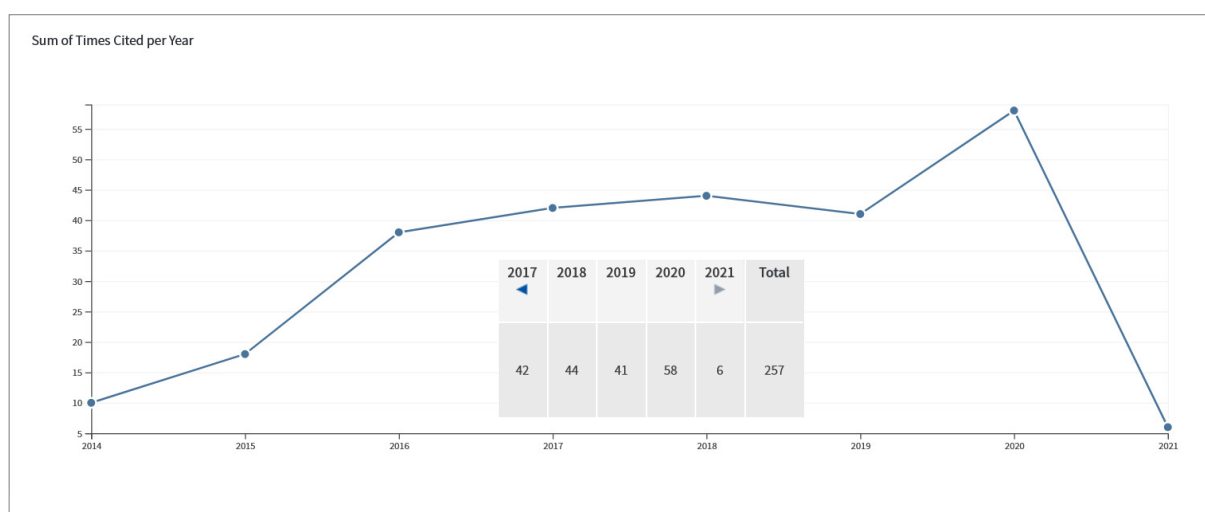
Precup, R.E., Hellendoorn, H. A survey on industrial applications of fuzzy control, COMPUTERS IN INDUSTRY, Volume: 62, Issue: 3, Pages: 213-226, ISSN: 0166-3615, eISSN: 1872-6194, 2011;  
Times Cited in Web of Science Core Collection: 311

**Abstract:** Fuzzy control has long been applied to industry with several important theoretical results and successful results. Originally introduced as model-free control design approach, model-based fuzzy control has gained widespread significance in the past decade.

This paper presents a survey on recent developments of analysis and design of fuzzy control systems focused on industrial applications reported after 2000.

## Web of Science - Clarivate Analytics Highly Cited Paper

As of January/December 2020, this highly cited paper received enough citations to place it in the top 1% of the academic field of **Engineering** based on a highly cited threshold for the field and publication year.



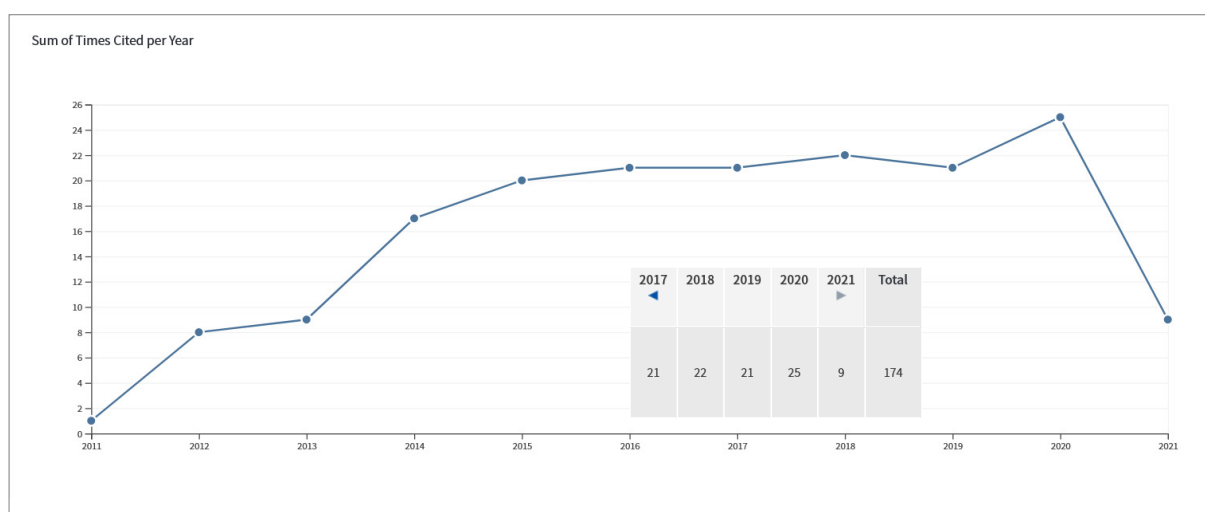
Sarbu, I., Sebarchievici, C. General review of ground-source heat pump systems for heating and cooling of buildings, *ENERGY AND BUILDINGS*, Volume: 70, Pages: 441-454, ISSN: 0378-7788, eISSN: 1872-6178, 2014;  
Times Cited in Web of Science Core Collection: 257

**Abstract:** A large number of ground-source heat pumps (GSHP) systems have been used in residential and commercial buildings throughout the world due to the attractive advantages of high energy and environmental performances. The GSHPs are proven renewable energy technology for space heating and cooling. This paper provides a detailed literature review of the GSHP systems, and their recent advances. The operation principle and energy efficiency of a heat pump are defined first. Then, a general introduction on the GSHPs and its development, and a detailed description of the surface water (SWHP), ground-water (GWHP), and ground-couplet (GCHP) heat pumps are performed. The most typical simulation and ground thermal response

test models for the vertical ground heat exchangers currently available are summarized including the heat transfer processes outside and inside the boreholes. Also, some information about a new GWHP using a heat exchanger with special construction, and the possibility to obtain the better energy efficiency with combined heating and cooling by GCHP are presented. The various hybrid GCHP systems for cooling or heating-dominated buildings are well described. Finally, the energy, economic and environmental performance of a closed-loop GCHP system is also briefly reviewed. It is found that the GSHP technology can be used both in cold and hot weather areas and the energy saving potential is significant.

## Web of Science - Clarivate Analytics Highly Cited Paper

As of January/December 2020, this highly cited paper received enough citations to place it in the top 1% of the academic field of **Engineering** based on a highly cited threshold for the field and publication year.



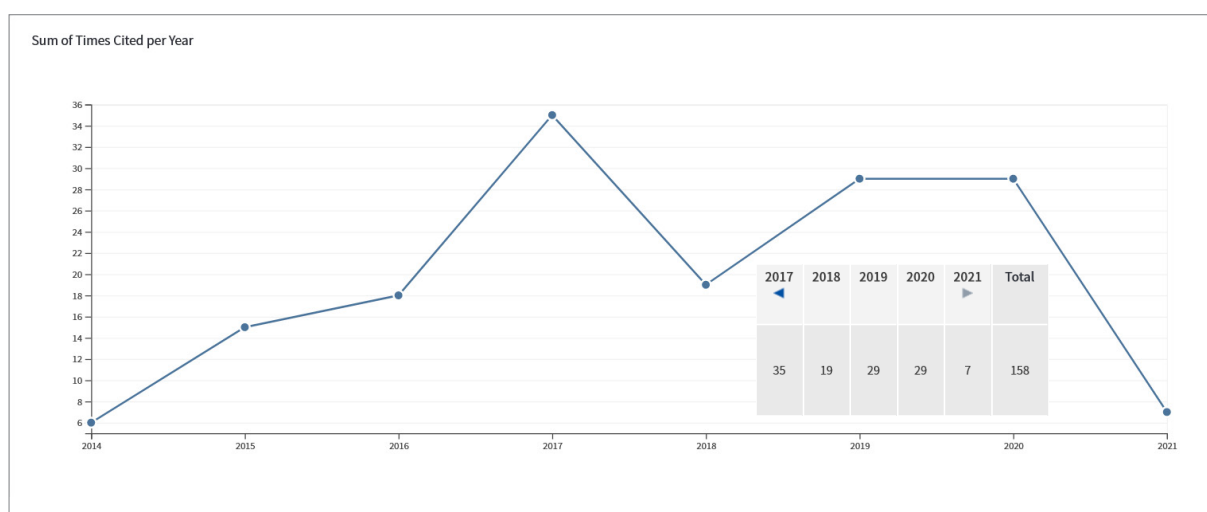
Gheju, M., Balcu, I. Removal of chromium from Cr(VI) polluted wastewaters by reduction with scrap iron and subsequent precipitation of resulted cations, JOURNAL OF HAZARDOUS MATERIALS, Volume: 196, Pages: 131-138, PubMed ID: 21955659, ISSN: 0304-3894, 2011;  
Times Cited in Web of Science Core Collection: 174

**Abstract:** This work presents investigations on the total removal of chromium from Cr(VI) aqueous solutions by reduction with scrap iron and subsequent precipitation of the resulted cations with NaOH. The process was detrimentally affected by a compactly passivation film occurred at scrap iron surface, mainly composed of Cr(III) and Fe(III). Maximum removal efficiency of the Cr(total) and Fe(total) achieved in the clarifier under circumneutral and alkaline (pH 9.1) conditions was 98.5% and 100%, respectively. The optimum precipitation pH range which resulted from this study is 7.6-8.0. Fe(total) and Cr(total) were

almost entirely removed in the clarifier as Fe(III) and Cr(III) species: however, after Cr(VI) breakthrough in column effluent, chromium was partially removed in the clarifier also as Cr(VI), by coprecipitation with cationic species. As long the column effluent was free of Cr(VI), the average Cr(total) removal efficiency of the packed column and clarifier was 10.8% and 78.8%, respectively. Our results clearly indicated that Cr(VI) contaminated wastewater can be successfully treated by combining reduction with scrap iron and chemical precipitation with NaOH.

## Web of Science - Clarivate Analytics Highly Cited Paper

As of May/December 2020, this highly cited paper received enough citations to place it in the top 1% of the academic field of **Engineering** based on a highly cited threshold for the field and publication year.



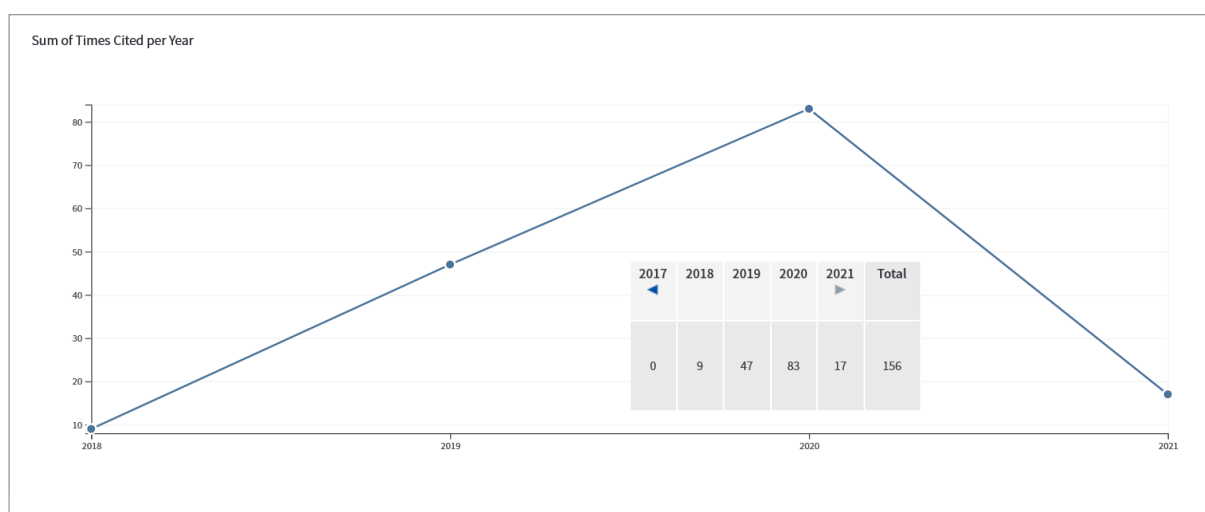
Sarbu, I., Sebarchievici, C. Review of solar refrigeration and cooling systems, *ENERGY AND BUILDINGS*, Volume: 67, Pages: 286-297, ISSN: 0378-7788, eISSN: 1872-6178, 2013;  
Times Cited in Web of Science Core Collection: 158

**Abstract:** Providing cooling by utilizing renewable energy such as solar energy is a key solution to the energy and environmental issues. This paper provides a detailed review of different solar refrigeration and cooling methods. There are presented theoretical basis and practical applications for cooling systems within various working fluids assisted by solar energy and their recent advances. Thermally powered refrigeration technologies are classified into two categories: sorption technology (open systems or closed systems) and thermo-mechanical technology (ejector system). Solid and liquid desiccant cycles represent the open system. The liquid desiccant system has a higher thermal coefficient of performance (COP) than the solid

desiccant system. Absorption and adsorption technologies represent the closed system. The adsorption cooling typically needs lower heat source temperatures than the absorption cooling. Based on COP, the absorption systems are preferred to the adsorption systems, the higher temperature issues can be easily handled with solar adsorption systems. The ejector system represents the thermo-mechanical cooling, and has a higher thermal COP but require a higher heat source temperature than other systems. The study also refers to solar hybrid cooling systems with heterogeneous composite pairs, to a comparison of various solar cooling systems, and to some use suggestions of these systems.

## Web of Science - Clarivate Analytics Highly Cited Paper

As of January/December 2020, this highly cited paper received enough citations to place it in the top 1% of the academic field of **Environment/ Ecology** based on a highly cited threshold for the field and publication year.



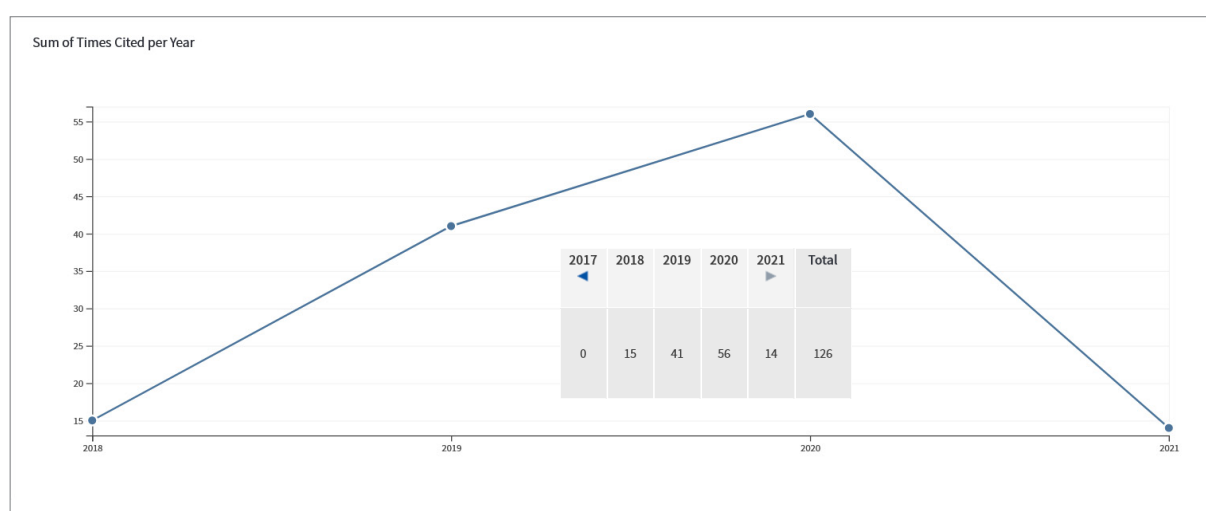
Sarbu, I., Sebachievici, C. A Comprehensive Review of Thermal Energy Storage, SUSTAINABILITY, Volume: 10, Issue: 1, Article Number: 191, ISSN: 2071-1050, 2018;  
Times Cited in Web of Science Core Collection: 156

**Abstract:** Thermal energy storage (TES) is a technology that stocks thermal energy by heating or cooling a storage medium so that the stored energy can be used at a later time for heating and cooling applications and power generation. TES systems are used particularly in buildings and in industrial processes. This paper is focused on TES technologies that provide a way of valorizing solar heat and reducing the energy demand of buildings. The principles of several energy storage methods and calculation of storage capacities are

described. Sensible heat storage technologies, including water tank, underground, and packed-bed storage methods, are briefly reviewed. Additionally, latent-heat storage systems associated with phase-change materials for use in solar heating/cooling of buildings, solar water heating, heat-pump systems, and concentrating solar power plants as well as thermo-chemical storage are discussed. Finally, cool thermal energy storage is also briefly reviewed and outstanding information on the performance and costs of TES systems are included.

## Web of Science - Clarivate Analytics Highly Cited Paper

As of January/December 2020, this highly cited paper received enough citations to place it in the top 1% of the academic field of **Engineering** based on a highly cited threshold for the field and publication year.



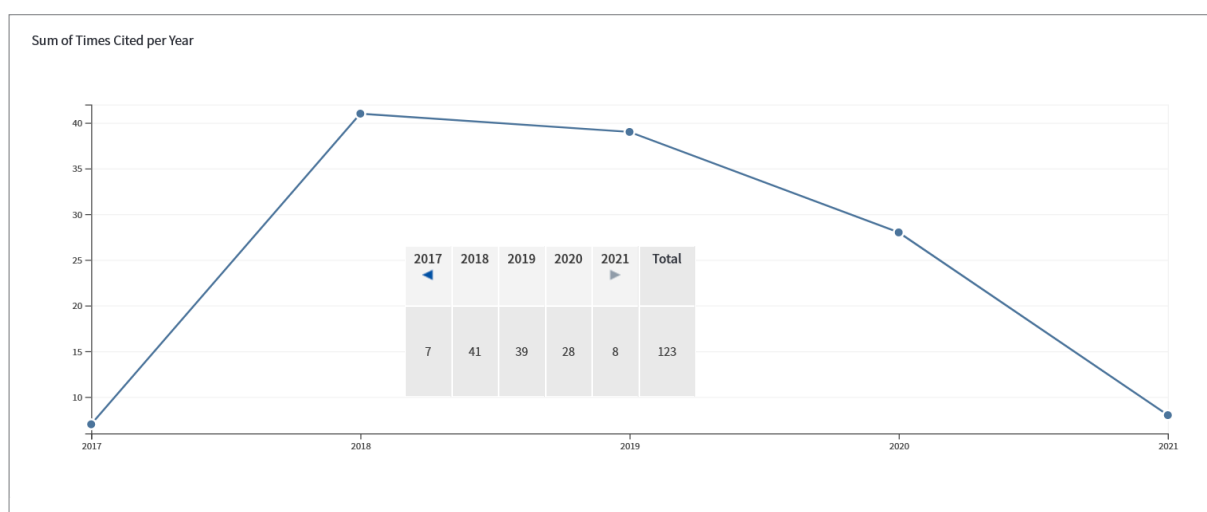
Ancuti, C.O., Ancuti, C., De Vleeschouwer, C., Bekaert, P. Color Balance and Fusion for Underwater Image Enhancement, IEEE TRANSACTIONS ON IMAGE PROCESSING, Volume: 27, Issue: 1, Pages: 379-393, PubMed ID: 28981416, ISSN: 1057-7149, eISSN: 1941-0042, 2018;  
Times Cited in Web of Science Core Collection: 126

**Abstract:** We introduce an effective technique to enhance the images captured underwater and degraded due to the medium scattering and absorption. Our method is a single image approach that does not require specialized hardware or knowledge about the underwater conditions or scene structure. It builds on the blending of two images that are directly derived from a color-compensated and white-balanced version of the original degraded image. The two images to fusion, as well as their associated weight maps, are defined to promote the transfer of edges and color contrast to the output

image. To avoid that the sharp weight map transitions create artifacts in the low frequency components of the reconstructed image, we also adapt a multiscale fusion strategy. Our extensive qualitative and quantitative evaluation reveals that our enhanced images and videos are characterized by better exposedness of the dark regions, improved global contrast, and edges sharpness. Our validation also proves that our algorithm is reasonably independent of the camera settings, and improves the accuracy of several image processing applications, such as image segmentation and keypoint matching.

## Web of Science - Clarivate Analytics Highly Cited Paper

As of January/December 2020, this highly cited paper received enough citations to place it in the top 1% of the academic field of **Engineering** based on a highly cited threshold for the field and publication year.



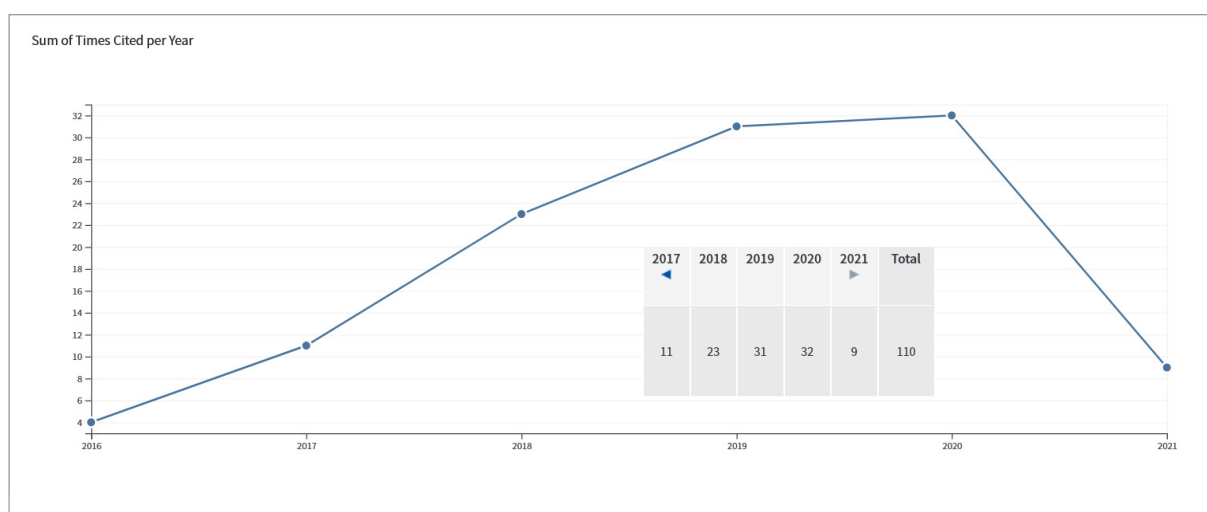
Precup, R.E., David, R.C., Petriu, E.M. Grey Wolf Optimizer Algorithm-Based Tuning of Fuzzy Control Systems With Reduced Parametric Sensitivity, IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS, Volume: 64, Issue: 1, Pages: 527-534, ISSN: 0278-0046, eISSN: 1557-9948, 2017;  
Times Cited in Web of Science Core Collection: 123

**Abstract:** This paper proposes an innovative tuning approach for fuzzy control systems (CSs) with a reduced parametric sensitivity using the Grey Wolf Optimizer (GWO) algorithm. The CSs consist of servo system processes controlled by Takagi-Sugeno-Kang proportional-integral fuzzy controllers (TSK PI-FCs). The process models have second-order dynamics with an integral component, variable parameters, a saturation, and dead-zone static nonlinearity. The sensitivity analysis employs output sensitivity functions of the sensitivity models defined

with respect to the parametric variations of the processes. The GWO algorithm is used in solving the optimization problems, where the objective functions include the output sensitivity functions. GWO's motivation is based on its low-computational cost. The tuning approach is validated in an experimental case study of a position control for a laboratory nonlinear servo system, and TSK PI-FCs with a reduced process small time constant sensitivity are offered.

## Web of Science - Clarivate Analytics Highly Cited Paper

As of January/December 2020, this highly cited paper received enough citations to place it in the top 1% of the academic field of **Engineering** based on a highly cited threshold for the field and publication year.



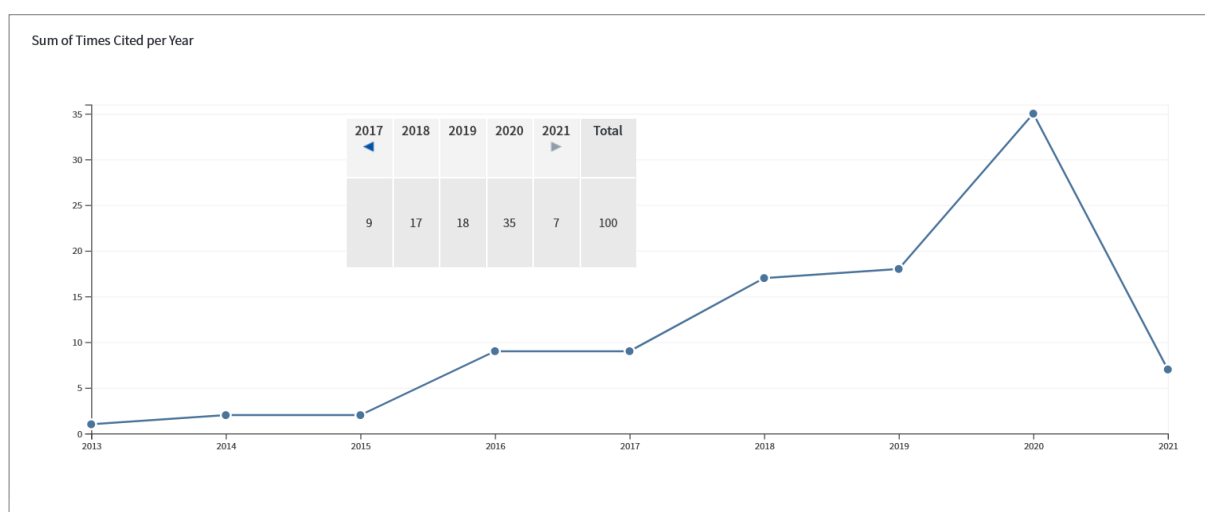
Gheju, M., Balcu, I., Mosoarca, G. Removal of Cr(VI) from aqueous solutions by adsorption on MnO<sub>2</sub>, JOURNAL OF HAZARDOUS MATERIALS, Volume: 310, Pages: 270-277, PubMed ID: 26947189, ISSN: 0304-3894, eISSN: 1873-3336, 2016;  
Times Cited in Web of Science Core Collection: 110

**Abstract:** Adsorption of Cr(VI) on MnO<sub>2</sub> was investigated with respect to effect of pH, temperature, ionic strength, initial Cr(VI) concentration, co-presence of different anions (HCO<sub>3</sub><sup>-</sup>, SO<sub>4</sub><sup>2-</sup>, H<sub>2</sub>PO<sub>4</sub><sup>-</sup>, NO<sub>3</sub><sup>-</sup> and Cl<sup>-</sup>) and of low molecular weight natural organic materials (LMWNOM) (acetate, oxalate and citrate). The process was rapid during the first 3-5 min, reaching equilibrium after one hour. Adsorption decreased with increasing pH, temperature and Cr(VI) initial concentration, and increased with increasing ionic strength. Co-presence of phosphate, sulfate, bicarbonate, citrate and oxalate hindered Cr(VI) adsorption, whereas nitrate, chloride and acetate did not exert any notable influence. The overall order of Cr(VI) adsorption suppression due to

co-presence of anions and LMWNOM was H<sub>2</sub>PO<sub>4</sub><sup>-</sup> > HCO<sub>3</sub><sup>-</sup> > SO<sub>4</sub><sup>2-</sup>, and oxalate > citrate, respectively. Highest experimental equilibrium sorption capacity (0.83 mg g<sup>-1</sup>) was obtained at 20 degrees C and pH 5.9, while lowest (0.18 mg g<sup>-1</sup>) was noticed in the co-presence of H<sub>2</sub>PO<sub>4</sub><sup>-</sup>, at 20 degrees C and pH 6.9. Adsorption kinetics was successfully fitted by pseudo-second-order model. Mechanisms for both specific and non-specific adsorption are likely to be involved, while rate-controlling step involved both intra-particle and film diffusion processes. Cr(VI) was strongly bound to MnO<sub>2</sub>, which makes risks of its subsequent liberation into the environment to be low.

## Web of Science - Clarivate Analytics Highly Cited Paper

As of May/June and September/December 2020, this highly cited paper received enough citations to place it in the top 1% of the academic field of **Mathematics** based on a highly cited threshold for the field and publication year.



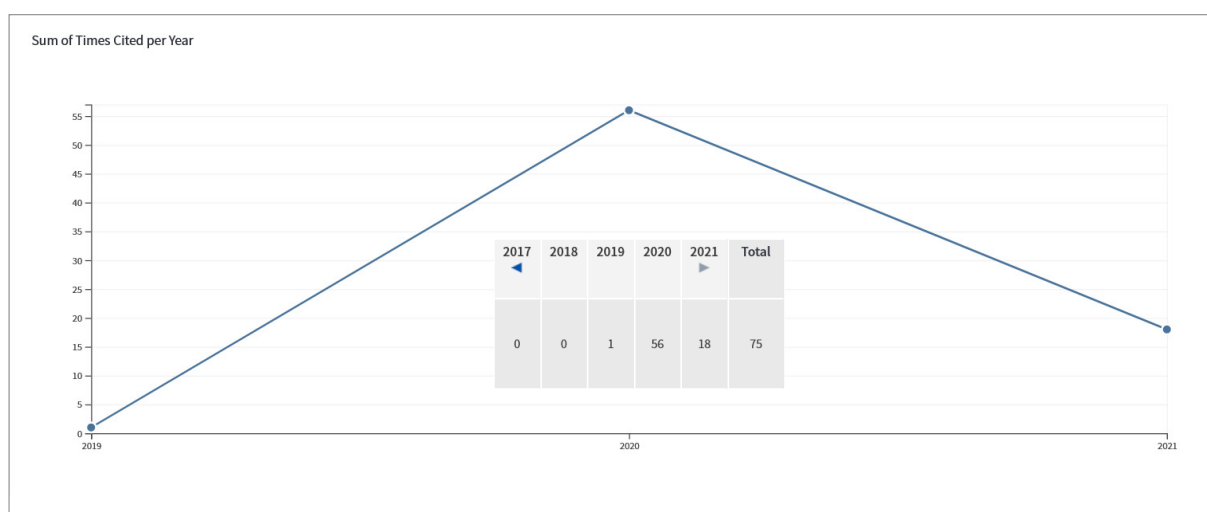
Gavruta, L. Frames for operators, APPLIED AND COMPUTATIONAL HARMONIC ANALYSIS, Volume: 32, Issue: 1, Pages: 139-144, ISSN: 1063-5203, 2012;  
Times Cited in Web of Science Core Collection: 100

Abstract: Frames in Hilbert spaces are a redundant set of vectors which yield a representation for each vector in the space. In the present paper, we give a generalization of frames, which allows, in a stable

way, to reconstruct elements from the range of a linear and bounded operator in a Hilbert space.

## Web of Science - Clarivate Analytics Highly Cited Paper

As of September/December 2020, this highly cited paper received enough citations to place it in the top 1% of the academic field of **Chemistry** based on a highly cited threshold for the field and publication year.



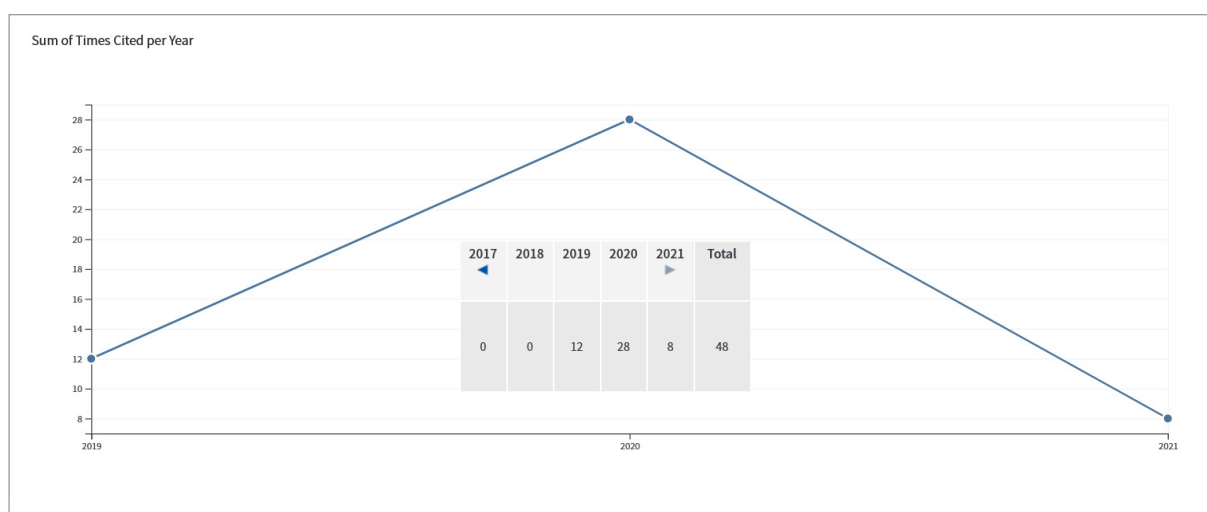
Rajak, D.K., Pagar, D.D., Menezes, P.L., Linul, E. Fiber-Reinforced Polymer Composites: Manufacturing, Properties, and Applications, POLYMERS, Volume: 11, Issue: 10, Article Number: 1667, PubMed ID: 31614875, eISSN: 2073-4360, 2019;  
Times Cited in Web of Science Core Collection: 75

**Abstract:** Composites have been found to be the most promising and discerning material available in this century. Presently, composites reinforced with fibers of synthetic or natural materials are gaining more importance as demands for lightweight materials with high strength for specific applications are growing in the market. Fiber-reinforced polymer composite offers not only high strength to weight ratio, but also reveals exceptional properties such as high durability; stiffness; damping property; flexural strength; and resistance to corrosion, wear, impact, and fire. These wide ranges of diverse features have led composite materials to find applications in mechanical, construction, aerospace, automobile, biomedical, marine, and many other manufacturing industries. Performance of composite

materials predominantly depends on their constituent elements and manufacturing techniques, therefore, functional properties of various fibers available worldwide, their classifications, and the manufacturing techniques used to fabricate the composite materials need to be studied in order to figure out the optimized characteristic of the material for the desired application. An overview of a diverse range of fibers, their properties, functionality, classification, and various fiber composite manufacturing techniques is presented to discover the optimized fiber-reinforced composite material for significant applications. Their exceptional performance in the numerous fields of applications have made fiber-reinforced composite materials a promising alternative over solitary metals or alloys.

## Web of Science - Clarivate Analytics Highly Cited Paper

As of January/December 2020, this highly cited paper received enough citations to place it in the top 1% of the academic field of **Engineering** based on a highly cited threshold for the field and publication year.



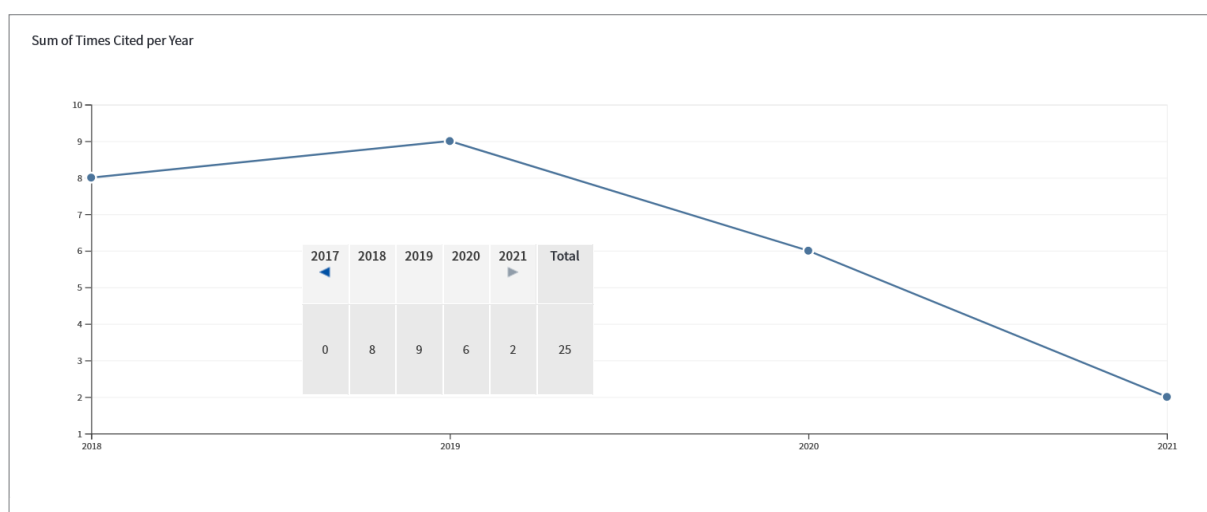
Sarbu, I., Dorca, A. Review on heat transfer analysis in thermal energy storage using latent heat storage systems and phase change materials, INTERNATIONAL JOURNAL OF ENERGY RESEARCH, Volume: 43, Issue: 1, Pages: 29-64, ISSN: 0363-907X, eISSN: 1099-114X, 2019;  
Times Cited in Web of Science Core Collection: 48

**Abstract:** Thermal energy storage (TES) is a technology that stocks thermal energy by heating or cooling a storage medium so that the stored energy can be used later for heating and cooling applications and for power generation. TES has recently attracted increasing interest to thermal applications such as space and water heating, waste heat utilisation, cooling, and air conditioning. Phase change materials (PCMs) used for the storage of thermal energy as latent heat are special types of advanced materials that substantially contribute to the efficient use and conservation of waste heat and solar energy. This paper provides a comprehensive review on the development of latent heat storage (LHS) systems focused on heat transfer and enhancement techniques employed in PCMs to effectively charge and discharge

latent heat energy, and the formulation of the phase change problem. The main categories of PCMs are classified and briefly described, and heat transfer enhancement technologies, namely dispersion of low-density materials, use of porous materials, metal matrices and encapsulation, incorporation of extended surfaces and fins, utilisation of heat pipes, cascaded storage, and direct heat transfer techniques, are also discussed in detail. Additionally, a two-dimensional heat transfer simulation model of an LHS system is developed using the control volume technique to solve the phase change problem. Furthermore, a three-dimensional numerical simulation model of an LHS is built to investigate the quasi-steady state and transient heat transfer in PCMs. Finally, several future research directions are provided.

## Web of Science - Clarivate Analytics Highly Cited Paper

As of January/February 2020, this highly cited paper received enough citations to place it in the top 1% of the academic field of **Chemistry** based on a highly cited threshold for the field and publication year.



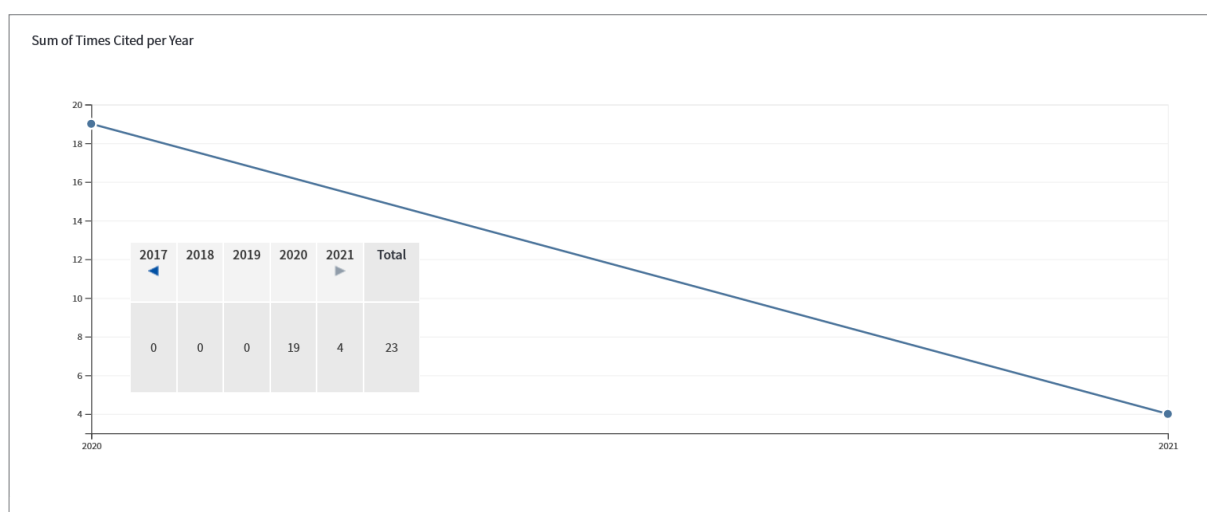
Istratie, R., Stoia, M., Pacurariu, C., Locovei, C. Single and simultaneous adsorption of methyl orange and phenol onto magnetic iron oxide/carbon nanocomposites, ARABIAN JOURNAL OF CHEMISTRY, Volume: 12, Issue: 8, Pages: 3704-3722, ISSN: 1878-5352, eISSN: 1878-5379, 2019; Times Cited in Web of Science Core Collection: 25

**Abstract:** Magnetic iron oxide/carbon nanocomposites were synthesized by a facile, one-step solvothermal method. The magnetic nanopowders were characterized by X-ray diffraction (XRD), Fourier transform infrared (FTIR) spectroscopy, thermal analysis (DSC-TG), scanning electron microscopy (SEM), specific surface area and particle size measurements, pore size distributions and magnetic properties. The magnetic nanopowders were tested as adsorbents for the removal of methyl orange (MO) and phenol (Ph) from aqueous solutions. The effects of solution pH, contact time, adsorbent dose and initial pollutants concentration on the adsorption of MO and phenol onto the investigated adsorbents were studied. A significant increase in the removal efficiency, both for MO and phenol, with the increase in the carbon content of the magnetic nanopowder was evidenced.

New experimental data were provided regarding the bicomponent adsorption of MO and phenol. Pseudo-second order equation was fitted to the kinetic data and four isotherm models, namely Langmuir, Freundlich, Redlich-Peterson and Sips were used to analyze the equilibrium data in both single and binary-component solutions. The investigated adsorbents showed a higher adsorption capacity toward MO than phenol. The simultaneous adsorption of the two pollutants in bicomponent solutions indicated that the MO adsorption is practically not affected by the presence of phenol while the adsorption of phenol is significantly reduced in the presence of MO. The benefits of obtaining low-cost nanocomposites with adsorption capacity and magnetic separation tailored, effective in single and bicomponent adsorption of MO and phenol, represent strong arguments regarding their great potential for practical applications.

## Web of Science - Clarivate Analytics Highly Cited Paper

As of May/December 2020, this highly cited paper received enough citations to place it in the top 1% of the academic field of **Materials Science** based on a highly cited threshold for the field and publication year.



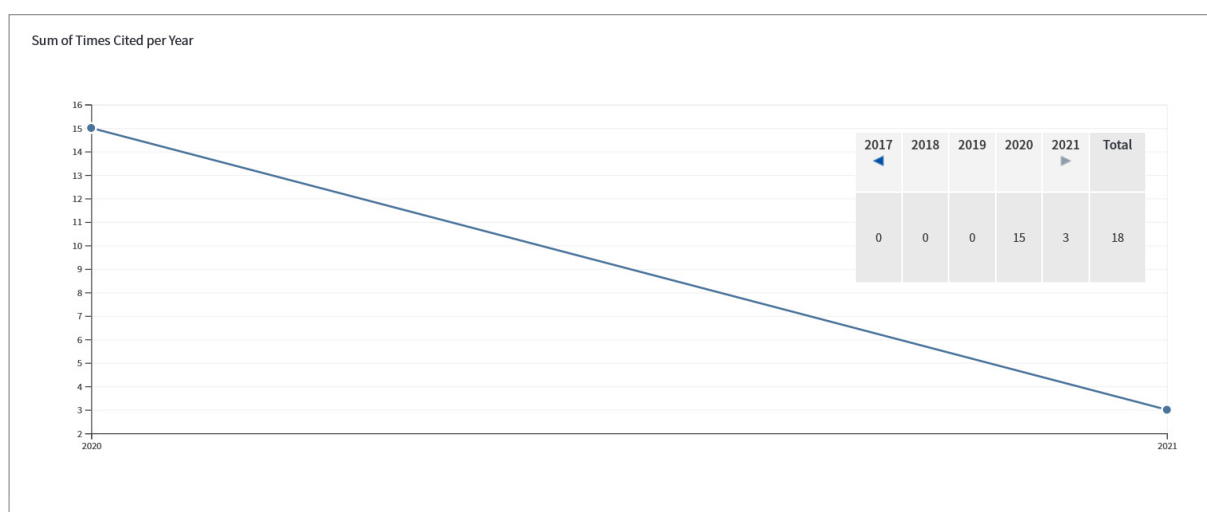
Fiedler, T., Al-Sahlani, K., Linul, P.A., Linul, E. Mechanical properties of A356 and ZA27 metallic syntactic foams at cryogenic temperature, JOURNAL OF ALLOYS AND COMPOUNDS, Volume: 813, Article Number: 152181, ISSN: 0925-8388, eISSN: 1873-4669, 2020;  
Times Cited in Web of Science Core Collection: 23

**Abstract:** This work presents compressions tests of metallic foams at cryogenic temperature. The investigated syntactic foams were manufactured by combining a packed bed of expanded glass particles with either an aluminium or a zinc matrix using infiltration casting. Uni-axial compressions tests were performed after submerging samples in a bath of liquid nitrogen with an equilibrium temperature of -196 degrees C. Both the solid matrix material and syntactic foam

samples were tested. For comparison, room temperature reference data from the literature was obtained. In addition, the effect of thermal treatment on the mechanical behaviour of both alloys and their foams at cryogenic temperature was addressed. The results indicate significant embrittlement at cryogenic temperature; however, aluminium and its foams are less susceptible to this effect.

## Web of Science - Clarivate Analytics Highly Cited Paper

As of July/December 2020, this highly cited paper received enough citations to place it in the top 1% of the academic field of **Geosciences** based on a highly cited threshold for the field and publication year.



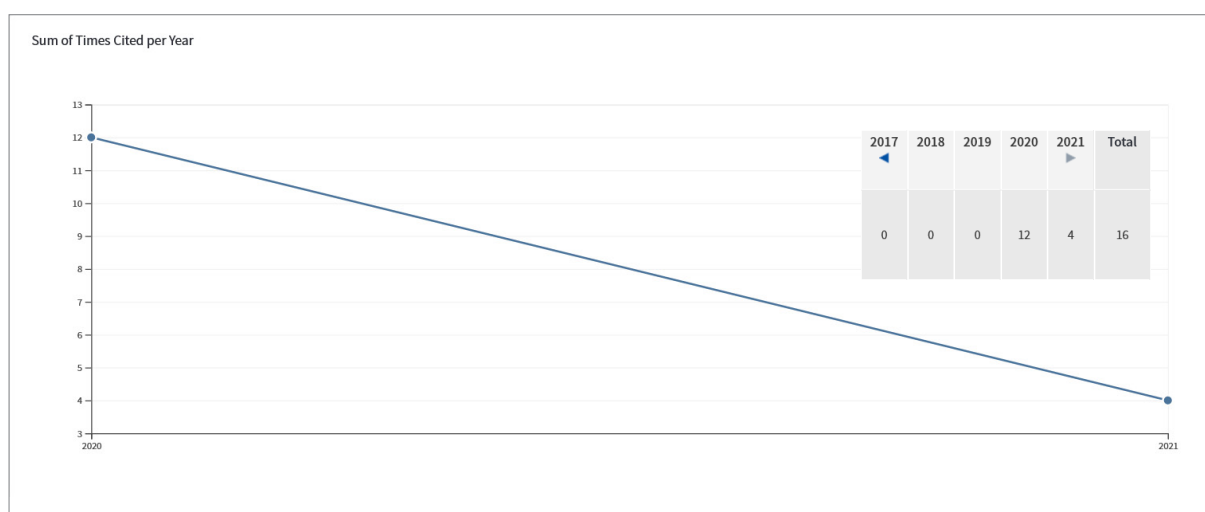
Tmusic, G., Manfreda, S., Aasen, H., James, M.R., Goncalves, G., Ben-Dor, E., Brook, A., Polinova, M., Arranz, J.J., Meszaros, J., Zhuang, R.D., Johansen, K., Malbeteau, Y., de Lima, I.P., Davids, C., Herban, S., McCabe, M.F. Current Practices in UAS-based Environmental Monitoring, REMOTE SENSING, Volume: 12, Issue: 6, Article Number: 1001, eISSN: 2072-4292, 2020;  
Times Cited in Web of Science Core Collection: 18

**Abstract:** With the increasing role that unmanned aerial systems (UAS) are playing in data collection for environmental studies, two key challenges relate to harmonizing and providing standardized guidance for data collection, and also establishing protocols that are applicable across a broad range of environments and conditions. In this context, a network of scientists are cooperating within the framework of the Harmonious Project to develop and promote harmonized mapping strategies and disseminate operational guidance to ensure best practice for data collection and interpretation. The culmination of these efforts is summarized in the present manuscript. Through

this synthesis study, we identify the many interdependencies of each step in the collection and processing chain, and outline approaches to formalize and ensure a successful workflow and product development. Given the number of environmental conditions, constraints, and variables that could possibly be explored from UAS platforms, it is impractical to provide protocols that can be applied universally under all scenarios. However, it is possible to collate and systematically order the fragmented knowledge on UAS collection and analysis to identify the best practices that can best ensure the streamlined and rigorous development of scientific products.

## Web of Science - Clarivate Analytics Highly Cited Paper

As of November/December 2020, this highly cited paper received enough citations to place it in the top 1% of the academic field of **Engineering** based on a highly cited threshold for the field and publication year.



Precup, R.E., Teban, T.A., Albu, A., Borlea, A.B., Zamfirache, I.A., Petriu, E.M. Evolving Fuzzy Models for Prosthetic Hand Myoelectric-Based Control, IEEE TRANSACTIONS ON INSTRUMENTATION AND MEASUREMENT, Volume: 69, Issue: 7, Pages: 4625-4636, ISSN: 0018-9456, eISSN: 1557-9662, 2020;

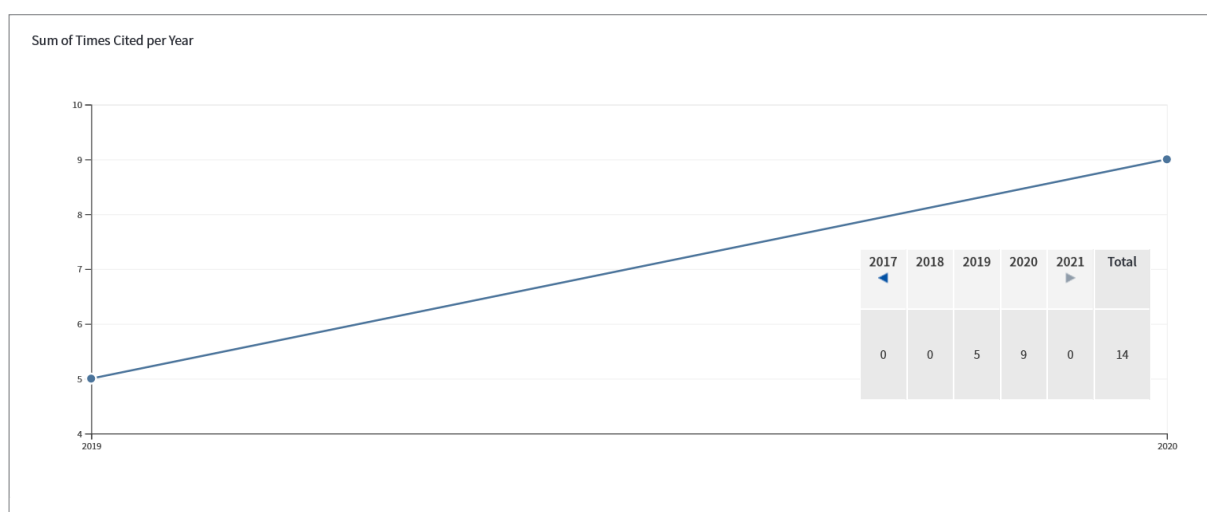
Times Cited in Web of Science Core Collection: 16

**Abstract:** This article applies an incremental online identification algorithm to develop a set of evolving fuzzy models (FMs) that characterize the nonlinear finger dynamics of the human hand for the myoelectric (ME)-based control of a prosthetic hand. The FM inputs are the ME signals obtained from eight ME sensors and past inputs and/or outputs. The FM outputs are the finger angles, considered here as the midcarpal joint angles, to ensure their control. The best evolving FMs that characterize each of the five fingers are described with the results validated on real data. Simple second-order linear models are

next given to enable the cost-effective controller design. Five separate control loops are proposed, with proportional-integral (PI) controllers separately tuned by a frequency-domain approach. Simple PI-fuzzy controllers are designed starting with the linear PI controllers to ensure the control system performance improvement. The evolving FMs are used to simulate accurately the behavior of the human hand. Digital simulation results are included to show the effectiveness of the PI-fuzzy controllers and the performance improvement in comparison to the initial PI ones.

## Web of Science - Clarivate Analytics Highly Cited Paper

As of January/December 2020, this highly cited paper received enough citations to place it in the top 1% of the academic field of **Engineering** based on a highly cited threshold for the field and publication year.



Linul, E., Marsavina, L., Valean, C., Banica, R. Static and dynamic mode I fracture toughness of rigid PUR foams under room and cryogenic temperatures, *ENGINEERING FRACTURE MECHANICS*, Volume: 225, Article Number: 106274, ISSN: 0013-7944, eISSN: 1873-7315, 2020;  
Times Cited in Web of Science Core Collection: 14

**Abstract:** The research presented in this paper is an effort to better understand the fracture toughness of closed-cell rigid polyurethane (PUR) foams under different loading and temperature conditions. The effect of density (100, 145 and 300 kg/m<sup>3</sup>) and anisotropy (in-plane and out-of-plane loading directions) on both quasi-static and dynamic fracture behavior was also experimentally investigated. The three-point bending (3PB) tests were performed on Single Edge Notched Bend (SENB) samples, at room (25 degrees C) and cryogenic (-196 degrees C) temperatures, and the mode I fracture toughness (K-IC) was calculated from their load-displacement curves. It was

observed that all PUR foam samples, regardless of foam density and loading direction, showed a significant increase in K-IC at the cryogenic temperature. The out-of-plane obtained samples showed a slight improvement in fracture toughness (highlighting an anisotropic behavior), both under quasi-static and dynamic 3PB loads. The dynamic K-IC values were found higher than quasi-static ones, and irrespective of foam density and test condition, a brittle deformation mechanism without plastic deformation was observed for all samples. Finally, empirical formulations for cryogenic and dynamic K-IC based on room temperature mode I fracture toughness were proposed.

No.	Article	2019 Impact Factor / Quartile in Category
1.	Afzal, M.U., Matekovits, L., Esselle, K.P., Lalbakhsh, A. Beam-Scanning Antenna Based on Near-Electric Field Phase Transformation and Refraction of Electromagnetic Wave Through Dielectric Structures, IEEE ACCESS, Volume: 8, Pages: 199242-199253, ISSN: 2169-3536, 2020;	3.745 / Q1
2.	Ahmed, S.E., San, O., Bistran, D.A., Navon, I.M. Sampling and resolution characteristics in reduced order models of shallow water equations: Intrusive vs nonintrusive, INTERNATIONAL JOURNAL FOR NUMERICAL METHODS IN FLUIDS, Volume: 92, Issue: 8, Pages: 992-1036, ISSN: 0271-2091, eISSN: 1097-0363, 2020;	1.808 / Q2
3.	Albulescu, C.T., Artene, A.E., Luminosu, C.T., Tamasila, M. CO(2)emissions, renewable energy, and environmental regulations in the EU countries, ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH, Volume: 27, Issue: 27, Pages: 33615-33635, PubMed ID: 31473925, ISSN: 0944-1344, eISSN: 1614-7499, 2020;	3.056 / Q2
4.	Albulescu, C.T., Tiwari, A.K., Ji, Q. Copula-based local dependence among energy, agriculture and metal commodities markets, ENERGY, Volume: 202, Article Number: 117762, ISSN: 0360-5442, eISSN: 1873-6785, 2020;	6.082 / Q1
5.	Ancuti, C., Ancuti, C.O., De Vleeschouwer, C., Bovik, A.C. Day and Night-Time Dehazing by Local Airlight Estimation, IEEE TRANSACTIONS ON IMAGE PROCESSING, Volume: 29, Pages: 6264-6275, PubMed ID: 32340946, ISSN: 1057-7149, eISSN: 1941-0042, 2020;	9.34 / Q1
6.	Ancuti, C.O., Ancuti, C., De Vleeschouwer, C., Sbert, M. Color Channel Compensation (3C): A Fundamental Pre-Processing Step for Image Enhancement, IEEE TRANSACTIONS ON IMAGE PROCESSING, Volume: 29, Pages: 2653-2665, PubMed ID: 31751271, ISSN: 1057-7149, eISSN: 1941-0042, 2020;	9.34 / Q1
7.	Ancuti, M.C., Musuroi, S., Sorandaru, C., Dordescu, M., Erdodi, G.M. Wind Turbines Optimal Operation at Time Variable Wind Speeds, APPLIED SCIENCES-BASEL, Volume: 10, Issue: 12, Article Number: 4232, eISSN: 2076-3417, 2020;	2.474 / Q2
8.	Apopei, P., Orha, C., Popescu, M.I., Lazau, C., Manea, F., Catrinescu, C., Teodosiu, C. Diclofenac removal from water by photocatalysis- assisted filtration using activated carbon modified with N-doped TiO <sub>2</sub> , PROCESS SAFETY AND ENVIRONMENTAL PROTECTION, Volume: 138, Pages: 324-336, ISSN: 0957-5820, eISSN: 1744-3598, 2020;	4.966 / Q1
9.	Ardean, C., Ciopec, M., Davidescu, C.M., Negrea, P., Voda, R. Kinetics and Thermodynamics Studies for Cadmium (II) Adsorption onto Functionalized Chitosan with Hexa-Decyl-Trimethyl-Ammonium Chloride, MATERIALS, Volume: 13, Issue: 23, Article Number: 5552, PubMed ID: 33291450, eISSN: 1996-1944, 2020;	3.057 / Q2
10.	Artene, A., Bunget, O.C., Dumitrescu, A.C., Domil, A.E., Bogdan, O. Non-Financial Information Disclosures and Environmental Protection-Evidence from Romania and Greece, FORESTS, Volume: 11, Issue: 8, Article Number: 814, eISSN: 1999-4907, 2020;	2.221 / Q1
11.	Arvinti, B., Isar, A., Stolz, R., Costache, M. REMOVAL OF REPETITIVE MAGNETIC INTERFERENCES UPON UNSHIELDED FETAL MAGNETOCARDIOGRAMS, ROMANIAN REPORTS IN PHYSICS, Volume: 72, Issue: 3, Article Number: 607, ISSN: 1221-1451, eISSN: 1841-8759, 2020;	2.147 / Q2
12.	Bauer, M., Bruveris, M., Cismas, E., Escher, J., Kolev, B. Well-posedness of the EPDiff equation with a pseudo-differential inertia operator, JOURNAL OF DIFFERENTIAL EQUATIONS, Volume: 269, Issue: 1, Pages: 288-325, ISSN: 0022-0396, eISSN: 1090-2732, 2020;	2.192 / Q1
13.	Biba, D.R., Ancuti, M.C., Ianovici, A., Sorandaru, C., Musuroi, S. Power Supply Platform and Functional Safety Concept Proposals for a Powertrain Transmission Electronic Control Unit, ELECTRONICS, Volume: 9, Issue: 10, Article Number: 1580, eISSN: 2079-9292, 2020;	2.412 / Q2
14.	Binzar, T., Pater, F., Nadaban, S. Fuzzy bounded operators with application to Radon transform, CHAOS SOLITONS & FRACTALS, Volume: 141, Article Number: 110359, ISSN: 0960-0779, eISSN: 1873-2887, 2020;	3.764 / Q1

No.	Article	2019 Impact Factor / Quartile in Category
15.	Boncalo, O., Amaricai, A., Lendek, Z. Fault Tolerant Digital Data-Path Design via Control Feedback Loops, ELECTRONICS, Volume: 9, Issue: 10, Article Number: 1721, eISSN: 2079-9292, 2020;	2.412 / Q2
16.	Borlea, A., Borcan, F., Sporea, I., Dehelean, C.A., Negrea, R., Cotoi, L., Stoian, D. TI-RADS Diagnostic Performance: Which Algorithm is Superior and How Elastography and 4D Vascularity Improve the Malignancy Risk Assessment, DIAGNOSTICS, Volume: 10, Issue: 4, Article Number: 180, PubMed ID: 32225078, eISSN: 2075-4418, 2020;	3.11 / Q1
17.	Bosic, A.I., Tanasa, C. Experimental study of swirling flow from conical diffusers using the water jet control method, RENEWABLE ENERGY, Volume: 152, Pages: 385-398, ISSN: 0960-1481, 2020;	6.274 / Q1
18.	Bota, C., Caruntu, B., Tucu, D., Lapadat, M., Pasca, M.S. A Least Squares Differential Quadrature Method for a Class of Nonlinear Partial Differential Equations of Fractional Order, MATHEMATICS, Volume: 8, Issue: 8, Article Number: 1336, eISSN: 2227-7390, 2020;	1.747 / Q1
19.	Brighenti, R., Cosma, M.P., Marsavina, L., Spagnoli, A., Terzano, M. Laser-based additively manufactured polymers: a review on processes and mechanical models, JOURNAL OF MATERIALS SCIENCE, Volume: 56, Issue: 2, Pages: 961-998, ISSN: 0022-2461, eISSN: 1573-4803, 2020;	3.553 / Q2
20.	Bucur, A.I., Linul, E., Taranu, B.O. Hydroxyapatite coatings on Ti substrates by simultaneous precipitation and electrodeposition, APPLIED SURFACE SCIENCE, Volume: 527, Article Number: 146820, ISSN: 0169-4332, eISSN: 1873-5584, 2020;	6.182 / Q1
21.	Buda, V., Baul, B., Andor, M., Man, D.E., Ledeti, A., Vlase, G., Vlase, T., Danciu, C., Matusz, P., Peter, F., Ledeti, I. Solid State Stability and Kinetics of Degradation for Candesartan-Pure Compound and Pharmaceutical Formulation, PHARMACEUTICS, Volume: 12, Issue: 2, Article Number: 86, PubMed ID: 31972960, eISSN: 1999-4923, 2020;	4.421 / Q1
22.	Buncianu, D., Tessier-Doyen, N., Absi, J., Negru, R., Serban, D.A., Marsavina, L. Multi-Scale Mechanical Behaviour of a Highly Porous Alumina Based Foam, METALS AND MATERIALS INTERNATIONAL, Volume: 26, Issue: 10, Pages: 1524-1532, ISSN: 1598-9623, eISSN: 2005-4149, 2020;	1.99 / Q2
23.	Buriac, O., Ciopec, M., Duteanu, N., Negrea, A., Negrea, P., Grozav, I. Platinum (IV) Recovery from Waste Solutions by Adsorption onto Dibenzo-30-crown-10 Ether Immobilized on Amberlite XAD7 Resin-Factorial Design Analysis, MOLECULES, Volume: 25, Issue: 16, Article Number: 3692, PubMed ID: 32823592, eISSN: 1420-3049, 2020;	3.267 / Q2
24.	Buse, C., Lupulescu, V., O'Regan, D. Hyers-Ulam stability for equations with differences and differential equations with time-dependent and periodic coefficients, PROCEEDINGS OF THE ROYAL SOCIETY OF EDINBURGH SECTION A-MATHEMATICS, Volume: 150, Issue: 5, Pages: 2175-2188, ISSN: 0308-2105, eISSN: 1473-7124, 2020;	1.009 / Q2
25.	Buse, C., O'Regan, D. Discrete integral conditions for weak trajectories and asymptotic stability for operators in Banach spaces, BULLETIN DES SCIENCES MATHÉMATIQUES, Volume: 158, Article Number: 102805, ISSN: 0007-4497, eISSN: 1952-4773, 2020;	1.241 / Q2
26.	Busoni, L., Varma, V.S., Loheac, J., Codrean, A., Stefan, O., Morarescu, I.C., Lasaulce, S. Learning control for transmission and navigation with a mobile robot under unknown communication rates, CONTROL ENGINEERING PRACTICE, Volume: 100, Article Number: 104460, ISSN: 0967-0661, eISSN: 1873-6939, 2020;	3.193 / Q2
27.	Buzatu, A.R., Frissen, A.E., van den Broek, L.A.M., Todea, A., Motoc, M., Boeriu, C.G. Chemoenzymatic Synthesis of New Aromatic Esters of Mono- and Oligosaccharides, PROCESSES, Volume: 8, Issue: 12, Article Number: 1638, eISSN: 2227-9717, 2020;	2.753 / Q2
28.	Cadariu, L., Popa, D., Rasa, I. Ulam Stability of a Second Linear Differential Operator with Nonconstant Coefficients, SYMMETRY-BASEL, Volume: 12, Issue: 9, Article Number: 1451, eISSN: 2073-8994, 2020;	2.645 / Q2

No.	Article	2019 Impact Factor / Quartile in Category
29.	Capota, E.A., Stangaciu, C.S., Micea, M.V., Curiac, D.I. Towards Fully Jitterless Applications: Periodic Scheduling in Multiprocessor MCSs Using a Table-Driven Approach, APPLIED SCIENCES-BASEL, Volume: 10, Issue: 19, Article Number: 6702, eISSN: 2076-3417, 2020;	2.474 / Q2
30.	Carstoiu, G., Micea, M.V., Ungurean, L., Marcu, M. Novel battery wear leveling method for large-scale reconfigurable battery packs, INTERNATIONAL JOURNAL OF ENERGY RESEARCH, Volume: 45, Issue: 2, Pages: 1932-1947, ISSN: 0363-907X, eISSN: 1099-114X, 2020;	3.741 / Q1
31.	Ceburcean, D., Ceburcean, V., Ionel, I. Modeling and performance analysis of subcritical and supercritical coal-fired power plants with biomass co-firing and CO <sub>2</sub> capture, CLEAN TECHNOLOGIES AND ENVIRONMENTAL POLICY, Volume: 22, Issue: 1, Pages: 153-169, ISSN: 1618-954X, eISSN: 1618-9558, 2020;	2.429 / Q2
32.	Chirita-Emandi, A., Andreescu, N., Zimbru, C.G., Tutac, P., Arghirescu, S., Serban, M., Puiu, M. Challenges in reporting pathogenic/potentially pathogenic variants in 94 cancer predisposing genes - in pediatric patients screened with NGS panels, SCIENTIFIC REPORTS, Volume: 10, Issue: 1, Article Number: 223, PubMed ID: 31937788, ISSN: 2045-2322, 2020;	3.998 / Q1
33.	Ciopec, M., Gabor, A., Davidescu, C.M., Negrea, A., Negrea, P., Duteanu, N. Eu(III) removal by tetrabutylammonium di-hydrogen phosphate (TBAH <sub>2</sub> P) functionalized polymers, ARABIAN JOURNAL OF CHEMISTRY, Volume: 13, Issue: 1, Pages: 3534-3545, ISSN: 1878-5352, eISSN: 1878-5379, 2020;	4.762 / Q2
34.	Cividino, S., Halbac-Cotoara-Zamfir, R., Salvati, L. Revisiting the "City Life Cycle": Global Urbanization and Implications for Regional Development, SUSTAINABILITY, Volume: 12, Issue: 3, Article Number: 1151, eISSN: 2071-1050, 2020;	2.576 / Q2
35.	Cocheci, L., Lupa, L., Tolea, N.S., Muntean, C., Negrea, P. Sequential use of ionic liquid functionalized Zn-Al layered double hydroxide as adsorbent and photocatalyst, SEPARATION AND PURIFICATION TECHNOLOGY, Volume: 250, Article Number: 117104, ISSN: 1383-5866, eISSN: 1873-3794, 2020;	5.774 / Q1
36.	Cornea, O., Hulea, D., Muntean, N., Andreescu, G.D. Step-Down Switched-Inductor Hybrid DC-DC Converter for Small Power Wind Energy Conversion Systems With Hybrid Storage, IEEE ACCESS, Volume: 8, Pages: 136092-136107, ISSN: 2169-3536, 2020;	3.745 / Q1
37.	Covaci, C., Gontean, A. Piezoelectric Energy Harvesting Solutions: A Review, SENSORS, Volume: 20, Issue: 12, Article Number: 3512, PubMed ID: 32575888, eISSN: 1424-8220, 2020;	3.275 / Q1
38.	Craciunescu, C.M., Kohl, M., Ercuta, A. Micro-actuation design in VO <sub>2</sub> -based bimorph cantilevers, SMART MATERIALS AND STRUCTURES, Volume: 29, Issue: 11, Article Number: 115035, ISSN: 0964-1726, eISSN: 1361-665X, 2020;	3.613 / Q1
39.	Croitoru, C., Pop, M.A., Bedo, T., Cosnita, M., Roata, I.C., Hulka, I. Physically Crosslinked Poly (Vinyl Alcohol)/Kappa-Carrageenan Hydrogels: Structure and Applications, POLYMERS, Volume: 12, Issue: 3, Article Number: 560, PubMed ID: 32138357, eISSN: 2073-4360, 2020;	3.426 / Q1
40.	Croitoru, C., Roata, I.C., Pascu, A., Stanciu, E.M., Hulka, I., Stoian, G., Lupu, N. Photocatalytic surfaces obtained through one-step thermal spraying of titanium, APPLIED SURFACE SCIENCE, Volume: 504, Article Number: 144173, ISSN: 0169-4332, eISSN: 1873-5584, 2020;	6.182 / Q1
41.	Cveticanin, D., Herisanu, N., Biro, I., Zukovic, M., Cveticanin, L. Vibration of the Biomass Boiler Tube Excited with Impact of the Cleaning Device, MATHEMATICS, Volume: 8, Issue: 9, Article Number: 1519, eISSN: 2227-7390, 2020;	1.747 / Q1

No.	Article	2019 Impact Factor / Quartile in Category
42.	Daianu, D.M., Mindruta, C. Sections in functional equations, AEQUATIONES MATHEMATICAE, Volume: 94, Issue: 5, Pages: 931-943, ISSN: 0001-9054, eISSN: 1420-8903, 2020;	0.851 / Q2
43.	Don, R., Ciutina, A., Vulcu, C., Stratan, A. Seismic-resistant slim-floor beam-to-column joints: experimental and numerical investigations, STEEL AND COMPOSITE STRUCTURES, Volume: 37, Issue: 3, Pages: 307-321, ISSN: 1229-9367, eISSN: 1598-6233, 2020;	4.394 / Q1
44.	Dragicevic, D., Pecek, N.J., Lupa, N. Admissibility and general dichotomies for evolution families, ELECTRONIC JOURNAL OF QUALITATIVE THEORY OF DIFFERENTIAL EQUATIONS, Issue: 58, Pages: 1-19, ISSN: 1417-3875, 2020;	1.827 / Q1
45.	Dragomir, G.M., Cernicova-Buca, M., Gherhes, V., Cismariu, L. Engineering Students' Human Values as Rhizomatic Lines of Sustainability, SUSTAINABILITY, Volume: 12, Issue: 18, Article Number: 7417, eISSN: 2071-1050, 2020;	2.576 / Q2
46.	Dumitru, R., Negrea, S., Ianculescu, A., Pacurariu, C., Vasile, B., Surdu, A., Manea, F. Lanthanum Ferrite Ceramic Powders: Synthesis, Characterization and Electrochemical Detection Application, MATERIALS, Volume: 13, Issue: 9, Article Number: 2061, PubMed ID: 32365678, eISSN: 1996-1944, 2020;	3.057 / Q2
47.	Egidi, G., Halbac-Cotoara-Zamfir, R., Cividino, S., Quaranta, G., Salvati, L., Colantoni, A. Rural in Town: Traditional Agriculture, Population Trends, and Long-Term Urban Expansion in Metropolitan Rome, LAND, Volume: 9, Issue: 2, Article Number: 53, eISSN: 2073-445X, 2020;	2.429 / Q2
48.	Ene, R.D., Pop, C., Petrisor, C. Systematic Review of Geometrical Approaches and Analytical Integration for Chen's System, MATHEMATICS, Volume: 8, Issue: 9, Article Number: 1530, eISSN: 2227-7390, SEP 2020;	1.747 / Q1
49.	Epasto, G., Distefano, F., Gu, L.X., Mozafari, H., Linul, E. Design and optimization of Metallic Foam Shell protective device against flying ballast impact damage in railway axles, MATERIALS & DESIGN, Volume: 196, Article Number: 109120, ISSN: 0264-1275, eISSN: 1873-4197, 2020;	6.289 / Q1
50.	Erdelyi, R.A., Duma, V.F., Sinescu, C., Dobre, G.M., Bradu, A., Podoleanu, A. Dental Diagnosis and Treatment Assessments: Between X-rays Radiography and Optical Coherence Tomography, MATERIALS, Volume: 13, Issue: 21, Article Number: 4825, PubMed ID: 33126714, eISSN: 1996-1944, 2020;	3.057 / Q2
51.	Fagadar-Cosma, E., Plesu, N., Lascu, A., Anghel, D., Cazacu, M., Ianasi, C., Fagadar-Cosma, G., Fratilescu, I., Epuran, C. Novel Platinum-Porphyrin as Sensing Compound for Efficient Fluorescent and Electrochemical Detection of H <sub>2</sub> O <sub>2</sub> , CHEMOSENSORS, Volume: 8, Issue: 2, Article Number: 29, eISSN: 2227-9040, 2020;	3.108 / Q1
52.	Farcas, C.G., Dehelean, C., Pinzaru, I.A., Mioc, M., Socoliuc, V., Moaca, E.A., Avram, S., Ghiulai, R., Coricovac, D., Pavel, I., Alla, P.K., Cretu, O.M., Soica, C., Loghin, F. Thermosensitive Betulinic Acid-Loaded Magnetoliposomes: A Promising Antitumor Potential for Highly Aggressive Human Breast Adenocarcinoma Cells Under Hyperthermic Conditions, INTERNATIONAL JOURNAL OF NANOMEDICINE, Volume: 15, Pages: 8175-8200, PubMed ID: 33122905, ISSN: 1178-2013, 2020;	5.115 / Q1
53.	Fiedler, T., Al-Sahlani, K., Linul, P.A., Linul, E. Mechanical properties of A356 and ZA27 metallic syntactic foams at cryogenic temperature, JOURNAL OF ALLOYS AND COMPOUNDS, Volume: 813, Article Number: 152181, ISSN: 0925-8388, eISSN: 1873-4669, 2020;	4.65 / Q1
54.	Filip, I., Dragan, F., Szeidert, I., Albu, A. Minimum-Variance Control System with Variable Control Penalty Factor, APPLIED SCIENCES-BASEL, Volume: 10, Issue: 7, Article Number: 2274, eISSN: 2076-3417, 2020;	2.474 / Q2
55.	Forton, A., Mangiafico, S., Sauzeat, C., Di Benedetto, H., Marc, P. Properties of blends of fresh and RAP binders with rejuvenator: Experimental and estimated results, CONSTRUCTION AND BUILDING MATERIALS, Volume: 236, Article Number: 117555, ISSN: 0950-0618, eISSN: 1879-0526, 2020;	4.419 / Q1

No.	Article	2019 Impact Factor / Quartile in Category
56.	Frigura-Iliasa, M., Baloi, F.I., Frigura-Iliasa, F.M., Simo, A., Musuroi, S., Andea, P. Health-Related Electromagnetic Field Assessment in the Proximity of High Voltage Power Equipment, APPLIED SCIENCES-BASEL, Volume: 10, Issue: 1, Article Number: 260, eISSN: 2076-3417, 2020;	2.474 / Q2
57.	Gherhes, V., Dragomir, G.M., Cernicova-Buca, M. Migration Intentions of Romanian Engineering Students, SUSTAINABILITY, Volume: 12, Issue: 12, Article Number: 4846, eISSN: 2071-1050, 2020;	2.576 / Q2
58.	Glevitzky, M., Aleya, L., Vica, M.L., Dumitrel, G.A., Avram, M., Tit, D.M., Popa, M., Popa, V.C., Behl, T., Bungau, S. Assessing the microbiological contamination along with environmental factors of old books in the 1490-founded Bistrita Monastery, Romania, ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH, Volume: 28, Issue: 7, Pages: 8743-8757, PubMed ID: 33070291, ISSN: 0944-1344, eISSN: 1614-7499, 2020;	3.056 / Q2
59.	Groza, B., Popa, L., Murvay, P.S. Highly Efficient Authentication for CAN by Identifier Reallocation With Ordered CMACs, IEEE TRANSACTIONS ON VEHICULAR TECHNOLOGY, Volume: 69, Issue: 6, Pages: 6129-6140, ISSN: 0018-9545, eISSN: 1939-9359, 2020;	5.379 / Q1
60.	Groza, B., Berdich, A., Jichici, C., Mayrhofer, R. Secure Accelerometer-Based Pairing of Mobile Devices in Multi-Modal Transport, IEEE ACCESS, Volume: 8, Pages: 9246-9259, ISSN: 2169-3536, 2020;	3.745 / Q1
61.	Groza, B., Andreica, T., Berdich, A., Murvay, P.S., Gurban, E.H. PRESTvO: Privacy Enabled Smartphone Based Access to Vehicle On-Board Units, IEEE ACCESS, Volume: 8, Pages: 119105-119122, ISSN: 2169-3536, 2020;	3.745 / Q1
62.	Gurban, D. Radial non-potential Dirichlet systems with mean curvature operator in Minkowski space, POSITIVITY, Volume: 25, Issue: 1, ISSN: 1385-1292, eISSN: 1572-9281, 2020;	1.005 / Q2
63.	Hadaruga, N.G., Szakal, R.N., Chirila, C.A., Lukinich-Gruia, A.T., Paunescu, V., Muntean, C., Rusu, G., Bujanca, G., Hadaruga, D.I. Complexation of Danube common nase (Chondrostoma nasus L.) oil by beta-cyclodextrin and 2-hydroxypropyl-beta-cyclodextrin, FOOD CHEMISTRY, Volume: 303, Article Number: 125419, PubMed ID: 31470276, ISSN: 0308-8146, eISSN: 1873-7072, 2020;	6.306 / Q1
64.	Halbac-Cotoara-Zamfir, R., Egidi, G., Mosconi, E.M., Poponi, S., Alhusein, A., Salvati, L. Uncovering Demographic Trends and Recent Urban Expansion in Metropolitan Regions: A Paradigmatic Case Study, SUSTAINABILITY, Volume: 12, Issue: 9, Article Number: 3937, eISSN: 2071-1050, 2020;	2.576 / Q2
65.	Halbac-Cotoara-Zamfir, R., Cividino, S., Egidi, G., Salvia, R., Salvati, L. Rapidity of Change in Population Age Structures: A Local Approach Based on Multiway Factor Analysis, SUSTAINABILITY, Volume: 12, Issue: 7, Article Number: 2828, eISSN: 2071-1050, 2020;	2.576 / Q2
66.	Hegyi, A., Sarris, A., Curta, F., Floca, C., Fortiu, S., Urdea, P., Onaca, A., Timofte, F., Pisz, M., Timut, S., Nica, M., Maciulschi, D., Stavila, A. Deserted Medieval Village Reconstruction Using Applied Geosciences, REMOTE SENSING, Volume: 12, Issue: 12, Article Number: 1975, eISSN: 2072-4292, 2020;	4.509 / Q2
67.	Heinosaari, T., Jivulescu, M.A., Nechita, I. Random positive operator valued measures, JOURNAL OF MATHEMATICAL PHYSICS, Volume: 61, Issue: 4, ISSN: 0022-2488, eISSN: 1089-7658, 2020;	1.317 / Q2
68.	Herisanu, N., Marinca, V. An effective analytical approach to nonlinear free vibration of elastically actuated microtubes, MECCANICA, ISSN: 0025-6455, eISSN: 1572-9648, 2020;	2.153 / Q2
69.	Herisanu, N., Marinca, V. An Efficient Analytical Approach to Investigate the Dynamics of a Misaligned Multirotor System, MATHEMATICS, Volume: 8, Issue: 7, Article Number: 1083, eISSN: 2227-7390, 2020;	1.747 / Q1
70.	Hulka, I., Utu, D., Serban, V.A., Negrea, P., Lukac, F., Chraska, T. Effect of Ti addition on microstructure and corrosion properties of laser cladded WC-Co/NiCrBSi(Ti) coatings, APPLIED SURFACE SCIENCE, Volume: 504, Article Number: 144349, ISSN: 0169-4332, eISSN: 1873-5584, 2020;	6.182 / Q1

No.	Article	2019 Impact Factor / Quartile in Category
71.	Ioana, A., Korodi, A. Improving OPC UA Publish-Subscribe Mechanism over UDP with Synchronization Algorithm and Multithreading Broker Application, SENSORS, Volume: 20, Issue: 19, Article Number: 5591, PubMed ID: 33003549, eISSN: 1424-8220, 2020;	3.275 / Q1
72.	Ioana, A., Korodi, A. OPC UA Publish-Subscribe and VSOME/IP Notify-Subscribe Based Gateway Application in the Context of Car to Infrastructure Communication, SENSORS, Volume: 20, Issue: 16, Article Number: 4624, PubMed ID: 32824493, eISSN: 1424-8220, 2020;	3.275 / Q1
73.	Ionitescu, M., Vermesan, D., Haragus, H., Suciu, O., Todor, A., Dumitrascu, C.V., Negrea, R., Hoinoiu, T., Radu, D., Fruja, D. Association of Neutrophil to Lymphocyte Ratio with Patient Reported Outcomes in Knee Osteoarthritis, APPLIED SCIENCES-BASEL, Volume: 10, Issue: 22, Article Number: 8173, eISSN: 2076-3417, 2020;	2.474 / Q2
74.	Isfanuti, A.S., Tutelea, L.N., Boldea, I., Staudt, T., da Silva, P.E. Outer Ferrite-PM-Rotor BLAC Motor Characterization: FEM-Assisted Optimal Design and Preliminary Experiments, IEEE TRANSACTIONS ON INDUSTRY APPLICATIONS, Volume: 56, Issue: 3, Pages: 2580-2589, ISSN: 0093-9994, eISSN: 1939-9367, 2020;	3.488 / Q1
75.	Ivascu, L. Measuring the Implications of Sustainable Manufacturing in the Context of Industry 4.0, PROCESSES, Volume: 8, Issue: 5, Article Number: 585, eISSN: 2227-9717, 2020;	2.753 / Q2
76.	Karagiorgis, S., Tsamis, A., Voutouri, C., Turcu, R., Porav, S.A., Socoliuc, V., Vekas, L., Louca, M., Stylianopoulos, T., Vavourakis, V., Krasia-Christoforou, T. Engineered magnetoactive collagen hydrogels with tunable and predictable mechanical response, MATERIALS SCIENCE & ENGINEERING C-MATERIALS FOR BIOLOGICAL APPLICATIONS, Volume: 114, Article Number: 111089, PubMed ID: 32994019, ISSN: 0928-4931, eISSN: 1873-0191, 2020;	5.88 / Q1
77.	Khezzadeh, O., Mirzaee, O., Emadoddin, E., Linul, E. Anisotropic Compressive Behavior of Metallic Foams under Extreme Temperature Conditions, MATERIALS, Volume: 13, Issue: 10, Article Number: 2329, PubMed ID: 32438755, eISSN: 1996-1944, 2020;	3.057 / Q2
78.	Kiss, G., Rusu, G., Peter, F., Tanase, I., Bandur, G. Recovery of Flexible Polyurethane Foam Waste for Efficient Reuse in Industrial Formulations, POLYMERS, Volume: 12, Issue: 7, Article Number: 1533, PubMed ID: 32664336, eISSN: 2073-4360, 2020;	3.426 / Q1
79.	Kolumban-Antal, G., Lasak, V., Bogdan, R., Groza, B. A Secure and Portable Multi-Sensor Module for Distributed Air Pollution Monitoring, SENSORS, Volume: 20, Issue: 2, Article Number: 403, PubMed ID: 31936847, eISSN: 1424-8220, 2020;	3.275 / Q1
80.	Korodi, A., Anitei, D., Boitor, A., Silea, I. Image-Processing-Based Low-Cost Fault Detection Solution for End-of-Line ECUs in Automotive Manufacturing, SENSORS, Volume: 20, Issue: 12, Article Number: 3520, PubMed ID: 32580271, eISSN: 1424-8220, 2020;	3.275 / Q1
81.	Korodi, A., Crisan, R., Nicolae, A., Silea, I. Industrial Internet of Things and Fog Computing to Reduce Energy Consumption in Drinking Water Facilities, PROCESSES, Volume: 8, Issue: 3, Article Number: 282, eISSN: 2227-9717, 2020;	2.753 / Q2
82.	Lascu, C., Andreescu, G.D. PLL Position and Speed Observer With Integrated Current Observer for Sensorless PMSM Drives, IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS, Volume: 67, Issue: 7, Pages: 5990-5999, ISSN: 0278-0046, eISSN: 1557-9948, 2020;	7.515 / Q1
83.	Lascu, C., Argeseanu, A., Blaabjerg, F. Supertwisting Sliding-Mode Direct Torque and Flux Control of Induction Machine Drives, IEEE TRANSACTIONS ON POWER ELECTRONICS, Volume: 35, Issue: 5, Pages: 5057-5065, ISSN: 0885-8993, eISSN: 1941-0107, 2020;	6.373 / Q1

No.	Article	2019 Impact Factor / Quartile in Category
84.	Ledeti, I., Bengescu, C., Cirioban, D., Vlase, G., Vlase, T., Tomoroga, C., Buda, V., Ledeti, A., Dragomirescu, A., Murariu, M. Solid-state stability and kinetic study of three glucocorticoid hormones: prednisolone, prednisone and cortisone, JOURNAL OF THERMAL ANALYSIS AND CALORIMETRY, Volume: 141, Issue: 3, Pages: 1053-1065, ISSN: 1388-6150, eISSN: 1588-2926, 2020;	2.731 / Q2
85.	Linul, E., Marsavina, L., Stoia, D.I. Mode I and II fracture toughness investigation of Laser-Sintered Polyamide, THEORETICAL AND APPLIED FRACTURE MECHANICS, Volume: 106, Article Number: 102497, ISSN: 0167-8442, eISSN: 1872-7638, 2020;	3.021 / Q1
86.	Linul, E., Marsavina, L., Valean, C., Banica, R. Static and dynamic mode I fracture toughness of rigid PUR foams under room and cryogenic temperatures, ENGINEERING FRACTURE MECHANICS, Volume: 225, Article Number: 106274, ISSN: 0013-7944, eISSN: 1873-7315, 2020;	3.426 / Q1
87.	Luca, R.E., Giuliani, A., Manescu, A., Heredea, R., Hoinoiu, B., Constantin, G.D., Duma, V.F., Todea, C.D. Osteogenic Potential of Bovine Bone Graft in Combination with Laser Photobiomodulation: An Ex Vivo Demonstrative Study in Wistar Rats by Cross-Linked Studies Based on Synchrotron Microtomography and Histology, INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES, Volume: 21, Issue: 3, Article Number: 778, PubMed ID: 31991756, eISSN: 1422-0067, 2020;	4.556 / Q1
88.	Lupa, L., Cochei, L., Trica, B., Coroaba, A., Popa, A. Photodegradation of Phenolic Compounds from Water in the Presence of a Pd-Containing Exhausted Adsorbent, APPLIED SCIENCES-BASEL, Volume: 10, Issue: 23, Article Number: 8440, eISSN: 2076-3417, 2020;	2.474 / Q2
89.	Lupa, N. A New Approach on Datko-Zabczyk Method for Nonuniform Exponential Stability, MATHEMATICS, Volume: 8, Issue: 7, Article Number: 1095, eISSN: 2227-7390, 2020;	1.747 / Q1
90.	Lupa, N., Popescu, L.H. Admissible Banach Function Spaces and Nonuniform Stabilities, MEDITERRANEAN JOURNAL OF MATHEMATICS, Volume: 17, Issue: 4, Article Number: 105, ISSN: 1660-5446, eISSN: 1660-5454, 2020;	1.216 / Q1
91.	Manolescu, L. Ulam's Type Stability and Generalized Norms, SYMMETRY-BASEL, Volume: 12, Issue: 4, Article Number: 502, eISSN: 2073-8994, 2020;	2.645 / Q2
92.	Marian, E., Tita, B., Duteanu, N., Vicas, L., Ciocan, S., Jurca, T., Antal, L., Tica, O., Muresan, M., Pallag, A., Micle, O. Antimicrobial activity of fusidic acid inclusion complexes, INTERNATIONAL JOURNAL OF INFECTIOUS DISEASES, Volume: 101, Pages: 65-73, PubMed ID: 33011279, ISSN: 1201-9712, eISSN: 1878-3511, 2020;	3.202 / Q2
93.	Marian, E., Duteanu, N., Vicas, L., Rusu, G., Jurca, T., Muresan, M., Micle, O., Hangan, A.C., Stan, R.L., Ionescu, C., Sevastre, B., Pall, E. Synthesis, characterization of inclusion compounds of amygdalin with beta-cyclodextrin and sod-like activity and cytotoxicity on hela tumor cells, ARABIAN JOURNAL OF CHEMISTRY, Volume: 13, Issue: 8, Pages: 6828-6837, ISSN: 1878-5352, eISSN: 1878-5379, 2020;	4.762 / Q2
94.	Marinca, V., Herisanu, N. Optimal Auxiliary Functions Method for a Pendulum Wrapping on Two Cylinders, MATHEMATICS, Volume: 8, Issue: 8, Article Number: 1364, eISSN: 2227-7390, 2020;	1.747 / Q1
95.	Marinca, V., Herisanu, N. Construction of Analytic Solution to Axisymmetric Flow and Heat Transfer on a Moving Cylinder, SYMMETRY-BASEL, Volume: 12, Issue: 8, Article Number: 1335, eISSN: 2073-8994, 2020;	2.645 / Q2
96.	Marsavina, L., Linul, E. Fracture toughness of rigid polymeric foams: A review, FATIGUE & FRACTURE OF ENGINEERING MATERIALS & STRUCTURES, Volume: 43, Issue: 11, Pages: 2483-2514, ISSN: 8756-758X, eISSN: 1460-2695, 2020;	3.031 / Q1

No.	Article	2019 Impact Factor / Quartile in Category
97.	Miclea, R.C., Dughir, C., Alexa, F., Sandru, F., Silea, I. Laser and LIDAR in a System for Visibility Distance Estimation in Fog Conditions, SENSORS, Volume: 20, Issue: 21, Article Number: 6322, PubMed ID: 33167586, eISSN: 1424-8220, 2020;	3.275 / Q1
98.	Milici, C., Machado, J.T., Draganescu, G. Application of the Euler and Runge-Kutta Generalized Methods for FDE and Symbolic Packages in the Analysis of Some Fractional Attractors, INTERNATIONAL JOURNAL OF NONLINEAR SCIENCES AND NUMERICAL SIMULATION, Volume: 21, Issue: 2, Pages: 159-170, ISSN: 1565-1339, eISSN: 2191-0294, 2020;	1.467 / Q2
99.	Militaru, B.A., Pode, R., Lupa, L., Schmidt, W., Tekle-Roettering, A., Kazamer, N. Using Sewage Sludge Ash as an Efficient Adsorbent for Pb (II) and Cu (II) in Single and Binary Systems, MOLECULES, Volume: 25, Issue: 11, Article Number: 2559, PubMed ID: 32486401, eISSN: 1420-3049, 2020;	3.267 / Q2
100.	Mirsu, R., Simion, G., Căleanu, C.D., Pop-Calimanu, I.M. A PointNet-Based Solution for 3D Hand Gesture Recognition, SENSORS, Volume: 20, Issue: 11, Article Number: 3226, PubMed ID: 32517141, eISSN: 1424-8220, 2020;	3.275 / Q1
101.	Mosoarca, G., Vancea, C., Popa, S., Gheju, M., Boran, S. Syringa vulgaris leaves powder a novel low-cost adsorbent for methylene blue removal: isotherms, kinetics, thermodynamic and optimization by Taguchi method, SCIENTIFIC REPORTS, Volume: 10, Issue: 1, Article Number: 17676, PubMed ID: 33077788, ISSN: 2045-2322, 2020;	3.998 / Q1
102.	Mosoarca, G., Vancea, C., Popa, S., Boran, S., Tanasie, C. A green approach for treatment of wastewater with manganese using wood ash, JOURNAL OF CHEMICAL TECHNOLOGY AND BIOTECHNOLOGY, Volume: 95, Issue: 6, Pages: 1781-1789, ISSN: 0268-2575, eISSN: 1097-4660, 2020;	2.75 / Q2
103.	Mosoarca, M., Onescu, I., Onescu, E., Anastasiadis, A. Seismic vulnerability assessment methodology for historic masonry buildings in the near-field areas, ENGINEERING FAILURE ANALYSIS, Volume: 115, Article Number: 104662, ISSN: 1350-6307, eISSN: 1873-1961, 2020;	2.897 / Q1
104.	Muntean, R., Pascal, D.T., Rost, U., Marginean, G., Brodmann, M., Vaszilcsin, N. Synthesis and characterisation of platinum-cobalt-manganese ternary alloy catalysts supported on carbon nanofibers: An alternative catalyst for hydrogen evolution reaction, INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, Volume: 45, Issue: 49, Special Issue: SI, Pages: 26217-26225, ISSN: 0360-3199, eISSN: 1879-3487, 2020;	4.939 / Q2
105.	Murvay, P.S., Groza, B. Efficient Physical Layer Key Agreement for FlexRay Networks, IEEE TRANSACTIONS ON VEHICULAR TECHNOLOGY, Volume: 69, Issue: 9, Pages: 9767-9780, ISSN: 0018-9545, eISSN: 1939-9359, 2020;	5.379 / Q1
106.	Murvay, P.S., Groza, B. TIDAL-CAN: Differential Timing Based Intrusion Detection and Localization for Controller Area Network, IEEE ACCESS, Volume: 8, Pages: 68895-68912, ISSN: 2169-3536, 2020;	3.745 / Q1
107.	Nagornyi, A.V., Socoliuc, V., Petrenko, V.I., Almasy, L., Ivankov, O.I., Avdeev, M.V., Bulavin, L.A., Vekas, L. Structural characterization of concentrated aqueous ferrofluids, JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS, Volume: 501, Article Number: 166445, ISSN: 0304-8853, eISSN: 1873-4766, 2020;	2.717 / Q2
108.	Negirla, P., Druta, R., Silea, I. Availability Improvements through Data Slicing in PLC Smart Grid Networks, SENSORS, Volume: 20, Issue: 24, Article Number: 7256, PubMed ID: 33348872, eISSN: 1424-8220, 2020;	3.275 / Q1
109.	Negrea, A., Mihailescu, M., Mosoarca, G., Ciopec, M., Duteanu, N., Negrea, P., Minzatu, V. Estimation on Fixed-Bed Column Parameters of Breakthrough Behaviors for Gold Recovery by Adsorption onto Modified/Functionalized Amberlite XAD7, INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH, Volume: 17, Issue: 18, Article Number: 6868, PubMed ID: 32962235, eISSN: 1660-4601, 2020;	2.849 / Q1

No.	Article	2019 Impact Factor / Quartile in Category
110.	Negrea, P., Gabor, A., Davidescu, C.M., Ciopec, M., Negrea, A., Duteanu, N. Kinetics and thermodynamics modeling of Nd(III) removal from aqueous solution using modified Amberlite XAD7, JOURNAL OF RARE EARTHS, Volume: 38, Issue: 3, Pages: 306-314, ISSN: 1002-0721, 2020;	3.104 / Q2
111.	Negrea, R. On a class of nonlinear stochastic integral equations, NONLINEAR ANALYSIS-REAL WORLD APPLICATIONS, Volume: 54, Article Number: 103104, ISSN: 1468-1218, 2020;	2.072 / Q1
112.	Negrea, R. On the functional equation $f(x+y) = f(x) + f(y)$ , MONATSHFTE FÜR MATHEMATIK, Volume: 191, Issue: 3, Pages: 635-637, ISSN: 0026-9255, eISSN: 1436-5081, 2020;	0.933 / Q2
113.	Negrea, R. On a nonlinear stochastic integral equation, MONATSHFTE FÜR MATHEMATIK, Volume: 192, Issue: 4, Pages: 905-914, ISSN: 0026-9255, eISSN: 1436-5081, 2020;	0.933 / Q2
114.	Nichita, I., Lupa, L., Visa, A., Popa, A. One-pot synthesis, characterization and in vitro antibacterial evaluation of bioactive "aminophosphinic acid" groups grafted onto polymeric-support, POLYMER BULLETIN, ISSN: 0170-0839, eISSN: 1436-2449, 2020;	2.014 / Q2
115.	Nicola, R., Costisor, O., Ciopec, M., Negrea, A., Lazau, R., Ianasi, C., Piciorus, E.M., Len, A., Almasy, L., Szerb, E.I., Putz, A.M. Silica-Coated Magnetic Nanocomposites for Pb <sup>2+</sup> Removal from Aqueous Solution, APPLIED SCIENCES-BASEL, Volume: 10, Issue: 8, Article Number: 2726, eISSN: 2076-3417, 2020;	2.474 / Q2
116.	Nicolae, A., Korodi, A., Silea, I. Weather-Based Prediction Strategy inside the Proactive Historian with Application in Wastewater Treatment Plants, APPLIED SCIENCES-BASEL, Volume: 10, Issue: 9, Article Number: 3015, eISSN: 2076-3417, 2020;	2.474 / Q2
117.	Onchis, D.M., Istin, C., Tudoran, C., Tudoran, M., Real, P. Timely-Automatic Procedure for Estimating the Endocardial Limits of the Left Ventricle Assessed Echocardiographically in Clinical Practice, DIAGNOSTICS, Volume: 10, Issue: 1, Article Number: 40, PubMed ID: 31941079, eISSN: 2075-4418, 2020;	3.11 / Q1
118.	Osaci, M., Cacciola, M. Influence of the magnetic nanoparticle coating on the magnetic relaxation time, BEILSTEIN JOURNAL OF NANOTECHNOLOGY, Volume: 11, Pages: 1207-1216, PubMed ID: 32832316, ISSN: 2190-4286, 2020;	2.612 / Q2
119.	Pana, A., Baloi, A., Molnar-Matei, F. New method for calculating the susceptances of a balancing capacitive compensator for a three-phase four-wire distribution network, INTERNATIONAL JOURNAL OF ELECTRICAL POWER & ENERGY SYSTEMS, Volume: 115, Article Number: 105414, ISSN: 0142-0615, eISSN: 1879-3517, 2020;	3.588 / Q1
120.	Pana, A.M., Ordodi, V., Rusu, G., Gherman, V., Bandur, G., Rusnac, L.M., Dumitrel, G.A. Biodegradation Pattern of Glycopolymer Based on D-Mannose Oligomer and Hydroxypropyl Acrylate, POLYMERS, Volume: 12, Issue: 3, Article Number: 704, PubMed ID: 32235772, eISSN: 2073-4360, 2020;	3.426 / Q1
121.	Papaparaskeva, G., Dinev, M.M., Krasia-Christoforou, T., Turcu, R., Porav, S.A., Balanean, F., Socoliuc, V. White Magnetic Paper with Zero Remanence Based on Electrospun Cellulose Microfibers Doped with Iron Oxide Nanoparticles, NANOMATERIALS, Volume: 10, Issue: 3, Article Number: 517, PubMed ID: 32178410, eISSN: 2079-4991, 2020;	4.324 / Q2
122.	Pascu, B., Negrea, A., Ciopec, M., Davidescu, C.M., Negrea, P., Gherman, V., Duteanu, N. New Generation of Antibacterial Products Based on Colloidal Silver, MATERIALS, Volume: 13, Issue: 7, Article Number: 1578, PubMed ID: 32235381, eISSN: 1996-1944, 2020;	3.057 / Q2
123.	Pascu, B., Ardean, C., Davidescu, C.M., Negrea, A., Ciopec, M., Duteanu, N., Negrea, P., Rusu, G. Modified Chitosan for Silver Recovery-Kinetics, Thermodynamic, and Equilibrium Studies, MATERIALS, Volume: 13, Issue: 3, Article Number: 657, PubMed ID: 32024185, eISSN: 1996-1944, 2020;	3.057 / Q2

No.	Article	2019 Impact Factor / Quartile in Category
124.	Perju-Mitran, A., Zirra, D., Carutasu, G., Pirjan, A., Stanica, J.L. Applying the Technology Acceptance Model to Assess the Intention to Use an Aftermarket eCall Based on 112 Device for Passenger Vehicles to Ensure Sustainable Rescue Operations on European Roads, SUSTAINABILITY, Volume: 12, Issue: 22, Article Number: 9488, eISSN: 2071-1050, 2020;	2.576 / Q2
125.	Pevnaya, M.V., Drozdova, A.A., Cernicova-Buca, M. Making Room for Volunteer Participation in Managing Public Affairs: A Russian Experience, SUSTAINABILITY, Volume: 12, Issue: 24, Article Number: 10229, eISSN: 2071-1050, 2020;	2.576 / Q2
126.	Philippou, K., Christou, C.N., Socoliuc, V., Vekas, L., Tanasa, E., Miclau, M., Pashalidis, I., Krasia-Christoforou, T. Superparamagnetic polyvinylpyrrolidone/chitosan/Fe3O4 electrospun nanofibers as effective U(VI) adsorbents, JOURNAL OF APPLIED POLYMER SCIENCE, Volume: 138, Issue: 15, Article Number: e50212, ISSN: 0021-8995, eISSN: 1097-4628, 2020;	2.52 / Q2
127.	Pietras, D., Linul, E., Sadowski, T., Rusinek, A. Out-of-plane crushing response of aluminum honeycombs in-situ filled with graphene-reinforced polyurethane foam, COMPOSITE STRUCTURES, Volume: 249, Article Number: 112548, ISSN: 0263-8223, eISSN: 1879-1085, 2020;	5.138 / Q1
128.	Pohoryles, D.A., Maduta, C., Bournas, D.A., Kouris, L.A. Energy performance of existing residential buildings in Europe: A novel approach combining energy with seismic retrofitting, ENERGY AND BUILDINGS, Volume: 223, Article Number: 110024, ISSN: 0378-7788, eISSN: 1872-6178, 2020;	4.867 / Q1
129.	Pop, M.D., Prostean, O., David, T.M., Prostean, G. Hybrid Solution Combining Kalman Filtering with Takagi-Sugeno Fuzzy Inference System for Online Car-Following Model Calibration, SENSORS, Volume: 20, Issue: 19, Article Number: 5539, PubMed ID: 32992622, eISSN: 1424-8220, 2020;	3.275 / Q1
130.	Pop-Calimanu, I.M., Balint, M., Lascu, D. A New Hybrid Cuk DC-DC Converter with Coupled Inductors, ELECTRONICS, Volume: 9, Issue: 12, Article Number: 2188, eISSN: 2079-9292, 2020;	2.412 / Q2
131.	Popa, C.A. Dissipativity of impulsive matrix -valued neural networks with leakage delay and mixed delays, NEUROCOMPUTING, Volume: 405, Pages: 85-95, ISSN: 0925-2312, eISSN: 1872-8286, 2020;	4.438 / Q1
132.	Popa, C.A., Kaslik, E. Finite-Time Mittag-Leffler Synchronization of Neutral-Type Fractional-Order Neural Networks with Leakage Delay and Time-Varying Delays, MATHEMATICS, Volume: 8, Issue: 7, Article Number: 1146, eISSN: 2227-7390, 2020;	1.747 / Q1
133.	Popa, C.A. Global mu-stability of neutral-type impulsive complex-valued BAM neural networks with leakage delay and unbounded time-varying delays, NEUROCOMPUTING, Volume: 376, Pages: 73-94, ISSN: 0925-2312, eISSN: 1872-8286, 2020;	4.438 / Q1
134.	Popa, S., Milea, M.S., Boran, S., Nitu, S.V., Mosoarca, G.E., Vancea, C., Lazau, R.I. Rapid adulteration detection of cold pressed oils with their refined versions by UV-Vis spectroscopy, SCIENTIFIC REPORTS, Volume: 10, Issue: 1, Article Number: 16100, PubMed ID: 32999344, ISSN: 2045-2322, 2020;	3.998 / Q1
135.	Popescu, G., Radulov, I., Iordanescu, O.A., Orboi, M.D., Radulescu, L., Druga, M., Bujanca, G.S., David, I., Hadaruga, D.I., Lucan, C.A., Hadaruga, N.G., Ravis, M. Karl Fischer Water Titration-Principal Component Analysis Approach on Bread Products, APPLIED SCIENCES-BASEL, Volume: 10, Issue: 18, Article Number: 6518, eISSN: 2076-3417, 2020;	2.474 / Q2
136.	Precup, R.E., Roman, R.C., Teban, T.A., Albu, A., Petriu, E.M., Pozna, C. Model-Free Control of Finger Dynamics in Prosthetic Hand Myoelectric-based Control Systems, STUDIES IN INFORMATICS AND CONTROL, Volume: 29, Issue: 4, Pages: 399-410, ISSN: 1220-1766, 2020;	2.102 / Q2

No.	Article	2019 Impact Factor / Quartile in Category
137.	Precup, R.E., Teban, T.A., Albu, A., Borlea, A.B., Zamfirache, I.A., Petriu, E.M. Evolving Fuzzy Models for Prosthetic Hand Myoelectric-Based Control, IEEE TRANSACTIONS ON INSTRUMENTATION AND MEASUREMENT, Volume: 69, Issue: 7, Pages: 4625-4636, ISSN: 0018-9456, eISSN: 1557-9662, 2020;	3.658 / Q1
138.	Pugna, A., Negrea, R., Linul, E., Marsavina, L. Is Fracture Toughness of PUR Foams a Material Property? A Statistical Approach, MATERIALS, Volume: 13, Issue: 21, Article Number: 4868, PubMed ID: 33143072, eISSN: 1996-1944, 2020;	3.057 / Q2
139.	Pugna, A.P., Potra, S.A., Negrea, R. A strategic decision making tool for new product and service design, MANAGEMENT DECISION, Volume: 59, Issue: 2, Pages: 406-425, ISSN: 0025-1747, eISSN: 1758-6070, 2020;	2.723 / Q2
140.	Radac, M.B., Lala, T. Robust Control of Unknown Observable Nonlinear Systems Solved as a Zero-Sum Game, IEEE ACCESS, Volume: 8, Pages: 214153-214165, ISSN: 2169-3536, 2020;	3.745 / Q1
141.	Remes, A., Manea, F., Motoc, S., Baci, A., Szerb, E.I., Gascon, J., Gug, G. Highly Sensitive Non-Enzymatic Detection of Glucose at MWCNT-CuBTC Composite Electrode, APPLIED SCIENCES-BASEL, Volume: 10, Issue: 23, Article Number: 8419, eISSN: 2076-3417, 2020;	2.474 / Q2
142.	Roata, I.C., Croitoru, C., Pascu, A., Stanciu, E.M., Hulka, I., Petre, I., Gabor, C., Patroi, D., Sbarcea, B.G. Surface engineering of Ni-Al coatings through concentrated solar heat treatment, APPLIED SURFACE SCIENCE, Volume: 506, Article Number: 144185, ISSN: 0169-4332, eISSN: 1873-5584, 2020;	6.182 / Q1
143.	Salvia, R., Halbac-Cotoara-Zamfir, R., Cividino, S., Salvati, L., Quaranta, G. From Rural Spaces to Peri-Urban Districts: Metropolitan Growth, Sparse Settlements and Demographic Dynamics in a Mediterranean Region, LAND, Volume: 9, Issue: 6, Article Number: 200, eISSN: 2073-445X, 2020;	2.429 / Q2
144.	Sbarcea, L., Tanase, I.M., Ledeti, A., Circoban, D., Vlase, G., Barvinschi, P., Miclau, M., Varut, R.M., Trandafirescu, C., Ledeti, I. Encapsulation of Risperidone by Methylated beta-Cyclodextrins: Physicochemical and Molecular Modeling Studies, MOLECULES, Volume: 25, Issue: 23, Article Number: 5694, PubMed ID: 33287127, eISSN: 1420-3049, 2020;	3.267 / Q2
145.	Serban, D.A., Furtos, G., Marsavina, L., Sosdean, C., Negru, R. Numerical modelling of the mechanical behaviour of wood fibre-reinforced geopolymers, CONTINUUM MECHANICS AND THERMODYNAMICS, ISSN: 0935-1175, eISSN: 1432-0959, 2020;	2.139 / Q2
146.	Serban, D.A., Negru, R., Filipescu, H., Marsavina, L. Investigations on the influence of the triaxial state of stress on the failure of polyurethane rigid foams, CONTINUUM MECHANICS AND THERMODYNAMICS, ISSN: 0935-1175, eISSN: 1432-0959, 2020;	2.139 / Q2
147.	Shah, S.G.M., Sarfraz, M., Ivascu, L. Assessing the interrelationship corporate environmental responsibility, innovative strategies, cognitive and hierarchicalCEO: A stakeholder theory perspective, CORPORATE SOCIAL RESPONSIBILITY AND ENVIRONMENTAL MANAGEMENT, Volume: 28, Issue: 1, Pages: 457-473, ISSN: 1535-3958, eISSN: 1535-3966, 2020;	4.542 / Q1
148.	Simon, S., Stoian, C.E., Gherhes, V. The Concept of Sustainability in the Romanian Top Universities' Strategic Plans, SUSTAINABILITY, Volume: 12, Issue: 7, Article Number: 2757, eISSN: 2071-1050, 2020;	2.576 / Q2
149.	Smuleac, A., Smuleac, L., Man, T.E., Popescu, C.A., Imbrea, F., Radulov, I., Adamov, T., Pascalau, R. Use of Modern Technologies for the Conservation of Historical Heritage in Water Management, WATER, Volume: 12, Issue: 10, Article Number: 2895, eISSN: 2073-4441, 2020;	2.544 / Q2

No.	Article	2019 Impact Factor / Quartile in Category
150.	Stavi, I., Siad, S.M., Kyriazopoulos, A.P., Halbac-Cotoara-Zamfir, R. Water runoff harvesting systems for restoration of degraded rangelands: A review of challenges and opportunities, JOURNAL OF ENVIRONMENTAL MANAGEMENT, Volume: 255, Article Number: 109823, PubMed ID: 31785458, ISSN: 0301-4797, eISSN: 1095-8630, 2020;	5.647 / Q1
151.	Stefanovic, N., Blagojevic, M., Pokrajac, I., Greconici, M., Cen, Y.G., Mladenovic, V. A Symbolic Encapsulation Point as Tool for 5G Wideband Channel Cross-Layer Modeling, ENTROPY, Volume: 22, Issue: 10, Article Number: 1151, PubMed ID: 33286920, eISSN: 1099-4300, 2020;	2.494 / Q2
152.	Stoia, D.L., Marsavina, L., Linul, E. Mode I Fracture Toughness of Polyamide and Alumide Samples obtained by Selective Laser Sintering Additive Process, POLYMERS, Volume: 12, Issue: 3, Article Number: 640, PubMed ID: 32168974, eISSN: 2073-4360, 2020;	3.426 / Q1
153.	Stratan, A., Zub, C.I., Dubina, D. Prequalification of a set of buckling restrained braces: Part I – experimental tests, STEEL AND COMPOSITE STRUCTURES, Volume: 34, Issue: 4, Pages: 547-559, ISSN: 1229-9367, eISSN: 1598-6233, 2020;	4.394 / Q1
154.	Szabo, R.Z., Herceg, I.V., Hanak, R., Hortovanyi, L., Romanova, A., Mocan, M., Djuricin, D. Industry 4.0 Implementation in B2B Companies: Cross-Country Empirical Evidence on Digital Transformation in the CEE Region, SUSTAINABILITY, Volume: 12, Issue: 22, Article Number: 9538, eISSN: 2071-1050, 2020;	2.576 / Q2
155.	Tamas, A., Cozma, I., Cocheci, L., Lupa, L., Rusu, G. Adsorption of Orange II Onto Zn2Al-Layered Double Hydroxide Prepared From Zinc Ash, FRONTIERS IN CHEMISTRY, Volume: 8, Article Number: 573535, PubMed ID: 33425845, ISSN: 2296-2646, 2020;	3.693 / Q2
156.	Tanasa, C., Dan, D., Becchio, C., Corgnati, S.P., Stoian, V. Cost-optimal and indoor environmental quality assessment for residential buildings towards EU long-term climate targets, ENERGY FOR SUSTAINABLE DEVELOPMENT, Volume: 59, Pages: 49-61, ISSN: 0973-0826, eISSN: 2352-4669, 2020;	3.61 / Q2
157.	Tanase, I.M., Sbarcea, L., Ledeti, A., Vlase, G., Barvinschi, P., Varut, R.M., Dragomirescu, A., Axente, C., Ledeti, I. Physicochemical characterization and molecular modeling study of host-guest systems of aripiprazole and functionalized cyclodextrins, JOURNAL OF THERMAL ANALYSIS AND CALORIMETRY, Volume: 141, Issue: 3, Pages: 1027-1039, ISSN: 1388-6150, eISSN: 1588-2926, 2020;	2.731 / Q2
158.	Tanase, I.M., Sbarcea, L., Ledeti, A., Barvinschi, P., Circioban, D., Vlase, G., Varut, R.M., Ledeti, I. Compatibility studies with pharmaceutical excipients for aripiprazole-heptakis (2,6-di-O-methyl)-beta-cyclodextrin supramolecular adduct, JOURNAL OF THERMAL ANALYSIS AND CALORIMETRY, Volume: 142, Issue: 5, Pages: 1963-1976, ISSN: 1388-6150, eISSN: 1588-2926, 2020;	2.731 / Q2
159.	Tekle-Roettering, A., Lim, S., Reisz, E., Lutze, H.V., Abdighahroudi, M.S., Willach, S., Schmidt, W., Tentscher, P.R., Rentsch, D., McArdell, C.S., Schmidt, T.C., von Gunten, U. Reactions of pyrrole, imidazole, and pyrazole with ozone: kinetics and mechanisms, ENVIRONMENTAL SCIENCE-WATER RESEARCH & TECHNOLOGY, Volume: 6, Issue: 4, Pages: 976-992, ISSN: 2053-1400, eISSN: 2053-1419, 2020;	3.449 / Q1
160.	Tigan, G., Lugoian, S., Ciurdariu, L. Analysis of Degenerate Chenciner Bifurcation, INTERNATIONAL JOURNAL OF BIFURCATION AND CHAOS, Volume: 30, Issue: 16, Article Number: 2050245, ISSN: 0218-1274, eISSN: 1793-6551, 2020;	2.469 / Q2
161.	Tigan, G., Lazureanu, C., Munteanu, F., Sterbeti, C., Florea, A. Bifurcation diagrams in a class of Kolmogorov systems, NONLINEAR ANALYSIS-REAL WORLD APPLICATIONS, Volume: 56, Article Number: 103154, ISSN: 1468-1218, 2020;	2.072 / Q1

No.	Article	2019 Impact Factor / Quartile in Category
162.	Tiwari, A.K., Adewuyi, A.O., Albulescu, C.T., Wohar, M.E. Empirical evidence of extreme dependence and contagion risk between main cryptocurrencies, NORTH AMERICAN JOURNAL OF ECONOMICS AND FINANCE, Volume: 51, Article Number: 101083, ISSN: 1062-9408, eISSN: 1879-0860, 2020;	1.535 / Q2
163.	Tmusic, G., Manfreda, S., Aasen, H., James, M.R., Goncalves, G., Ben-Dor, E., Brook, A., Polinova, M., Arranz, J.J., Meszaros, J., Zhuang, R.D., Johansen, K., Malbeteau, Y., de Lima, I.P., Davids, C., Herban, S., McCabe, M.F. Current Practices in UAS-based Environmental Monitoring, REMOTE SENSING, Volume: 12, Issue: 6, Article Number: 1001, eISSN: 2072-4292, 2020;	4.509 / Q2
164.	Todea, A., Aparaschivei, D., Bitcan, I., Ledeti, I.V., Bandur, G., Peter, F., Nagy, L., Keki, S., Biro, E. Thermal behavior of oligo[epsilon-caprolactone]-co-delta-gluconolactone enzymatically synthesized in reaction conditions optimized by experimental design, JOURNAL OF THERMAL ANALYSIS AND CALORIMETRY, Volume: 141, Issue: 3, Pages: 1017-1026, ISSN: 1388-6150, eISSN: 1588-2926, 2020;	2.731 / Q2
165.	Topirceanu, A., Udrescu, L., Udrescu, M., Mihaicuta, S. Gender Phenotyping of Patients with Obstructive Sleep Apnea Syndrome Using a Network Science Approach, JOURNAL OF CLINICAL MEDICINE, Volume: 9, Issue: 12, Article Number: 4025, PubMed ID: 33322816, eISSN: 2077-0383, 2020;	3.303 / Q1
166.	Tudoran, R.M., Girban, A. On the rattleback dynamics, JOURNAL OF MATHEMATICAL ANALYSIS AND APPLICATIONS, Volume: 488, Issue: 1, Article Number: 124066, ISSN: 0022-247X, eISSN: 1096-0813, 2020;	1.22 / Q1
167.	Tulcan, A., Vasilescu, M.D., Tulcan, L. Study of the Influence of Technological Parameters on Generating Flat Part with Cylindrical Features in 3D Printing with Resin Cured by Optical Processing, POLYMERS, Volume: 12, Issue: 9, Article Number: 1941, PubMed ID: 32867332, eISSN: 2073-4360, 2020;	3.426 / Q1
168.	Udrescu, L., Bogdan, P., Chis, A., Sirbu, I.O., Topirceanu, A., Varut, R.M., Udrescu, M. Uncovering New Drug Properties in Target-Based Drug-Drug Similarity Networks, PHARMACEUTICS, Volume: 12, Issue: 9, Article Number: 879, PubMed ID: 32947845, eISSN: 1999-4923, 2020;	4.421 / Q1
169.	Ungureanu, L., Micea, M.V., Carstoiu, G. Online state of health prediction method for lithium-ion batteries, based on gated recurrent unit neural networks, INTERNATIONAL JOURNAL OF ENERGY RESEARCH, Volume: 44, Issue: 8, Pages: 6767-6777, ISSN: 0363-907X, eISSN: 1099-114X, 2020;	3.741 / Q1
170.	Ungureanu, V.I., Miclea, R.C., Korodi, A., Silea, I. A Novel Approach against Sun Glare to Enhance Driver Safety, APPLIED SCIENCES-BASEL, Volume: 10, Issue: 9, Article Number: 3032, eISSN: 2076-3417, 2020;	2.474 / Q2
171.	Vajda, M., Ursu, D., Mosoarca, C., Duteanu, N., Miclau, M. Experimental investigation of hydrogen insertion in copper oxide on photovoltaic performance of p-type dye-sensitized solar cell, INTERNATIONAL JOURNAL OF ENERGY RESEARCH, Volume: 45, Issue: 4, Pages: 5309-5317, ISSN: 0363-907X, eISSN: 1099-114X, 2020;	3.741 / Q1
172.	Vajda, M., Ursu, D., Duteanu, N., Miclau, M. Low lying valence band edge materials based on copper oxide for tandem dye -sensitized solar cells, MATERIALS LETTERS, Volume: 275, Article Number: 128151, ISSN: 0167-577X, eISSN: 1873-4979, 2020;	3.204 / Q2
173.	Vamvatsikos, D., Bakalis, K., Kohrangi, M., Pyrza, S., Castiglioni, C.A., Kanyilmaz, A., Morelli, F., Stratan, A., D'Aniello, M., Calado, L., Proenca, J.M., Degee, H., Hoffmeister, B., Pinkawa, M., Thanopoulos, P., Vayas, I. A risk-consistent approach to determine EN1998 behaviour factors for lateral load resisting systems, SOIL DYNAMICS AND EARTHQUAKE ENGINEERING, Volume: 131, Article Number: 106008, ISSN: 0267-7261, eISSN: 1879-341X, 2020;	2.637 / Q2

No.	Article	2019 Impact Factor / Quartile in Category
174.	Vancea, C., Mihailescu, M., Negrea, A., Mosoarca, G., Ciopec, M., Duteanu, N., Negrea, P., Minzatu, V. Batch and Fixed-Bed Column Studies on Palladium Recovery from Acidic Solution by Modified MgSiO <sub>3</sub> , INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH, Volume: 17, Issue: 24, Article Number: 9500, PubMed ID: 33352975, eISSN: 1660-4601, 2020;	2.849 / Q1
175.	Vangijzegem, T., Stanicki, D., Panepinto, A., Socoliuc, V., Vekas, L., Muller, R.N., Laurent, S. Influence of Experimental Parameters of a Continuous Flow Process on the Properties of Very Small Iron Oxide Nanoparticles (VISION) Designed for Ti -Weighted Magnetic Resonance Imaging (MRI), NANOMATERIALS, Volume: 10, Issue: 4, Article Number: 757, eISSN: 2079-4991, 2020;	4.324 / Q2
176.	Vasiliu, R.D., Porojan, S.D., Birdeanu, M.I., Utu, I.D., Porojan, L. The Effect of Thermocycling and Surface Treatments on the Surface Roughness and Microhardness of Three Heat-Pressed Ceramics Systems, CRYSTALS, Volume: 10, Issue: 3, Article Number: 160, ISSN: 2073-4352, 2020;	2.404 / Q2
177.	Visa, A., Maranescu, B., Lupa, L., Crisan, L., Borota, A. New Efficient Adsorbent Materials for the Removal of Cd(II) from Aqueous Solutions, NANOMATERIALS, Volume: 10, Issue: 5, Article Number: 899, PubMed ID: 32397122, eISSN: 2079-4991, 2020;	4.324 / Q2
178.	Vlase, D., Mosoiu, C., Vlase, G., Lazau, R., Vlase, T. Comparative analyses of Roman mortars belonging to different ancient periods from Drobeta-Turnu Severin region, JOURNAL OF THERMAL ANALYSIS AND CALORIMETRY, Volume: 141, Issue: 3, Pages: 991-998, ISSN: 1388-6150, eISSN: 1588-2926, 2020;	2.731 / Q2
179.	Voicu, A., Duteanu, N., Voicu, M., Vlad, D., Dumitrascu, V. The rcdk and cluster R packages applied to drug candidate selection, JOURNAL OF CHEMINFORMATICS, Volume: 12, Issue: 1, Article Number: 3, PubMed ID: 33430987, ISSN: 1758-2946, 2020;	5.326 / Q1
180.	Zaharia, C., Duma, V.F., Sinescu, C., Socoliuc, V., Craciunescu, I., Turcu, R.P., Marin, C.N., Tudor, A., Rominu, M., Negrutiu, M.L. Dental Adhesive Interfaces Reinforced with Magnetic Nanoparticles: Evaluation and Modeling with Micro-CT versus Optical Microscopy, MATERIALS, Volume: 13, Issue: 18, Article Number: 3908, PubMed ID: 32899605, eISSN: 1996-1944, 2020;	3.057 / Q2
181.	Zirra, D., Perju-Mitran, A., Carutasu, G., Pirjan, A., Garais, E.G. An Analysis of the Socio-Economic and Human Life Impact of Implementing the eCall In Vehicle System (IVS) in the Purpose of Ensuring Sustainable, Improved Rescue Operations on European Roads, SUSTAINABILITY, Volume: 12, Issue: 13, Article Number: 5341, eISSN: 2071-1050, 2020;	2.576 / Q2
182.	Zub, C.I., Stratan, A., Dubina, D. Prequalification of a set of buckling restrained braces: Part II - numerical simulations, STEEL AND COMPOSITE STRUCTURES, Volume: 34, Issue: 4, Pages: 561-580, ISSN: 1229-9367, eISSN: 1598-6233, 2020.	4.394 / Q1

\*The data was obtained from Web of Science - Clarivate Analytics in 28 June 2021

## Papers in ISI Journals



1. Abdollahpour, M.R., Najati, A., Gavrut, P. Multipliers of pg-Bessel Sequences in Banach Spaces, IRANIAN JOURNAL OF MATHEMATICAL SCIENCES AND INFORMATICS, Volume: 15, Issue: 2, Pages: 1-12, ISSN: 1735-4463, eISSN: 2008-9473, 2020;
2. Abdullah, M.I., Huang, D.C., Sarfraz, M., Ivascu, L., Riaz, A. Effects of internal service quality on nurses' job satisfaction, commitment and performance: Mediating role of employee well-being, NURSING OPEN, Volume: 8, Issue: 2, Pages: 607-619, PubMed ID: 33570299, ISSN: 2054-1058, 2020;
3. Afzal, M.U., Matekovits, L., Esselle, K.P., Lalbakhsh, A. Beam-Scanning Antenna Based on Near-Electric Field Phase Transformation and Refraction of Electromagnetic Wave Through Dielectric Structures, IEEE ACCESS, Volume: 8, Pages: 199242-199253, ISSN: 2169-3536, 2020;
4. Ahmed, S.E., San, O., Bistran, D.A., Navon, I.M. Sampling and resolution characteristics in reduced order models of shallow water equations: Intrusive vs nonintrusive, INTERNATIONAL JOURNAL FOR NUMERICAL METHODS IN FLUIDS, Volume: 92, Issue: 8, Pages: 992-1036, ISSN: 0271-2091, eISSN: 1097-0363, 2020;
5. Albulescu, C.T., Bouri, E., Tiwari, A.K., Roubaud, D. Quantile causality between banking stock and real estate securities returns in the US, QUARTERLY REVIEW OF ECONOMICS AND FINANCE, Volume: 78, Pages: 251-260, ISSN: 1062-9769, eISSN: 1878-4259, 2020;
6. Albulescu, C.T., Artene, A.E., Luminosu, C.T., Tamasila, M. CO(2)emissions, renewable energy, and environmental regulations in the EU countries, ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH, Volume: 27, Issue: 27, Pages: 33615-33635, PubMed ID: 31473925, ISSN: 0944-1344, eISSN: 1614-7499, 2020;
7. Albulescu, C.T., Tiwari, A.K., Ji, Q. Copula-based local dependence among energy, agriculture and metal commodities markets, ENERGY, Volume: 202, Article Number: 117762, ISSN: 0360-5442, eISSN: 1873-6785, 2020;
8. Albulescu, C.T., Oros, C. Inflation, uncertainty, and labour market conditions in the US, APPLIED ECONOMICS, Volume: 52, Issue: 52, Pages: 5770-5782, ISSN: 0003-6846, eISSN: 1466-4283, 2020;
9. Ancuti, C., Ancuti, C.O., De Vleeschouwer, C., Bovik, A.C. Day and Night-Time Dehazing by Local Airlight Estimation, IEEE TRANSACTIONS ON IMAGE PROCESSING, Volume: 29, Pages: 6264-6275, PubMed ID: 32340946, ISSN: 1057-7149, eISSN: 1941-0042, 2020;
10. Ancuti, C.O., Ancuti, C., De Vleeschouwer, C., Sbert, M. Color Channel Compensation (3C): A Fundamental Pre-Processing Step for Image Enhancement, IEEE TRANSACTIONS ON IMAGE PROCESSING, Volume: 29, Pages: 2653-2665, PubMed ID: 31751271, ISSN: 1057-7149, eISSN: 1941-0042, 2020;
11. Ancuti, M.C., Musuroi, S., Sorandaru, C., Dordescu, M., Erdodi, G.M. Wind Turbines Optimal Operation at Time Variable Wind Speeds, APPLIED SCIENCES-BASEL, Volume: 10, Issue: 12, Article Number: 4232, eISSN: 2076-3417, 2020;
12. Apopei, P., Orha, C., Popescu, M.I., Lazau, C., Manea, F., Catrinescu, C., Teodosiu, C. Diclofenac removal from water by photocatalysis- assisted filtration using activated carbon modified with N-doped TiO<sub>2</sub>, PROCESS SAFETY AND ENVIRONMENTAL PROTECTION, Volume: 138, Pages: 324-336, ISSN: 0957-5820, eISSN: 1744-3598, 2020;
13. Ardean, C., Ciopec, M., Davidescu, C.M., Negrea, P., Voda, R. Kinetics and Thermodynamics Studies for Cadmium (II) Adsorption onto Functionalized Chitosan with Hexa-Decyl-Trimethyl-Ammonium Chloride, MATERIALS, Volume: 13, Issue: 23, Article Number: 5552, PubMed ID: 33291450, eISSN: 1996-1944, 2020;
14. Artene, A., Bunget, O.C., Dumitrescu, A.C., Domil, A.E., Bogdan, O. Non-Financial Information Disclosures and Environmental Protection- Evidence from Romania and Greece, FORESTS, Volume: 11, Issue: 8, Article Number: 814, eISSN: 1999-4907, 2020;
15. Arvinti, B., Isar, A., Stolz, R., Costache, M. REMOVAL OF REPETITIVE MAGNETIC INTERFERENCES UPON UNSHIELDED FETAL MAGNETOCARDIOGRAMS, ROMANIAN REPORTS IN PHYSICS, Volume: 72, Issue: 3, Article Number: 607, ISSN: 1221-1451, eISSN: 1841-8759, 2020;
16. Arvinti, B., Isar, A., Costache, M. Effective Wavelet Algorithm for an Automatic Detection of Atrial Fibrillation, ADVANCES IN ELECTRICAL AND COMPUTER ENGINEERING, Volume: 20, Issue: 3, Pages: 49-56, ISSN: 1582-7445, eISSN: 1844-7600, 2020;
17. Arvinti, B., Isar, A., Toader, D., Toepfer, H., Costache, M. EXPERIMENTAL STAND FOR THE STUDY OF NON-SINUSOIDAL ELECTRICAL PHENOMENA, REVUE ROUMAINE DES SCIENCES TECHNIQUES-SERIE ELECTROTECHNIQUE ET ENERGETIQUE, Volume: 65, Issue: 3-4, Pages: 179-184, ISSN: 0035-4066, 2020;

18. Baci, A.M., Kiss, I., Bordeasu, I., Micu, L.M. Compressive Strength of Woven and Strand of Recycled Polyethylene Terephthalate (PET) Reinforced Concrete, *MATERIALE PLASTICE*, Volume: 57, Issue: 1, Pages: 263-271, ISSN: 2668-8220, eISSN: 0025-5289, 2020;
19. Bauer, M., Bruveris, M., Cismas, E., Escher, J., Kolev, B. Well-posedness of the EPDiff equation with a pseudo-differential inertia operator, *JOURNAL OF DIFFERENTIAL EQUATIONS*, Volume: 269, Issue: 1, Pages: 288-325, ISSN: 0022-0396, eISSN: 1090-2732, 2020;
20. Belgiu, G., Turc, C.G.H., Carausu, C. Selection of Subtractive Manufacturing Technology Versus Additive Manufacturing Technology for Rapid Prototyping of a Polymeric Product, *MATERIALE PLASTICE*, Volume: 57, Issue: 4, Pages: 343-352, ISSN: 2668-8220, eISSN: 0025-5289, 2020;
21. Biba, D.R., Ancuti, M.C., Ianovici, A., Sorandaru, C., Musuroi, S. Power Supply Platform and Functional Safety Concept Proposals for a Powertrain Transmission Electronic Control Unit, *ELECTRONICS*, Volume: 9, Issue: 10, Article Number: 1580, eISSN: 2079-9292, 2020;
22. Binzar, T., Pater, F., Nadaban, S. Fuzzy bounded operators with application to Radon transform, *CHAOS SOLITONS & FRACTALS*, Volume: 141, Article Number: 110359, ISSN: 0960-0779, eISSN: 1873-2887, 2020;
23. Boldea, I., Tutelea, L.N., Muntean, N., Popa, A., Blaabjerg, F. ROBOTICS ELECTRIC ACTUATORS: RECENT PROGRESS IN HIGH TORQUE DENSITY DESIGNS AND THEIR ADVANCED MOTION CONTROL - A REVIEW, *PROCEEDINGS OF THE ROMANIAN ACADEMY SERIES A-MATHEMATICS PHYSICS TECHNICAL SCIENCES INFORMATION SCIENCE*, Volume: 21, Issue: 4, Pages: 337-355, ISSN: 1454-9069, 2020;
24. Boncalo, O., Amaricai, A., Lendek, Z. Fault Tolerant Digital Data-Path Design via Control Feedback Loops, *ELECTRONICS*, Volume: 9, Issue: 10, Article Number: 1721, eISSN: 2079-9292, 2020;
25. Borlea, A., Borcan, F., Sporea, I., Dehelean, C.A., Negrea, R., Cotoi, L., Stoian, D. TI-RADS Diagnostic Performance: Which Algorithm is Superior and How Elastography and 4D Vascularity Improve the Malignancy Risk Assessment, *DIAGNOSTICS*, Volume: 10, Issue: 4, Article Number: 180, PubMed ID: 32225078, eISSN: 2075-4418, 2020;
26. Borza, P., Benea, I.C., Bitcan, I., Todea, A., Muntean, S.G., Peter, F. ENZYMATIC DEGRADATION OF AZO DYES USING PEROXIDASE IMMOBILIZED ONTO COMMERCIAL CARRIERS WITH EPOXY GROUPS, *STUDIA UNIVERSITATIS BABES-BOLYAI CHEMIA*, Volume: 65, Issue: 1, Pages: 279-290, ISSN: 1224-7154, 2020;
27. Bosioc, A.I., Tanasa, C. Experimental study of swirling flow from conical diffusers using the water jet control method, *RENEWABLE ENERGY*, Volume: 152, Pages: 385-398, ISSN: 0960-1481, 2020;
28. Bota, C., Caruntu, B., Tucu, D., Lapadat, M., Pasca, M.S. A Least Squares Differential Quadrature Method for a Class of Nonlinear Partial Differential Equations of Fractional Order, *MATHEMATICS*, Volume: 8, Issue: 8, Article Number: 1336, eISSN: 2227-7390, 2020;
29. Bota, C., Caruntu, B., Pasca, M.S., Tucu, D., Lapadat, M. Least Squares Differential Quadrature Method for the Generalized Bagley-Torvik Fractional Differential Equation, *MATHEMATICAL PROBLEMS IN ENGINEERING*, Volume: 2020, Article Number: 4806387, ISSN: 1024-123X, eISSN: 1563-5147, 2020;
30. Brighenti, R., Cosma, M.P., Marsavina, L., Spagnoli, A., Terzano, M. Laser-based additively manufactured polymers: a review on processes and mechanical models, *JOURNAL OF MATERIALS SCIENCE*, Volume: 56, Issue: 2, Pages: 961-998, ISSN: 0022-2461, eISSN: 1573-4803, 2020;
31. Bucur, A.I., Linul, E., Taranu, B.O. Hydroxyapatite coatings on Ti substrates by simultaneous precipitation and electrodeposition, *APPLIED SURFACE SCIENCE*, Volume: 527, Article Number: 146820, ISSN: 0169-4332, eISSN: 1873-5584, 2020;
32. Buda, V., Baul, B., Andor, M., Man, D.E., Ledeti, A., Vlase, G., Vlase, T., Danciu, C., Matusz, P., Peter, F., Ledeti, I. Solid State Stability and Kinetics of Degradation for Candestartan-Pure Compound and Pharmaceutical Formulation, *PHARMACEUTICS*, Volume: 12, Issue: 2, Article Number: 86, PubMed ID: 31972960, eISSN: 1999-4923, 2020;
33. Buncianu, D., Tessier-Doyen, N., Absi, J., Negru, R., Serban, D.A., Marsavina, L. Multi-Scale Mechanical Behaviour of a Highly Porous Alumina Based Foam, *METALS AND MATERIALS INTERNATIONAL*, Volume: 26, Issue: 10, Pages: 1524-1532, ISSN: 1598-9623, eISSN: 2005-4149, 2020;
34. Buriac, O., Ciopec, M., Duteanu, N., Negrea, A., Negrea, P., Grozav, I. Platinum (IV) Recovery from Waste Solutions by Adsorption onto Dibenzo-30-crown-10 Ether Immobilized on Amberlite XAD7 Resin-Factorial Design Analysis, *MOLECULES*, Volume: 25, Issue: 16, Article Number: 3692, PubMed ID: 32823592, eISSN: 1420-3049, 2020;

35. Buse, C., Lupulescu, V., O'Regan, D. Hyers-Ulam stability for equations with differences and differential equations with time-dependent and periodic coefficients, PROCEEDINGS OF THE ROYAL SOCIETY OF EDINBURGH SECTION A-MATHEMATICS, Volume: 150, Issue: 5, Pages: 2175-2188, ISSN: 0308-2105, eISSN: 1473-7124, 2020;
36. Buse, C., O'Regan, D. Discrete integral conditions for weak trajectories and asymptotic stability for operators in Banach spaces, BULLETIN DES SCIENCES MATHÉMATIQUES, Volume: 158, Article Number: 102805, ISSN: 0007-4497, eISSN: 1952-4773, 2020;
37. Busoni, L., Varma, V.S., Loheac, J., Codrean, A., Stefan, O., Morarescu, I.C., Lasaulce, S. Learning control for transmission and navigation with a mobile robot under unknown communication rates, CONTROL ENGINEERING PRACTICE, Volume: 100, Article Number: 104460, ISSN: 0967-0661, eISSN: 1873-6939, 2020;
38. Buzatu, A.R., Frissen, A.E., van den Broek, L.A.M., Todea, A., Motoc, M., Boeriu, C.G. Chemoenzymatic Synthesis of New Aromatic Esters of Mono- and Oligosaccharides, PROCESSES, Volume: 8, Issue: 12, Article Number: 1638, eISSN: 2227-9717, 2020;
39. Cadariu, L., Popa, D., Rasa, I. Ulam Stability of a Second Linear Differential Operator with Nonconstant Coefficients, SYMMETRY-BASEL, Volume: 12, Issue: 9, Article Number: 1451, eISSN: 2073-8994, 2020;
40. Caiman, D.V., Dragomir, T.L. A Novel Method for Obtaining the Signature of Household Consumer Pairs, ENERGIES, Volume: 13, Issue: 22, Article Number: 6030, eISSN: 1996-1073, 2020;
41. Capota, E.A., Stangaciu, C.S., Micea, M.V., Curic, D.I. Towards Fully Jitterless Applications: Periodic Scheduling in Multiprocessor MCSs Using a Table-Driven Approach, APPLIED SCIENCES-BASEL, Volume: 10, Issue: 19, Article Number: 6702, eISSN: 2076-3417, 2020;
42. Carstoiu, G., Micea, M.V., Ungurean, L., Marcu, M. Novel battery wear leveling method for large-scale reconfigurable battery packs, INTERNATIONAL JOURNAL OF ENERGY RESEARCH, Volume: 45, Issue: 2, Pages: 1932-1947, ISSN: 0363-907X, eISSN: 1099-114X, 2020;
43. Cebrucean, D., Cebrucean, V., Ionel, I. Modeling and performance analysis of subcritical and supercritical coal-fired power plants with biomass co-firing and CO<sub>2</sub> capture, CLEAN TECHNOLOGIES AND ENVIRONMENTAL POLICY, Volume: 22, Issue: 1, Pages: 153-169, ISSN: 1618-954X, eISSN: 1618-9558, 2020;
44. Cernicova-Buca, M., Luzan, K. Open Academic Book Publishing during COVID-19 Pandemic: A View on Romanian University Presses, PUBLICATIONS, Volume: 8, Issue: 4, Article Number: 49, eISSN: 2304-6775, 2020;
45. Chieffo, N., Formisano, A. Induced Seismic-Site Effects on the Vulnerability Assessment of a Historical Centre in the Molise Region of Italy: Analysis Method and Real Behaviour Calibration Based on 2002 Earthquake, GEOSCIENCES, Volume: 10, Issue: 1, Article Number: 21, eISSN: 2076-3263, 2020;
46. Chirita-Emandi, A., Andreescu, N., Zimbru, C.G., Tutac, P., Arghirescu, S., Serban, M., Puiu, M. Challenges in reporting pathogenic/potentially pathogenic variants in 94 cancer predisposing genes - in pediatric patients screened with NGS panels, SCIENTIFIC REPORTS, Volume: 10, Issue: 1, Article Number: 223, PubMed ID: 31937788, ISSN: 2045-2322, 2020;
47. Chirita-Emandi, A., Serban, C.L., Paul, C., Andreescu, N., Velea, I., Mihailescu, A., Serafim, V., Tiugan, D.A., Tutac, P., Zimbru, C., Puiu, M., Niculescu, M.D. CHDH-PNPLA3 Gene-Gene Interactions Predict Insulin Resistance in Children with Obesity, DIABETES METABOLIC SYNDROME AND OBESITY-TARGETS AND THERAPY, Volume: 13, Pages: 4483-4494, PubMed ID: 33239899, ISSN: 1178-7007, 2020;
48. Cioabla, A.E., Ivanovici, M., Dumitrel, G.A., Ordodi, L.V., Calinoiu, D.G., Trif-Tordai, G., Pode, V. MATHEMATICAL APPROACH FOR PILOT-SCALE EXPERIMENT SETUP ON BIOGAS PRODUCTION, STUDIA UNIVERSITATIS BABES-BOLYAI CHEMIA, Volume: 65, Issue: 1, Pages: 245-252, ISSN: 1224-7154, 2020;
49. Ciopec, M., Gabor, A., Davidescu, C.M., Negrea, A., Negrea, P., Duteanu, N. Eu(III) removal by tetrabutylammonium di-hydrogen phosphate (TBAH<sub>2</sub>P) functionalized polymers, ARABIAN JOURNAL OF CHEMISTRY, Volume: 13, Issue: 1, Pages: 3534-3545, ISSN: 1878-5352, eISSN: 1878-5379, 2020;
50. Ciopec, M., Negrea, A., Duteanu, N., Negrea, P., Nemes, N., Dobra, G., Iliev, S., Cotet, L., Boiangiu, A., Filipescu, L. PALLADIUM RECOVERY BY ADSORPTION ON ALUMINUM HYDROXIDE, UNIVERSITY POLITEHNICA OF BUCHAREST SCIENTIFIC BULLETIN SERIES B-CHEMISTRY AND MATERIALS SCIENCE, Volume: 82, Issue: 4, Pages: 111-124, ISSN: 1454-2331, 2020;

51. Cirligeriu, L.E., Nica, L.M., Puscu-Boscornea, S.A., Horhat, R.M., Pancotti, S., Stoia, D.I., Marinescu, A.G. MECHANICAL STRENGTH EVALUATION OF TWO SINGLE FILE SYSTEMS: RECIPROC VERSUS RECIPROC BLUE, ROMANIAN JOURNAL OF ORAL REHABILITATION, Volume: 12, Issue: 2, Pages: 109-115, eISSN: 2066-7000, 2020;
52. Cividino, S., Halbac-Cotoara-Zamfir, R., Salvati, L. Revisiting the "City Life Cycle": Global Urbanization and Implications for Regional Development, SUSTAINABILITY, Volume: 12, Issue: 3, Article Number: 1151, eISSN: 2071-1050, 2020;
53. Cocheci, L., Lupa, L., Tolea, N.S., Muntean, C., Negrea, P. Sequential use of ionic liquid functionalized Zn-Al layered double hydroxide as adsorbent and photocatalyst, SEPARATION AND PURIFICATION TECHNOLOGY, Volume: 250, Article Number: 117104, ISSN: 1383-5866, eISSN: 1873-3794, 2020;
54. Codrean, C., Voda, M., Buzdugan, D., Serban, V.A. Amorphous gray iron for concrete reinforcement, UIS INGENIERIAS, Volume: 19, Issue: 1, Pages: 103-107, ISSN: 1657-4583, eISSN: 2145-8456, 2020;
55. Colantoni, A., Halbac-Cotoara-Zamfir, R., Halbac-Cotoara-Zamfir, C., Cudlin, P., Salvati, L., Morera, A.G. Demographic Resilience in Local Systems: An Empirical Approach with Census Data, SYSTEMS, Volume: 8, Issue: 3, Article Number: 34, eISSN: 2079-8954, 2020;
56. Cornea, O., Hulea, D., Muntean, N., Andreescu, G.D. Step-Down Switched-Inductor Hybrid DC-DC Converter for Small Power Wind Energy Conversion Systems With Hybrid Storage, IEEE ACCESS, Volume: 8, Pages: 136092-136107, ISSN: 2169-3536, 2020;
57. Covaci, C., Gontean, A. Piezoelectric Energy Harvesting Solutions: A Review, SENSORS, Volume: 20, Issue: 12, Article Number: 3512, PubMed ID: 32575888, eISSN: 1424-8220, 2020;
58. Covaciu, F., Iordan, A.E. DESIGNING A COOLING SYSTEM FOR AN ELECTRIC MOTOR THAT IS USED IN THE AUTOMOTIVE INDUSTRY, ACTA TECHNICA NAPOCENSIS SERIES-APPLIED MATHEMATICS MECHANICS AND ENGINEERING, Volume: 63, Issue: 1, Pages: 61-66, ISSN: 1221-5872, 2020;
59. Craciunescu, C.M., Kohl, M., Ercuta, A. Micro-actuation design in VO<sub>2</sub>-based bimorph cantilevers, SMART MATERIALS AND STRUCTURES, Volume: 29, Issue: 11, Article Number: 115035, ISSN: 0964-1726, eISSN: 1361-665X, 2020;
60. Croitoru, C., Pop, M.A., Bedo, T., Cosnita, M., Roata, I.C., Hulka, I. Physically Crosslinked Poly (Vinyl Alcohol)/Kappa-Carrageenan Hydrogels: Structure and Applications, POLYMERS, Volume: 12, Issue: 3, Article Number: 560, PubMed ID: 32138357, eISSN: 2073-4360, 2020;
61. Croitoru, C., Roata, I.C., Pascu, A., Stanciu, E.M., Hulka, I., Stoian, G., Lupu, N. Photocatalytic surfaces obtained through one-step thermal spraying of titanium, APPLIED SURFACE SCIENCE, Volume: 504, Article Number: 144173, ISSN: 0169-4332, eISSN: 1873-5584, 2020;
62. Cveticanin, D., Herisanu, N., Biro, I., Zukovic, M., Cveticanin, L. Vibration of the Biomass Boiler Tube Excited with Impact of the Cleaning Device, MATHEMATICS, Volume: 8, Issue: 9, Article Number: 1519, eISSN: 2227-7390, 2020;
63. Daianu, D.M., Mindruta, C. Sections in functional equations, AEQUATIONES MATHEMATICAE, Volume: 94, Issue: 5, Pages: 931-943, ISSN: 0001-9054, eISSN: 1420-8903, 2020;
64. Dascalu, D., Roman, D.L., Filip, M., Ciorsac, A.A., Ostafe, V., Isvoran, A. Solubility and ADMET profiles of short oligomers of lactic acid, ADMET AND DMPK, Volume: 8, Issue: 4, Pages: 425-436, ISSN: 1848-7718, 2020;
65. David, V., Belc, A.L., Jianu, M.R., Musat, C.C. MONITORING BITUMINOUS LAYERS USING THERMAL 3 IMAGES, ROMANIAN JOURNAL OF TRANSPORT INFRASTRUCTURE, Volume: 9, Issue: 1, Pages: 22-37, Article Number: 2, ISSN: 2286-2218, 2020;
66. Dehelean, T., Nafornta, C., Isar, A. ENHANCED METRIC FOR MULTIPLE EXTENDED OBJECT TRACKER, REVUE ROUMAINE DES SCIENCES TECHNIQUES-SERIE ELECTROTECHNIQUE ET ENERGETIQUE, Volume: 65, Issue: 3-4, Pages: 235-243, ISSN: 0035-4066, 2020;
67. Dima, G., Vaszilcsin, N. INHIBITORY EFFECT OF SOME AMINO ACIDS ON COPPER ELECTRODEPOSITION FROM ACID BATHS, UNIVERSITY POLITEHNICA OF BUCHAREST SCIENTIFIC BULLETIN SERIES B-CHEMISTRY AND MATERIALS SCIENCE, Volume: 82, Issue: 2, Pages: 69-78, ISSN: 1454-2331, 2020;
68. Djuissi, E., Bogdan, R., Abdoulanziz, A., Pop, N., Iacob, F., Argentin, C., Epee, M.D.E., Motapon, O., Laporta, V., Mezei, J.Z., Schneider, I.F. ELECTRON DRIVEN REACTIVE PROCESSES INVOLVING H-2(+) AND HD+ MOLECULAR CATIONS IN THE EARLY UNIVERSE, ROMANIAN ASTRONOMICAL JOURNAL, Volume: 30, Issue: 2, Pages: 101-111, ISSN: 1220-5168, eISSN: 2285-3758, 2020;
69. Don, R., Ciutina, A., Vulcu, C., Stratan, A. Seismic-resistant slim-floor beam-to-column joints: experimental and numerical investigations, STEEL AND COMPOSITE STRUCTURES, Volume: 37, Issue: 3, Pages: 307-321, ISSN: 1229-9367, eISSN: 1598-6233, 2020;

70. Dragicevic, D., Pecek, N.J., Lupa, N. Admissibility and general dichotomies for evolution families, *ELECTRONIC JOURNAL OF QUALITATIVE THEORY OF DIFFERENTIAL EQUATIONS*, Issue: 58, Pages: 1-19, ISSN: 1417-3875, 2020;
71. Dragoi, V.F., Cayrel, P.L., Colombier, B., Bucerzan, D., Hoara, S. Solving a Modified Syndrome Decoding Problem using Integer Programming, *INTERNATIONAL JOURNAL OF COMPUTERS COMMUNICATIONS & CONTROL*, Volume: 15, Issue: 5, Article Number: 3920, ISSN: 1841-9836, eISSN: 1841-9844, 2020;
72. Dragomir, G.M., Cernicova-Buca, M., Gherhes, V., Cismariu, L. Engineering Students' Human Values as Rhizomatic Lines of Sustainability, *SUSTAINABILITY*, Volume: 12, Issue: 18, Article Number: 7417, eISSN: 2071-1050, 2020;
73. Dragomir, T.L., Stefan, O., Nanu, S., Codrean, A. Discrete-Time Rule-based Time Optimal Controller, *CONTROL ENGINEERING AND APPLIED INFORMATICS*, Volume: 22, Issue: 2, Pages: 67-78, ISSN: 1454-8658, 2020;
74. Dubina, D., Dinu, F., Stratan, A. High-strength steel and dissipative fuse solutions for seismic-resistant building structures, *STEEL CONSTRUCTION-DESIGN AND RESEARCH*, Volume: 13, Issue: 3, Pages: 154-164, ISSN: 1867-0520, eISSN: 1867-0539, 2020;
75. Dufour, C., Draghici, A., Ivascu, L., Sarfraz, M. Occupational health and safety division of responsibility: A conceptual model for the implementation of the OHSAS 18001:2007 standard, *HUMAN SYSTEMS MANAGEMENT*, Volume: 39, Issue: 4, Pages: 549-563, ISSN: 0167-2533, eISSN: 1875-8703, 2020;
76. Dumitru, R., Negrea, S., Ianculescu, A., Pacurariu, C., Vasile, B., Surdu, A., Manea, F. Lanthanum Ferrite Ceramic Powders: Synthesis, Characterization and Electrochemical Detection Application, *MATERIALS*, Volume: 13, Issue: 9, Article Number: 2061, PubMed ID: 32365678, eISSN: 1996-1944, 2020;
77. Egidi, G., Halbac-Cotoara-Zamfir, R., Cividino, S., Quaranta, G., Salvati, L., Colantoni, A. Rural in Town: Traditional Agriculture, Population Trends, and Long-Term Urban Expansion in Metropolitan Rome, *LAND*, Volume: 9, Issue: 2, Article Number: 53, eISSN: 2073-445X, 2020;
78. Ene, R.C., Brata, S., Boros, I., Dan, D. EFFECT OF INSERTED PARALLEL AIR CHAMBERS IN ROCKWOOL AND POLYSTYRENE INSULATION PANELS, *JOURNAL OF ENVIRONMENTAL PROTECTION AND ECOLOGY*, Volume: 21, Issue: 1, Pages: 202-210, ISSN: 1311-5065, 2020;
79. Ene, R.D., Pop, C., Petrisor, C. Systematic Review of Geometrical Approaches and Analytical Integration for Chen's System, *MATHEMATICS*, Volume: 8, Issue: 9, Article Number: 1530, eISSN: 2227-7390, SEP 2020;
80. Epasto, G., Distefano, F., Gu, L.X., Mozafari, H., Linul, E. Design and optimization of Metallic Foam Shell protective device against flying ballast impact damage in railway axles, *MATERIALS & DESIGN*, Volume: 196, Article Number: 109120, ISSN: 0264-1275, eISSN: 1873-4197, 2020;
81. Erdelyi, R.A., Duma, V.F., Sinescu, C., Dobre, G.M., Bradu, A., Podoleanu, A. Dental Diagnosis and Treatment Assessments: Between X-rays Radiography and Optical Coherence Tomography, *MATERIALS*, Volume: 13, Issue: 21, Article Number: 4825, PubMed ID: 33126714, eISSN: 1996-1944, 2020;
82. Fagadar-Cosma, E., Plesu, N., Lascu, A., Anghel, D., Cazacu, M., Ianasi, C., Fagadar-Cosma, G., Fratilescu, I., Epuran, C. Novel Platinum-Porphyrin as Sensing Compound for Efficient Fluorescent and Electrochemical Detection of H<sub>2</sub>O<sub>2</sub>, *CHEMOSENSORS*, Volume: 8, Issue: 2, Article Number: 29, eISSN: 2227-9040, 2020;
83. Falk, A., Marsavina, L., Pop, O. Analysis of Printed Circuit Boards strains using finite element analysis and digital image correlation, *FRATTURA ED INTEGRITÀ STRUTTURALE*, Issue: 51, Pages: 541-551, ISSN: 1971-8993, 2020;
84. Farcas, C.G., Dehelean, C., Pinzaru, I.A., Mioc, M., Socoliuc, V., Moaca, E.A., Avram, S., Ghiulai, R., Coricovac, D., Pavel, I., Alla, P.K., Cretu, O.M., Soica, C., Loghin, F. Thermosensitive Betulinic Acid-Loaded Magnetoliposomes: A Promising Antitumor Potential for Highly Aggressive Human Breast Adenocarcinoma Cells Under Hyperthermic Conditions, *INTERNATIONAL JOURNAL OF NANOMEDICINE*, Volume: 15, Pages: 8175-8200, PubMed ID: 33122905, ISSN: 1178-2013, 2020;
85. Fiedler, T., Al-Sahlani, K., Linul, P.A., Linul, E. Mechanical properties of A356 and ZA27 metallic syntactic foams at cryogenic temperature, *JOURNAL OF ALLOYS AND COMPOUNDS*, Volume: 813, Article Number: 152181, ISSN: 0925-8388, eISSN: 1873-4669, 2020;
86. Filip, I., Dragan, F., Szeidert, I., Albu, A. Minimum-Variance Control System with Variable Control Penalty Factor, *APPLIED SCIENCES-BASEL*, Volume: 10, Issue: 7, Article Number: 2274, eISSN: 2076-3417, 2020;

87. Florut, S.C., Popescu, D.A., Stoian, V., Dan, D., Nagy-Gyorgy, T., Todea, V. EXPERIMENTALLY VALIDATED NUMERICAL ANALYSIS OF REINFORCED CONCRETE SLAB-COLUMN CONNECTIONS SUBJECTED TO PUNCHING SHEAR, *JOURNAL OF APPLIED ENGINEERING SCIENCES*, Volume: 10, Issue: 2, Pages: 125-132, ISSN: 2247-3769, eISSN: 2284-7197, 2020;
88. Forton, A., Mangiafico, S., Sauzeat, C., Di Benedetto, H., Marc, P. Properties of blends of fresh and RAP binders with rejuvenator: Experimental and estimated results, *CONSTRUCTION AND BUILDING MATERIALS*, Volume: 236, Article Number: 117555, ISSN: 0950-0618, eISSN: 1879-0526, 2020;
89. Frigura-Iliasa, M., Baloi, F.I., Frigura-Iliasa, F.M., Simo, A., Musuroi, S., Andea, P. Health-Related Electromagnetic Field Assessment in the Proximity of High Voltage Power Equipment, *APPLIED SCIENCES-BASEL*, Volume: 10, Issue: 1, Article Number: 260, eISSN: 2076-3417, 2020;
90. Gherhes, V., Dragomir, G.M., Cernicova-Buca, M. Migration Intentions of Romanian Engineering Students, *SUSTAINABILITY*, Volume: 12, Issue: 12, Article Number: 4846, eISSN: 2071-1050, 2020;
91. Glevitzky, I., Dumitrel, G.A., Glevitzky, M., Bungau, S., Popa, M. ASPECTS CONCERNING THE MANAGEMENT OF GROUNDWATER IN THE FARAU AREA - ALBA COUNTY, ROMANIA, *JOURNAL OF ENVIRONMENTAL PROTECTION AND ECOLOGY*, Volume: 21, Issue: 2, Pages: 443-453, ISSN: 1311-5065, 2020;
92. Glevitzky, M., Aleya, L., Vica, M.L., Dumitrel, G.A., Avram, M., Tit, D.M., Popa, M., Popa, V.C., Behl, T., Bungau, S. Assessing the microbiological contamination along with environmental factors of old books in the 1490-founded Bistrita Monastery, Romania, *ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH*, Volume: 28, Issue: 7, Pages: 8743-8757, PubMed ID: 33070291, ISSN: 0944-1344, eISSN: 1614-7499, 2020;
93. Golban, A., Lupa, L., Cocheci, L., Pode, R. COMPARATIVE STUDIES REGARDING MOLYBDATE ADSORPTION ONTO MnFe LAYERED DOUBLE HYDROXIDES OBTAINED FROM REAGENT AND WASTE SLUDGE, *ENVIRONMENTAL ENGINEERING AND MANAGEMENT JOURNAL*, Volume: 19, Issue: 2, Pages: 235-245, ISSN: 1582-9596, eISSN: 1843-3707, 2020;
94. Grecu, E., Oncioiu, I., Ionel, I., Ungureanu, C.I. POTENTIAL ASSESSMENT OF USING BIOMASS FOR SUSTAINABLE DEVELOPMENT. A CASE STUDY FOR ROMANIA, *JOURNAL OF ENVIRONMENTAL PROTECTION AND ECOLOGY*, Volume: 21, Issue: 2, Pages: 544-550, ISSN: 1311-5065, 2020;
95. Grecu, E., Albulescu, C.T., Partachi, I.P., Stancu, S., Trasca, D.L. OUTPUT, UNCERTAINTY AND FUEL PRICES IN THE EU COUNTRIES, *ECONOMIC COMPUTATION AND ECONOMIC CYBERNETICS STUDIES AND RESEARCH*, Volume: 54, Issue: 1, Pages: 15-30, ISSN: 0424-267X, eISSN: 1842-3264, 2020;
96. Groza, B., Popa, L., Murvay, P.S. Highly Efficient Authentication for CAN by Identifier Reallocation With Ordered CMACs, *IEEE TRANSACTIONS ON VEHICULAR TECHNOLOGY*, Volume: 69, Issue: 6, Pages: 6129-6140, ISSN: 0018-9545, eISSN: 1939-9359, 2020;
97. Groza, B., Berdich, A., Jichici, C., Mayrhofer, R. Secure Accelerometer-Based Pairing of Mobile Devices in Multi-Modal Transport, *IEEE ACCESS*, Volume: 8, Pages: 9246-9259, ISSN: 2169-3536, 2020;
98. Groza, B., Andreica, T., Berdich, A., Murvay, P.S., Gurban, E.H. PRESTvO: PRIVACY Enabled Smartphone Based Access to Vehicle On-Board Units, *IEEE ACCESS*, Volume: 8, Pages: 119105-119122, ISSN: 2169-3536, 2020;
99. Gurban, D. Radial non-potential Dirichlet systems with mean curvature operator in Minkowski space, *POSITIVITY*, Volume: 25, Issue: 1, ISSN: 1385-1292, eISSN: 1572-9281, 2020;
100. Hadaruga, N.G., Szakal, R.N., Chirila, C.A., Lukinich-Gruia, A.T., Paunescu, V., Muntean, C., Rusu, G., Bujanca, G., Hadaruga, D.I. Complexation of Danube common nase (*Chondrostoma nasus* L.) oil by beta-cyclodextrin and 2-hydroxypropyl-beta-cyclodextrin, *FOOD CHEMISTRY*, Volume: 303, Article Number: 125419, PubMed ID: 31470276, ISSN: 0308-8146, eISSN: 1873-7072, 2020;
101. Halbac-Cotoara-Zamfir, R., Egidi, G., Mosconi, E.M., Poponi, S., Alhuseen, A., Salvati, L. Uncovering Demographic Trends and Recent Urban Expansion in Metropolitan Regions: A Paradigmatic Case Study, *SUSTAINABILITY*, Volume: 12, Issue: 9, Article Number: 3937, eISSN: 2071-1050, 2020;
102. Halbac-Cotoara-Zamfir, R., Cividino, S., Egidi, G., Salvia, R., Salvati, L. Rapidity of Change in Population Age Structures: A Local Approach Based on Multiway Factor Analysis, *SUSTAINABILITY*, Volume: 12, Issue: 7, Article Number: 2828, eISSN: 2071-1050, 2020;

103. Hegyi, A., Sarris, A., Curta, F., Floca, C., Fortiu, S., Urdea, P., Onaca, A., Timofte, F., Pisz, M., Timut, S., Nica, M., Maciulski, D., Stavila, A. Deserted Medieval Village Reconstruction Using Applied Geosciences, REMOTE SENSING, Volume: 12, Issue: 12, Article Number: 1975, eISSN: 2072-4292, 2020;
104. Heinosaari, T., Jivulescu, M.A., Nechita, I. Random positive operator valued measures, JOURNAL OF MATHEMATICAL PHYSICS, Volume: 61, Issue: 4, ISSN: 0022-2488, eISSN: 1089-7658, 2020;
105. Herisanu, N., Marinca, V. An effective analytical approach to nonlinear free vibration of elastically actuated microtubes, MECCANICA, Volume: 56, Issue: 4, Special Issue: SI, Pages: 813-823, ISSN: 0025-6455, eISSN: 1572-9648, 2020;
106. Herisanu, N., Marinca, V. An Efficient Analytical Approach to Investigate the Dynamics of a Misaligned Multirotor System, MATHEMATICS, Volume: 8, Issue: 7, Article Number: 1083, eISSN: 2227-7390, 2020;
107. Holotescu, V., Vasiu, R. Challenges and Emerging Solutions for Public Blockchains, BRAIN-BROAD RESEARCH IN ARTIFICIAL INTELLIGENCE AND NEUROSCIENCE, Volume: 11, Issue: 1, Pages: 58-83, ISSN: 2067-3957, 2020;
108. Hulka, I., Utu, D., Serban, V.A., Negrea, P., Lukac, F., Chraska, T. Effect of Ti addition on microstructure and corrosion properties of laser cladded WC-Co/NiCrBSi(Ti) coatings, APPLIED SURFACE SCIENCE, Volume: 504, Article Number: 144349, ISSN: 0169-4332, eISSN: 1873-5584, 2020;
109. Ilia, G., Simulescu, V., Hulka, I. Hybrids containing zirconium and phosphorus compounds obtained by sol-gel method, COLLOID AND POLYMER SCIENCE, Volume: 299, Issue: 1, Pages: 137-151, ISSN: 0303-402X, eISSN: 1435-1536, 2020;
110. Ioana, A., Korodi, A. Improving OPC UA Publish-Subscribe Mechanism over UDP with Synchronization Algorithm and Multithreading Broker Application, SENSORS, Volume: 20, Issue: 19, Article Number: 5591, PubMed ID: 33003549, eISSN: 1424-8220, 2020;
111. Ioana, A., Korodi, A. OPC UA Publish-Subscribe and VSOME/IP Notify-Subscribe Based Gateway Application in the Context of Car to Infrastructure Communication, SENSORS, Volume: 20, Issue: 16, Article Number: 4624, PubMed ID: 32824493, eISSN: 1424-8220, 2020;
112. Ionel, R., Mischie, S., Belega, D., Matiu-lovan, L., Dughir, C. I&M applications for educational purposes, IEEE INSTRUMENTATION & MEASUREMENT MAGAZINE, Volume: 23, Issue: 2, Pages: 21-29, ISSN: 1094-6969, eISSN: 1941-0123, 2020;
113. Ionitescu, M., Vermesan, D., Haragus, H., Suciu, O., Todor, A., Dumitrascu, C.V., Negrea, R., Hoinoiu, T., Radu, D., Fruja, D. Association of Neutrophil to Lymphocyte Ratio with Patient Reported Outcomes in Knee Osteoarthritis, APPLIED SCIENCES-BASEL, Volume: 10, Issue: 22, Article Number: 8173, eISSN: 2076-3417, 2020;
114. Iordan, A.E., Covaciu, F. IMPROVING DESIGN OF A TRIANGLE GEOMETRY COMPUTER APPLICATION USING A CREATIONAL PATTERN, ACTA TECHNICA NAPOCENSIS SERIES-APPLIED MATHEMATICS MECHANICS AND ENGINEERING, Volume: 63, Issue: 1, Pages: 73-78, ISSN: 1221-5872, 2020;
115. Iovanovici, A., Avramoni, D., Prodan, L. A dataset of urban traffic flow for 13 Romanian cities amid lockdown and after ease of COVID19 related restrictions, DATA IN BRIEF, Volume: 32, Article Number: 106318, PubMed ID: 32959019, ISSN: 2352-3409, 2020;
116. Isfanuti, A., Paicu, M.C., Andreescu, G.D., Tutelea, L.N., Staudt, T., Boldea, I. V/f with Stabilizing Loops and MTPA versus Sensorless FOC for PMSM Drives, ELECTRIC POWER COMPONENTS AND SYSTEMS, Volume: 48, Issue: 11, Pages: 1197-1210, ISSN: 1532-5008, eISSN: 1532-5016, 2020;
117. Isfanuti, A.S., Tutelea, L.N., Boldea, I., Staudt, T., da Silva, P.E. Outer Ferrite-PM-Rotor BLAC Motor Characterization: FEM-Assisted Optimal Design and Preliminary Experiments, IEEE TRANSACTIONS ON INDUSTRY APPLICATIONS, Volume: 56, Issue: 3, Pages: 2580-2589, ISSN: 0093-9994, eISSN: 1939-9367, 2020;
118. Ivascu, L. Measuring the Implications of Sustainable Manufacturing in the Context of Industry 4.0, PROCESSES, Volume: 8, Issue: 5, Article Number: 585, eISSN: 2227-9717, 2020;
119. Karagiorgis, S., Tsamis, A., Voutouri, C., Turcu, R., Porav, S.A., Socoliuc, V., Vekas, L., Louca, M., Stylianopoulos, T., Vavourakis, V., Krasia-Christoforou, T. Engineered magnetoactive collagen hydrogels with tunable and predictable mechanical response, MATERIALS SCIENCE & ENGINEERING C-MATERIALS FOR BIOLOGICAL APPLICATIONS, Volume: 114, Article Number: 111089, PubMed ID: 32994019, ISSN: 0928-4931, eISSN: 1873-0191, 2020;

120. Kellenberger, A., Duca, D., Vaszilcsin, N., Craciunescu, C.M. Electrochemical Evaluation of Niobium Corrosion Resistance in Simulated Anodic PEM Electrolyzer Environmen, INTERNATIONAL JOURNAL OF ELECTROCHEMICAL SCIENCE, Volume: 15, Issue: 11 Pages: 10664-10673, ISSN: 1452-3981, 2020;
121. Kellenberger, A., Ambros, D., Plesu, N. Polyaniline Nanofibers Modified Ni Electrodes for Electrochemical Hydrogen Production, INTERNATIONAL JOURNAL OF ELECTROCHEMICAL SCIENCE, Volume: 15, Issue: 9, Pages: 8536-8551, ISSN: 1452-3981, 2020;
122. Kellenberger, A., Gavrilă, R., Plesu, N. ACTIVATED MULTI-WALLED CARBON NANOTUBES FOR ELECTROCHEMICAL DETECTION OF DOPAMINE IN THE PRESENCE OF ASCORBIC AND URIC ACID, STUDIA UNIVERSITATIS BABES-BOLYAI CHEMIA, Volume: 65, Issue: 4, Pages: 35-52, ISSN: 1224-7154, 2020;
123. Khezzadeh, O., Mirzaee, O., Emadoddin, E., Linul, E. Anisotropic Compressive Behavior of Metallic Foams under Extreme Temperature Conditions, MATERIALS, Volume: 13, Issue: 10, Article Number: 2329, PubMed ID: 32438755, eISSN: 1996-1944, 2020;
124. Kiss, G., Rusu, G., Peter, F., Tanase, I., Bandur, G. Recovery of Flexible Polyurethane Foam Waste for Efficient Reuse in Industrial Formulations, POLYMERS, Volume: 12, Issue: 7, Article Number: 1533, PubMed ID: 32664336, eISSN: 2073-4360, 2020;
125. Kiss, I., Bordeasu, I., Baci, A.M., Alexa, V., Cioata, V.G., Ursu-Neamt, G. Comparative Analysis on Use of Polymer Fibres from Recycled Polyethylene Terephthalate into Reinforced Concrete Solutions, MATERIALE PLASTICE, Volume: 57, Issue: 4, Pages: 216-224, ISSN: 2668-8220, eISSN: 0025-5289, 2020;
126. Kiss, I., Alexa, V. Study on the Deformation behaviour of Non-Hardenable Ferritic Stainless Steel (grade X6Cr17) by Hot Torsion Tests, TEHNICKI GLASNIK-TECHNICAL JOURNAL, Volume: 14, Issue: 2, Pages: 239-244, ISSN: 1846-6168, eISSN: 1848-5588, 2020;
127. Kiss, I., Baci, A.M., Bordeasu, I., Micu, L.M. Compressive Strength of Stripes and Flakes of Recycled Polyethylene Terephthalate (PET) Added Concrete, MATERIALE PLASTICE, Volume: 57, Issue: 1, Pages: 244-252, ISSN: 2668-8220, eISSN: 0025-5289, 2020;
128. Kiss, I. Multivariate Statistical Research in Areas of the Cast Hyper-Eutectoid Steel Roll Manufacturing, in the Melting and Alloying Processing Stages, ACTA POLYTECHNICA HUNGARICA, Volume: 17, Issue: 6, Pages: 41-59, ISSN: 1785-8860, 2020;
129. Kiss, I., Alexa, V. Study on the Deformability Characteristics of Steels for Seamless Tubes and Pipes destined for the Petrochemical Industry, ACTA POLYTECHNICA HUNGARICA, Volume: 17, Issue: 5, Pages: 89-111, ISSN: 1785-8860, 2020;
130. Kiss, I., Alexa, V. Study on Deformation Behavior of Non-Hardenable Austenitic Stainless Steel (Grade X5CrNi18-10) by Hot Torsion Tests, TEHNICKI GLASNIK-TECHNICAL JOURNAL, Volume: 14, Issue: 3, Pages: 396-402, ISSN: 1846-6168, eISSN: 1848-5588, 2020;
131. Kolumban-Antal, G., Lasak, V., Bogdan, R., Groza, B. A Secure and Portable Multi-Sensor Module for Distributed Air Pollution Monitoring, SENSORS, Volume: 20, Issue: 2, Article Number: 403, PubMed ID: 31936847, eISSN: 1424-8220, 2020;
132. Korodi, A., Anitei, D., Boitor, A., Silea, I. Image-Processing-Based Low-Cost Fault Detection Solution for End-of-Line ECUs in Automotive Manufacturing, SENSORS, Volume: 20, Issue: 12, Article Number: 3520, PubMed ID: 32580271, eISSN: 1424-8220, 2020;
133. Korodi, A., Crisan, R., Nicolae, A., Silea, I. Industrial Internet of Things and Fog Computing to Reduce Energy Consumption in Drinking Water Facilities, PROCESSES, Volume: 8, Issue: 3, Article Number: 282, eISSN: 2227-9717, 2020;
134. Lascu, C., Andreescu, G.D. PLL Position and Speed Observer With Integrated Current Observer for Sensorless PMSM Drives, IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS, Volume: 67, Issue: 7, Pages: 5990-5999, ISSN: 0278-0046, eISSN: 1557-9948, 2020;
135. Lascu, C., Argeanu, A., Blaabjerg, F. Supertwisting Sliding-Mode Direct Torque and Flux Control of Induction Machine Drives, IEEE TRANSACTIONS ON POWER ELECTRONICS, Volume: 35, Issue: 5, Pages: 5057-5065, ISSN: 0885-8993, eISSN: 1941-0107, 2020;
136. Lazar, I.C. Minimal Disc Diagrams of 5/9-Simplicial Complexes, MICHIGAN MATHEMATICAL JOURNAL, Volume: 69, Issue: 4, Pages: 793-829, ISSN: 0026-2285, 2020;
137. Lazar, I.C. The collapsibility of CAT(0) square 2-complexes, PUBLICATIONES MATHEMATICAE-DEBRECEN, Volume: 97, Issue: 1-2, Pages: 1-25, ISSN: 0033-3883, 2020;
138. Ledeti, I., Bengescu, C., Cirioban, D., Vlase, G., Vlase, T., Tomoroga, C., Buda, V., Ledeti, A., Dragomirescu, A., Murariu, M. Solid-state stability and kinetic study of three glucocorticoid hormones: prednisolone, prednisone and cortisone, JOURNAL OF THERMAL ANALYSIS AND CALORIMETRY, Volume: 141, Issue: 3, Pages: 1053-1065, ISSN: 1388-6150, eISSN: 1588-2926, 2020;

139. Linul, E., Marsavina, L., Stoia, D.I. Mode I and II fracture toughness investigation of Laser-Sintered Polyamide, THEORETICAL AND APPLIED FRACTURE MECHANICS, Volume: 106, Article Number: 102497, ISSN: 0167-8442, eISSN: 1872-7638, 2020;
140. Linul, E., Marsavina, L., Vlean, C., Banica, R. Static and dynamic mode I fracture toughness of rigid PUR foams under room and cryogenic temperatures, ENGINEERING FRACTURE MECHANICS, Volume: 225, Article Number: 106274, ISSN: 0013-7944, eISSN: 1873-7315, 2020;
141. Luca, R.E., Giuliani, A., Manescu, A., Heredea, R., Hoinoiu, B., Constantin, G.D., Duma, V.F., Todea, C.D. Osteogenic Potential of Bovine Bone Graft in Combination with Laser Photobiomodulation: An Ex Vivo Demonstrative Study in Wistar Rats by Cross-Linked Studies Based on Synchrotron Microtomography and Histology, INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES, Volume: 21, Issue: 3, Article Number: 778, PubMed ID: 31991756, eISSN: 1422-0067, 2020;
142. Lupa, L., Cocheci, L., Trica, B., Coroaba, A., Popa, A. Photodegradation of Phenolic Compounds from Water in the Presence of a Pd-Containing Exhausted Adsorbent, APPLIED SCIENCES-BASEL, Volume: 10, Issue: 23, Article Number: 8440, eISSN: 2076-3417, 2020;
143. Lupa, N. A New Approach on Datko-Zabczyk Method for Nonuniform Exponential Stability, MATHEMATICS, Volume: 8, Issue: 7, Article Number: 1095, eISSN: 2227-7390, 2020;
144. Lupa, N., Popescu, L.H. Admissible Banach Function Spaces and Nonuniform Stabilities, MEDITERRANEAN JOURNAL OF MATHEMATICS, Volume: 17, Issue: 4, Article Number: 105, ISSN: 1660-5446, eISSN: 1660-5454, 2020;
145. Manea, A.S., Muntean, S., Stroita, D.C. ANALYTICAL APPROACH AND NUMERICAL METHODOLOGY VALIDATED AGAINST EXPERIMENTAL DATA ON S SHAPE AIRFOIL FOR WIDE FLOW ANGLES OF ATTACK, PROCEEDINGS OF THE ROMANIAN ACADEMY SERIES A-MATHEMATICS PHYSICS TECHNICAL SCIENCES INFORMATION SCIENCE, Volume: 21, Issue: 2, Pages: 163-172, ISSN: 1454-9069, 2020;
146. Manolescu, L. Ulam's Type Stability and Generalized Norms, SYMMETRY-BASEL, Volume: 12, Issue: 4, Article Number: 502, eISSN: 2073-8994, 2020;
147. Marian, E., Tita, B., Duteanu, N., Vicas, L., Ciocan, S., Jurca, T., Antal, L., Tica, O., Muresan, M., Pallag, A., Micle, O. Antimicrobial activity of fusidic acid inclusion complexes, INTERNATIONAL JOURNAL OF INFECTIOUS DISEASES, Volume: 101, Pages: 65-73, PubMed ID: 33011279, ISSN: 1201-9712, eISSN: 1878-3511, 2020;
148. Marian, E., Duteanu, N., Vicas, L., Rusu, G., Jurca, T., Muresan, M., Micle, O., Hangan, A.C., Stan, R.L., Ionescu, C., Sevastre, B., Pall, E. Synthesis, characterization of inclusion compounds of amygdalin with beta-cyclodextrin and sod-like activity and cytotoxicity on hela tumor cells, ARABIAN JOURNAL OF CHEMISTRY, Volume: 13, Issue: 8, Pages: 6828-6837, ISSN: 1878-5352, eISSN: 1878-5379, 2020;
149. Marinca, V., Herisanu, N. Optimal Auxiliary Functions Method for a Pendulum Wrapping on Two Cylinders, MATHEMATICS, Volume: 8, Issue: 8, Article Number: 1364, eISSN: 2227-7390, 2020;
150. Marinca, V., Herisanu, N. Construction of Analytic Solution to Axisymmetric Flow and Heat Transfer on a Moving Cylinder, SYMMETRY-BASEL, Volume: 12, Issue: 8, Article Number: 1335, eISSN: 2073-8994, 2020;
151. Marinescu, A.G., Cirligeriu, L.E., Boscornea-Puscu, S.A., Horhat, R.M., Sgii, S.T., Stoia, D.I., Nica, L.M. FRACTURE STRENGTH EVALUATION OF TEETH WITH DIFFERENT DESIGNS OF ENDODONTIC ACCESS CAVITIES, ROMANIAN JOURNAL OF ORAL REHABILITATION, Volume: 12, Issue: 2, Pages: 76-84, eISSN: 2066-7000, 2020;
152. Marsavina, L., Linul, E. Fracture toughness of rigid polymeric foams: A review, FATIGUE & FRACTURE OF ENGINEERING MATERIALS & STRUCTURES, Volume: 43, Issue: 11, Pages: 2483-2514, ISSN: 8756-758X, eISSN: 1460-2695, 2020;
153. Medeleanu, M., Khalaj, Z., Diudea, M.V. Rhombellane-Related Crystal Networks, IRANIAN JOURNAL OF MATHEMATICAL CHEMISTRY, Volume: 11, Issue: 2, Pages: 73-81, ISSN: 2228-6489, eISSN: 2008-9015, 2020;
154. Miclea, R.C., Dughir, C., Alexa, F., Sandru, F., Silea, I. Laser and LIDAR in a System for Visibility Distance Estimation in Fog Conditions, SENSORS, Volume: 20, Issue: 21, Article Number: 6322, PubMed ID: 33167586, eISSN: 1424-8220, 2020;
155. Milici, C., Machado, J.T., Draganescu, G. Application of the Euler and Runge-Kutta Generalized Methods for FDE and Symbolic Packages in the Analysis of Some Fractional Attractors, INTERNATIONAL JOURNAL OF NONLINEAR SCIENCES AND NUMERICAL SIMULATION, Volume: 21, Issue: 2, Pages: 159-170, ISSN: 1565-1339, eISSN: 2191-0294, 2020;

156. Militaru, B.A., Pode, R., Lupa, L., Schmidt, W., Tekle-Roettering, A., Kazamer, N. Using Sewage Sludge Ash as an Efficient Adsorbent for Pb (II) and Cu (II) in Single and Binary Systems, *MOLECULES*, Volume: 25, Issue: 11, Article Number: 2559, PubMed ID: 32486401, eISSN: 1420-3049, 2020;
157. Militaru, B.A., Pode, R., Lupa, L., Manea, F. STRUVITE PRECIPITATION FROM SEWAGE SLUDGE ASH, *ENVIRONMENTAL ENGINEERING AND MANAGEMENT JOURNAL*, Volume: 19, Issue: 2, Pages: 303-310, ISSN: 1582-9596, eISSN: 1843-3707, 2020;
158. Mirsu, R., Simion, G., Căleanu, C.D., Pop-Calimanu, I.M. A PointNet-Based Solution for 3D Hand Gesture Recognition, *SENSORS*, Volume: 20, Issue: 11, Article Number: 3226, PubMed ID: 32517141, eISSN: 1424-8220, 2020;
159. Mitelea, I., Bordeasu, I., Frant, F., Utu, I.D. Effect of heat treatment on corrosion and ultrasonic cavitation erosion resistance of AISi10MnMg alloy, *MATERIALS TESTING*, Volume: 62, Issue: 9, Pages: 921-926, ISSN: 0025-5300, 2020;
160. Mitelea, I., Simionescu, D., Craciunescu, C.M., Utu, I.D. Fracture toughness of MAG welds in pulsed current of API 5L AX65M thermomechanical treated steel, *MATERIALS TESTING*, Volume: 62, Issue: 3, Pages: 304-310, ISSN: 0025-5300, 2020;
161. Mosoarca, G., Vancea, C., Popa, S., Gheju, M., Boran, S. Syringa vulgaris leaves powder a novel low-cost adsorbent for methylene blue removal: isotherms, kinetics, thermodynamic and optimization by Taguchi method, *SCIENTIFIC REPORTS*, Volume: 10, Issue: 1, Article Number: 17676, PubMed ID: 33077788, ISSN: 2045-2322, 2020;
162. Mosoarca, G., Vancea, C., Popa, S., Boran, S., Tanasie, C. A green approach for treatment of wastewater with manganese using wood ash, *JOURNAL OF CHEMICAL TECHNOLOGY AND BIOTECHNOLOGY*, Volume: 95, Issue: 6, Pages: 1781-1789, ISSN: 0268-2575, eISSN: 1097-4660, 2020;
163. Mosoarca, M., Onescu, I., Onescu, E., Anastasiadis, A. Seismic vulnerability assessment methodology for historic masonry buildings in the near-field areas, *ENGINEERING FAILURE ANALYSIS*, Volume: 115, Article Number: 104662, ISSN: 1350-6307, eISSN: 1873-1961, 2020;
164. Muntean, R., Pascal, D.T., Rost, U., Marginean, G., Brodmann, M., Vaszilcsin, N. Synthesis and characterisation of platinum-cobalt-manganese ternary alloy catalysts supported on carbon nanofibers: An alternative catalyst for hydrogen evolution reaction, *INTERNATIONAL JOURNAL OF HYDROGEN ENERGY*, Volume: 45, Issue: 49, Special Issue: SI, Pages: 26217-26225, ISSN: 0360-3199, eISSN: 1879-3487, 2020;
165. Murvay, P.S., Groza, B. Efficient Physical Layer Key Agreement for FlexRay Networks, *IEEE TRANSACTIONS ON VEHICULAR TECHNOLOGY*, Volume: 69, Issue: 9, Pages: 9767-9780, ISSN: 0018-9545, eISSN: 1939-9359, 2020;
166. Murvay, P.S., Groza, B. TIDAL-CAN: Differential Timing Based Intrusion Detection and Localization for Controller Area Network, *IEEE ACCESS*, Volume: 8, Pages: 68895-68912, ISSN: 2169-3536, 2020;
167. Nagorny, A.V., Socoliuc, V., Petrenko, V.I., Almasy, L., Ivankov, O.I., Avdeev, M.V., Bulavin, L.A., Vekas, L. Structural characterization of concentrated aqueous ferrofluids, *JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS*, Volume: 501, Article Number: 166445, ISSN: 0304-8853, eISSN: 1873-4766, 2020;
168. Negirla, P., Druta, R., Silea, I. Availability Improvements through Data Slicing in PLC Smart Grid Networks, *SENSORS*, Volume: 20, Issue: 24, Article Number: 7256, PubMed ID: 33348872, eISSN: 1424-8220, 2020;
169. Negrea, A., Mihailescu, M., Mosoarca, G., Ciopec, M., Duteanu, N., Negrea, P., Minzatu, V. Estimation on Fixed-Bed Column Parameters of Breakthrough Behaviors for Gold Recovery by Adsorption onto Modified/Functionalized Amberlite XAD7, *INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH*, Volume: 17, Issue: 18, Article Number: 6868, PubMed ID: 32962235, eISSN: 1660-4601, 2020;
170. Negrea, P., Gabor, A., Davidescu, C.M., Ciopec, M., Negrea, A., Duteanu, N. Kinetics and thermodynamics modeling of Nd(III) removal from aqueous solution using modified Amberlite XAD7, *JOURNAL OF RARE EARTHS*, Volume: 38, Issue: 3, Pages: 306-314, ISSN: 1002-0721, 2020;
171. Negrea, R. On a class of stochastic integro-differential equations, *APPLICABLE ANALYSIS*, ISSN: 0003-6811, eISSN: 1563-504X, 2020;
172. Negrea, R. On a class of nonlinear stochastic integral equations, *NONLINEAR ANALYSIS-REAL WORLD APPLICATIONS*, Volume: 54, Article Number: 103104, ISSN: 1468-1218, 2020;

173. Negrea, R. On the functional equation  $f(x \text{ plus } y) = f(x) \text{ plus } f(y)$ , MONATSHEFTE FÜR MATHEMATIK, Volume: 191, Issue: 3, Pages: 635-637, ISSN: 0026-9255, eISSN: 1436-5081, 2020;
174. Negrea, R. On a nonlinear stochastic integral equation, MONATSHEFTE FÜR MATHEMATIK, Volume: 192, Issue: 4, Pages: 905-914, ISSN: 0026-9255, eISSN: 1436-5081, 2020;
175. Nichita, I., Lupa, L., Visa, A., Popa, A. One-pot synthesis, characterization and in vitro antibacterial evaluation of bioactive "aminophosphinic acid" groups grafted onto polymeric-support, POLYMER BULLETIN, Volume: 78, Issue: 5, Pages: 2505-2522, ISSN: 0170-0839, eISSN: 1436-2449, 2020;
176. Nicola, R., Costisor, O., Ciopec, M., Negrea, A., Lazau, R., Ianasi, C., Piciorus, E.M., Len, A., Almasy, L., Szerb, E.I., Putz, A.M. Silica-Coated Magnetic Nanocomposites for Pb<sup>2+</sup> Removal from Aqueous Solution, APPLIED SCIENCES-BASEL, Volume: 10, Issue: 8, Article Number: 2726, eISSN: 2076-3417, 2020;
177. Nicolae, A., Korodi, A., Silea, I. Weather-Based Prediction Strategy inside the Proactive Historian with Application in Wastewater Treatment Plants, APPLIED SCIENCES-BASEL, Volume: 10, Issue: 9, Article Number: 3015, eISSN: 2076-3417, 2020;
178. Onchis, D.M., Istin, C., Tudoran, C., Tudoran, M., Real, P. Timely-Automatic Procedure for Estimating the Endocardial Limits of the Left Ventricle Assessed Echocardiographically in Clinical Practice, DIAGNOSTICS, Volume: 10, Issue: 1, Article Number: 40, PubMed ID: 31941079, eISSN: 2075-4418, 2020;
179. Ordodi, V., Pana, A.M., Dumitrel, A., Hadaruga, D., Tamas, A., Pode, V., Todea, A., Paunescu, V., Negru, S. AN ECOLOGICAL TREATMENT METHOD FOR IFOSFAMIDE CONTAMINATED WASTEWATER RESULTING FROM ONCOLOGICAL THERAPY, STUDIA UNIVERSITATIS BABES-BOLYAI CHEMIA, Volume: 65, Issue: 1, Pages: 267-277, ISSN: 1224-7154, 2020;
180. Osaci, M., Cacciola, M. Influence of the magnetic nanoparticle coating on the magnetic relaxation time, BEILSTEIN JOURNAL OF NANOTECHNOLOGY, Volume: 11, Pages: 1207-1216, PubMed ID: 32832316, ISSN: 2190-4286, 2020;
181. Ouamri, M.A., Ottesteanu, M.E., Isar, A., Azni, M. Coverage, Handoff and cost optimization for 5G Heterogeneous Network, PHYSICAL COMMUNICATION, Volume: 39, Article Number: 101037, ISSN: 1874-4907, 2020;
182. Pana, A., Baloi, A., Molnar-Matei, F. New method for calculating the susceptances of a balancing capacitive compensator for a three-phase four-wire distribution network, INTERNATIONAL JOURNAL OF ELECTRICAL POWER & ENERGY SYSTEMS, Volume: 115, Article Number: 105414, ISSN: 0142-0615, eISSN: 1879-3517, 2020;
183. Pana, A.M., Ordodi, V., Rusu, G., Gherman, V., Bandur, G., Rusnac, L.M., Dumitrel, G.A. Biodegradation Pattern of Glycopolymer Based on D-Mannose Oligomer and Hydroxypropyl Acrylate, POLYMERS, Volume: 12, Issue: 3, Article Number: 704, PubMed ID: 32235772, eISSN: 2073-4360, 2020;
184. Papaparaskeva, G., Dinev, M.M., Krasia-Christoforou, T., Turcu, R., Porav, S.A., Balanean, F., Socoliuc, V. White Magnetic Paper with Zero Remanence Based on Electrospun Cellulose Microfibers Doped with Iron Oxide Nanoparticles, NANOMATERIALS, Volume: 10, Issue: 3, Article Number: 517, PubMed ID: 32178410, eISSN: 2079-4991, 2020;
185. Pascu, B., Negrea, A., Ciopec, M., Davidescu, C.M., Negrea, P., Gherman, V., Duteanu, N. New Generation of Antibacterial Products Based on Colloidal Silver, MATERIALS, Volume: 13, Issue: 7, Article Number: 1578, PubMed ID: 32235381, eISSN: 1996-1944, 2020;
186. Pascu, B., Ardean, C., Davidescu, C.M., Negrea, A., Ciopec, M., Duteanu, N., Negrea, P., Rusu, G. Modified Chitosan for Silver Recovery-Kinetics, Thermodynamic, and Equilibrium Studies, MATERIALS, Volume: 13, Issue: 3, Article Number: 657, PubMed ID: 32024185, eISSN: 1996-1944, 2020;
187. Patrut, B., Maris, S.A., Maris, S. Coding with Patience (Programare cu Rabdare) - a Non-Formal Educational Initiative to Increase the ICT Skills, POSTMODERN OPENINGS, Volume: 11, Issue: 3, Pages: 290-302, ISSN: 2068-0236, eISSN: 2069-9387, 2020;
188. Perdiou, A.S., Eldin, R.A., Hajaj, K.R., Rominu, M., Sinescu, C., Negrutiu, M., Negru, R.M., Hajaj, T. A Comparative Evaluation of Stress Resistance Between Nano-hybrid Composite and Ormocer Restorations on Posterior Teeth - in vitro Study, MATERIALE PLASTICE, Volume: 57, Issue: 1, Pages: 8-12, ISSN: 2668-8220, eISSN: 0025-5289, 2020;

189. Perju-Mitran, A., Zirra, D., Carutasu, G., Pirjan, A., Stanica, J.L. Applying the Technology Acceptance Model to Assess the Intention to Use an Aftermarket eCall Based on 112 Device for Passenger Vehicles to Ensure Sustainable Rescue Operations on European Roads, SUSTAINABILITY, Volume: 12, Issue: 22, Article Number: 9488, eISSN: 2071-1050, 2020;
190. Pevnaya, M.V., Drozdova, A.A., Cernicova-Buca, M. Making Room for Volunteer Participation in Managing Public Affairs: A Russian Experience, SUSTAINABILITY, Volume: 12, Issue: 24, Article Number: 10229, eISSN: 2071-1050, 2020;
191. Philippou, K., Christou, C.N., Socoliuc, V., Vekas, L., Tanasa, E., Miclau, M., Pashalidis, I., Krasia-Christoforou, T. Superparamagnetic polyvinylpyrrolidone/chitosan/Fe3O4 electrospun nanofibers as effective U(VI) adsorbents, JOURNAL OF APPLIED POLYMER SCIENCE, Volume: 138, Issue: 15, Article Number: e50212, ISSN: 0021-8995, eISSN: 1097-4628, 2020;
192. Pietras, D., Linul, E., Sadowski, T., Rusinek, A. Out-of-plane crushing response of aluminum honeycombs in-situ filled with graphene-reinforced polyurethane foam, COMPOSITE STRUCTURES, Volume: 249, Article Number: 112548, ISSN: 0263-8223, eISSN: 1879-1085, 2020;
193. Pohoryles, D.A., Maduta, C., Bournas, D.A., Kouris, L.A. Energy performance of existing residential buildings in Europe: A novel approach combining energy with seismic retrofitting, ENERGY AND BUILDINGS, Volume: 223, Article Number: 110024, ISSN: 0378-7788, eISSN: 1872-6178, 2020;
194. Pop, M.D., Prostean, O., Prostean, G. Fault Detection Based on Parity Equations in Multiple Lane Road Car-Following Models Using Bayesian Lane Change Estimation, JOURNAL OF SENSOR AND ACTUATOR NETWORKS, Volume: 9, Issue: 4, Article Number: 52, eISSN: 2224-2708, 2020;
195. Pop, M.D., Prostean, O., David, T.M., Prostean, G. Hybrid Solution Combining Kalman Filtering with Takagi-Sugeno Fuzzy Inference System for Online Car-Following Model Calibration, SENSORS, Volume: 20, Issue: 19, Article Number: 5539, PubMed ID: 32992622, eISSN: 1424-8220, 2020;
196. Pop, M.C. Teaching and Learning Strategies for Specialised Translation in MLA: The Project in Technical Translation Class, LITERA-JOURNAL OF LANGUAGE LITERATURE AND CULTURE STUDIES, Volume: 30, Issue: 1, Pages: 45-62, ISSN: 1304-0057, eISSN: 2602-2117, 2020;
197. Pop, N., Beiu, R., Svera, P., Mnerie, C., Hutiu, G., Duma, V.F. THERMAL DEGRADATION OF PHOTOVOLTAIC PANELS: EVALUATIONS USING A RANGE OF TESTING METHODS, JOURNAL OF ENVIRONMENTAL PROTECTION AND ECOLOGY, Volume: 21, Issue: 6, Pages: 2083-2092, ISSN: 1311-5065, 2020;
198. Pop-Calimanu, I.M., Balint, M., Lascu, D. A New Hybrid Cuk DC-DC Converter with Coupled Inductors, ELECTRONICS, Volume: 9, Issue: 12, Article Number: 2188, eISSN: 2079-9292, 2020;
199. Popa, C.A. Dissipativity of impulsive matrix-valued neural networks with leakage delay and mixed delays, NEUROCOMPUTING, Volume: 405, Pages: 85-95, ISSN: 0925-2312, eISSN: 1872-8286, 2020;
200. Popa, C.A., Kaslik, E. Finite-Time Mittag-Leffler Synchronization of Neutral-Type Fractional-Order Neural Networks with Leakage Delay and Time-Varying Delays, MATHEMATICS, Volume: 8, Issue: 7, Article Number: 1146, eISSN: 2227-7390, 2020;
201. Popa, C.A. Global mu-stability of neutral-type impulsive complex-valued BAM neural networks with leakage delay and unbounded time-varying delays, NEUROCOMPUTING, Volume: 376, Pages: 73-94, ISSN: 0925-2312, eISSN: 1872-8286, 2020;
202. Popa, S., Milea, M.S., Boran, S., Nitu, S.V., Mosoarca, G.E., Vancea, C., Lazau, R.I. Rapid adulteration detection of cold pressed oils with their refined versions by UV-Vis spectroscopy, SCIENTIFIC REPORTS, Volume: 10, Issue: 1, Article Number: 16100, PubMed ID: 32999344, ISSN: 2045-2322, 2020;
203. Popescu, E., Popescu, C.A., Herbei, M.V., Horablaga, A., Smulea, A. 3D MODELING OF WASTE DUMPS IN ORDER TO ECOLOGY OF MINING AREAS, AGROLIFE SCIENTIFIC JOURNAL, Volume: 9, Issue: 2, Pages: 240-249, ISSN: 2285-5718, eISSN: 2286-0126, 2020;
204. Popescu, G., Radulov, I., Iordanescu, O.A., Orboi, M.D., Radulescu, L., Druga, M., Bujanca, G.S., David, I., Hadaruga, D.I., Lucan, C.A., Hadaruga, N.G., Ravis, M. Karl Fischer Water Titration-Principal Component Analysis Approach on Bread Products, APPLIED SCIENCES-BASEL, Volume: 10, Issue: 18, Article Number: 6518, eISSN: 2076-3417, 2020;
205. Precup, R.E., Voisan, E.I., Petriu, E.M., Tomescu, M.L., David, R.C., Szedlak-Stinean, A.I., Roman, R.C. Grey Wolf Optimizer-Based Approaches to Path Planning and Fuzzy Logic-based Tracking Control for Mobile Robots, INTERNATIONAL JOURNAL OF COMPUTERS COMMUNICATIONS & CONTROL, Volume: 15, Issue: 3, Article Number: 3844, ISSN: 1841-9836, eISSN: 1841-9844, 2020;

206. Precup, R.E., Roman, R.C., Teban, T.A., Albu, A., Petriu, E.M., Pozna, C. Model-Free Control of Finger Dynamics in Prosthetic Hand Myoelectric-based Control Systems, STUDIES IN INFORMATICS AND CONTROL, Volume: 29, Issue: 4, Pages: 399-410, ISSN: 1220-1766, 2020;
207. Precup, R.E., Preitl, S., Petriu, E.M., Roman, R.C., Bojan-Dragos, C.A., Hedrea, E.L., Szedlak-Stinean, A.I. A CENTER MANIFOLD THEORY-BASED APPROACH TO THE STABILITY ANALYSIS OF STATE FEEDBACK TAKAGI-SUGENO-KANG FUZZY CONTROL SYSTEMS, FACTA UNIVERSITATIS-SERIES MECHANICAL ENGINEERING, Volume: 18, Issue: 2, Pages: 189-204, ISSN: 0354-2025, eISSN: 2335-0164, 2020;
208. Precup, R.E., Teban, T.A., Albu, A., Borlea, A.B., Zamfirache, I.A., Petriu, E.M. Evolving Fuzzy Models for Prosthetic Hand Myoelectric-Based Control, IEEE TRANSACTIONS ON INSTRUMENTATION AND MEASUREMENT, Volume: 69, Issue: 7, Pages: 4625-4636, ISSN: 0018-9456, eISSN: 1557-9662, 2020;
209. Pugna, A., Negrea, R., Linul, E., Marsavina, L. Is Fracture Toughness of PUR Foams a Material Property? A Statistical Approach, MATERIALS, Volume: 13, Issue: 21, Article Number: 4868, PubMed ID: 33143072, eISSN: 1996-1944, 2020;
210. Pugna, A.P., Potra, S.A., Negrea, R. A strategic decision making tool for new product and service design, MANAGEMENT DECISION, Volume: 59, Issue: 2, Pages: 406-425, ISSN: 0025-1747, eISSN: 1758-6070, 2020;
211. Radac, M.B., Lala, T. Robust Control of Unknown Observable Nonlinear Systems Solved as a Zero-Sum Game, IEEE ACCESS, Volume: 8, Pages: 214153-214165, ISSN: 2169-3536, 2020;
212. Radulescu-Grad, M.E., Visa, A., Milea, M.S., Laza, R.I., Popa, S., Funar-Timofei, S. Synthesis, spectral characterization, and theoretical investigations of a new azo-stilbene dye for acrylic resins, JOURNAL OF MOLECULAR STRUCTURE, Volume: 1217, Article Number: 128380, ISSN: 0022-2860, eISSN: 1872-8014, 2020;
213. Ratiu, S.A., Mihon, N.L., Armion, M.D. STUDY ON THE RECYCLING METHODS OF USED ENGINE OIL, INGINERIA AUTOMOBILULUI, Issue: 55, Pages: 20-22, ISSN: 1842-4074, 2020;
214. Ratiu, S.A., Mihon, N.L., Laza, I., Armioni, M.D. A REVIEW ON THE CONTAMINATION OF USED ENGINE OIL, INGINERIA AUTOMOBILULUI, Issue: 57, Pages: 20-25, ISSN: 1842-4074, 2020;
215. Remes, A., Manea, F., Motoc, S., Baci, A., Szerb, E.I., Gascon, J., Gug, G. Highly Sensitive Non-Enzymatic Detection of Glucose at MWCNT-CuBTC Composite Electrode, APPLIED SCIENCES-BASEL, Volume: 10, Issue: 23, Article Number: 8419, eISSN: 2076-3417, 2020;
216. Roata, I.C., Croitoru, C., Pascu, A., Stanciu, E.M., Hulka, I., Petre, I., Gabor, C., Patroi, D., Sbarcea, B.G. Surface engineering of Ni-Al coatings through concentrated solar heat treatment, APPLIED SURFACE SCIENCE, Volume: 506, Article Number: 144185, ISSN: 0169-4332, eISSN: 1873-5584, 2020;
217. Rusu, D., Stratul, S.I., Calniceanu, H., Boariu, M., Ogodescu, A., Milicescu, S., Didilescu, A., Roman, A., Surlin, P., Locovei, C., Chiperi, M., Solomon, S., Nica, L. A qualitative and semiquantitative SEM study of the morphology of the biofilm on root surfaces of human teeth with endodontic-periodontal lesions, EXPERIMENTAL AND THERAPEUTIC MEDICINE, Volume: 20, Issue: 6, Article Number: 201, PubMed ID: 33133249, ISSN: 1792-0981, eISSN: 1792-1015, 2020;
218. Sajfert, V., Pop, N., Popov, D. Geometrical analyses of nanostructures, NANOSYSTEMS-PHYSICS CHEMISTRY MATHEMATICS, Volume: 11, Issue: 1, Pages: 36-43, ISSN: 2220-8054, eISSN: 2305-7971, 2020;
219. Salvia, R., Halbac-Cotoara-Zamfir, R., Cividino, S., Salvati, L., Quaranta, G. From Rural Spaces to Peri-Urban Districts: Metropolitan Growth, Sparse Settlements and Demographic Dynamics in a Mediterranean Region, LAND, Volume: 9, Issue: 6, Article Number: 200, eISSN: 2073-445X, 2020;
220. Sarb, D., Bogdan, R., Pop, N. PRACTICAL RELIABILITY ASSESSMENT FOR INTERNET OF THINGS BY MEANS OF MONTE CARLO SIMULATION, JOURNAL OF ENVIRONMENTAL PROTECTION AND ECOLOGY, Volume: 21, Issue: 2, Pages: 507-517, ISSN: 1311-5065, 2020;
221. Sarbu, I., Mirza, M., Crasmareanu, E. OPTIMISATION OF DISTRICT HEATING SYSTEMS USING HEURISTIC METHODS: A REVIEW, PROCEEDINGS OF THE ROMANIAN ACADEMY SERIES A-MATHEMATICS PHYSICS TECHNICAL SCIENCES INFORMATION SCIENCE, Volume: 21, Issue: 4, Pages: 319-328, ISSN: 1454-9069, 2020;
222. Sarbu, I., Sebarchievici, C. Exploratory Research to Improve Energy-Efficiency of a Ground-Coupled Heat Pump Utilizing an Automatic Control Device of Circulation Pump Speed, ENERGIES, Volume: 13, Issue: 19, Article Number: 5016, eISSN: 1996-1073, 2020;

223. Sarfraz, M., Shah, S.G.M., Ivascu, L., Qureshi, M.A.A. Explicating the impact of hierarchical CEO succession on small-medium enterprises' performance and cash holdings, *INTERNATIONAL JOURNAL OF FINANCE & ECONOMICS*, ISSN: 1076-9307, eISSN: 1099-1158, 2020;
224. Sbarcea, L., Tanase, I.M., Ledeti, A., Cirioban, D., Vlase, G., Barvinschi, P., Miclau, M., Varut, R.M., Trandafirescu, C., Ledeti, I. Encapsulation of Risperidone by Methylated beta-Cyclodextrins: Physicochemical and Molecular Modeling Studies, *MOLECULES*, Volume: 25, Issue: 23, Article Number: 5694, PubMed ID: 33287127, eISSN: 1420-3049, 2020;
225. Serban, D.A., Furtos, G., Marsavina, L., Sosdean, C., Negru, R. Numerical modelling of the mechanical behaviour of wood fibre-reinforced geopolymers, *CONTINUUM MECHANICS AND THERMODYNAMICS*, ISSN: 0935-1175, eISSN: 1432-0959, 2020;
226. Serban, D.A., Negru, R., Filipescu, H., Marsavina, L. Investigations on the influence of the triaxial state of stress on the failure of polyurethane rigid foams, *CONTINUUM MECHANICS AND THERMODYNAMICS*, ISSN: 0935-1175, eISSN: 1432-0959, 2020;
227. Shah, S.G.M., Sarfraz, M., Ivascu, L. Assessing the interrelationship corporate environmental responsibility, innovative strategies, cognitive and hierarchical CEO: A stakeholder theory perspective, *CORPORATE SOCIAL RESPONSIBILITY AND ENVIRONMENTAL MANAGEMENT*, Volume: 28, Issue: 1, Pages: 457-473, ISSN: 1535-3958, eISSN: 1535-3966, 2020;
228. Simo, A., Dzitac, S., Frigura-Iliasa, F.M., Musuroi, S., Andea, P., Meianu, D. Technical Solution for a Real-Time Air Quality Monitoring System, *INTERNATIONAL JOURNAL OF COMPUTERS COMMUNICATIONS & CONTROL*, Volume: 15, Issue: 4, Article Number: 3891, ISSN: 1841-9836, eISSN: 1841-9844, 2020;
229. Simon, S., Stoian, C.E., Gherhes, V. The Concept of Sustainability in the Romanian Top Universities' Strategic Plans, *SUSTAINABILITY*, Volume: 12, Issue: 7, Article Number: 2757, eISSN: 2071-1050, 2020;
230. Smuleac, A., Smuleac, L., Man, T.E., Popescu, C.A., Imbrea, F., Radulov, I., Adamov, T., Pascalau, R. Use of Modern Technologies for the Conservation of Historical Heritage in Water Management, *WATER*, Volume: 12, Issue: 10, Article Number: 2895, eISSN: 2073-4441, 2020;
231. Stan, D.V. Considerations on the Drying of the Raw Material and Consequences on the Quality of the Injected Products, *MATERIALE PLASTICE*, Volume: 57, Issue: 1, Pages: 46-56, ISSN: 2668-8220, eISSN: 0025-5289, 2020;
232. Stavi, I., Siad, S.M., Kyriazopoulos, A.P., Halbac-Cotoara-Zamfir, R. Water runoff harvesting systems for restoration of degraded rangelands: A review of challenges and opportunities, *JOURNAL OF ENVIRONMENTAL MANAGEMENT*, Volume: 255, Article Number: 109823, PubMed ID: 31785458, ISSN: 0301-4797, eISSN: 1095-8630, 2020;
233. Stefanovic, N., Blagojevic, M., Pokrajac, I., Greconici, M., Cen, Y.G., Mladenovic, V. A Symbolic Encapsulation Point as Tool for 5G Wideband Channel Cross-Layer Modeling, *ENTROPY*, Volume: 22, Issue: 10, Article Number: 1151, PubMed ID: 33286920, eISSN: 1099-4300, 2020;
234. Stirb, I. Improving runtime performance and energy consumption through balanced data locality with NUMA-BTLP and NUMA-BTDM static algorithms for thread classification and thread type-aware mapping, *INTERNATIONAL JOURNAL OF COMPUTATIONAL SCIENCE AND ENGINEERING*, Volume: 22, Issue: 2-3, Pages: 200-210, ISSN: 1742-7185, eISSN: 1742-7193, 2020;
235. Stoia, D.L., Marsavina, L., Linul, E. Mode I Fracture Toughness of Polyamide and Alumide Samples obtained by Selective Laser Sintering Additive Process, *POLYMERS*, Volume: 12, Issue: 3, Article Number: 640, PubMed ID: 32168974, eISSN: 2073-4360, 2020;
236. Stratan, A., Zub, C.I., Dubina, D. Prequalification of a set of buckling restrained braces: Part I - experimental tests, *STEEL AND COMPOSITE STRUCTURES*, Volume: 34, Issue: 4, Pages: 547-559, ISSN: 1229-9367, eISSN: 1598-6233, 2020;
237. Sumalan, R.L., Muntean, C., Kostov, A., Krzanovic, D., Jucor, N.L., Ciulca, S.I., Sumalan, R.M., Gheju, M., Cernicova-Buca, M. The cup plant (*Silphium perfoliatum* L.) - a viable solution for bioremediating soils polluted with heavy metals, *NOTULAE BOTANICAE HORTI AGROBOTANICI CLUJ-NAPOCA*, Volume: 48, Issue: 4, Pages: 2095-2113, ISSN: 0255-965X, eISSN: 1842-4309, 2020;
238. Susan-Resiga, D., Malaescu, I., Marinica, O., Marin, C.N. Magnetorheological properties of a kerosene-based ferrofluid with magnetite particles hydrophobized in the absence of the dispersion medium, *PHYSICA B-CONDENSED MATTER*, Volume: 587, Article Number: 412150, ISSN: 0921-4526, eISSN: 1873-2135, 2020;
239. Szabo, R.Z., Herceg, I.V., Hanak, R., Hortovanyi, L., Romanova, A., Mocan, M., Djuricin, D. Industry 4.0 Implementation in B2B Companies: Cross-Country Empirical Evidence on Digital Transformation in the CEE Region, *SUSTAINABILITY*, Volume: 12, Issue: 22, Article Number: 9538, eISSN: 2071-1050, 2020;

240. Tamas, A., Cozma, I., Cocheci, L., Lupa, L., Rusu, G. Adsorption of Orange II Onto Zn<sub>2</sub>Al-Layered Double Hydroxide Prepared From Zinc Ash, *FRONTIERS IN CHEMISTRY*, Volume: 8, Article Number: 573535, PubMed ID: 33425845, ISSN: 2296-2646, 2020;
241. Tamasila, M., Prostean, G., Ivascu, L., Cioca, L.I., Draghici, A., Diaconescu, A. Evaluating and prioritizing municipal solid waste management-related factors in Romania using fuzzy AHP and TOPSIS, *JOURNAL OF INTELLIGENT & FUZZY SYSTEMS*, Volume: 38, Issue: 5, Pages: 6111-6127, ISSN: 1064-1246, eISSN: 1875-8967, 2020;
242. Tanasa, C., Dan, D., Becchio, C., Corgnati, S.P., Stoian, V. Cost-optimal and indoor environmental quality assessment for residential buildings towards EU long-term climate targets, *ENERGY FOR SUSTAINABLE DEVELOPMENT*, Volume: 59, Pages: 49-61, ISSN: 0973-0826, eISSN: 2352-4669, 2020;
243. Tanase, I.M., Sbarcea, L., Ledeti, A., Vlase, G., Barvinschi, P., Varut, R.M., Dragomirescu, A., Axente, C., Ledeti, I. Physicochemical characterization and molecular modeling study of host-guest systems of aripiprazole and functionalized cyclodextrins, *JOURNAL OF THERMAL ANALYSIS AND CALORIMETRY*, Volume: 141, Issue: 3, Pages: 1027-1039, ISSN: 1388-6150, eISSN: 1588-2926, 2020;
244. Tanase, I.M., Sbarcea, L., Ledeti, A., Barvinschi, P., Cirioban, D., Vlase, G., Varut, R.M., Ledeti, I. Compatibility studies with pharmaceutical excipients for aripiprazole-heptakis (2,6-di-O-methyl)-beta-cyclodextrin supramolecular adduct, *JOURNAL OF THERMAL ANALYSIS AND CALORIMETRY*, Volume: 142, Issue: 5, Pages: 1963-1976, ISSN: 1388-6150, eISSN: 1588-2926, 2020;
245. Tekle-Roettering, A., Lim, S., Reisz, E., Lutze, H.V., Abdighahroudi, M.S., Willach, S., Schmidt, W., Tentscher, P.R., Rentsch, D., McArdell, C.S., Schmidt, T.C., von Gunten, U. Reactions of pyrrole, imidazole, and pyrazole with ozone: kinetics and mechanisms, *ENVIRONMENTAL SCIENCE-WATER RESEARCH & TECHNOLOGY*, Volume: 6, Issue: 4, Pages: 976-992, ISSN: 2053-1400, eISSN: 2053-1419, 2020;
246. Tigan, G., Lugojan, S., Ciurdariu, L. Analysis of Degenerate Chenciner Bifurcation, *INTERNATIONAL JOURNAL OF BIFURCATION AND CHAOS*, Volume: 30, Issue: 16, Article Number: 2050245, ISSN: 0218-1274, eISSN: 1793-6551, 2020;
247. Tigan, G., Lazureanu, C., Munteanu, F., Sterbeti, C., Florea, A. Bifurcation diagrams in a class of Kolmogorov systems, *NONLINEAR ANALYSIS-REAL WORLD APPLICATIONS*, Volume: 56, Article Number: 103154, ISSN: 1468-1218, 2020;
248. Tigan, G., Efrem, R. Analysis of a map-based neuronal model, *JOURNAL OF DIFFERENCE EQUATIONS AND APPLICATIONS*, Volume: 26, Issue: 5, Pages: 643-656, ISSN: 1023-6198, eISSN: 1563-5120, 2020;
249. Tiwari, A.K., Adewuyi, A.O., Albulescu, C.T., Wohar, M.E. Empirical evidence of extreme dependence and contagion risk between main cryptocurrencies, *NORTH AMERICAN JOURNAL OF ECONOMICS AND FINANCE*, Volume: 51, Article Number: 101083, ISSN: 1062-9408, eISSN: 1879-0860, 2020;
250. Tmusic, G., Manfreda, S., Aasen, H., James, M.R., Goncalves, G., Ben-Dor, E., Brook, A., Polinova, M., Arranz, J.J., Meszaros, J., Zhuang, R.D., Johansen, K., Malbeteau, Y., de Lima, I.P., Davids, C., Herban, S., McCabe, M.F. Current Practices in UAS-based Environmental Monitoring, *REMOTE SENSING*, Volume: 12, Issue: 6, Article Number: 1001, eISSN: 2072-4292, 2020;
251. Todea, A., Aparaschivei, D., Bitcan, I., Ledeti, I.V., Bandur, G., Peter, F., Nagy, L., Keki, S., Biro, E. Thermal behavior of oligo[(epsilon-caprolactone)-co-delta-gluconolactone] enzymatically synthesized in reaction conditions optimized by experimental design, *JOURNAL OF THERMAL ANALYSIS AND CALORIMETRY*, Volume: 141, Issue: 3, Pages: 1017-1026, ISSN: 1388-6150, eISSN: 1588-2926, 2020;
252. Topirceanu, A., Udrescu, L., Udrescu, M., Mihaicuta, S. Gender Phenotyping of Patients with Obstructive Sleep Apnea Syndrome Using a Network Science Approach, *JOURNAL OF CLINICAL MEDICINE*, Volume: 9, Issue: 12, Article Number: 4025, PubMed ID: 33322816, eISSN: 2077-0383, 2020;
253. Topirceanu, A., Precup, R.E. A framework for improving electoral forecasting based on time-aware polling, *SOCIAL NETWORK ANALYSIS AND MINING*, Volume: 10, Issue: 1, Article Number: 39, ISSN: 1869-5450, eISSN: 1869-5469, 2020;
254. Tudoran, R.M., Girban, A. On the rattleback dynamics, *JOURNAL OF MATHEMATICAL ANALYSIS AND APPLICATIONS*, Volume: 488, Issue: 1, Article Number: 124066, ISSN: 0022-247X, eISSN: 1096-0813, 2020;
255. Tulcan, A., Vasilescu, M.D., Tulcan, L. Study of the Influence of Technological Parameters on Generating Flat Part with Cylindrical Features in 3D Printing with Resin Cured by Optical Processing, *POLYMERS*, Volume: 12, Issue: 9, Article Number: 1941, PubMed ID: 32867332, eISSN: 2073-4360, 2020;

256. Udrescu, L., Bogdan, P., Chis, A., Sirbu, I.O., Topirceanu, A., Varut, R.M., Udrescu, M. Uncovering New Drug Properties in Target-Based Drug-Drug Similarity Networks, *PHARMACEUTICS*, Volume: 12, Issue: 9, Article Number: 879, PubMed ID: 32947845, eISSN: 1999-4923, 2020;
257. Ungurean, L., Micea, M.V., Carstoiu, G. Online state of health prediction method for lithium-ion batteries, based on gated recurrent unit neural networks, *INTERNATIONAL JOURNAL OF ENERGY RESEARCH*, Volume: 44, Issue: 8, Pages: 6767-6777, ISSN: 0363-907X, eISSN: 1099-114X, 2020;
258. Ungureanu, V.I., Miclea, R.C., Korodi, A., Silea, I. A Novel Approach against Sun Glare to Enhance Driver Safety, *APPLIED SCIENCES-BASEL*, Volume: 10, Issue: 9, Article Number: 3032, eISSN: 2076-3417, 2020;
259. Ursu, D., Dabici, A., Miclau, M., Miclau, N. Low-temperature hydrothermal synthesis of hierarchical flower-like Cu<sub>2</sub>O<sub>4</sub> superstructures, *PROCESSING AND APPLICATION OF CERAMICS*, Volume: 14, Issue: 2, Pages: 113-118, ISSN: 1820-6131, eISSN: 2406-1034, 2020;
260. Utu, I.D., Muntean, R., Mitelea, I. Corrosion and Wear Properties of Zn-Based Composite Coatings, *JOURNAL OF MATERIALS ENGINEERING AND PERFORMANCE*, Volume: 29, Issue: 8, Pages: 5360-5365, ISSN: 1059-9495, eISSN: 1544-1024, 2020;
261. Vajda, M., Ursu, D., Mosoarca, C., Duteanu, N., Miclau, M. Experimental investigation of hydrogen insertion in copper oxide on photovoltaic performance of p-type dye-sensitized solar cell, *INTERNATIONAL JOURNAL OF ENERGY RESEARCH*, Volume: 45, Issue: 4, Pages: 5309-5317, ISSN: 0363-907X, eISSN: 1099-114X, 2020;
262. Vajda, M., Ursu, D., Duteanu, N., Miclau, M. Low lying valence band edge materials based on copper oxide for tandem dye -sensitized solar cells, *MATERIALS LETTERS*, Volume: 275, Article Number: 128151, ISSN: 0167-577X, eISSN: 1873-4979, 2020;
263. Vamvatsikos, D., Bakalis, K., Kohrangi, M., Pyrza, S., Castiglioni, C.A., Kanyilmaz, A., Morelli, F., Stratan, A., D'Aniello, M., Calado, L., Proenca, J.M., Degee, H., Hoffmeister, B., Pinkawa, M., Thanopoulos, P., Vayas, I. A risk-consistent approach to determine EN1998 behaviour factors for lateral load resisting systems, *SOIL DYNAMICS AND EARTHQUAKE ENGINEERING*, Volume: 131, Article Number: 106008, ISSN: 0267-7261, eISSN: 1879-341X, 2020;
264. van Pinxteren, B., Emirhafizovic, M., Dailidienė, I., Figurek, A., Halbac-Cotoara-Zamfir, R., Metrak, M. Education for Resilience: How a Combination of Systemic and Bottom-Up Changes in Educational Services Can Empower Dryland Communities in Africa and Central Asia, *JOURNAL OF ASIAN AND AFRICAN STUDIES*, Volume: 56, Issue: 6, Pages: 1271-1285, Article Number: 0021909620960177, ISSN: 0021-9096, eISSN: 1745-2538, 2020;
265. Vancea, C., Mihailescu, M., Negrea, A., Mosoarca, G., Ciopec, M., Duteanu, N., Negrea, P., Minzatu, V. Batch and Fixed-Bed Column Studies on Palladium Recovery from Acidic Solution by Modified MgSiO<sub>3</sub>, *INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH*, Volume: 17, Issue: 24, Article Number: 9500, PubMed ID: 33352975, eISSN: 1660-4601, 2020;
266. Vangijzegem, T., Stanicki, D., Panepinto, A., Socoliuc, V., Vekas, L., Muller, R.N., Laurent, S. Influence of Experimental Parameters of a Continuous Flow Process on the Properties of Very Small Iron Oxide Nanoparticles (VSION) Designed for Ti -Weighted Magnetic Resonance Imaging (MRI), *NANOMATERIALS*, Volume: 10, Issue: 4, Article Number: 757, eISSN: 2079-4991, 2020;
267. Varga, M.G., Rata, A.L. The effect of a group exercise program on functional performance of patients with moderate knee osteoarthritis, *BALNEO RESEARCH JOURNAL*, Volume: 11, Issue: 3, Pages: 405-408, ISSN: 2069-7597, eISSN: 2069-7619, 2020;
268. Vasiliu, R.D., Porojan, S.D., Birdeanu, M.I., Utu, I.D., Porojan, L. The Effect of Thermocycling and Surface Treatments on the Surface Roughness and Microhardness of Three Heat-Pressed Ceramics Systems, *CRYSTALS*, Volume: 10, Issue: 3, Article Number: 160, ISSN: 2073-4352, 2020;
269. Visa, A., Maranescu, B., Lupa, L., Crisan, L., Borota, A. New Efficient Adsorbent Materials for the Removal of Cd(II) from Aqueous Solutions, *NANOMATERIALS*, Volume: 10, Issue: 5, Article Number: 899, PubMed ID: 32397122, eISSN: 2079-4991, 2020;
270. Vlase, D., Mosoiu, C., Vlase, G., Lazau, R., Vlase, T. Comparative analyses of Roman mortars belonging to different ancient periods from Drobeta-Turnu Severin region, *JOURNAL OF THERMAL ANALYSIS AND CALORIMETRY*, Volume: 141, Issue: 3, Pages: 991-998, ISSN: 1388-6150, eISSN: 1588-2926, 2020;
271. Voda, M., Codrean, C., Serban, V.A., Tosa, D., Zabava, E. Magnetic properties optimization of Zr/Fe dual amorphous phase bulk metallic glasses, *UIS INGENIERIAS*, Volume: 19, Issue: 1, Pages: 67-71, ISSN: 1657-4583, eISSN: 2145-8456, 2020;
272. Voicu, A., Duteanu, N., Voicu, M., Vlad, D., Dumitrascu, V. The rcdk and cluster R packages applied to drug candidate selection, *JOURNAL OF CHEMINFORMATICS*, Volume: 12, Issue: 1, Article Number: 3, PubMed ID: 33430987, ISSN: 1758-2946, 2020;

273. Vujic, B., Pode, V., Micic, J., Popescu, F., Marceta, U., Cioabla, A.E. PRELIMINARY ASSESSMENT OF PARTICULATE CONCENTRATION NEAR COAL FIRED POWER PLANT, STUDIA UNIVERSITATIS BABES-BOLYAI CHEMIA, Volume: 65, Issue: 1, Pages: 291-303, ISSN: 1224-7154, 2020;
274. Vujic, B., Stanisavljevic, N., Popescu, F., Tosic, N., Marceta, U., Pardanjac, M., Pode, V. INFLUENCE OF LANDFILL METHANE EMISSIONS ON ENVIRONMENT - DISTRIBUTION MODELLING AND ASSESSMENT, STUDIA UNIVERSITATIS BABES-BOLYAI CHEMIA, Volume: 65, Issue: 1, Pages: 305-319, ISSN: 1224-7154, 2020;
275. Wachter, M.R., Ionel, I., Dan, D. MODEL SETUP FOR A WASTE INCINERATION LANDFILL DISPOSAL, JOURNAL OF ENVIRONMENTAL PROTECTION AND ECOLOGY, Volume: 21, Issue: 2, Pages: 596-603, ISSN: 1311-5065, 2020;
276. Zaharia, C., Duma, V.F., Sinescu, C., Socoliuc, V., Craciunescu, I., Turcu, R.P., Marin, C.N., Tudor, A., Rominu, M., Negrutiu, M.L. Dental Adhesive Interfaces Reinforced with Magnetic Nanoparticles: Evaluation and Modeling with Micro-CT versus Optical Microscopy, MATERIALS, Volume: 13, Issue: 18, Article Number: 3908, PubMed ID: 32899605, eISSN: 1996-1944, 2020;
277. Zamfira, A., Ciocarlie, H. A NETWORK INTRUSION DETECTION SYSTEM BASED ON ARTIFICIAL INTELLIGENCE AND SEMANTIC WEB TECHNIQUES, ACTA TECHNICA NAPOCENSIS SERIES-APPLIED MATHEMATICS MECHANICS AND ENGINEERING, Volume: 63, Issue: 4, Pages: 451-460, ISSN: 1221-5872, 2020;
278. Zirra, D., Perju-Mitran, A., Carutasu, G., Pirjan, A., Garais, E.G. An Analysis of the Socio-Economic and Human Life Impact of Implementing the eCall In Vehicle System (IVS) in the Purpose of Ensuring Sustainable, Improved Rescue Operations on European Roads, SUSTAINABILITY, Volume: 12, Issue: 13, Article Number: 5341, eISSN: 2071-1050, 2020;
279. Zub, C.I., Stratan, A., Dubina, D. Prequalification of a set of buckling restrained braces: Part II - numerical simulations, STEEL AND COMPOSITE STRUCTURES, Volume: 34, Issue: 4, Pages: 561-580, ISSN: 1229-9367, eISSN: 1598-6233, 2020.

\* The data was obtained from Web of Science - Clarivate Analytics in 26 August 2021



## Papers in ISI Proceedings



1. Alexa, V., Cioata, V.G., Ratiu, S.A., Dascal, A.A. Testing the functionality of the safety belts of road vehicles in the production process phase, INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Book Series: Journal of Physics Conference Series, Volume: 1426, Article Number: 012039, International Conference on Applied Sciences (ICAS), MAY 09-11, 2019, Hunedoara, ROMANIA, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;
2. Amaricai, A., Stein, D., Boncalo, O. Generalized Very High Throughput Unrolled LDPC Layered Decoder, 2020 28TH TELECOMMUNICATIONS FORUM (TELFOR), Pages: 113-116, 28th Telecommunications Forum (TELFOR), NOV 24-25, 2020, Belgrade, SERBIA, ISBN: 978-0-7381-4243-2, Published: 2020;
3. Andone, D., Ternauciuc, A., Vasiu, R., Mihaescu, V., Vert, S. DigiCulture - an open education environment for digital skills, 2020 IEEE 20TH INTERNATIONAL CONFERENCE ON ADVANCED LEARNING TECHNOLOGIES (ICALT 2020), Book Series: IEEE International Conference on Advanced Learning Technologies, Pages: 24-26, 20th IEEE International Conference on Advanced Learning Technologies (ICALT), JUL 06-09, 2020, ELECTR NETWORK, ISSN: 2161-3761, ISBN: 978-1-7281-6090-0, Published: 2020;
4. Andone, D., Mihaescu, V., Vert, S., Ternauciuc, A., Vasiu, R. Students as OERs (Open Educational Resources) co-creators, 2020 IEEE 20TH INTERNATIONAL CONFERENCE ON ADVANCED LEARNING TECHNOLOGIES (ICALT 2020), Book Series: IEEE International Conference on Advanced Learning Technologies, Pages: 34-38, 20th IEEE International Conference on Advanced Learning Technologies (ICALT), JUL 06-09, 2020, ELECTR NETWORK, ISSN: 2161-3761, ISBN: 978-1-7281-6090-0, Published: 2020;
5. Anton, A., Cioarga, R. Bunkers: Jail Application Level Firewall for the Mitigation and Identification of Service Takeover Attacks on HardenedBSD, COMPUTER SECURITY: ESORICS 2019 INTERNATIONAL WORKSHOPS, IOSEC, MSTEC, AND FINSEC, Book Series: Lecture Notes in Computer Science, Volume: 11981, Pages: 242-257, 24th European Symposium on Research in Computer Security (ESORICS), SEP 23-27, 2019, Luxembourg, LUXEMBOURG, ISSN: 0302-9743, eISSN: 1611-3349, ISBN: 978-3-030-42051-2; 978-3-030-42050-5, Published: 2020;
6. Ardelean, M., Ardelean, E., Josan, A., Socalici, V. Braking mechanism for profile rolling mill cooling bed. Analysis and operation, INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Book Series: Journal of Physics Conference Series, Volume: 1426, Article Number: 012018, International Conference on Applied Sciences (ICAS), MAY 09-11, 2019, Hunedoara, ROMANIA, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;
7. Armas, A., Beilicci, E., Beilicci, R. Hydraulic calculation of fish ladders, Sebesel River, Romania, 5TH WORLD MULTIDISCIPLINARY CIVIL ENGINEERING-ARCHITECTURE-URBAN PLANNING SYMPOSIUM (WMCAUS), Book Series: IOP Conference Series-Materials Science and Engineering, Volume: 960, Article Number: 032080, 5th World Multidisciplinary Civil Engineering-Architecture-Urban Planning Symposium (WMCAUS), JUN 15-19, 2020, Prague, CZECH REPUBLIC, ISSN: 1757-8981, Published: 2020;
8. Arvinti, B., Toader, D., Vesa, D., Costache, M. Experimental and Analytical Study of the Electric Potential using Lagrange Polynomials, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 123-126, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
9. Arvinti, B., Stolz, R., Costache, M. Spectral Component Analysis of Magnetically Unshielded Magnetocardiograms, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 249-252, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
10. Baci, I., Cuntan, C.D., Gherman, P.L. The power chopper with forced extinguish and command realized with FPGA, INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Book Series: Journal of Physics Conference Series, Volume: 1426, Article Number: 012032, International Conference on Applied Sciences (ICAS), MAY 09-11, 2019, Hunedoara, ROMANIA, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;
11. Barb, G., Otesteanu, M., Roman, M. Dynamic Spectrum Sharing for LTE-NR Downlink MIMO Systems, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 391-394, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;

12. Barb, G., Otesteanu, M., Alexa, F., Danuti, F. OFDM Multi-Numerology for Future 5G New Radio Communication Systems, 2020 28TH INTERNATIONAL CONFERENCE ON SOFTWARE, TELECOMMUNICATIONS AND COMPUTER NETWORKS (SOFTCOM), Book Series: International Conference on Software in Telecommunications and Computer Networks, Pages: 276-278, 28th International Conference on Software, Telecommunications and Computer Networks (SoftCOM), SEP 17-19, 2020, ELECTR NETWORK, ISSN: 1848-1744, ISBN: 978-953-290-099-6, Published: 2020;
13. Barb, G., Otesteanu, M. 4G/5G: A Comparative Study and Overview on What to Expect from 5G, 2020 43RD INTERNATIONAL CONFERENCE ON TELECOMMUNICATIONS AND SIGNAL PROCESSING (TSP), Pages: 37-40, 43rd International Conference on Telecommunications and Signal Processing (TSP), JUL 07-09, 2020, ELECTR NETWORK, ISBN: 978-1-7281-6376-5, Published: 2020;
14. Belc, A.L., Marc, P., Belc, F., Stirb, A. The Impact of Sample Compaction Temperatures on the Characteristics of Bituminous Concrete, 5TH WORLD MULTIDISCIPLINARY CIVIL ENGINEERING-ARCHITECTURE-URBAN PLANNING SYMPOSIUM (WMCAUS), Book Series: IOP Conference Series-Materials Science and Engineering, Volume: 960, Article Number: 032047, 5th World Multidisciplinary Civil Engineering-Architecture-Urban Planning Symposium (WMCAUS), JUN 15-19, 2020, Prague, CZECH REPUBLIC, ISSN: 1757-8981, Published: 2020;
15. Belega, D., Gasparesc, G. Accurate Measurement of the rms of a Sine-wave by Means of Low-Cost rms-to-dc Converters, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 147-150, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
16. Benea, M.L., Benea, L.P. The improvement of steel properties using Al<sub>2</sub>O<sub>3</sub> coatings deposited by plasma spraying, INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Book Series: Journal of Physics Conference Series, Volume: 1426, Article Number: 012010, International Conference on Applied Sciences (ICAS), MAY 09-11, 2019, Hunedoara, ROMANIA, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;
17. Benea, M.L., Benea, L.P. Influence of the thickness of the Tungsten Carbide (WC) coating deposited on martensitic stainless steel on corrosion resistance, INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Book Series: Journal of Physics Conference Series, Volume: 1426, Article Number: 012009, International Conference on Applied Sciences (ICAS), MAY 09-11, 2019, Hunedoara, ROMANIA, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;
18. Bercean, B., Iarca, S., Tenescu, A., Avramescu, C., Fuicu, S. Assisting Radiologists Through Automatic Cardiothoracic Ratio Calculation, 2020 IEEE 14TH INTERNATIONAL SYMPOSIUM ON APPLIED COMPUTATIONAL INTELLIGENCE AND INFORMATICS (SACI 2020), Pages: 173-177, IEEE 14th International Symposium on Applied Computational Intelligence and Informatics (SACI), MAY 21-23, 2020, Timisoara, ROMANIA, ISBN: 978-1-7281-7376-4, Published: 2020;
19. Berdie, A.D., Jitian, S. Ellipsometric determination of the thickness and the refractive index of superficial films deposited on metal mirrors, INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Book Series: Journal of Physics Conference Series, Volume: 1426, Article Number: 012027, International Conference on Applied Sciences (ICAS), MAY 09-11, 2019, Hunedoara, ROMANIA, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;
20. Bistran, D.A., Dimitriu, G., Navon, I.M. Modeling Dynamic Patterns from COVID-19 Data Using Randomized Dynamic Mode Decomposition in Predictive Mode and ARIMA, APPLICATION OF MATHEMATICS IN TECHNICAL AND NATURAL SCIENCES (AMITANS 2020), Book Series: AIP Conference Proceedings, Volume: 2302, Article Number: 080002, 12th International On-Line Conference for Promoting the Application of Mathematics in Technical and Natural Sciences (AMiTaNS), JUN 24-29, 2020, ELECTR NETWORK, ISSN: 0094-243X, ISBN: 978-0-7354-4036-4, Published: 2020;
21. Bobaru, A., Budura, G., Balint, C. Single Tier Heterogeneous Traffic Generator based on Traffic Statistics, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 405-408, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
22. Boldea, I., Tutelea, L.N., Torac, I. 10MW, 10rpm, 15Hz directly-driven reluctance synchronous generator system: preliminary design with key FEM validations, 2020 INTERNATIONAL CONFERENCE ON ELECTRICAL MACHINES (ICEM), VOL 1, Pages: 1835-1840, International Conference on Electrical Machines (ICEM), AUG 23-26, 2020, ELECTR NETWORK, ISBN: 978-1-7281-9945-0, Published: 2020;

23. Boncalo, O., Amaricai, A. Layered LDPC decoder in-order message access scheduling: a case study, 2020 IEEE 14TH INTERNATIONAL SYMPOSIUM ON APPLIED COMPUTATIONAL INTELLIGENCE AND INFORMATICS (SACI 2020), Pages: 193-198, IEEE 14th International Symposium on Applied Computational Intelligence and Informatics (SACI), MAY 21-23, 2020, Timisoara, ROMANIA, ISBN: 978-1-7281-7376-4, Published: 2020;
24. Bonciog, D.D., Lascu, M.R., Matiu-Iovan, L., Ionel, R., Burian, C.A., Ordodi, V.L. Modified Langendorff experimental device for rat heart decellularization with a vibrating fluid column, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 127-130, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
25. Borlea, A.B., Precup, R.E., Borlea, I.D., Dragus, A.N. Frequency Domain Design of Controllers for Lighting Process, 2020 IEEE 14TH INTERNATIONAL SYMPOSIUM ON APPLIED COMPUTATIONAL INTELLIGENCE AND INFORMATICS (SACI 2020), Pages: 53-58, IEEE 14th International Symposium on Applied Computational Intelligence and Informatics (SACI), MAY 21-23, 2020, Timisoara, ROMANIA, ISBN: 978-1-7281-7376-4, Published: 2020;
26. Borlea, I.D., Precup, R.E., Borlea, A.B., Iercan, D. Extending BigTim Distributed Clustering Platform to Support Mobile Devices, 2020 IEEE 14TH INTERNATIONAL SYMPOSIUM ON APPLIED COMPUTATIONAL INTELLIGENCE AND INFORMATICS (SACI 2020), Pages: 17-22, IEEE 14th International Symposium on Applied Computational Intelligence and Informatics (SACI), MAY 21-23, 2020, Timisoara, ROMANIA, ISBN: 978-1-7281-7376-4, Published: 2020;
27. Botila, D.A., Lascu, D. A Novel Single Switch Step-Up Converter with High Conversion Ratio, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 207-210, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
28. Bran, M., Frigura-fliasa, M., Filipescu, H.E., Dolga, L., Vatau, V., Iorga, M. Case Study about Smart Integrated Utilities for Smart Cities, 2020 IEEE 18TH WORLD SYMPOSIUM ON APPLIED MACHINE INTELLIGENCE AND INFORMATICS (SAMI 2020), Pages: 23-26, 18th IEEE World Symposium on Applied Machine Intelligence and Informatics (SAMI), JAN 23-25, 2020, Herlany, SLOVAKIA, ISBN: 978-1-7281-3149-8, Published: 2020;
29. Broasca, L., Ancusa, V.M., Ciocarlie, H. Towards a Hybrid Layout for Complex Networks Visualization, 2020 24TH INTERNATIONAL CONFERENCE ON SYSTEM THEORY, CONTROL AND COMPUTING (ICSTCC), Book Series: International Conference on System Theory Control and Computing, Pages: 118-123, 24th International Conference on System Theory, Control and Computing (ICSTCC), OCT 08-10, 2020, ELECTR NETWORK, ISSN: 2372-1618, ISBN: 978-1-7281-9809-5, Published: 2020;
30. Broasca, L., Ancusa, V.M., Ciocarlie, H. A 3D Surface Fitting Layout for Complex Networks Visualization, IMPORTANCE OF HEALTH INFORMATICS IN PUBLIC HEALTH DURING A PANDEMIC, Book Series: Studies in Health Technology and Informatics, Volume: 272, Pages: 362-365, PubMed ID: 32604677, 18th Annual International Conference on Informatics, Management, and Technology in Healthcare (ICIMTH), JUL 03-05, 2020, ELECTR NETWORK, ISSN: 0926-9630, eISSN: 1879-8365, ISBN: 978-1-64368-093-4; 978-1-64368-092-7, Published: 2020;
31. Bublea, A., Căleanu, C.D. Deep Learning based Eye Gaze Tracking for Automotive Applications: An Auto-Keras Approach, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 48-51, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
32. Bucevschi, R., Socalici, V., Berghian, A.B., Baneasa, C.B. Analysis of the fluid dynamic behaviour through the air collector following the installation of pressure outlets, INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Book Series: Journal of Physics Conference Series, Volume: 1426, Article Number: 012050, International Conference on Applied Sciences (ICAS), MAY 09-11, 2019, Hunedoara, ROMANIA, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;
33. Bucos, M., Dragulescu, B. Student cluster analysis based on Moodle data and academic performance indicators, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 167-170, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;

34. Bucur, F., Socalici, A., Josan, A., Putan, V. Research regarding the hardness of cast iron, INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Book Series: Journal of Physics Conference Series, Volume: 1426, Article Number: 012049, International Conference on Applied Sciences (ICAS), MAY 09-11, 2019, Hunedoara, ROMANIA, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;
35. Burta, A., Szabo, R., Gontean, A. Object Recognition Development for Android. Mobile Devices with Text-to-Speech Function Created for Visually Impaired People, PROCEEDINGS OF THE 2020 FOURTH WORLD CONFERENCE ON SMART TRENDS IN SYSTEMS, SECURITY AND SUSTAINABILITY (WORLDS4 2020), Pages: 608-613, 4th World Conference on Smart Trends in Systems, Security and Sustainability (WorldS4), JUL 27-28, 2020, ELECTR NETWORK, ISBN: 978-1-7281-6823-4, Published: 2020;
36. Burta, A., Szabo, R., Gontean, A. Temperature Measurements with Thermocouples Used in a Thermo-electric Hybrid Solar System, PROCEEDINGS OF THE 2020 FOURTH WORLD CONFERENCE ON SMART TRENDS IN SYSTEMS, SECURITY AND SUSTAINABILITY (WORLDS4 2020), Pages: 614-619, 4th World Conference on Smart Trends in Systems, Security and Sustainability (WorldS4), JUL 27-28, 2020, ELECTR NETWORK, ISBN: 978-1-7281-6823-4, Published: 2020;
37. Buta, A.P., Silaghi, A.M., De Sabata, A., Matekovits, L. MULTIPLE-NOTCH FREQUENCY SELECTIVE SURFACE FOR AUTOMOTIVE APPLICATIONS, 2020 13TH INTERNATIONAL CONFERENCE ON COMMUNICATIONS (COMM), Pages: 439-442, 13th International Conference on Communications (COMM), JUN 18-20, 2020, ELECTR NETWORK, ISBN: 978-1-7281-5611-8, Published: 2020;
38. Buta, A.P., Silaghi, A.M., De Sabata, A., Matekovits, L. LTE Band Filtering Applications of a Fractal Based Frequency Selective Surface, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 99-102, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
39. Butaru, F., Carstea, C., Lascu, C., Ancuti, M.C. Optimal Operation of Microgrid Employing Predictive Control, 2020 15TH INTERNATIONAL CONFERENCE ON DEVELOPMENT AND APPLICATION SYSTEMS (DAS), Pages: 27-31, 15th International Conference on Development and Application Systems (DAS), MAY 21-23, 2020, Suceava, ROMANIA, ISBN: 978-1-7281-6870-8, Published: 2020;
40. Butean, F.M., Jucut, M.A., Lie, I. Automation of water meter testing using stepper motors, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 83-86, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
41. Buzatu, R., Muntean, D., Ciutina, A., Ungureanu, V. Thermal Performance and Energy Efficiency of Lightweight Steel Buildings: a Case-Study, 5TH WORLD MULTIDISCIPLINARY CIVIL ENGINEERING-ARCHITECTURE-URBAN PLANNING SYMPOSIUM (WMCAUS), Book Series: IOP Conference Series-Materials Science and Engineering, Volume: 960, Article Number: 032099, 5th World Multidisciplinary Civil Engineering-Architecture-Urban Planning Symposium (WMCAUS), JUN 15-19, 2020, Prague, CZECH REPUBLIC, ISSN: 1757-8981, Published: 2020;
42. Carstea, C., Butaru, F., Ancuti, M.C., Musuroi, S., Deacu, A., Babaita, M., Stanciu, A.M. Wind Power Plants Operation at Variable Wind Speeds, 2020 IEEE 14TH INTERNATIONAL SYMPOSIUM ON APPLIED COMPUTATIONAL INTELLIGENCE AND INFORMATICS (SACI 2020), Pages: 205-210, IEEE 14th International Symposium on Applied Computational Intelligence and Informatics (SACI), MAY 21-23, 2020, Timisoara, ROMANIA, ISBN: 978-1-7281-7376-4, Published: 2020;
43. Chioncel, C.P., Murarescu, C., Dudu, M., Tirian, O.G. Optimal and stable energetic operation of wind power systems at variable wind speed, INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Book Series: Journal of Physics Conference Series, Volume: 1426, Article Number: 012041, International Conference on Applied Sciences (ICAS), MAY 09-11, 2019, Hunedoara, ROMANIA, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;
44. Chioncel, C.P., Dordescu, M., Lazar, M.A., Tirian, O.G. Wind turbine power and optimum energy, at variable wind speeds, 2020 IEEE 24TH INTERNATIONAL CONFERENCE ON INTELLIGENT ENGINEERING SYSTEMS (INES 2020), Book Series: IEEE International Conference on Intelligent Engineering Systems, Pages: 197-202, 24th IEEE International Conference on Intelligent Engineering Systems (INES), JUL 08-10, 2020, ELECTR NETWORK, ISSN: 1562-5850, ISBN: 978-1-7281-1059-2, Published: 2020;
45. Chioncel, C.P., Tirian, O.G., Dordescu, M., Spunei, E. Optimization of wind turbine operation in variable wind speed conditions, 7TH INTERNATIONAL CONFERENCE ON ENERGY EFFICIENCY AND AGRICULTURAL ENGINEERING (EE&AE), 7th International Conference on Energy Efficiency and Agricultural Engineering (EE and AE), NOV 12-14, 2020, Ruse, BULGARIA, ISBN: 978-1-7281-0362-4, Published: 2020;

46. Chirita-Emandi, A., Andreescu, N., Zimbru, C.G., Puiu, M. Unsettling NGS findings related to 94 cancer genes in pediatric patients- is there benefit or harm in reporting?, EUROPEAN JOURNAL OF HUMAN GENETICS, Meeting Abstract: P12.036.B, Volume: 28, Issue: SUPPL 1, Pages: 499-499, Supplement: 1, ISSN: 1018-4813, eISSN: 1476-5438, Published: 2020;
47. Cioata, V.G., Kiss, I., Alexa, V., Ratiu, S.A. Study of the contact forces between workpiece and fixture using dynamic analysis, INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Book Series: Journal of Physics Conference Series, Volume: 1426, Article Number: 012040, International Conference on Applied Sciences (ICAS), MAY 09-11, 2019, Hunedoara, ROMANIA, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;
48. Cipleu, A., Stefanescu, W., Vandici, I., Gonczi, A.I. A New Method to Improve Computing Time for TSP Little Algorithm, 30TH SIAR INTERNATIONAL CONGRESS OF AUTOMOTIVE AND TRANSPORT ENGINEERING: SCIENCE AND MANAGEMENT OF AUTOMOTIVE AND TRANSPORTATION ENGINEERING, Pages: 400-405, 30th SIAR International Congress of Science and Management of Automotive and Transportation Engineering (SMAT), OCT 23-25, 2019, Craiova, ROMANIA, ISBN: 978-3-030-32564-0, Published: 2020;
49. Ciulica, D. Research on the transient regime of SF6 circuit breakers in MATLAB, INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Book Series: Journal of Physics Conference Series, Volume: 1426, Article Number: 012054, International Conference on Applied Sciences (ICAS), MAY 09-11, 2019, Hunedoara, ROMANIA, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;
50. Ciulu, M.D., Holban, S., Lungeanu, D. Hierarchical Clustering for Image Classification in Dermatology: Towards Mobile Deploying, DIGITAL PERSONALIZED HEALTH AND MEDICINE, Book Series: Studies in Health Technology and Informatics, Volume: 270, Pages: 1303-1304, PubMed ID: 32570630, 30th Medical Informatics Europe (MIE) Conference, APR, 2020, Geneva, SWITZERLAND, ISSN: 0926-9630, eISSN: 1879-8365, ISBN: 978-1-64368-083-5; 978-1-64368-082-8, Published: 2020;
51. Clementi, F., Formisano, A., Milani, G., Moscarca, M. Seismic Analysis and Retrofitting of Civil Engineering Structures, INTERNATIONAL CONFERENCE ON NUMERICAL ANALYSIS AND APPLIED MATHEMATICS ICNAAM 2019, Book Series: AIP Conference Proceedings, Volume: 2293, Article Number: 380001, PubMed ID: 32015214, International Conference on Numerical Analysis and Applied Mathematics (ICNAAM), SEP 23-28, 2019, Rhodes, GREECE, ISSN: 0094-243X, ISBN: 978-0-7354-4025-8, Published: 2020;
52. Coicheci, S., Filip, I. Self-driving vehicles: current status of development and technical challenges to overcome, 2020 IEEE 14TH INTERNATIONAL SYMPOSIUM ON APPLIED COMPUTATIONAL INTELLIGENCE AND INFORMATICS (SACI 2020), Pages: 255-259, IEEE 14th International Symposium on Applied Computational Intelligence and Informatics (SACI), MAY 21-23, 2020, Timisoara, ROMANIA, ISBN: 978-1-7281-7376-4, Published: 2020;
53. Cojocar, A., Mares, O., Tatomiurescu, D., Popescu, A. The influence of Marangoni convection and of the external temperature gradient on the temperature fluctuations in a Czochralski solar silicon process, TIM 19 PHYSICS CONFERENCE, Book Series: AIP Conference Proceedings, Volume: 2218, Article Number: 040006, 18th Physics Conference (TIM) of the West-University-of-Timisoara, MAY 29-31, 2019, Timisoara, ROMANIA, ISSN: 0094-243X, ISBN: 978-0-7354-1974-2, Published: 2020;
54. Costea, F.M., Chirila, C.B., Cretu, V.I. Auto-Generative Learning Objects for Learning Linked Lists Concepts, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 151-154, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
55. Covaci, C., Gontean, A. Two-Stage Converter for Piezoelectric Energy Harvesting using Buck Configuration, 2020 IEEE 26TH INTERNATIONAL SYMPOSIUM FOR DESIGN AND TECHNOLOGY IN ELECTRONIC PACKAGING (SIITME 2020), Book Series: International Symposium for Design and Technology in Electronic Packaging, Pages: 408-411, IEEE 26th International Symposium for Design and Technology in Electronic Packaging (SIITME), OCT 21-24, 2020, Pitesti, ROMANIA, ISSN: 2641-287X, ISBN: 978-1-7281-7506-5, Published: 2020;
56. Cretan, I.A. Potential impact on the environment and reduction measures in the case of the temporary perimeters for mineral aggregates exploitation. Case study "Temporary perimeter operating in Ribiului Valley", Socol Locality, Caras-Severin County, Romania, 5TH WORLD MULTIDISCIPLINARY CIVIL ENGINEERING-ARCHITECTURE-URBAN PLANNING SYMPOSIUM (WMCAUS), Book Series: IOP Conference Series- Materials Science and Engineering, Volume: 960, Article Number: 022093, 5th World Multidisciplinary Civil Engineering-Architecture-Urban Planning Symposium (WMCAUS), JUN 15-19, 2020, CZECH REPUBLIC, ISSN: 1757-8981, Published: 2020;

57. David, I; Stefanescu, C. Gravity Compressed -Air- Hydraulic- Power-Tower Energy Storage Plants, 5TH WORLD MULTIDISCIPLINARY CIVIL ENGINEERING-ARCHITECTURE-URBAN PLANNING SYMPOSIUM (WMCAUS), Book Series: IOP Conference Series-Materials Science and Engineering, Volume: 960, Article Number: 022077, 5th World Multidisciplinary Civil Engineering-Architecture-Urban Planning Symposium (WMCAUS), JUN 15-19, 2020, Prague, CZECH REPUBLIC, ISSN: 1757-8981, Published: 2020;
58. David, R.C., Precup, R.E., Preitl, S., Szedlak-Stinean, A.I., Roman, R.C., Petriu, E.M. Fuzzy Control Systems with Reduced Parametric Sensitivity Design Based on Hybrid Grey Wolf Optimizer-Particle Swarm Optimization, 2020 24TH INTERNATIONAL CONFERENCE ON SYSTEM THEORY, CONTROL AND COMPUTING (ICSTCC), Book Series: International Conference on System Theory Control and Computing, Pages: 66-71, 24th International Conference on System Theory, Control and Computing (ICSTCC), OCT 08-10, 2020, ELECTR NETWORK, ISSN: 2372-1618, ISBN: 978-1-7281-9809-5, Published: 2020;
59. David, R.C., Precup, R.E., Preitl, S., Petriu, E.M., Szedlak-Stinean, A.I., Roman, R.C. Whale Optimization Algorithm-Based Tuning of Low-Cost Fuzzy Controllers with Reduced Parametric Sensitivity, 2020 28TH MEDITERRANEAN CONFERENCE ON CONTROL AND AUTOMATION (MED), Book Series: Mediterranean Conference on Control and Automation, Pages: 440-445, 28th Mediterranean Conference on Control and Automation (MED), SEP 15-18, 2020, ELECTR NETWORK, ISSN: 2325-369X, ISBN: 978-1-7281-5742-9, Published: 2020;
60. David, R.C., Precup, R.E., Preitl, S., Szedlak-Stinean, A.I., Roman, R.C., Petriu, E.M. Design of Low-Cost Fuzzy Controllers with Reduced Parametric Sensitivity Based on Whale Optimization Algorithm, 2020 IEEE INTERNATIONAL CONFERENCE ON FUZZY SYSTEMS (FUZZ-IEEE), Book Series: IEEE International Conference on Fuzzy Systems, Article Number: 22183, IEEE International Conference on Fuzzy Systems (FUZZ-IEEE), JUL 19-24, 2020, ELECTR NETWORK, ISSN: 1098-7584, ISBN: 978-1-7281-6932-3, Published: 2020;
61. Dinulica, I.S., Cosma, D. Monitoring computer systems for crypto mining threat detection, 2020 24TH INTERNATIONAL CONFERENCE ON SYSTEM THEORY, CONTROL AND COMPUTING (ICSTCC), Book Series: International Conference on System Theory Control and Computing, Pages: 553-558, 24th International Conference on System Theory, Control and Computing (ICSTCC), OCT 08-10, 2020, ELECTR NETWORK, ISSN: 2372-1618, ISBN: 978-1-7281-9809-5, Published: 2020;
62. Dobrin, E., Ancuti, M.C., Musuroi, S., Sorandaru, C., Ancuti, R., Lazar, M.A. Dynamics of the Wind Power Plants at Small Wind Speeds, 2020 IEEE 14TH INTERNATIONAL SYMPOSIUM ON APPLIED COMPUTATIONAL INTELLIGENCE AND INFORMATICS (SACI 2020), Pages: 187-192, IEEE 14th International Symposium on Applied Computational Intelligence and Informatics (SACI), MAY 21-23, 2020, Timisoara, ROMANIA, ISBN: 978-1-7281-7376-4, Published: 2020;
63. Dragan, C.M. Car Environment Conditions vs. Thermal Chamber Conditions, PROCEEDINGS OF THE NINETEENTH INTERSOCIETY CONFERENCE ON THERMAL AND THERMOMECHANICAL PHENOMENA IN ELECTRONIC SYSTEMS (ITHERM 2020), Book Series: InterSociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems, Pages: 568-574, 19th IEEE Intersociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems (ITherm), JUL 21-23, 2020, ELECTR NETWORK, ISSN: 1936-3958, ISBN: 978-1-7281-9764-7, Published: 2020;
64. Draghici, A., Ivascu, L., Mircea, G. Development of E-learning Platform for Education on Sustainable Development, DIVAI 2020: 13TH INTERNATIONAL SCIENTIFIC CONFERENCE ON DISTANCE LEARNING IN APPLIED INFORMATICS, Book Series: DIVAI, Pages: 81-89, 13th International Scientific Conference on Distance Learning in Applied Informatics (DIVAI), SEP 21-23, 2020, Sturovo, SLOVAKIA, ISSN: 2464-7470, eISSN: 2464-7489, ISBN: 978-80-7598-841-6, Published: 2020;
65. Draghici, A., Ivascu, L., Fatol, D. The Sense of E-learning Community, DIVAI 2020: 13TH INTERNATIONAL SCIENTIFIC CONFERENCE ON DISTANCE LEARNING IN APPLIED INFORMATICS, Book Series: DIVAI, Pages: 285-294, 13th International Scientific Conference on Distance Learning in Applied Informatics (DIVAI), SEP 21-23, 2020, Sturovo, SLOVAKIA, ISSN: 2464-7470, eISSN: 2464-7489, ISBN: 978-80-7598-841-6, Published: 2020;
66. Dragomir, A., Simion, G., Ermalai, I. Smart Mirror for Skin Type Identification, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 52-55, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;

67. Dudu, M., Chilibaru-Opritescu, C. An Analytical Investigation on the Effect of Variable Wind Speed in Wind Energy Conversion Systems, INTERNATIONAL CONFERENCE ON NUMERICAL ANALYSIS AND APPLIED MATHEMATICS ICNAAM 2019, Book Series: AIP Conference Proceedings, Volume: 2293, Article Number: 270006, International Conference on Numerical Analysis and Applied Mathematics (ICNAAM), SEP 23-28, 2019, Rhodes, GREECE, ISSN: 0094-243X, ISBN: 978-0-7354-4025-8, Published: 2020;
68. Dumitru, P.P., Florescu, C., Gîrbaciu, A., Vaju, D. The Technologies Optimization for the Treatment of Underground Water with Iron and Arsenic Content - A Case Study, 5TH WORLD MULTIDISCIPLINARY CIVIL ENGINEERING-ARCHITECTURE-URBAN PLANNING SYMPOSIUM (WMCAUS), Book Series: IOP Conference Series-Materials Science and Engineering, Volume: 960, Article Number: 022060, 5th World Multidisciplinary Civil Engineering-Architecture-Urban Planning Symposium (WMCAUS), JUN 15-19, 2020, Prague, CZECH REPUBLIC, ISSN: 1757-8981, Published: 2020;
69. Ene, R.D., Petrisor, C. Some Mathematical Approaches on the Viscous flow Problem on a Continuous Stretching Surface: Nonlinear Stability and Dual Approximate Analytic Solutions, INTERNATIONAL CONFERENCE ON NUMERICAL ANALYSIS AND APPLIED MATHEMATICS ICNAAM 2019, Book Series: AIP Conference Proceedings, Volume: 2293, Article Number: 350004, International Conference on Numerical Analysis and Applied Mathematics (ICNAAM), SEP 23-28, 2019, Rhodes, GREECE, ISSN: 0094-243X, ISBN: 978-0-7354-4025-8, Published: 2020;
70. Erdelyi, R.A., Duma, V.F., Dobre, G., Bradu, A., Podoleanu, A.G. A combination of imaging techniques for dental medicine: from X-rays radiography and 3D CBCT to OCT, BIOMEDICAL SPECTROSCOPY, MICROSCOPY, AND IMAGING, Book Series: Proceedings of SPIE, Volume: 11359, Article Number: 113591E, Conference on Biomedical Spectroscopy, Microscopy, and Imaging / SPIE Photonics Europe Conference, APR 06-10, 2020, ELECTR NETWORK, ISSN: 0277-786X, eISSN: 1996-756X, ISBN: 978-1-5106-3490-9; 978-1-5106-3491-6, Published: 2020;
71. Filip, B., Filipescu, H., Iftime, S., Frigura-Iliasa, F.M., Frigura-Iliasa, M., Simo, A. SCIENTIFIC AND ACADEMIC RESEARCH ETHICS LEGISLATION ISSUES IN ROMANIA, 14TH INTERNATIONAL TECHNOLOGY, EDUCATION AND DEVELOPMENT CONFERENCE (INTED2020), Book Series: INTED Proceedings, Pages: 8089-8094, 14th International Technology, Education and Development Conference (INTED), MAR 02-04, 2020, Valencia, SPAIN, ISSN: 2340-1079, ISBN: 978-84-09-17939-8, Published: 2020;
72. Filip, B., Simo, A., Vatau, D., Frigura-Iliasa, F.M., Musuroi, S., Andea, P. LoRaWAN Based Real-Time Air Quality Monitoring System, 2020 IEEE 18TH WORLD SYMPOSIUM ON APPLIED MACHINE INTELLIGENCE AND INFORMATICS (SAMI 2020), Pages: 69-72, 18th IEEE World Symposium on Applied Machine Intelligence and Informatics (SAMI), JAN 23-25, 2020, Herlany, SLOVAKIA, ISBN: 978-1-7281-3149-8, Published: 2020;
73. Filip, I., Szeidert, I., Prostean, O., Vasar, C. Consideration about the stability and performance of a minimum variance control system, 2020 IEEE 14TH INTERNATIONAL SYMPOSIUM ON APPLIED COMPUTATIONAL INTELLIGENCE AND INFORMATICS (SACI 2020), Pages: 83-87, IEEE 14th International Symposium on Applied Computational Intelligence and Informatics (SACI), MAY 21-23, 2020, Timisoara, ROMANIA, ISBN: 978-1-7281-7376-4, Published: 2020;
74. Florescu, E.R., Bica, S.M. EARTH AS AN ALTERNATIVE INDICATOR REGARDING THE ECOLOGICAL CHARACTER OF BUILDING MATERIALS, 7TH INTERNATIONAL CONFERENCE ON EDUCATION AND SOCIAL SCIENCES (INTCESS 2020), Pages: 205-212, 7th International Conference on Education and Social Sciences (INTCESS), JAN 20-22, 2020, Dubai, U ARAB EMIRATES, ISBN: 978-605-82433-8-5, Published: 2020;
75. Flori, M., Milostean, D. Influence of heating and moisture content on sludge drying process, INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Book Series: Journal of Physics Conference Series, Volume: 1426, Article Number: 012056, International Conference on Applied Sciences (ICAS), MAY 09-11, 2019, Hunedoara, ROMANIA, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;
76. Flori, M., Vilceanu, L. Analysis of wastewater sludge drying process in vacuum filters, INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Book Series: Journal of Physics Conference Series, Volume: 1426, Article Number: 012055, International Conference on Applied Sciences (ICAS), MAY 09-11, 2019, Hunedoara, ROMANIA, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;
77. Formisano, A., Chieffo, N., Mosoarca, M. Probabilistic Earthquake Scenarios of a Historical Area in the Town of Amatrice, INTERNATIONAL CONFERENCE ON NUMERICAL ANALYSIS AND APPLIED MATHEMATICS ICNAAM 2019, Book Series: AIP Conference Proceedings, Volume: 2293, Article Number: 240006, International Conference on Numerical Analysis and Applied Mathematics (ICNAAM), SEP 23-28, 2019, Rhodes, GREECE, ISSN: 0094-243X, ISBN: 978-0-7354-4025-8, Published: 2020;
78. Foti, P., Razavi, S.M.J., Marsavina, L., Berto, F. Volume free strain energy density method for applications to blunt V-notches, 1ST VIRTUAL EUROPEAN CONFERENCE ON FRACTURE - VECF1, Book Series: Procedia Structural Integrity, Volume: 28, Pages: 734-742, 1st European-Structural-Integrity-Society (ESIS) Virtual European Conference on Fracture (ECF), JUN 29-JUL 01, 2020, ELECTR NETWORK, ISSN: 2452-3216, Published: 2020;

79. Galatanu, S.V., Scano, M., Pietras, D., Pirvulescu, L.D., Porcu, M.C., Marsavina, L., Sadowski, T. Bending behavior of AM50 Magnesium alloy under static and dynamic loading, 1ST MEDITERRANEAN CONFERENCE ON FRACTURE AND STRUCTURAL INTEGRITY (MEDFRACT1), Book Series: Procedia Structural Integrity, Volume: 26, Pages: 269-276, 1st Mediterranean Conference on Fracture and Structural Integrity (MedFract), FEB, 2020, ELECTR NETWORK, ISSN: 2452-3216, Published: 2020;
80. Girbaciuc, A., Girbaciuc, C., Dumitru, P.P., Lucut, M. Study Regarding the Possibility of Use the Alternative High Efficiency Systems for Increasing Energy Performance in Suburban Areas, 5TH WORLD MULTIDISCIPLINARY CIVIL ENGINEERING-ARCHITECTURE-URBAN PLANNING SYMPOSIUM (WMCAUS), Book Series: IOP Conference Series-Materials Science and Engineering, Volume: 960, Article Number: 022061, 5th World Multidisciplinary Civil Engineering-Architecture-Urban Planning Symposium (WMCAUS), JUN 15-19, 2020, Prague, CZECH REPUBLIC, ISSN: 1757-8981, Published: 2020;
81. Goncz, A.I., Cipleu, A. Cross-Validation of Two Collision Modeling Software Based on the Reconstruction of a Real Collision - A Possible New Approach to Collision Reconstruction, 30TH SIAR INTERNATIONAL CONGRESS OF AUTOMOTIVE AND TRANSPORT ENGINEERING: SCIENCE AND MANAGEMENT OF AUTOMOTIVE AND TRANSPORTATION ENGINEERING, Pages: 366-374, 30th SIAR International Congress of Science and Management of Automotive and Transportation Engineering (SMAT), OCT 23-25, 2019, Craiova, ROMANIA, ISBN: 978-3-030-32564-0, Published: 2020;
82. Grozav, A., Rogobete, G. Reflections on Decanted Waste Water Application in the Timis County (Romania), 5TH WORLD MULTIDISCIPLINARY CIVIL ENGINEERING-ARCHITECTURE-URBAN PLANNING SYMPOSIUM (WMCAUS), Book Series: IOP Conference Series-Materials Science and Engineering, Volume: 960, Article Number: 022070, 5th World Multidisciplinary Civil Engineering-Architecture-Urban Planning Symposium (WMCAUS), JUN 15-19, 2020, Prague, CZECH REPUBLIC, ISSN: 1757-8981, Published: 2020;
83. Gruicin, I., Ionascu, M.E., Popa, M. Evaluation of air quality variability in Timisoara, Romania, 2020 IEEE 14TH INTERNATIONAL SYMPOSIUM ON APPLIED COMPUTATIONAL INTELLIGENCE AND INFORMATICS (SACI 2020), Pages: 179-182, IEEE 14th International Symposium on Applied Computational Intelligence and Informatics (SACI), MAY 21-23, 2020, Timisoara, ROMANIA, ISBN: 978-1-7281-7376-4, Published: 2020;
84. Gugea, O., Cosma, D. Identifying software problems in Java applications using ViMC, 2020 24TH INTERNATIONAL CONFERENCE ON SYSTEM THEORY, CONTROL AND COMPUTING (ICSTCC), Book Series: International Conference on System Theory Control and Computing, Pages: 112-117, 24th International Conference on System Theory, Control and Computing (ICSTCC), OCT 08-10, 2020, ELECTR NETWORK, ISSN: 2372-1618, ISBN: 978-1-7281-9809-5, Published: 2020;
85. Haiducu, C.G., Lica, S., Lie, I. About the possibility to use the model based testing for system test automation, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 91-94, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
86. Hapenciuc, A.D., Anghel, A.A., Mohora, I. The Poetics of Access Apparatuses in Contemporary Lyric Exhibition Spaces, 5TH WORLD MULTIDISCIPLINARY CIVIL ENGINEERING-ARCHITECTURE-URBAN PLANNING SYMPOSIUM (WMCAUS), Book Series: IOP Conference Series-Materials Science and Engineering, Volume: 960, Article Number: 042010, 5th World Multidisciplinary Civil Engineering-Architecture-Urban Planning Symposium (WMCAUS), JUN 15-19, 2020, Prague, CZECH REPUBLIC, ISSN: 1757-8981, Published: 2020;
87. Hausler-Cozma, D.P., Beilicci, E., Beilicci, R. Modelling of Privalul Tinoasa channel, in irrigation system Borcea 2-Danube Romania, 5TH WORLD MULTIDISCIPLINARY CIVIL ENGINEERING-ARCHITECTURE-URBAN PLANNING SYMPOSIUM (WMCAUS), Book Series: IOP Conference Series-Materials Science and Engineering, Volume: 960, Article Number: 022023, 5th World Multidisciplinary Civil Engineering-Architecture-Urban Planning Symposium (WMCAUS), JUN 15-19, 2020, Prague, CZECH REPUBLIC, ISSN: 1757-8981, Published: 2020;
88. Herisanu, N. Optimal Homotopy Asymptotic Approaches to Nonlinear Dynamical Systems in Engineering-4, INTERNATIONAL CONFERENCE ON NUMERICAL ANALYSIS AND APPLIED MATHEMATICS ICNAAM 2019, Book Series: AIP Conference Proceedings, Volume: 2293, Article Number: 270001, International Conference on Numerical Analysis and Applied Mathematics (ICNAAM), SEP 23-28, 2019, Rhodes, GREECE, ISSN: 0094-243X, ISBN: 978-0-7354-4025-8, Published: 2020;
89. Herisanu, N., Marinca, V. Analytic Approximate Solutions to Electrically Actuated MEMS, INTERNATIONAL CONFERENCE ON NUMERICAL ANALYSIS AND APPLIED MATHEMATICS ICNAAM 2019, Book Series: AIP Conference Proceedings, Volume: 2293, Article Number: 270002, International Conference on Numerical Analysis and Applied Mathematics (ICNAAM), SEP 23-28, 2019, Rhodes, GREECE, ISSN: 0094-243X, ISBN: 978-0-7354-4025-8, Published: 2020;

90. Hulea, D., Gireada, M., Vitan, D., Cornea, O., Muntean, N. An Improved Bidirectional Hybrid Switched Inductor Converter, 2020 22ND EUROPEAN CONFERENCE ON POWER ELECTRONICS AND APPLICATIONS (EPE'20 ECCE EUROPE), Book Series: European Conference on Power Electronics and Applications, 22nd European Conference on Power Electronics and Applications (EPE ECCE Europe), SEP 07-11, 2020, ELECTR NETWORK, ISSN: 2325-0313, ISBN: 978-9-0758-1536-8, Published: 2020;
91. Iacob, F., Pop, N., Mezei, J.Z., Niyonzima, S., Laporta, V., Chakrabarti, K., Schneider, I.F. Reactive collisions between electrons and BeT+, TIM 19 PHYSICS CONFERENCE, Book Series: AIP Conference Proceedings, Volume: 2218, Article Number: 050010, 18th Physics Conference (TIM) of the West-University-of-Timisoara, MAY 29-31, 2019, Timisoara, ROMANIA, ISSN: 0094-243X, ISBN: 978-0-7354-1974-2, Published: 2020;
92. Iacobici, N.L., Frigura-Iliasa, M., Filipescu, H.E., Nen, M., Frigura-Iliasa, F.M., Iorga, M. Digital Imaging Processing and Reconstruction for General Applications, 2020 IEEE 18TH WORLD SYMPOSIUM ON APPLIED MACHINE INTELLIGENCE AND INFORMATICS (SAMI 2020), Pages: 231-234, 18th IEEE World Symposium on Applied Machine Intelligence and Informatics (SAMI), JAN 23-25, 2020, Herlany, SLOVAKIA, ISBN: 978-1-7281-3149-8, Published: 2020;
93. Ilie, M., Stoica, V., Cicala, E., Kneip, J.C. Experimental design investigation of through-transmission laser welding of dissimilar polymers, INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Book Series: Journal of Physics Conference Series, Volume: 1426, Article Number: 012045, International Conference on Applied Sciences (ICAS), MAY 09-11, 2019, Hunedoara, ROMANIA, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;
94. Ionici, C. A New Step-Up Watkins-Johnson Type Converter, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 211-214, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
95. Iovanovici, A., Avramoni, D., Moscovici, A.M., Prodan, L. Traffic micro-simulation as a validation tool for developing genetic algorithms for green wave optimization, 2020 IEEE 14TH INTERNATIONAL SYMPOSIUM ON APPLIED COMPUTATIONAL INTELLIGENCE AND INFORMATICS (SACI 2020), Pages: 147-151, IEEE 14th International Symposium on Applied Computational Intelligence and Informatics (SACI), MAY 21-23, 2020, Timisoara, ROMANIA, ISBN: 978-1-7281-7376-4, Published: 2020;
96. Isar, A., Nafornta, C., Macaveiu, A., Magu, G. Wavelet Based Adaptive Detection of Automotive Radar Single Target with Low SNR, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 259-264, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
97. Iuoras, A.M., Szekely, N.C., Vitan, L.D., Bojan, M., Teodosescu, P.D. AC home appliances retrofitting for DC microgrids, PROCEEDINGS OF THE 2020 12TH INTERNATIONAL CONFERENCE ON ELECTRONICS, COMPUTERS AND ARTIFICIAL INTELLIGENCE (ECAI-2020), Book Series: International Conference on Electronics Computers and Artificial Intelligence, 12th International Conference on Electronics, Computers and Artificial Intelligence (ECAI), JUN 25-27, 2020, Bucharest, ROMANIA, ISSN: 2378-7147, ISBN: 978-1-7281-6843-2, Published: 2020;
98. Ivanovici, M., Vlazar, P., Novaconi, S.D., Rus, F.S. Degradation of Rhodamine B by glass foam coated with WO<sub>3</sub> and TiO<sub>2</sub> under simulated solar radiation, TIM 19 PHYSICS CONFERENCE, Book Series: AIP Conference Proceedings, Volume: 2218, Article Number: 030013, 18th Physics Conference (TIM) of the West-University-of-Timisoara, MAY 29-31, 2019, Timisoara, ROMANIA, ISSN: 0094-243X, ISBN: 978-0-7354-1974-2, Published: 2020;
99. Ivascu, L., Trocan, C., Mocan, M., Ardelean, B.O. Assessment of Student's Perception on the Teaching Process, DIVAI 2020: 13TH INTERNATIONAL SCIENTIFIC CONFERENCE ON DISTANCE LEARNING IN APPLIED INFORMATICS, Book Series: DIVAI, Pages: 339-349, 13th International Scientific Conference on Distance Learning in Applied Informatics (DIVAI), SEP 21-23, 2020, Sturovo, SLOVAKIA, ISSN: 2464-7470, eISSN: 2464-7489, ISBN: 978-80-7598-841-6, Published: 2020;
100. Jianu, M.R., Grecea, C. STUDENT SUPPORT IN THE TRANSITION FROM HIGHER EDUCATION TO LABOR MARKET, 14TH INTERNATIONAL TECHNOLOGY, EDUCATION AND DEVELOPMENT CONFERENCE (INTED2020), Book Series: INTED Proceedings, Pages: 7912-7916, 14th International Technology, Education and Development Conference (INTED), MAR 02-04, 2020, Valencia, SPAIN, ISSN: 2340-1079, ISBN: 978-84-09-17939-8, Published: 2020;

101. Jude, G.M., Pop-Calimanu, I.M., Renken, F. A New Step-Up Converter With Coupled Inductor, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 219-222, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
102. Jurj, S.L., Farcas, A.J., Opritoiu, F., Vladutiu, M. Mobile Application for Receipt Fraud Detection Based on Optical Character Recognition, TWELFTH INTERNATIONAL CONFERENCE ON MACHINE VISION (ICMV 2019), Book Series: Proceedings of SPIE, Volume: 11433, Article Number: UNSP 114330A, 12th International Conference on Machine Vision (ICMV), NOV 16-18, 2019, Amsterdam, NETHERLANDS, ISSN: 0277-786X, eISSN: 1996-756X, ISBN: 978-1-5106-3644-6, Published: 2020;
103. Jurj, S.L., Opritoiu, F., Vladutiu, M. Real-Time Identification of Animals found in Domestic Areas of Europe, TWELFTH INTERNATIONAL CONFERENCE ON MACHINE VISION (ICMV 2019), Book Series: Proceedings of SPIE, Volume: 11433, Article Number: UNSP 1143313, 12th International Conference on Machine Vision (ICMV), NOV 16-18, 2019, Amsterdam, NETHERLANDS, ISSN: 0277-786X, eISSN: 1996-756X, ISBN: 978-1-5106-3644-6, Published: 2020;
104. Komor, D., Roman, R.C., Precup, R.E., David, R.C., Pamfilii, I. Models of Two-Wheeled Mobile Robots with Experimental Validation, 2020 IEEE 14TH INTERNATIONAL SYMPOSIUM ON APPLIED COMPUTATIONAL INTELLIGENCE AND INFORMATICS (SACI 2020), Pages: 211-216, IEEE 14th International Symposium on Applied Computational Intelligence and Informatics (SACI), MAY 21-23, 2020, Timisoara, ROMANIA, ISBN: 978-1-7281-7376-4, Published: 2020;
105. Lapadat, M., Pasca, M.S. Polynomial Least Squares Method for Approx Solutions of Fractional Boundary Value Prob, INTERNATIONAL CONFERENCE ON NUMERICAL ANALYSIS AND APPLIED MATHEMATICS ICNAAM 2019, Book Series: AIP Conference Proceedings, Volume: 2293, Article Number: 350005, International Conference on Numerical Analysis and Applied Mathematics (ICNAAM), SEP 23-28, 2019, Rhodes, GREECE, ISSN: 0094-243X, ISBN: 978-0-7354-4025-8, Published: 2020;
106. Lazar, B., Lascu, D. Fourth-Order Buck-Boost Converters Exhibiting Minimum Phase by Reverse Inductor Coupling, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 223-226, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
107. Lazar, I., Salcianu, C.L., Bordeasu, I., Popoviciu, M.O., Hluscu, M., Pirvulescu, L.D., Malaimare, G., Badarau, R. Contributions for increasing the CuZnPb brass durability to cavitation erosion, INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Book Series: Journal of Physics Conference Series, Volume: 1426, Article Number: 012015, International Conference on Applied Sciences (ICAS), MAY 09-11, 2019, Hunedoara, ROMANIA, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;
108. Lazar, I., Bordeasu, I., Popoviciu, M.O., Hluscu, M., Podoleanu, C.E., Duma, S.T., Pirvulescu, L.D., Sava, M. Modification of the average durability for CuSn12 bronze at cavitation erosion using volumetric treatments, INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Book Series: Journal of Physics Conference Series, Volume: 1426, Article Number: 012014, International Conference on Applied Sciences (ICAS), MAY 09-11, 2019, Hunedoara, ROMANIA, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;
109. Lazarescu, E., Iftime, S., Filipescu, H., Frigura-Iliasa, F.M., Iorga, M., Petrenci, R. THE MISSION OF UNIVERSITIES IN THE DEVELOPMENT OF INTELLECTUAL CAPITAL AND "SMART" ECONOMY IN ROMANIA, 14TH INTERNATIONAL TECHNOLOGY, EDUCATION AND DEVELOPMENT CONFERENCE (INTED2020), Book Series: INTED Proceedings, Pages: 8080-8088, 14th International Technology, Education and Development Conference (INTED), MAR 02-04, 2020, Valencia, SPAIN, ISSN: 2340-1079, ISBN: 978-84-09-17939-8, Published: 2020;
110. Lazarescu, E., Simo, A., Alexa, F., Frigura-Iliasa, F.M., Musuroi, S., Andea, P. RDS Coder Emulator Applied for Didactic Purposes, 2020 IEEE 18TH WORLD SYMPOSIUM ON APPLIED MACHINE INTELLIGENCE AND INFORMATICS (SAMI 2020), Pages: 241-244, 18th IEEE World Symposium on Applied Machine Intelligence and Informatics (SAMI), JAN 23-25, 2020, Herlany, SLOVAKIA, ISBN: 978-1-7281-3149-8, Published: 2020;
111. Lemle, D.L., Pater, F. On Some Representation Theorems for the Yosida Approximation in Locally Convex Spaces, INTERNATIONAL CONFERENCE ON NUMERICAL ANALYSIS AND APPLIED MATHEMATICS ICNAAM 2019, Book Series: AIP Conference Proceedings, Volume: 2293, Article Number: 350010, International Conference on Numerical Analysis and Applied Mathematics (ICNAAM), SEP 23-28, 2019, Rhodes, GREECE, ISSN: 0094-243X, ISBN: 978-0-7354-4025-8, Published: 2020;

112. Lica, S., Lie, I., Wegner, A.N., Pop-Calimanu, I.M. A Generalized Model for Single-Switch Stacked Step-Down Converters, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 227-230, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
113. Lica, S., Molcut, A., Lie, I., Lascu, D. Small-Signal Modelling of the Three Switch 1L2C Boost Converter, 2020 IEEE 26TH INTERNATIONAL SYMPOSIUM FOR DESIGN AND TECHNOLOGY IN ELECTRONIC PACKAGING (SIITME 2020), Book Series: International Symposium for Design and Technology in Electronic Packaging, Pages: 37-42, IEEE 26th International Symposium for Design and Technology in Electronic Packaging (SIITME), OCT 21-24, 2020, Pitesti, ROMANIA, ISSN: 2641-287X, ISBN: 978-1-7281-7506-5, Published: 2020;
114. Lica, S., Vatau, V., Lascu, D., Tomoroga, M. A Generalized Model for Stacked Boost Single-Switch Converters, 2020 IEEE 26TH INTERNATIONAL SYMPOSIUM FOR DESIGN AND TECHNOLOGY IN ELECTRONIC PACKAGING (SIITME 2020), Book Series: International Symposium for Design and Technology in Electronic Packaging, Pages: 386-389, IEEE 26th International Symposium for Design and Technology in Electronic Packaging (SIITME), OCT 21-24, 2020, Pitesti, ROMANIA, ISSN: 2641-287X, ISBN: 978-1-7281-7506-5, Published: 2020;
115. Lovasz, E.A., Lascu, D. A New Buck Converter with Hybrid Switching, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 203-206, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
116. Lucut, M., Gîrbaciu, A., Stefanescu, C., Gîrbaciu, C. The Future for Conventional Resources of Romania Used in Energy Production, 5TH WORLD MULTIDISCIPLINARY CIVIL ENGINEERING-ARCHITECTURE-URBAN PLANNING SYMPOSIUM (WMCAUS), Book Series: IOP Conference Series- Materials Science and Engineering, Volume: 960, Article Number: 032012, 5th World Multidisciplinary Civil Engineering-Architecture-Urban Planning Symposium (WMCAUS), JUN 15-19, 2020, CZECH REPUBLIC, ISSN: 1757-8981, Published: 2020;
117. Lupu, O., Socalici, A., Bucur, F., Ardelean, E. Capitalization possibilities of small ferrous and pulverous waste in the iron production industry, INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Book Series: Journal of Physics Conference Series, Volume: 1426, Article Number: 012051, International Conference on Applied Sciences (ICAS), MAY 09-11, 2019, Hunedoara, ROMANIA, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;
118. Madescu, G., Bîriescu, M., Mot, M., Tutelea, L.N. Investigation of Rotor Current Spectrum Signature in the Healthy and Faulty Cage of a Dedicated Induction Motor in Load Conditions, 2020 INTERNATIONAL CONFERENCE ON ELECTRICAL MACHINES (ICEM), VOL 1, Pages: 1370-1376, International Conference on Electrical Machines (ICEM), AUG 23-26, 2020, ELECTR NETWORK, ISBN: 978-1-7281-9945-0, Published: 2020;
119. Magu, G., Lucaci, R. Multiple Radar Targets Tracking and Trajectories Fitting, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 321-324, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
120. Magu, G., Lucaci, R., Isar, A. Polynomial Based Kalman Filter Result Fitting to Data, 2020 43RD INTERNATIONAL CONFERENCE ON TELECOMMUNICATIONS AND SIGNAL PROCESSING (TSP), Pages: 65-68, 43rd International Conference on Telecommunications and Signal Processing (TSP), JUL 07-09, 2020, ELECTR NETWORK, ISBN: 978-1-7281-6376-5, Published: 2020;
121. Mahmut, E.E., Berian, D., Della Ventura, M., Stoicu Tivadar, V. Optimization of Entropy-Based Automated Dyslalia Screening Algorithm, DIGITAL PERSONALIZED HEALTH AND MEDICINE, Book Series: Studies in Health Technology and Informatics, Volume: 270, Pages: 357-361, PubMed ID: 32570406, 30th Medical Informatics Europe (MIE) Conference, APR, 2020, Geneva, SWITZERLAND, ISSN: 0926-9630, eISSN: 1879-8365, ISBN: 978-1-64368-083-5; 978-1-64368-082-8, Published: 2020;
122. Mahmut, E.E., Nicola, S., Stoicu-Tivadar, V. CROSS-CORRELATION BASED AUTOMATIC SEGMENTATION OF MEDIAL PHONEMES, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 293-296, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;

123. Mahmut, E.E., Nicola, S., Stoicu-Tivadar, V. Cross-Correlation Based Automated Segmentation of Audio Samples, IMPORTANCE OF HEALTH INFORMATICS IN PUBLIC HEALTH DURING A PANDEMIC, Book Series: Studies in Health Technology and Informatics, Volume: 272, Pages: 241-244, PubMed ID: 32604646, 18th Annual International Conference on Informatics, Management, and Technology in Healthcare (ICIMTH), JUL 03-05, 2020, ELECTR NETWORK, ISSN: 0926-9630, eISSN: 1879-8365, ISBN: 978-1-64368-093-4; 978-1-64368-092-7, Published: 2020;
124. Manea, R.M., Calin, M.C., Salagean, T., Moscovici, A.M. GEODESIC EDUCATION IN ROMANIA BETWEEN PAST AND FUTURE, 14TH INTERNATIONAL TECHNOLOGY, EDUCATION AND DEVELOPMENT CONFERENCE (INTED2020), Book Series: INTED Proceedings, Pages: 8520-8526, 14th International Technology, Education and Development Conference (INTED), MAR 02-04, 2020, Valencia, SPAIN, ISSN: 2340-1079, ISBN: 978-84-09-17939-8, Published: 2020;
125. Marinca, V., Herisanu, N. Incompressible Boundary Layer Flow of Nanofluid Over a Convectively Heated Stretching Sheet, INTERNATIONAL CONFERENCE ON NUMERICAL ANALYSIS AND APPLIED MATHEMATICS ICNAAM 2019, Book Series: AIP Conference Proceedings, Volume: 2293, Article Number: 270003, International Conference on Numerical Analysis and Applied Mathematics (ICNAAM), SEP 23-28, 2019, Rhodes, GREECE, ISSN: 0094-243X, ISBN: 978-0-7354-4025-8, Published: 2020;
126. Marsavina, C. Understanding the Impact of Mutable Global State on the Defect Proneness of Object-Oriented Systems, 2020 IEEE 14TH INTERNATIONAL SYMPOSIUM ON APPLIED COMPUTATIONAL INTELLIGENCE AND INFORMATICS (SACI 2020), Pages: 105-110, IEEE 14th International Symposium on Applied Computational Intelligence and Informatics (SACI), MAY 21-23, 2020, Timisoara, ROMANIA, ISBN: 978-1-7281-7376-4, Published: 2020;
127. Marsavina, C. Studying the Evolution of Static Methods and their Effect on Class Testability, 2020 IEEE 20TH INTERNATIONAL SYMPOSIUM ON COMPUTATIONAL INTELLIGENCE AND INFORMATICS (CINTI), Book Series: International Symposium on Computational Intelligence and Informatics, 20th IEEE International Symposium on Computational Intelligence and Informatics (CINTI), NOV 05-07, 2020, Budapest, HUNGARY, ISSN: 2380-8586, eISSN: 2471-9269, ISBN: 978-1-7281-8339-8, Published: 2020;
128. Martin, A.D., Tutelea, L.N., Boldea, I. Twin Induction Machines Artificial Loading Without Mechanical Coupling, 2020 INTERNATIONAL CONFERENCE ON ELECTRICAL MACHINES (ICEM), VOL 1, Pages: 352-358, 24th International Conference on Electrical Machines (ICEM), AUG 23-26, 2020, ELECTR NETWORK, ISBN: 978-1-7281-9945-0, Published: 2020;
129. Matiu-Iovan, L., Ordodi, V., Ionel, R., Bonciog, D. Virtual Instrumentation based Prototype for Evaluation of the Cardiac Systolic Function, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 107-110, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
130. Mercioni, M.A., Holban, S. TeLU: A New Activation Function for Deep Learning, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 32-35, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
131. Mercioni, M.A., Holban, S. P-Swish: Activation Function with Learnable Parameters Based on Swish Activation Function in Deep Learning, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 40-43, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
132. Mercioni, M.A., Holban, S. The Most Used Activation Functions: Classic Versus Current, 2020 15TH INTERNATIONAL CONFERENCE ON DEVELOPMENT AND APPLICATION SYSTEMS (DAS), Pages: 141-145, 15th International Conference on Development and Application Systems (DAS), MAY 21-23, 2020, Suceava, ROMANIA, ISBN: 978-1-7281-6870-8, Published: 2020;
133. Mercioni, M.A., Tat, A.M., Holban, S. Improving the Accuracy of Deep Neural Networks Through Developing New Activation Functions, 2020 IEEE 16TH INTERNATIONAL CONFERENCE ON INTELLIGENT COMPUTER COMMUNICATION AND PROCESSING (ICCP 2020), Book Series: IEEE International Conference on Intelligent Computer Communication and Processing ICCP, Pages: 385-391, IEEE 16th International Conference on Intelligent Computer Communication and Processing (ICCP), SEP 03-05, 2020, ELECTR NETWORK, ISSN: 2065-9946, ISBN: 978-1-7281-9080-8, Published: 2020;

134. Mihaicuta, S., Topirceanu, A., Udrescu, L., Udrescu, M. Assessing the predictive potential of neck circumference for diagnostic and CPAP treatment response in OSAS with network medicine, JOURNAL OF SLEEP RESEARCH, Meeting Abstract: P321, Volume: 29, Special Issue: SI, Pages: 226-227, Supplement: 1, 25th Congress of the European-Sleep-Research-Society (ESRS), SEP 22-24, 2020, ELECTR NETWORK, ISSN: 0962-1105, eISSN: 1365-2869, Published: 2020;
135. Mihut, D., Chilibaru-Opritu, C. An Optimal Approach to a Nonlinear Dynamical System Related to Gait Dynamics, INTERNATIONAL CONFERENCE ON NUMERICAL ANALYSIS AND APPLIED MATHEMATICS ICNAAM 2019, Book Series: AIP Conference Proceedings, Volume: 2293, Article Number: 270005, International Conference on Numerical Analysis and Applied Mathematics (ICNAAM), SEP 23-28, 2019, Rhodes, GREECE, ISSN: 0094-243X, ISBN: 978-0-7354-4025-8, Published: 2020;
136. Miklos, I.Z., Miklos, C.C., Alic, C.I. Piston crank mechanism simulation using finite element method, INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Book Series: Journal of Physics Conference Series, Volume: 1426, Article Number: 012005, International Conference on Applied Sciences (ICAS), MAY 09-11, 2019, Hunedoara, ROMANIA, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;
137. Mir, F., Kouhalvandi, L., Matekovits, L., Gunes, E.O. Electromagnetic Bottom-Up Optimization for Automated Antenna Designs, 2020 IEEE ASIA-PACIFIC MICROWAVE CONFERENCE (APMC), Pages: 792-794, IEEE Asia-Pacific Microwave Conference (APMC), DEC 08-11, 2020, ELECTR NETWORK, ISBN: 978-1-7281-6962-0, Published: 2020;
138. Mischie, N., Albu, A. Artificial Neural Networks for Diagnosis of Coronary Heart Disease, 2020 INTERNATIONAL CONFERENCE ON E-HEALTH AND BIOENGINEERING (EHB), Book Series: E-Health and Bioengineering Conference, 8th International Conference on E-Health and Bioengineering (EHB), OCT 29-30, 2020, ELECTR NETWORK, ISSN: 2575-5137, eISSN: 2575-5145, ISBN: 978-1-7281-8803-4, Published: 2020;
139. Mischie, S., Matiu-lovan, L. HEADING COMPUTATION USING MAGNETOMETER, INERTIAL SENSORS AND BLUETOOTH COMMUNICATION, 2020 13TH INTERNATIONAL CONFERENCE ON COMMUNICATIONS (COMM), Pages: 211-214, 13th International Conference on Communications (COMM), JUN 18-20, 2020, ELECTR NETWORK, ISBN: 978-1-7281-5611-8, Published: 2020;
140. Mischie, S., Gasparesc, G. On Using ReSpeaker Mic Array 2.0 for speech processing algorithms, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 317-320, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
141. Mitrea, T., Vasile, V., Borda, M., Naforita, C., Romaniuc, A. STUDY OF ATTACKS ON SATELLITE NAVIGATION SYSTEM RECEIVERS, 2020 13TH INTERNATIONAL CONFERENCE ON COMMUNICATIONS (COMM), Pages: 521-525, 13th International Conference on Communications (COMM), JUN 18-20, 2020, ELECTR NETWORK, ISBN: 978-1-7281-5611-8, Published: 2020;
142. Moldovan, C., Ciupe, V., Dolga, V., Lovasz, E.C., Maniu, I. Design and Novel Control Solution for a Modular Mechatronic Demonstrator with Video Feedback Used in Research and Education, TWELFTH INTERNATIONAL CONFERENCE ON MACHINE VISION (ICMV 2019), Book Series: Proceedings of SPIE, Volume: 11433, Article Number: UNSP 114332F, 12th International Conference on Machine Vision (ICMV), NOV 16-18, 2019, Amsterdam, NETHERLANDS, ISSN: 0277-786X, eISSN: 1996-756X, ISBN: 978-1-5106-3644-6, Published: 2020;
143. Morarescu, A., Herban, S., Vilceanu, C.B., Grecea, D. Durable Solutions for Precision Agriculture in Romania, INTERNATIONAL CONFERENCE ON NUMERICAL ANALYSIS AND APPLIED MATHEMATICS ICNAAM 2019, Book Series: AIP Conference Proceedings, Volume: 2293, Article Number: 350006, International Conference on Numerical Analysis and Applied Mathematics (ICNAAM), SEP 23-28, 2019, Rhodes, GREECE, ISSN: 0094-243X, ISBN: 978-0-7354-4025-8, Published: 2020;
144. Muntea, D., Giurgiu, M., Topirceanu, A. Network-based clustering of book genres based on the connection between books bought together, 2020 IEEE 14TH INTERNATIONAL SYMPOSIUM ON APPLIED COMPUTATIONAL INTELLIGENCE AND INFORMATICS (SACI 2020), Pages: 41-46, IEEE 14th International Symposium on Applied Computational Intelligence and Informatics (SACI), MAY 21-23, 2020, Timisoara, ROMANIA, ISBN: 978-1-7281-7376-4, Published: 2020;
145. Naforita, C., Isar, A., Dehelean, T., Naforita, I. Comparison of Two Compressive Sensing Algorithms for Automotive Radar, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 253-258, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;

146. Nedelcea, M.L., Albu, A. Warning Solution for Medication Administration, 2020 IEEE 14TH INTERNATIONAL SYMPOSIUM ON APPLIED COMPUTATIONAL INTELLIGENCE AND INFORMATICS (SACI 2020), Pages: 95-98, IEEE 14th International Symposium on Applied Computational Intelligence and Informatics (SACI), MAY 21-23, 2020, Timisoara, ROMANIA, ISBN: 978-1-7281-7376-4, Published: 2020;
147. Nedelcu, D., Gillich, G.R., Gerocs, A., Padurean, I. A comparative study between photogrammetry and laser technology applied on model turbine blades, INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Book Series: Journal of Physics Conference Series, Volume: 1426, Article Number: 012026, International Conference on Applied Sciences (ICAS), MAY 09-11, 2019, Hunedoara, ROMANIA, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;
148. Nedelcu, D., Gillich, G.R., Bloju, A., Padurean, I. The kinematic and kinetostatic study of the shaker mechanism with SolidWorks Motion, INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Book Series: Journal of Physics Conference Series, Volume: 1426, Article Number: 012025, International Conference on Applied Sciences (ICAS), MAY 09-11, 2019, Hunedoara, ROMANIA, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;
149. Neiconi, A.O., Pacurar, O.T., De Sabata, A. EMC Characteristics of Helical Antennas used in Automotive Testing, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 139-142, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
150. Nicola, S., Chirila, O.S., Stoicu-Tivadar, L. Gesture Classification for a Hand Controller Device Using Neural Networks, DIGITAL PERSONALIZED HEALTH AND MEDICINE, Book Series: Studies in Health Technology and Informatics, Volume: 270, Pages: 756-760, PubMed ID: 32570484, 30th Medical Informatics Europe (MIE) Conference, APR, 2020, Geneva, SWITZERLAND, ISSN: 0926-9630, eISSN: 1879-8365, ISBN: 978-1-64368-083-5; 978-1-64368-082-8, Published: 2020;
151. Nicola, S., Stoicu-Tivadar, L. Evaluating Interactivity in VR Healthcare Applications Using Analytics, IMPORTANCE OF HEALTH INFORMATICS IN PUBLIC HEALTH DURING A PANDEMIC, Book Series: Studies in Health Technology and Informatics, Volume: 272, Pages: 225-228, PubMed ID: 32604642, 18th Annual International Conference on Informatics, Management, and Technology in Healthcare (ICIMTH), JUL 03-05, 2020, ELECTR NETWORK, ISSN: 0926-9630, eISSN: 1879-8365, ISBN: 978-1-64368-093-4; 978-1-64368-092-7, Published: 2020;
152. Nitulescu, A., Crisan-Vida, M., Stoicu-Tivadar, L. Continuous Monitoring and Statistical Modelling of Heart Rate Variability, DIGITAL PERSONALIZED HEALTH AND MEDICINE, Book Series: Studies in Health Technology and Informatics, Volume: 270, Pages: 128-132, PubMed ID: 32570360, 30th Medical Informatics Europe (MIE) Conference, APR, 2020, Geneva, SWITZERLAND, ISSN: 0926-9630, eISSN: 1879-8365, ISBN: 978-1-64368-083-5; 978-1-64368-082-8, Published: 2020;
153. Oprea, R.I., Pater, F., Juratoni, A., Bundau, O. An Introduction to Spectral Theory in Fuzzy Normed Linear Spaces, INTERNATIONAL CONFERENCE ON NUMERICAL ANALYSIS AND APPLIED MATHEMATICS ICNAAM 2019, Book Series: AIP Conference Proceedings, Volume: 2293, Article Number: 350008, International Conference on Numerical Analysis and Applied Mathematics (ICNAAM), SEP 23-28, 2019, Rhodes, GREECE, ISSN: 0094-243X, ISBN: 978-0-7354-4025-8, Published: 2020;
154. Oprea, R.I., Pater, F., Juratoni, A., Bundau, O. Dynamic Analysis in an Economic Growth Model with CES Utility Function and Delay, INTERNATIONAL CONFERENCE ON NUMERICAL ANALYSIS AND APPLIED MATHEMATICS ICNAAM 2019, Book Series: AIP Conference Proceedings, Volume: 2293, Article Number: 350007, International Conference on Numerical Analysis and Applied Mathematics (ICNAAM), SEP 23-28, 2019, Rhodes, GREECE, ISSN: 0094-243X, ISBN: 978-0-7354-4025-8, Published: 2020;
155. Orasan, I.L., Căleanu, C.D. ARM Embedded Low Cost Solution for Implementing Deep Learning Paradigms, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 36-39, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
156. Orhei, C., Mocofan, M., Vert, S., Vasiu, R. End-to-End Computer Vision Framework, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 63-66, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;

157. Orhei, C., Bogdan, V., Bonchis, C. Edge map response of dilated and reconstructed classical filters, 2020 22ND INTERNATIONAL SYMPOSIUM ON SYMBOLIC AND NUMERIC ALGORITHMS FOR SCIENTIFIC COMPUTING (SYNASC 2020), Book Series: International Symposium on Symbolic and Numeric Algorithms for Scientific Computing, Pages: 187-194, 22nd International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC), SEP 01-04, 2020, ELECTR NETWORK, ISSN: 2470-8801, ISBN: 978-1-7281-7628-4, Published: 2020;
158. Pacurar, O., Silaghi, A., De Sabata, A. MEASUREMENT AND SIMULATION OF ELECTROSTATIC DISCHARGE IN THE AUTOMOTIVE INDUSTRY, 2020 13TH INTERNATIONAL CONFERENCE ON COMMUNICATIONS (COMM), Pages: 443-446, 13th International Conference on Communications (COMM), JUN 18-20, 2020, ELECTR NETWORK, ISBN: 978-1-7281-5611-8, Published: 2020;
159. Pacurar, O.T., Balint, C., Iftode, C., Silaghi, A.M., De Sabata, A. Spectrum Occupancy Measurements in the Wi-Fi Band with a PCB Antenna, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 143-146, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
160. Pacurar, O.T., Silaghi, A.M., Balint, C., De Sabata, A., Graur, A. Experiments Concerning the Spectrum Structure Inside an Automotive FMC Laboratory, 2020 15TH INTERNATIONAL CONFERENCE ON DEVELOPMENT AND APPLICATION SYSTEMS (DAS), Pages: 133-136, 15th International Conference on Development and Application Systems (DAS), MAY 21-23, 2020, Suceava, ROMANIA, ISBN: 978-1-7281-6870-8, Published: 2020;
161. Panfilii, I., Precup, R.E., Roman, R.C., Petriu, E.M. Wilt Dataset-based Comparative Analysis of Three Neural Networks, PROCEEDINGS OF THE 2020 12TH INTERNATIONAL CONFERENCE ON ELECTRONICS, COMPUTERS AND ARTIFICIAL INTELLIGENCE (ECAI-2020), Book Series: International Conference on Electronics Computers and Artificial Intelligence, 12th International Conference on Electronics, Computers and Artificial Intelligence (ECAI), JUN 25-27, 2020, Bucharest, ROMANIA, ISSN: 2378-7147, ISBN: 978-1-7281-6843-2, Published: 2020;
162. Paraschiva, G.A., Draghici, A. TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING SCHOOLS AS LEARNING ORGANISATIONS: EXPERIMENTAL RESEARCH, ROMANIA'S CASE, 14TH INTERNATIONAL TECHNOLOGY, EDUCATION AND DEVELOPMENT CONFERENCE (INTED2020), Book Series: INTED Proceedings, Pages: 4503-4512, 14th International Technology, Education and Development Conference (INTED), MAR 02-04, 2020, Valencia, SPAIN, ISSN: 2340-1079, ISBN: 978-84-09-17939-8, Published: 2020;
163. Paraschiva, G.A., Draghici, A. Are Romanian Schools Learning Organizations?, EDUCATION EXCELLENCE AND INNOVATION MANAGEMENT: A 2025 VISION TO SUSTAIN ECONOMIC DEVELOPMENT DURING GLOBAL CHALLENGES, Pages: 279-289, 35th International-Business-Information-Management-Association Conference (IBIMA), APR 01-02, 2020, Seville, SPAIN, ISBN: 978-0-9998551-4-0, Published: 2020;
164. Pasc A.M., Beilicci, R., Beilicci, E. Improvement of the pressurization station SPP 41 from the irrigation system of Ograda, Ialomita County, Romania, 5TH WORLD MULTIDISCIPLINARY CIVIL ENGINEERING-ARCHITECTURE-URBAN PLANNING SYMPOSIUM (WMCAUS), Book Series: IOP Conference Series-Materials Science and Engineering, Volume: 960, Article Number: 032082, 5th World Multidisciplinary Civil Engineering-Architecture-Urban Planning Symposium (WMCAUS), JUN 15-19, 2020, Prague, CZECH REPUBLIC, ISSN: 1757-8981, Published: 2020;
165. Pater, F., Herban, S., Rosu, S. On the Topics of "Mathematical Optimization in Modern Medicine and Engineering" Symposium 2019, INTERNATIONAL CONFERENCE ON NUMERICAL ANALYSIS AND APPLIED MATHEMATICS ICNAAM 2019, Book Series: AIP Conference Proceedings, Volume: 2293, Article Number: 350001, International Conference on Numerical Analysis and Applied Mathematics (ICNAAM), SEP 23-28, 2019, Rhodes, GREECE, ISSN: 0094-243X, ISBN: 978-0-7354-4025-8, Published: 2020;
166. Pater, L., Izvercian, M. A Statistical Study on Environmental Protection of Sustainable Products Consumers, INTERNATIONAL CONFERENCE ON NUMERICAL ANALYSIS AND APPLIED MATHEMATICS ICNAAM 2019, Book Series: AIP Conference Proceedings, Volume: 2293, Article Number: 350011, International Conference on Numerical Analysis and Applied Mathematics (ICNAAM), SEP 23-28, 2019, Rhodes, GREECE, ISSN: 0094-243X, ISBN: 978-0-7354-4025-8, Published: 2020;
167. Petrenci, R., Frigura-Iliasa, M., Baloi, F., Olariu, A., Iftime, S., Frigura-Iliasa, F. TEACHING TOOL FOR THE ASSESSMENT OF MAIN POLLUTING AGENTS NEAR THERMAL POWER PLANTS, 14TH INTERNATIONAL TECHNOLOGY, EDUCATION AND DEVELOPMENT CONFERENCE (INTED2020), Book Series: INTED Proceedings, Pages: 8040-8046, 14th International Technology, Education and Development Conference (INTED), MAR 02-04, 2020, Valencia, SPAIN, ISSN: 2340-1079, ISBN: 978-84-09-17939-8, Published: 2020;

168. Petri, M., Turi, A., Ivascu, L., Vlad, M.E. Taboos in Higher Education: How Ethical Values Are Bent Under Pressure, EDUCATION EXCELLENCE AND INNOVATION MANAGEMENT: A 2025 VISION TO SUSTAIN ECONOMIC DEVELOPMENT DURING GLOBAL CHALLENGES, Pages: 12774-12784, 35th International-Business-Information-Management-Association Conference (IBIMA), APR 01-02, 2020, Seville, SPAIN, ISBN: 978-0-9998551-4-0, Published: 2020;
169. Petrita, T., Alexa, F., Negrea, R. A Comparison Between Two Antenna Pattern Approximations, 2020 INTERNATIONAL WORKSHOP ON ANTENNA TECHNOLOGY (IWAT), International Workshop on Antenna Technology (iWAT), FEB 25-28, 2020, Bucharest, ROMANIA, ISBN: 978-1-7281-2640-1, Published: 2020;
170. Pfeifer, F., Anghel, A., Milincu, C., Filipescu, H., Frigura-Iliasa, F., Mohora, I. NEW ADVANCED TEACHING TOOLS FOR SMART CREATIVE DESIGN, 14TH INTERNATIONAL TECHNOLOGY, EDUCATION AND DEVELOPMENT CONFERENCE (INTED2020), Book Series: INTED Proceedings, Pages: 7833-7839, 14th International Technology, Education and Development Conference (INTED), MAR 02-04, 2020, Valencia, SPAIN, ISSN: 2340-1079, ISBN: 978-84-09-17939-8, Published: 2020;
171. Pfeifer, F., Frigura-Iliasa, M., Filipescu, H.E., Dolga, L., Dolga, V., Pocola, A. CAD Design of Overvoltage Protection Systems Applied to Embedded Systems in Automotive, 2020 IEEE 18TH WORLD SYMPOSIUM ON APPLIED MACHINE INTELLIGENCE AND INFORMATICS (SAMI 2020), Pages: 79-82, 18th IEEE World Symposium on Applied Machine Intelligence and Informatics (SAMI), JAN 23-25, 2020, Herlany, SLOVAKIA, ISBN: 978-1-7281-3149-8, Published: 2020;
172. Pinca-Bretotean, C., Josan, A., Preda, C. Numerical and experimental analysis of dry contact in pad disc brake assembly, INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Book Series: Journal of Physics Conference Series, Volume: 1426, Article Number: 012002, International Conference on Applied Sciences (ICAS), MAY 09-11, 2019, Hunedoara, ROMANIA, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;
173. Pop, M.D., Prostean, O., Prostean, G. Minimax Strategy for Lane Choice Prediction in Markovian Traffic Modeling, GOL'20: 2020 5TH INTERNATIONAL CONFERENCE ON LOGISTICS OPERATIONS MANAGEMENT (GOL), Pages: 73-78, 5th IEEE International Conference on Logistics Operations Management (GOL), OCT 28-30, 2020, ELECTR NETWORK, ISBN: 978-1-7281-6425-0, Published: 2020;
174. Pop, N., Iacob, F., Mezei, J.Z., Niyonzima, S., Motapon, O., Schneider, I.F. Dissociative recombination and vibrational excitation of molecular cations with electrons: application to H-2(+), BeH+ and their isotopomers, 31ST INTERNATIONAL CONFERENCE ON PHOTONIC, ELECTRONIC AND ATOMIC COLLISIONS (ICPEAC XXXI), Book Series: Journal of Physics Conference Series, Volume: 1412, Article Number: 172004, 31st International Conference on Photonic, Electronic and Atomic Collisions (ICPEAC), JUL 23-30, 2019, Deauville, FRANCE, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;
175. Pop-Calimanu, I.M., Cauc, A.A., Pop-Calimanu, M. A New Quadratic Step-Down Converter, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 215-218, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
176. Povian, C.M. ARCHITECTURAL STRATEGIES FOR CHILDREN WITH SPECIAL EDUCATIONAL NEEDS, 7TH INTERNATIONAL CONFERENCE ON EDUCATION AND SOCIAL SCIENCES (INTCESS 2020), Pages: 1167-1172, 7th International Conference on Education and Social Sciences (INTCESS), JAN 20-22, 2020, Dubai, U ARAB EMIRATES, ISBN: 978-605-82433-8-5, Published: 2020;
177. Povian, C.M. ALTERNATIVE METHODS OF TEACHING INTERIOR DESIGN STYLISTICS, 7TH INTERNATIONAL CONFERENCE ON EDUCATION AND SOCIAL SCIENCES (INTCESS 2020), Pages: 1253-1259, 7th International Conference on Education and Social Sciences (INTCESS), JAN 20-22, 2020, Dubai, U ARAB EMIRATES, ISBN: 978-605-82433-8-5, Published: 2020;
178. Povian, C.M. THE ARCHITECTURAL PERCEPTION AND THE MAIN FACTORS THAT CAN INFLUENCE IT, 14TH INTERNATIONAL TECHNOLOGY, EDUCATION AND DEVELOPMENT CONFERENCE (INTED2020), Book Series: INTED Proceedings, Pages: 7899-7906, 14th International Technology, Education and Development Conference (INTED), MAR 02-04, 2020, Valencia, SPAIN, ISSN: 2340-1079, ISBN: 978-84-09-17939-8, Published: 2020;
179. Prodan, G. The impact of Coronavirus on Romanian Automotive Industry, EDUCATION EXCELLENCE AND INNOVATION MANAGEMENT: A 2025 VISION TO SUSTAIN ECONOMIC DEVELOPMENT DURING GLOBAL CHALLENGES, Pages: 9871-9878, 35th International-Business-Information-Management-Association Conference (IBIMA), APR 01-02, 2020, Seville, SPAIN, ISBN: 978-0-9998551-4-0, Published: 2020;

180. Puiu, M., Chirita-Emandi, A., Andreescu, N., Doros, G., Popoiu, A., Dumitrescu, A., Lacatusu, A., Zimbru, C. Identifying the molecular cause in Marfan and Marfan like phenotype in a cohort of patients from Romania-5-year single center experience, EUROPEAN JOURNAL OF HUMAN GENETICS, Meeting Abstract: P04.42.C, Volume: 28, Issue: SUPPL 1, Pages: 243-244, Supplement: 1, ISSN: 1018-4813, eISSN: 1476-5438, Published: 2020;
181. Radac, M.B., Lala, T. Learning nonlinear robust control as a data-driven zero-sum two-player game for an active suspension system, IFAC PAPERSONLINE, Volume: 53, Issue: 2, Pages: 8057-8062, 21st IFAC World Congress on Automatic Control - Meeting Societal Challenges, JUL 11-17, 2020, ELECTR NETWORK, ISSN: 2405-8963, Published: 2020;
182. Radu, M., Serban, S., Popa, E., Heput, T. Influence of steel vacuuming on the reduction of hydrogen content, INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Book Series: Journal of Physics Conference Series, Volume: 1426, Article Number: 012052, International Conference on Applied Sciences (ICAS), MAY 09-11, 2019, Hunedoara, ROMANIA, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;
183. Ratiu, S., Alexa, V., Josan, A., Cioata, V.G., Kiss, I. Study of temperature dependent viscosity of different types of engine used oils, INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Book Series: Journal of Physics Conference Series, Volume: 1426, Article Number: 012001, International Conference on Applied Sciences (ICAS), MAY 09-11, 2019, Hunedoara, ROMANIA, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;
184. Ricman, R.S., Szabo, R., Burta, A. Temperature Acquisition and Logging in an Online SQL Database Used in a Photovoltaic System, 2020 43RD INTERNATIONAL CONFERENCE ON TELECOMMUNICATIONS AND SIGNAL PROCESSING (TSP), Pages: 57-60, 43rd International Conference on Telecommunications and Signal Processing (TSP), JUL 07-09, 2020, ELECTR NETWORK, ISBN: 978-1-7281-6376-5, Published: 2020;
185. Ricman, R.S., Szabo, R., Burta, A. Vacuum Pressure Online Logging Software Creation for a Solar Collector, 2020 43RD INTERNATIONAL CONFERENCE ON TELECOMMUNICATIONS AND SIGNAL PROCESSING (TSP), Pages: 61-64, 43rd International Conference on Telecommunications and Signal Processing (TSP), JUL 07-09, 2020, ELECTR NETWORK, ISBN: 978-1-7281-6376-5, Published: 2020;
186. Roman, R.C., Precup, R.E., Petriu, E.M., David, R.C., Hedrea, E.L., Szedlak-Stinean, A.I. First-Order Active Disturbance Rejection-Virtual Reference Feedback Tuning Control of Tower Crane Systems, 2020 24TH INTERNATIONAL CONFERENCE ON SYSTEM THEORY, CONTROL AND COMPUTING (ICSTCC), Book Series: International Conference on System Theory Control and Computing, Pages: 137-142, 24th International Conference on System Theory, Control and Computing (ICSTCC), OCT 08-10, 2020, ELECTR NETWORK, ISSN: 2372-1618, ISBN: 978-1-7281-9809-5, Published: 2020;
187. Roman, R.C., Precup, R.E., Petriu, E.M., Bojan-Dragos, C.A., Vanya, V.B., Rarinca, M.D. Second Order Active Disturbance Rejection Control - Virtual Reference Feedback Tuning for Twin Rotor Aerodynamic Systems, 2020 IEEE INTERNATIONAL CONFERENCE ON SYSTEMS, MAN, AND CYBERNETICS (SMC), Book Series: IEEE International Conference on Systems Man and Cybernetics Conference Proceedings, Pages: 1693-1698, IEEE International Conference on Systems, Man, and Cybernetics (SMC), OCT 11-14, 2020, ELECTR NETWORK, ISSN: 1062-922X, ISBN: 978-1-7281-8526-2, Published: 2020;
188. Saman, O., Muscaliuc, R., Stanciu, L. Music panel: An application for creating and editing music using OpenCV and JFugue, 2020 24TH INTERNATIONAL CONFERENCE ON SYSTEM THEORY, CONTROL AND COMPUTING (ICSTCC), Book Series: International Conference on System Theory Control and Computing, Pages: 379-383, 24th International Conference on System Theory, Control and Computing (ICSTCC), OCT 08-10, 2020, ELECTR NETWORK, ISSN: 2372-1618, ISBN: 978-1-7281-9809-5, Published: 2020;
189. Savu-Jivanov, A., Isar, A., Stolojescu-Crisan, C., Gal, J. Network Self-Similar Traffic Generator with Variable Hurst Parameter, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 359-362, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
190. Shamtshyan, M., Kolesnikov, B., Pushkarev, M., Gaceu, L., Oprea, O.B., Iatco, I., Mnerie, D., Mnerie, G., Tita, O., Tita, M., Georgescu, C., Mironescu, M., Stefanov, S., Damianova, S. Study of awareness of food labeling among consumers in North-West Russia, INTERNATIONAL SCIENTIFIC CONFERENCE ON BIOTECHNOLOGY AND FOOD TECHNOLOGY (BFT-2020), Book Series: E3S Web of Conferences, Volume: 215, Article Number: 01002, International Scientific Conference on Biotechnology and Food Technology (BFT), OCT 27-29, 2020, Saint Petersburg, RUSSIA, ISSN: 2267-1242, Published: 2020;

191. Sharma, A.K., Bhandari, R., Aherwar, A., Pinca-Bretotean, C. A study of fabrication methods of aluminum based composites focused on stir casting process, MATERIALS TODAY-PROCEEDINGS, Volume: 27, Pages: 1608-1612, 1st International Conference on Advanced Lightweight Materials and Structures (ICALMS), MAR 06-07, 2020, Hyderabad, INDIA, ISSN: 2214-7853, Published: 2020;
192. Sharma, A.K., Bhandari, R., Aherwar, A., Rimasauskiene, R., Pinca-Bretotean, C. A study of advancement in application opportunities of aluminum metal matrix composites, MATERIALS TODAY-PROCEEDINGS, Volume: 26, Pages: 2419-2424, 10th International Conference of Materials Processing and Characterization (ICMPC), FEB 21-23, 2020, Mathura, INDIA, ISSN: 2214-7853, Published: 2020;
193. Shen, W.S., Renken, F., Lascu, D. Soft Switched Multiphase Converter with Parallel Resonant DC-Link Circuit, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 195-198, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
194. Shen, W.S., Renken, F., Lascu, D. A New Multiphase ZVT-PWM Synchronous Buck Converter, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 199-202, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
195. Silaghi, A.M., De Sabata, A. EMC Simulation of an Automotive Ethernet Interface, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 103-106, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
196. Silaghi, A.M., De Sabata, A., Graur, A., Fechet, R. Simulation of Surge Pulse Generator and Applications in Automotive Immunity Testing, 2020 15TH INTERNATIONAL CONFERENCE ON DEVELOPMENT AND APPLICATION SYSTEMS (DAS), Pages: 117-120, 15th International Conference on Development and Application Systems (DAS), MAY 21-23, 2020, Suceava, ROMANIA, ISBN: 978-1-7281-6870-8, Published: 2020;
197. Silaghi, A.M., De Sabata, A. Analysis of Radiated Immunity of an Automotive Display by Means of Testing and Simulation, 2020 43RD INTERNATIONAL CONFERENCE ON TELECOMMUNICATIONS AND SIGNAL PROCESSING (TSP), Pages: 73-76, 43rd International Conference on Telecommunications and Signal Processing (TSP), JUL 07-09, 2020, ELECTR NETWORK, ISBN: 978-1-7281-6376-5, Published: 2020;
198. Silaghi, A.M., Berinde, F., Bleoju, C., De Sabata, A. EMC Simulation of Conducted Emissions Produced by a DC-DC converter, 2020 IEEE 26TH INTERNATIONAL SYMPOSIUM FOR DESIGN AND TECHNOLOGY IN ELECTRONIC PACKAGING (SIITME 2020), Book Series: International Symposium for Design and Technology in Electronic Packaging, Pages: 440-443, IEEE 26th International Symposium for Design and Technology in Electronic Packaging (SIITME), OCT 21-24, 2020, Pitesti, ROMANIA, ISSN: 2641-287X, ISBN: 978-1-7281-7506-5, Published: 2020;
199. Silaghi, A.M., De Sabata, A., Matekovits, L. Multi Wide-Band Frequency Selective Surface for Automotive Applications, 2020 IEEE INTERNATIONAL SYMPOSIUM ON ANTENNAS AND PROPAGATION AND NORTH AMERICAN RADIO SCIENCE MEETING, Book Series: IEEE Antennas and Propagation Society International Symposium, Pages: 721-722, IEEE International Symposium on Antennas and Propagation / North American Radio Science Meeting, JUL 05-10, 2020, ISSN: 1522-3965, ISBN: 978-1-7281-6670-4, Published: 2020;
200. Simu, C., Vesa, A. First Fresnel Ellipse Evaluation, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 399-403, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
201. Sirbu, C.L., Simion, G., Căleanu, C.D. Deep CNN for Contrast-Enhanced Ultrasound Focal Liver Lesions Diagnosis, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 3-6, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;

202. Staicu, L.L., Puiu, R.V., Bogdan, R., Crisan-Vida, M., Marcu, M. Communication and Verification for Radar Sensors in the Context of Driver Assistance Systems, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 87-90, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
203. Stirb, A., Marc, P., Belc, A., Belc, F., Buzuriu, A. Research Concerning the Impact of Geometrical Characteristics of Natural Quarry Aggregates Used in the Composition of Asphalt Concrete, 5TH WORLD MULTIDISCIPLINARY CIVIL ENGINEERING-ARCHITECTURE-URBAN PLANNING SYMPOSIUM (WMCAUS), Book Series: IOP Conference Series-Materials Science and Engineering, Volume: 960, Article Number: 032046, 5th World Multidisciplinary Civil Engineering-Architecture-Urban Planning Symposium (WMCAUS), JUN 15-19, 2020, Prague, CZECH REPUBLIC, ISSN: 1757-8981, Published: 2020;
204. Stoica, D.M. Nonuniform stability in mean-square for stochastic differential equations in Hilbert spaces, INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Book Series: Journal of Physics Conference Series, Volume: 1426, Article Number: 012013, International Conference on Applied Sciences (ICAS), MAY 09-11, 2019, Hunedoara, ROMANIA, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;
205. Stolojescu-Crisan, C., Butunoi, B.P., Crisan, C. IoT Based Intelligent Building Applications in the Context of COVID-19 Pandemic, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 355-358, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
206. Strava, C.C., Varga, M.G. Evaluating the Level of Perceived Stress on Physical Education and Sports Teachers from Timis County, Romania, at the Beginning of the School Year, in the Context of COVID-19 Pandemic, PROCEEDINGS OF THE 6TH INTERNATIONAL CONFERENCE OF UNIVERSITARIA CONSORTIUM FEFSTIM: PHYSICAL EDUCATION, SPORTS AND KINESIOTHERAPY - IMPLICATIONS IN QUALITY OF LIFE, Pages: 57-62, 6th International Conference of the University Consortium - FEFSTIM - Physical Education, Sports and Kinesiotherapy - Implications in Quality of Life, NOV 06-07, 2020, Timisoara, ROMANIA, ISBN: 979-12-80225-05-4, Published: 2020;
207. Szabo, R. Parameter Monitoring and Logging of a Thermo-Electric Hybrid Solar System, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 115-118, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
208. Szabo, R. The Design of a Crowd Density Checker App in Android with People Localization Using the GPS from the Mobile Device, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 347-350, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
209. Szabo, R., Gontean, A. Resource Utilization Comparison between Plain FPGA and SoC Combined with FPGA for Image Processing Applications Used by Robotic Arms, 2020 IEEE 26TH INTERNATIONAL SYMPOSIUM FOR DESIGN AND TECHNOLOGY IN ELECTRONIC PACKAGING (SIITME 2020), Book Series: International Symposium for Design and Technology in Electronic Packaging, Pages: 256-259, IEEE 26th International Symposium for Design and Technology in Electronic Packaging (SIITME), OCT 21-24, 2020, Pitesti, ROMANIA, ISSN: 2641-287X, ISBN: 978-1-7281-7506-5, Published: 2020;
210. Tarfulea, N., Frigura-Iliasa, F.M., Iftime, S., Iorga, M., Simo, A., Frigura-Iliasa, M. TEACHING EQUIPMENT AND PROCEDURE FOR LOW VOLTAGE QUALITY MEASUREMENTS, 14TH INTERNATIONAL TECHNOLOGY, EDUCATION AND DEVELOPMENT CONFERENCE (INTED2020), Book Series: INTED Proceedings, Pages: 8062-8067, 14th International Technology, Education and Development Conference (INTED), MAR 02-04, 2020, Valencia, SPAIN, ISSN: 2340-1079, ISBN: 978-84-09-17939-8, Published: 2020;
211. Tarfulea, N., Simo, A., Vatau, D., Frigura-Iliasa, F.M., Musuroi, S., Andea, P. Fuzzy Logic Based Diagnosis of SF6 Switching Devices, 2020 IEEE 18TH WORLD SYMPOSIUM ON APPLIED MACHINE INTELLIGENCE AND INFORMATICS (SAMI 2020), Pages: 31-34, 18th IEEE World Symposium on Applied Machine Intelligence and Informatics (SAMI), JAN 23-25, 2020, Herlany, SLOVAKIA, ISBN: 978-1-7281-3149-8, Published: 2020;

212. Teusdea, D.F., Stan, D.V., Voda, M., Lovasz, E.C. Study on the influence of recycled material on the tensile strength of HDPE products, MODTECH INTERNATIONAL CONFERENCE - MODERN TECHNOLOGIES IN INDUSTRIAL ENGINEERING VIII, Book Series: IOP Conference Series-Materials Science and Engineering, Volume: 916, Article Number: 012119, 8th International Conference on Modern Technologies in Industrial Engineering VIII (ModTech), JUN 23-27, 2020, ELECTR NETWORK, ISSN: 1757-8981, Published: 2020;
213. Tinca, J.E., Rai, P., Faller, D. System-Level Flip-Chip Ball Grid Array Solder Joint Reliability Assessment Under Different Methodologies and Correlation with Accelerated Thermal Cycling Experimental Data, 2020 IEEE 8TH ELECTRONICS SYSTEM-INTEGRATION TECHNOLOGY CONFERENCE (ESTC), 8th IEEE Electronics System-Integration Technology Conference (ESTC), SEP 15-18, 2020, Vestfold, NORWAY, ISBN: 978-1-7281-6293-5, Published: 2020;
214. Tirian, G.O., Chioncel, C.P., Holubeck, R., Cinkar, K. PLC programming to optimize water flow in secondary cooling zone, INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Book Series: Journal of Physics Conference Series, Volume: 1426, Article Number: 012020, International Conference on Applied Sciences (ICAS), MAY 09-11, 2019, Hunedoara, ROMANIA, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;
215. Tirian, G.O., Chioncel, C.P., Holubeck, R., Cinkar, K. Fuzzy decision system with a single variable parameter used in the intelligent control of the processes, INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Book Series: Journal of Physics Conference Series, Volume: 1426, Article Number: 012021, International Conference on Applied Sciences (ICAS), MAY 09-11, 2019, Hunedoara, ROMANIA, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;
216. Todea, N., Frigura-Iliasa, F.M., Filipescu, H.E., Dolga, L., Dolga, V., Crisovan, F. Reconstruction of Industrial Parts by using 3D Scanning Techniques, 2020 IEEE 18TH WORLD SYMPOSIUM ON APPLIED MACHINE INTELLIGENCE AND INFORMATICS (SAMI 2020), Pages: 27-30, 18th IEEE World Symposium on Applied Machine Intelligence and Informatics (SAMI), JAN 23-25, 2020, Herlany, SLOVAKIA, ISBN: 978-1-7281-3149-8, Published: 2020;
217. Tudor, M.C., Grozav, A. Constructions for the Protection of Underground Water against Pollution, in Warehouse Deposit Areas, 5TH WORLD MULTIDISCIPLINARY CIVIL ENGINEERING-ARCHITECTURE-URBAN PLANNING SYMPOSIUM (WMCAUS), Book Series: IOP Conference Series-Materials Science and Engineering, Volume: 960, Article Number: 022071, 5th World Multidisciplinary Civil Engineering-Architecture-Urban Planning Symposium (WMCAUS), JUN 15-19, 2020, Prague, CZECH REPUBLIC, ISSN: 1757-8981, Published: 2020;
218. Tudoroni, B., Isar, D. Simulation of Automotive MIMO Radar, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 367-370, 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
219. Tulcan, A., Banciu, F.V., Grozav, I. Tolerance allocation using Monte Carlo simulation, MODTECH INTERNATIONAL CONFERENCE - MODERN TECHNOLOGIES IN INDUSTRIAL ENGINEERING VIII, Book Series: IOP Conference Series-Materials Science and Engineering, Volume: 916, Article Number: 012122, 8th International Conference on Modern Technologies in Industrial Engineering VIII (ModTech), JUN 23-27, 2020, ELECTR NETWORK, ISSN: 1757-8981, Published: 2020;
220. Ungureanu-Anghel, D., Robu, R., Prostean, O. Mathematical Formalism of Sequential Automaton with Parallel Branches used in Industrial Automation, 2020 IEEE 14TH INTERNATIONAL SYMPOSIUM ON APPLIED COMPUTATIONAL INTELLIGENCE AND INFORMATICS (SACI 2020), Pages: 217-220, IEEE 14th International Symposium on Applied Computational Intelligence and Informatics (SACI), MAY 21-23, 2020, Timisoara, ROMANIA, ISBN: 978-1-7281-7376-4, Published: 2020;
221. Ursu-Neamt, G.V. Dynamic circulation in curve with R=300 m radius for CFR 060-EA 5100kW electric locomotive, INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Book Series: Journal of Physics Conference Series, Volume: 1426, Article Number: 012029, International Conference on Applied Sciences (ICAS), MAY 09-11, 2019, Hunedoara, ROMANIA, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;
222. Ursu-Neamt, G.V. Study about wear of wheel's bandage for CFR 060-EA 5100kW electric locomotive at circulation in curve with R=300 m radius, INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Book Series: Journal of Physics Conference Series, Volume: 1426, Article Number: 012030, International Conference on Applied Sciences (ICAS), MAY 09-11, 2019, Hunedoara, ROMANIA, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;

223. Valean, C., Marsavina, L., Marghitas, M., Linul, E., Razavi, J., Berto, F. Effect of manufacturing parameters on tensile properties of FDM printed specimens, 1ST MEDITERRANEAN CONFERENCE ON FRACTURE AND STRUCTURAL INTEGRITY (MEDFRACT1), Book Series: Procedia Structural Integrity, Volume: 26, Pages: 313-320, 1st Mediterranean Conference on Fracture and Structural Integrity (MedFract), FEB, 2020, ELECTR NETWORK, ISSN: 2452-3216, Published: 2020;
224. Valean, C., Marsavina, L., Marghitas, M., Linul, E., Razavi, J., Berto, F., Brighenti, R. The effect of crack insertion for FDM printed PLA materials on Mode I and Mode II fracture toughness, 1ST VIRTUAL EUROPEAN CONFERENCE ON FRACTURE - VECF1, Book Series: Procedia Structural Integrity, Volume: 28, Pages: 1134-1139, 1st European-Structural-Integrity-Society (ESIS) Virtual European Conference on Fracture (ECF), JUN 29-JUL 01, 2020, ELECTR NETWORK, ISSN: 2452-3216, Published: 2020;
225. Viadoescu, C., Tunea, M., Stanciu, L. Benefits of Using Mobile Applications to Keep Under Control, Detect, Attenuate and Monitor COVID-19 Pandemic, 2020 INTERNATIONAL CONFERENCE ON E-HEALTH AND BIOENGINEERING (EHB), Book Series: E-Health and Bioengineering Conference, 8th International Conference on E-Health and Bioengineering (EHB), OCT 29-30, 2020, ELECTR NETWORK, ISSN: 2575-5137, eISSN: 2575-5145, ISBN: 978-1-7281-8803-4, Published: 2020;
226. Vilceanu, R., Onita, M., Ternauciu, A. Analyzing parking lots vacancy detection algorithms using Mask R-CNN implementations, 2020 14TH INTERNATIONAL SYMPOSIUM ON ELECTRONICS AND TELECOMMUNICATIONS (ISETC), Book Series: International Symposium on Electronics and Telecommunications, Pages: 28-31, Title: 14th International Symposium on Electronics and Telecommunications (ISETC), NOV 05-06, 2020, ELECTR NETWORK, ISSN: 2475-787X, ISBN: 978-1-7281-8921-5, Published: 2020;
227. Visescu, M., Badaluta-Minda, C., Adam, R., Florescu, C., Eles, G. Flood Modelling in the Barzava River Sector, 5TH WORLD MULTIDISCIPLINARY CIVIL ENGINEERING-ARCHITECTURE-URBAN PLANNING SYMPOSIUM (WMCAUS), Book Series: IOP Conference Series-Materials Science and Engineering, Volume: 960, Article Number: 032014, 5th World Multidisciplinary Civil Engineering-Architecture-Urban Planning Symposium (WMCAUS), JUN 15-19, 2020, Prague, CZECH REPUBLIC, ISSN: 1757-8981, Published: 2020;
228. Wu, C., Boldea, I., Zhou, D., Tutelea, L., Blaabjerg, F. Variable Stator Frequency Diode Rectifier DFIG for Lower Cost MVDC Interface, 2020 IEEE ENERGY CONVERSION CONGRESS AND EXPOSITION (ECCE), Book Series: IEEE Energy Conversion Congress and Exposition, Pages: 4189-4193, 12th Annual IEEE Energy Conversion Congress and Exposition (IEEE ECCE), OCT 10-15, 2020, Detroit, MI, ISSN: 2329-3721, ISBN: 978-1-7281-5826-6, Published: 2020;
229. Zgripcea, L., Heput, T., Putan, V., Ardelean, M. Researches regarding increase of impact resistance for welded structures by weld micro-alloying, INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Book Series: Journal of Physics Conference Series, Volume: 1426, Article Number: 012053, International Conference on Applied Sciences (ICAS), MAY 09-11, 2019, Hunedoara, ROMANIA, ISSN: 1742-6588, eISSN: 1742-6596, Published: 2020;
230. Zimbru, C.G., Andreescu, N., Chirita-Emandi, A., Puiu, M. Predicting Human Acceptor Splice Site Regions using Text Distance Methods, 2020 INTERNATIONAL CONFERENCE ON E-HEALTH AND BIOENGINEERING (EHB), Book Series: E-Health and Bioengineering Conference, 8th International Conference on E-Health and Bioengineering (EHB), OCT 29-30, 2020, ELECTR NETWORK, ISSN: 2575-5137, eISSN: 2575-5145, ISBN: 978-1-7281-8803-4, Published: 2020.

\* The data was obtained from Web of Science - Clarivate Analytics in 05 November 2021

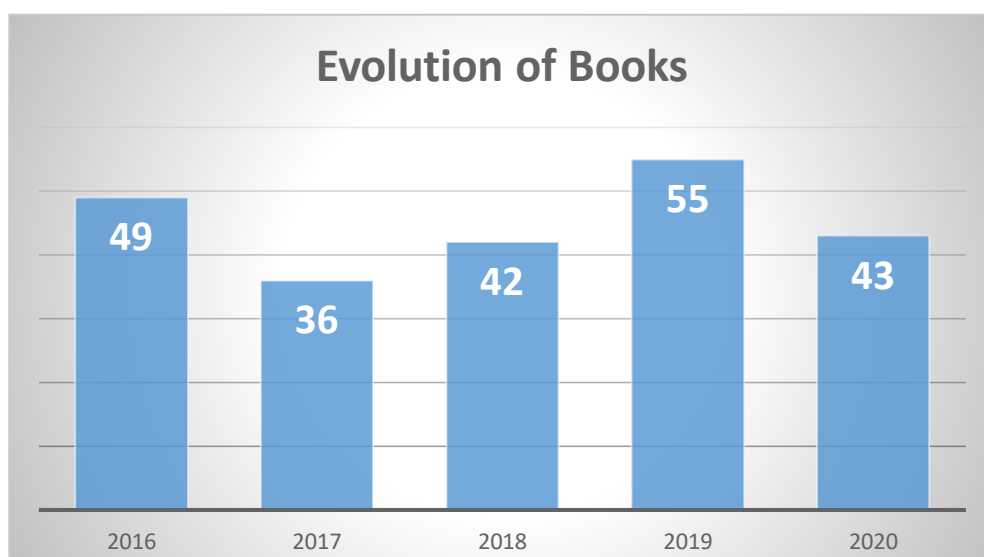


# BOOKS



## EVOLUTION OF BOOKS UNDER AFFILIATIONS OF UPT 2016 - 2020

A published book is indisputable evidence of research that has been performed, completed, and accepted by peers. Book is also an indicator of achievement of a certain academic standard. Besides communication of a finalised piece of research, the book is the basis for further opinions, views and critiques from fellow professionals and academics separated by time and distance. Most importantly, it represents the only permanent record of scientific work that has been completed.



In this chapter we present the books written by our professors and researchers, published at Romanian publishers as well as at international prestigious publishers.



## *Books in highlight*



## EUROPEAN RECOMMENDATIONS FOR REUSE OF STEEL PRODUCTS IN SINGLE-STOREY BUILDINGS

Ana M. Girão Coelho, Ricardo Pimentel, Viorel Ungureanu, Petr Hradil, Jyrki Kesti

Published by: European Convention for Constructional Steelwork, 2020, Pages: 237

ISBN: 978-92-9147-170-6

### Short description of the context

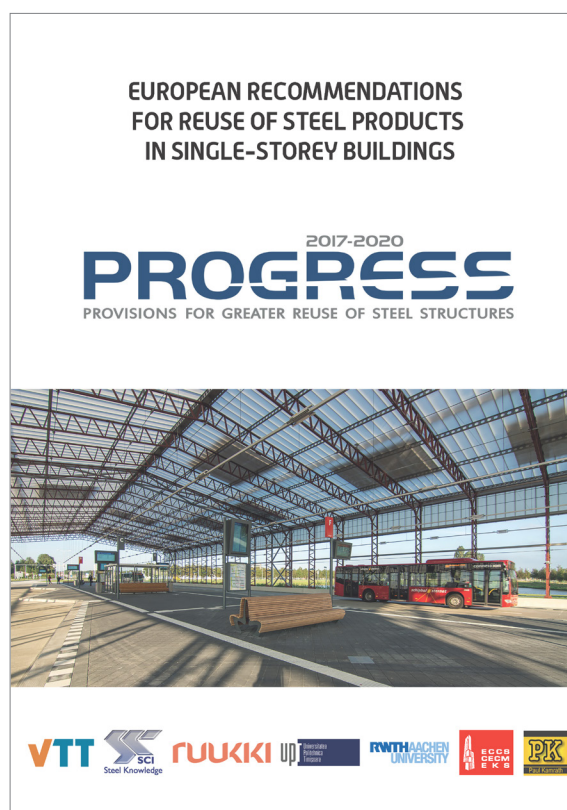
The construction industry needs to develop more sustainable construction practices that lead to a lower carbon footprint and contribute to the circular economy. The 3Rs waste management hierarchy (Reduce-Reuse-Recycle) can be applied in structural engineering to help develop new design approaches and systems that reduce environmental impacts and improve the overall structural efficiency of construction.

Using reclaimed structural steel members on a project is an effective strategy by eliminating the energy required to recycle steelwork into new structural sections.

### Purpose and Motivation of the book

The purpose of this publication is to provide recommendations and practical information on the fabrication and detailing of single-storey buildings made from reclaimed steel and on the design of buildings for future demounting and reuse.

These recommendations provide design guidance on the improvement of existing Eurocode based procedures for designs using reclaimed steel products, and provide information on design for future adaptability, demountability and reuse. The emphasis is on single-storey industrial buildings, but the principles can be extended to other types of building. The recommendations are presented as guidelines for the reuse of single storey buildings in the context of Eurocode design.



### Summary

The book is divided into three parts:

Part 1: Recommendations for reusing existing single-storey buildings, discusses general technical issues related to the structural use of reclaimed steel from existing single-storey industrial buildings.

Part 2: Recommendations for the design of single-storey buildings to facilitate future deconstruction and reuse cover the design of new buildings with the goals of functionality, ease of fabrication, demountability and future reuse.

Part 3 presents some case studies that illustrate the use of reclaimed steel structures in various EU countries and some of the technical issues that were overcome.

A protocol for condition assessment, sampling and testing of reclaimed steel is given in Appendix A. The derivation of the modified partial factor for the buckling resistance of reused steel members is presented in Appendix B.

## EDUCAȚIA PRIN E-LEARNING (E-LEARNING EDUCATION)

Doina BANCUI, Ben-Oni ARDELEAN, Larisa IVAȘCU, Daniel FODOREAN

Published by: Editura Tehnică,  
Academia Oamenilor de Știință din România,  
2020, Pages: 244  
ISBN: 978-606-8636-73-3; 978-973-31-2405-4

### Short description of the context

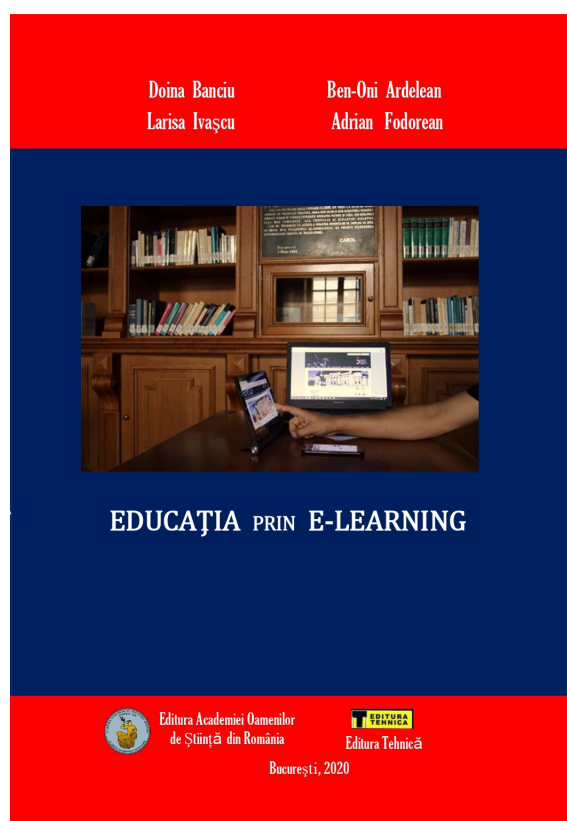
The book is intended to be a user guide both for people involved in the educational process (teachers, tutors, instructors, pupils, students) and for other people who, in the current conditions, need to be informed, communicate and work. Without moving in the community.

### Purpose and Motivation of the book

The need to introduce a new line of pedagogical training can be outlined, with an impact on the process of professional-cognitive development “learning - unlearning - relearning”, but which also contributes to the establishment of an emotional comfort for each teacher involved. Before learning something new, it is very good to give up, to “learn” from the old professional constructs, to make room for the new ones. This subject is all the more challenging, as the formation of digital skills is an imperative that challenges both time and educational “times”, and the expectation is not only of students, but also becomes an expectation of the community, transformed into social pressure. And as the relationship between patience and the digital world is not necessarily a biunivocal one, the personality trait (nn. patience) being perceived rather as an element of conservatism, the adjustment of institutional deadlines but also of personal agendas, to the action complexes reserved for digitization, it becomes the next step.

### Summary

This book arose from the desire to support the educational process in Romania during this period in which, due to the COVID-19 pandemic, both teachers and students must quickly adapt to the new conditions of teaching - learning and communication. The use of information and communication technology as a tool for the transmission and



acquisition of knowledge has evolved over time with the evolution and spread of computers and communication networks, especially the Internet. Policies and strategies developed at international and national level for building the information society in conjunction with concrete implementation actions in all areas of activity have led to the development of the skills of most citizens, of all ages, in the use of computers. In this context, the transition to the large-scale e-learning process has found a suitable ground, in most cases, for the construction of new forms of education of children and young people in all schooling systems. But with technology, new theories, methods, and practices have emerged in education. The paper briefly presents the theories and methods of e-learning, practical examples of e-learning systems in universities in several countries resulting from an international study and computer tools in support of online education.

## ELEMENTE DE ELECTRONICĂ DE PUTERE

**Octavian CORNEA**

Published by: Orizonturi Universitare, Timișoara,

2020, Pages: 184

ISBN: 978-973-638-647-3

### Short description of the context

A brief introduction to an area of electrical engineering that has a significant impact on the industry.

### Purpose and Motivation of the book

Convincing the students and engineers in Electrical Engineering of current and future importance of power electronics.

### Summary

The main categories of power static converters are presented in four chapters, which cover all the possibilities of energy conversion. The basic topologies are included, for which the operating modes are described, important mathematical expressions are given and, where appropriate, explanations are provided in relation to the power electronic converter behavior at the interface with the AC grid.





## Books List



1. Banciu, D., Ardelean, B.O., Ivașcu, L., Fodorean, D. Educația prin e-learning (e-learning education), Editura Academiei Oamenilor de Știință din România, Editura Tehnică, București, 2020, ISBN: 978-606-8636-73-3; 978-973-31-2405-4;
2. Bob, C. Durabilitatea și sustenabilitatea construcțiilor, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0358-0;
3. Boldea, I. (ed.), Ghiță, R. (Trad.) Electric machines. UPT selection contribution. 1920 – 2020, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0356-6;
4. Bordeasu, I. Monografia laboratorului de cercetare a eroziunii prin cavitație a Universității Politehnica Timișoara (1960 – 2020), Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0371-9;
5. Bordeasu, I., Ghera, C., Sălcianu, C.L., Stroiță, C.D. Elemente de proiectare și tehnologie de fabricație a reperelor mașinilor și sistemelor hidro-pneumatice, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0354-2;
6. Căleanu, C.D., Ciugudean, M., Ignea, A. (ed.) Monografia Facultății de Electronică, Telecomunicații și Tehnologii Informaționale din Timișoara. La semicentenar, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0391-7;
7. Ciurel, D. Cultura media, Editura Tritonic, 2020, ISBN: 978-606-749-472-3;
8. Cornea, O. Elemente de electronică de putere, Editura Orizonturi Universitare, Timișoara, 2020, ISBN: 978-973-638-647-3;
9. Cosma, C. Prototipare și fabricație rapidă. Aplicații, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0372-6;
10. Dejica Carțș, A. Deutsch für Ingenieure. Lehr- und Arbeitsbuch für Studierende der Ingenieurwissenschaften: Mechanik und Mechatronik, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0384-9;
11. Dejica, D. Dicționar englez-român, român-englez cu termeni și expresii utilizate în media digitală, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0392-4;
12. Dejica, D., Eugeni, C., Dejica-Carțș, A. (eds.) Translation Studies and Information Technologz – New Pathwazs for Researchers, Teachers and Professional, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0351-1;
13. Dejica-Carțș, A. Deutsch für den Beruf. Lehr- und Arbeitsbuch für Studierende der Studienrichtung: Kommunikation und PR, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0399-3;
14. Feier, A. Acoperiri termice și recondiționări. Aplicații, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0403-7;
15. Găman, M., Branea, A.M., Bocan, C. (Coord.) Student Trends 2016 – 2017, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0373-3;
16. Găman, M., Branea, A.M., Bocan, C. (Coord.) Student Trends 2017 – 2018, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0374-0;
17. Girão Coelho, A.M., Pimentel, R., Ungureanu, V., Hradil, P., Kesti, J. European Recommendations for Reuse of Steel Products in Single-Storey Buildings, ECCS – European Convention for Constructional Steelwork, 2020, ISBN: 978-92-9147-170-6;
18. Greconici, M. Ecuațiile câmpului electromagnetic pentru corpuri în mișcare. Condiții de interfață, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0398-6;

19. Ionel, S. Trilogia profesorilor, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0369-6;
20. Ivașcu, L. Marketing – Aplicații și studii de caz (Marketing – applications and case studies), Editura Eurobit, 2020, ISBN: 978-973-132-646-7;
21. Ivașcu, L. Marketing, Editura Eurobit, 2020, ISBN: 978-973-132-647-4;
22. Josan, A. Tehnologii de formare și turnare a pieselor metalice. Aplicații practice, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0378-8;
23. Lelea, D., Cioabla, E. (CD) Metode numerice în ingineria mecanică, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0350-4;
24. Marc, S. Bonca, G. Notions of molecular genetics and cytogenetics, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0360-3;
25. Micluța, V.M. Stimularea creativității elevilor, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0383-2;
26. Moscovici, A.M. Cadastu tehnic. Probleme aplicative, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0397-5;
27. Mușuroi, S. (Coord.), Popovici, D., Șorândaru, C., Lascu, C., Ancuți, C.M., Svoboda, M., Olărescu, V.N., Fărcașiu, M. (Trad.) Advanced electric drivers. An UPT selection, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0308-5;
28. Osaci, M. Fizica atmosferei, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0365-8;
29. Osaci, M. Surse de radiație și tehnici de protecție, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0366-5;
30. Osaci, M. Teoria Câmpului electromagnetic, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0367-2;
31. Oteșteanu, M. Noi, Alunni – EtcTm, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0385-6;
32. Părvulescu, L.D., Cernescu, A.V. Exploatarea și mentenanța echipamentelor hidropneumatice, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0361-0;
33. Pinca-Bretotean, C., Birtok-Băneasă, C. Transmisii mecanice. Aplicații la autovehicule, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0394-8;
34. Popa, A.A. Mașini electrice, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0355-9;
35. Popa, H.L. Ingineria și managementul competitivității sustenabile, Editura Eurobit, Timișoara, 2020, ISBN 978-973-132-681-8;
36. Rădulescu, R. (Coord.) Salonul internațional de invenții și inovații „Traian Vuia”. Timișoara. 13-15 octombrie 2020, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0386-3;
37. Sârbu, I. O viață de dascăl universitar. Sinteza activității de 45 de ani, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0364-1;
38. Szabó, R. Pzthon as the second programming language, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0368-9;
39. Șerban, V.A., Neguț, N., Florescu, C. Politehnica Timișoara. Un secol de istorie sportivă, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0370-2;

40. Tirian, G.O., Deaconu, S.I. (Coord.) Monografia Facultății de Inginerie din Hunedoara. 1970 – 2020, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0395-5;
41. Vaida, V. Centenarul Politehnicii din Timișoara. Electro 1968. O promoție de aur a industrializării și electrificării României, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0379-5;
42. Vasilescu, M.D. Tehnologia de fabricare a autovehiculelor, Vol. I, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0389-4 / ISBN 978-606-35-0390-0 (vol. I);
43. Walter, G. Investigating the discourse of financial reporting. Communicative strategies and translation problems, Editura Politehnica, Timișoara, 2020, ISBN 978-606-35-0362-7.



## Book Chapters List



1. Todea, A., Boeriu, C.G., Peter, F., Biro, E. IMMOBILIZED beta-D-GALACTOSIDASES FOR IMPROVED SYNTHESIS OF SHORT-CHAIN GALACTO-OLIGOSACCHARIDES, BIOTECHNOLOGICAL PROGRESS AND BEVERAGE CONSUMPTION, Book Series: Science of Beverages, Volume: 19, Pages: 71-110, WOODHEAD PUBL LTD, CAMBRIDGE, DUXFORD, ENGLAND, 2020, ISBN: 978-0-12-817285-8; 978-0-12-816678-9, Book DOI: 10.1016/C2017-0-02393-5.



Indexed in Web of Science - Clarivate Analytics





# Politehnica University Timisoara



Piata Victoriei No. 2  
RO 300006, Timisoara  
Fax: +40 256 40 30 21  
Email: [rector@upt.ro](mailto:rector@upt.ro)  
[www.upt.ro](http://www.upt.ro)



Editura **POLITEHNICA**

ISSN 1841-2769  
ISSN-L 1841-2769