

ANNEX 1c. Self-assessment report of state or private higher education institutions over the last 5 years

SELF-ASSESSMENT REPORT

-framework structure-

1. Identification data

1.1 Name of the research organization: Universitatea Politehnica Timișoara

1.2 The Founding Act, and subsequent amendments: Royal Decree no.4822 from 11.11.1920.

1.3 Registration number in the Register of Potential Contractors:2281

1.4 Legal representative: Assoc.Prof.Dr. Florin DRĂGAN

1.5 Contact person: Prof.Dr. Liviu MARȘAVINA

1.6 Field of activity: Higher Education Institution, Research Organization

1.7 Address: 2 Victoria Square, 300006 Timișoara

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2. Brief presentation of the research organization

2.1 Background

Established in 1920, by Royal Decree no. 4822 of 11.11.1920, shortly after the union of the Romanian territories, in a European context marked by the redefinition of the state and the consequences of the First World War, the Polytechnic School of Timisoara, as it was called at the beginning, was the answer to one of the requirements formulated by the Romanian society of the time and the requirements of the labor market for the training of engineers.

The main moments in the history of UPT are the following:

1920 The activity of the Polytechnic School in Timișoara begins based on the Royal Decree no. 4822 of 11.11.1920 of King Ferdinand.

1921 The first issue of the Yearbook of the Polytechnic School appears.

1921 The first cycle of public scientific and general culture conferences is initiated.

1921 The "Mathematical Journal of Timișoara" (RMT) is founded under the leadership of Professor Traian Lalescu, Rector of the Polytechnic School.

1923 The Pavilion of the Faculty of Mechanics is inaugurated, its first building.

1923 The "Scientific Society of the Polytechnic School of Timișoara" is founded, which prints in 1925 the first issue of the publication "Bulletin Scientifique de 'Ecole Politehnique de Timișoara".

1924 The engineering degree is awarded to the first class.

- 1927 The first Congress of engineers, graduates of the Polytechnic School, is organized.
- 1927 The first student dormitory with 220 places is put into use.
- 1929 The first Chemical Society in Romania is established.
- 1930 The student canteen is put into use.
- 1933 Two distinct faculties are created: Electromechanics, respectively Mines and Metallurgy.
- 1935 The Polytechnic School received the right to confer the title of doctor of engineering.
- 1939 The first title of Doctor of Engineering is awarded to Professor Stefan Nădășan.
- 1948 The Polytechnic School changes its name to "The Polytechnic Institute of Timișoara".
- 1961 The "Computing Center" is established.
- 2011 At the university ranking exercise, UPT was in the first category, as **advanced research and education university**.
- 2013 Based on Government Decision no. 493/2013 published in the Official Gazette no.447/22.07.2013, the name is changed to POLITEHNICA UNIVERSITY OF TIMIȘOARA.
- 2014 The new UPT Library is inaugurated.

The Politehnica University of Timisoara, a university of advanced research and education, is today one of the Romanian schools with tradition, recognized nationally and internationally, both through the activity of generations of academics and through the exceptional activity of prestigious academics. In the spirit of tradition, the mission of the Politehnica University of Timisoara is to satisfy the competence requirements of the societal environment, by providing higher professional training, at university and postgraduate level. Carrying fundamental values, the mission also reflected the concern for the future of society, by tracing the directions of its development at local, regional, national and international level.

Since the establishment of the Polytechnic School, the teaching staff has been of high scientific quality, the first professors being trained at prestigious universities in Europe: Berlin-Charlottenburg, Karlsruhe, Göttingen, Dresden, Nancy, Versailles, etc.

The teaching activity at the Politehnica University of Timisoara is organized in the Bologna paradigm, the study programs corresponding to the three cycles, BACHELOR'S, MASTER'S and DOCTORATE. Interested in responding to the demands of the labor market, as well as the need for training and development throughout life, determined by the complex challenges of modern society, the Politehnica University of Timisoara organizes POSTGRADUATE STUDIES programs, whose main objective is to update/develop/improve numerous university qualifications. The portfolio of specializations offered by UPT responds to the needs of today's society, reflecting the close relationships that the university maintains with the socio-economic environment. The specializations

are constantly adapted to the latest trends in the field, meeting the requirements of theoretical and practical training necessary for the insertion of graduates on the labor market.

Throughout history, the most representative researchers of UPT have been recognized nationally by voting them as members of the Romanian Academy, namely the full members: Acad. Ioan. Boldea, Acad. Dan Dubina, Acad. Horia Colan, Acad. Gleb Drăgan, Acad. Marius Peculea, Acad. Toma Dordea, Acad. Traian Lalescu (founder of the Polytechnic School of Timișoara), Acad. Constantin Dinculescu, Acad. Traian Lorin Sălăgean, Acad. Ioan Anton, Acad. Dan Mateescu, Acad. Victor Vâlcovici, Acad. Coriolan Drăgulescu, Acad. Caius Iacob, Acad. Ștefan Nădășan (first doctor of the Politehnica in 1939), Acad. Remus Răduleț, Acad. Corneliu Mikloși, Acad. Ilie Murgulescu, Acad. Eugen Macovschi and the corresponding members Prof. Gheorghe Silaș, Prof. Vasile Coheci, Prof. Alexandru Cișman, Prof. Constantin Avram, Prof. Aurel Bărglăzan, Prof. Radu Emil Precup and Prof. Liviu Marsavina (https://www.upt.ro/Informatii_membri-ai-academiei-romane_29_ro.html).

2.2 Organizational structure - organizational chart, subsidiaries (units with legal personality), **branches** (units without legal personality), **working points, facilities and special installations of national interest - IOSIN** (facilities and installations of national interest, where applicable)

According to the UPT organizational chart presented in Fig. 2.1, the academic and administrative structures are the Faculties, Departments, Research Centers, Research Institute, Center for Innovation and Technology Transfer, and others.

The UPT Charter considers **the faculty** as a structural-functional unit that develops and manages university study programs, on forms and cycles of studies, in one or more related fields and/or interdisciplinary study programs. Also, the faculty manages the students who follow the study programs assigned to it. **The department** is the basic structural-functional academic unit of the university, which ensures the production and capitalization of knowledge in one or more specialized fields, through advanced scientific research, research, development and innovation, respectively the transfer of knowledge to society, through initial and continuous training activities at university and postgraduate level and through its dissemination through publications and/or implementation.

The research center is the structural-functional unit that carries out research, development, innovation, design, consultancy, expertise, technical assistance, production, etc., operating mainly on a self-financing basis. The existence of a research center is conditioned by:

- the possession of or access to appropriate research infrastructure;
- if applicable: having design/production spaces and appropriate specific equipment.

The research center shall be established, organized/reorganized and abolished, by decision of the Senate, at the proposal of the Board of Directors. The research center can be organized either within a department or at the university level. He is subordinate to the executive management of the department, or, as the case may be, directly to the executive management of the university.

The Research Institute for Renewable Energies supports and carries out research, development and innovation activities, including training and improvement of highly qualified human resources in the field of engineering sciences, aiming at excellence in multidisciplinary strategic areas of the development of society, aiming at technological progress, scientific foundations, technical solutions, processes, materials, infrastructure and skills. The Institute operates on the basis of an organizational regulation and methodologies, specific regulations, approved by the Senate, at the proposal of the Board of Administration. The executive management of the university assigns to the Research Institute for Renewable Energies for use and administration offices, laboratories and auxiliary spaces, according to the needs.

Center for Innovation and Technology Transfer (CITT) "Politehnica 2020"

The Center for Innovation and Technology Transfer (CITT) "Politehnica 2020" is the structural-functional unit meant to capitalize on the innovative and technology transfer knowledge that the university has, including the innovative one, by establishing and/or intermediating contractual cooperation relations between UPT and various beneficiaries. It operates on the basis of an organizational regulation approved by the Senate, at the proposal of the Board of Administration . The executive management of the university assigns to the Center for Innovation and Technology Transfer (CITT) "Politehnica 2020" for the use and administration of offices, laboratories and auxiliary spaces, according to the needs.

Institute for Digital Transformation

The Institute for Digital Transformation is the structural-functional unit of UPT within which activities are carried out to integrate digital platforms and applications, to identify innovative solutions to support the teaching and research process, in order to digitize education, research and university innovation, to train digital skills for the UPT community and to adapt skills to the requirements of the digital society.

The Politehnica University of Timisoara is composed of:

- 10 faculties: [Architecture and City Planning](#), [Automation and Computing](#), [Chemical Engineering](#), [Biotechnologies and Environmental Protection](#), [Civil Engineering](#), [Electronics](#), [Telecommunications and Information Technologies](#), [Electrical and Power Engineering](#), [Engineering in Hunedoara](#), [Management in Production and Transportation](#), [Mechanical Engineering](#), [Communication Sciences](#)

- 26 departaments: [Architecture](#), [Automation and Applied Informatics](#), [Physical Bases of Engineering](#), [Computers and Information Technology](#), [Land Communication Routes](#), [Foundations and Cadastre](#), [Applied Chemistry and Engineering of Inorganic Compounds and Environment](#), [Applied Chemistry and Engineering of Organic and Natural Compounds](#), [Communications](#), [Civil Constructions and Installations](#), [Steel Structures and Structural Mechanics](#), [Physical Education and Sports](#), [Electrical Engineering](#), [Applied Electronics](#), [Hydrotechnics](#), [Materials and Manufacturing Engineering](#), [Electrical Engineering](#), [Electrical Engineering and Industrial Informatics in Hunedoara](#), [Engineering and Management in Hunedoara](#), [Management](#), [Mechanical Machinery](#), [Machinery and Transport](#), [Mathematics](#), [Measurements and Optical Electronics](#), [Mechanics and Strength of Materials](#), [Mechatronics](#), [Training of Teaching Staff](#)

- 32 research centers presented in Chapter 3.5 of this Self-Assessment Report.

Within the 10 faculties, approximately 13,000 students study in the 3 cycles of studies. The university campus includes 16 student dormitories, which offer 6,500 accommodation places, a student canteen, a student polyclinic and two high-performance sports facilities.

- 8540 – Higher education institution**
- 7210 – Research and development in natural sciences and engineering**
- 7220 – Research and development in social and humanistic sciences**

2.4 Staff employed by the research organization, of which RDI personnel (FTE)

The Politehnica University of Timișoara employs teaching staff in the positions of university professor, associate professor, assistant professor/lecturer, assistant lecturer, and CSI, CSII, CSIII, CS and ACS researchers. For Full-Time Equivalent (FTE) academics, the following were calculated:

- 1 full-time university professor = 0,5 FTE;
- 1 Associate Professor = 0,4 FTE;
- 1 assistant professor/lecturer = 0,3 FTE.

For doctoral supervisors with a contract on the doctoral school (normed with 2 hours/month/doctoral student in internship), who do not have a FTE teaching norm, it was calculated with the relation:

$$FTE = \frac{\text{No. active doctoral students} \times 2}{160} \quad (2.1)$$

where 160 represents the full-time of 8 hours/day (40 hours/week).

Table 2.1 indicates FTE for the Politehnica University of Timișoara (FTE)

Table 2.1 Staff employed by UPT (full-time equivalent)*

FTE (full-time equivalent)	2020	2021	2022	2023	2024
RDI staff with higher education total, of which:	262.82	249.08	241.04	235.86	238.64
– Staff with scientific grades CS III, CS II, CSI (or equivalent)	201.82	200.08	197.04	196.86	198.64

Note: 'n' stands for the first year of the 5 years under evaluation

2.5 R&D directions/research objectives/research priorities:

In accordance with the National Plan for Research, Development and Innovation 2022-2027 (PNCDI IV), an integral part of Romania's National Strategy for Research, Innovation and Smart Specialization (SNCISI) 2022 2027, the research directions of the Politehnica University of Timisoara are correlated with "smart specializations", which represent the key areas on which the research-innovation system should focus in order to generate competitive advantage, technology transfer and added value in the economy and society. Thus, the research directions can be classified into:

a) main directions of research and development:

- Digital technologies, artificial intelligence, cybersecurity, Internet of Things (IoT), cyber-physical systems.

- Energy-efficient materials and technological processes including: advanced metal, polymer, composite, ceramic, magnetic nanofluidic materials; advanced technologies including Industry 4.0, robotics and automation; technologies for microelectronics.
- Energy and mobility: renewable energies, conventional energies; energy conversion, power grids, IT applications in energy management, autonomous mobility, intelligent transport.
- Climate change, sustainable development, environment: climate change and environmental impact, built environment: protection and rehabilitation, energy-efficient construction: materials, solutions and technologies, waste management.

b) Secondary research directions:

- Food, bioeconomy, natural resources, biodiversity and agriculture.
- Culture, creativity and inclusive society.
- Civil security for society.
- Health

c) services/micro-production.

Politehnica University of Timișoara offers a wide range of services in different fields, especially for industry, SMEs and public authorities, which will be detailed in chapter 5.3 of this report.

2.6 Strategic changes in the organization and functioning of the research organization

(e.g. mergers, divisions, transformations, etc.)

Within UPT there is a continuous concern to improve the research, innovation and technology transfer activity. Thus, through two programs, coordinated by Assoc. Prof. Dr. Liviu Cădariu - Brăiloiu and financed by the National Plan for Research, Development and Innovation for the period 2015-2020 (PNCDI III), Subprogram 1.2 – Institutional Performance – Development Projects, namely the project *"Increasing the institutional performance of the Politehnica University of Timisoara by strengthening the research and development and technology transfer capacity in the field of "Energy, Environment and Climate Change"* Contract No. 10PFE / 16.10.2018 implemented in the period 2018-2020 in the amount of 5,306,553.66 lei and the project *"Increasing the performance of the Politehnica University of Timișoara by strengthening the research and development and technology transfer capacity in the field of "Energy, Environment and Climate Change"* Contract No. 26PFE/30.12.2021, carried out between 2021 - 2024 in the amount of 5,800,000 lei an attempt was made to reorganize it in order to increase the performance of the research activity under the coordination of the Research Institute for Renewable Energies (ICER). Thus, through these two projects, 5 research centers and laboratories have passed under the Research

Institute for Renewable Energies according to the organizational chart in Fig. 2.1. Through these projects, these research centers and laboratories have been supported to improve their research infrastructure, and a number of 6 researchers have been hired on these projects.

Establishment of the Center for Innovation and Technology Transfer

In 2020, at the recommendation of the Steering Committee, steps were taken to establish and authorize the Center for Innovation and Technology Transfer (CITT) Politehnica 2020, in order to improve the innovation and technology transfer activity. For the organization of this center, funding was obtained through the project "Increasing UPT's competitiveness through the establishment of the Center for Innovation and Technology Transfer Politehnica 2020", within the call for projects no. POR/2020/1/1.1.A./2 in the amount of 771,367 lei. Following the submission of the documents, the Provisional Authorization Certificate of CITT Politehnica 2020 No. 105/2020 was obtained from the Ministry of Education and Research. Subsequently, CITT Politehnica 2020 also obtained ISO accreditation, the last being in 2023 - SR EN ISO 9001:2015 Certificate for Scientific and Technological Assistance and Information, Innovation Coordination, Dissemination, Transfer and Capitalization of Research Results.

CITT Politehnica 2020 provides support to the research centers and staff of the Politehnica University of Timișoara by negotiating and drafting research contracts, service contracts or partnership agreements with industrial partners. Inventors are supported in view to proof-of-concept and pre-industrial validation. CITT also manages the protection of the intellectual property generated by the institution. This includes identifying internal and external funding sources for registering applications for intellectual property protection (such as patents, trademarks or copyrights). CITT negotiates and drafts the licensing and transfer agreements of intellectual property to the industry, with or without the support of specialized external legal advisors. CITT encourages and supports the creation of new companies.

Establishment of the Institute for Digital Transformation

The Institute for Digital Transformation was established within UPT in accordance with UPT's Digital Transformation Strategy. The institute's role is to coagulate the various groups in UPT with concerns related to digitization, to coordinate the UPT strategy in terms of digitization of the educational act and support elements. (see strategy)

3. Management and institutional capacity

3.1 Management structure of the research organization (adapted to the specifics of the research organization):

a. Board of Administration

According to the UPT Charter (2023), *the Board of Administration consists of the rector, vice-rectors, deans, the general administrative director, the deputy administrative general director and a student representative, appointed by the legally constituted student organizations of the university, from among the students of the university.* The composition of the Board of Administration of the Politehnica University of Timisoara, valid from 2024, is presented in Table 3.1.

Table 3.1 Board of the Administration of UPT

No.	Position	Name	Main responsibilities
1	Rector (Decision 3004/04.01.24)	Assoc.Prof.dr. Florin Drăgan	General Executive Management, Institutional Strategy, Institutional Representation
2	Vice-rector (Decision 430/112/C from 21.03.2024)	Prof.dr. Gabriela-Alina Dumitrel	Educational process, relationship with students and quality assurance
3	Vice-rector (Decision 431/112/C from 21.03.2024)	Prof.dr. Liviu Marșavina	Scientific research, innovation and technology transfer
4	Vice-rector (Decision 1420/112/C from 05.09.2025)	Prof.dr. Victoria-Larisa Ivașcu	Entrepreneurship and European Funds
5	Vice-rector (Decision 433/112/C from 21.03.2024)	Assoc.Prof.dr. Simon Alexandru Pescari	Investments, heritage and sustainable development
6	Vice-rector (Decision 434/112/C from 21.03.2024)	Prof.dr. Sorin Mușuroi	Communication, image and relationship with the socio-economic environment
7	General administrative director (Decision 312/2/112/C from 14.02.2025)	Eng. Dan Aurel Diaconu	Coordinates the administrative, patrimonial and IT activities of the university, ensuring the application of institutional policies and legal regulations.
8	Deputy general administrative director (Decision 436/112/C from 21.03.2024)	Ec. Sorin HOMEAG	Coordinates the elaboration, execution and rectification of the budget, manages the patrimony and investments of the infrastructure, as well as public procurement, administrative aspects of student life.
9	Student representative	Alice Cania	Represents the interests of students and facilitates communication between them and the university management.
10	General secretary of the university	Eng. Iolanda-Dorina Cosovan	Coordinates the activities of the general secretariat and university registry.

The Board of Administration also includes the Deans of the UPT faculties,

https://www.upt.ro/Informatii_consiliul-de-administratie-al-upt_158_ro.html .

The Politehnica University of Timisoara has 26 departments, the directors of these departments are presented at the link https://www.upt.ro/Informatii_consiliul-de-administratie-al-upt_158_ro.html .

b. Senate of the Politehnica University of Timișoara (Legislature 2024–2029)

According to the UPT Charter (2023), *the Senate represents the university community and is the highest regulatory, decision-making and debate forum in the university. The Senate elects, by secret ballot, from among its members, a President who presides over the Senate's meetings and represents the Senate in relations with the Rector. The Senate may have a number of vice presidents established by the Senate's rules of procedure, so that each vice president is responsible for the operation of a specified number of Senate committees established by the same rules. The vice-presidents are proposed by the president, from among the senators and validated by the Senate. In the event of temporary unavailability of the President of the Senate, he or she shall appoint one of the Vice-Presidents or a Committee Chairman to replace him or her during the period of unavailability.*

The members of the UPT Senate for the 2024–2029 legislature, academics and students, are presented at the https://www.upt.ro/Informatii_membrii-senatului-upt---rez_612_ro.html.

The leadership of the UPT Senate is ensured by President Liviu-Ioan CĂDARIU-BRĂILOIU, Vice-Presidents: Claudiu-Tiberiu ALBULESCU, Vlad-Mircea MIHĂESCU, Adina Ramona PALEA and Daniel-Viorel UNGUREANU, Ana-Maria Branea - Secretary General of the Senate.

c. Steering Committee

According to the UPT Charter (2023), *the Steering Committee is subordinated to the Rector of UPT, being made up of prominent personalities from the academic, economic, cultural, professional, administrative, social environment, designated by the Rector. The recommendations of the steering committee concern the university's strategies in the fields of education and research, employability, innovation, entrepreneurship, technology transfer, public-private partnerships, institutional development, internationalization.*

The list of members of the Steering Committee is presented on the official website of UPT, https://www.upt.ro/Informatii_comitet-director_254_ro.html. The committee was led between 2020 and 2024 by Dan Bedros – President, former CEO of Alcatel Romania, and Dr. Cristian von Albrichsfeld – Vice President, manager of Continental Automotive Romania. This structure reflects the collaboration between the academic environment, the public administration and the private sector, with the aim of developing and promoting the Politehnica University of Timișoara.

3.2 Quality management system (certified by authorized institutions)

To be completed with information on internal quality management manuals/regulations/procedures and other specific procedures, as well as whether the research organization has been accredited by institutions authorized in the field of quality management.

In 2021, the rector of UPT assumed the declaration on quality assurance in education, which for research activity includes:

- establishing research partnerships with the economic environment to identify common research topics, funding sources and find funding opportunities;
- the development of new research directions that can bring competitive advantages to the university as a basis for increasing the performance of the education and research process;
- stimulating researchers to intensify scientific networking with prestigious research communities in the country and abroad to materialize with joint project proposals, research papers;
- identifying areas of research excellence in UPT and stimulating the respective research teams to take on the role of regional leaders;
- encouraging the development of new postgraduate programs (continuous training and professional development, upskilling, lifelong learning), correlated with the requirements of the economic environment in the region;
- internationalization of research by participating in international projects, inviting prestigious researchers from abroad, conferring the titles of Honorary Professor and Doctor Honoris Causa to international personalities, attracting valuable researchers from abroad or Romanian researchers from the diaspora for the implementation of research projects in UPT, as well as organizing prestigious scientific events in collaboration with universities in the abroad;
- making investments in multidisciplinary laboratories, with the involvement of academics and students from several departments/faculties, starting from the main topics of interest for society, aiming at the aggregation of strong multidisciplinary research teams.

The Quality Management System (**QMS**) of UPT is based on an adequate structure for the reception and promotion of the quality function. According to the Law on National Education in Consolidated Form, the maintenance and development of the QMS involves:

- allocating the human resources necessary for the design, implementation and maintenance of the QMS;
- defining and explicitly delegating authority and responsibility over the QMS to the collective bodies and individual persons involved;
- establishing their working procedures.

The simplified organizational chart of the Politehnica University of Timisoara (Figure 3.1) highlights the positions of the collective bodies and the persons with responsibilities in **the Quality Management System (QMS)** at various levels:

- The management of the QMS at each level of the institution is the responsibility of the manager of the respective level (university-rector, faculty-dean, department-department director, etc.).
- The QMS promotes, as an attribute of institutional culture, by definition, explicit delegation and by verifying actual achievements, responsibility and institutional authority.

- c. The QMS requires the coordination of the university's programs by people who know very well the specifics of the university's activities and have an adequate competence in the field of quality.
- d. In the university, at all levels, leadership is based on identifying and defining the processes in the institution as well as on establishing responsibilities for them (process managers) and making decisions based on facts.
- e. The QMS uses Laws 1/2011 and 199/2023, ARACIS standards and the EUA guidelines in the field of quality as references.

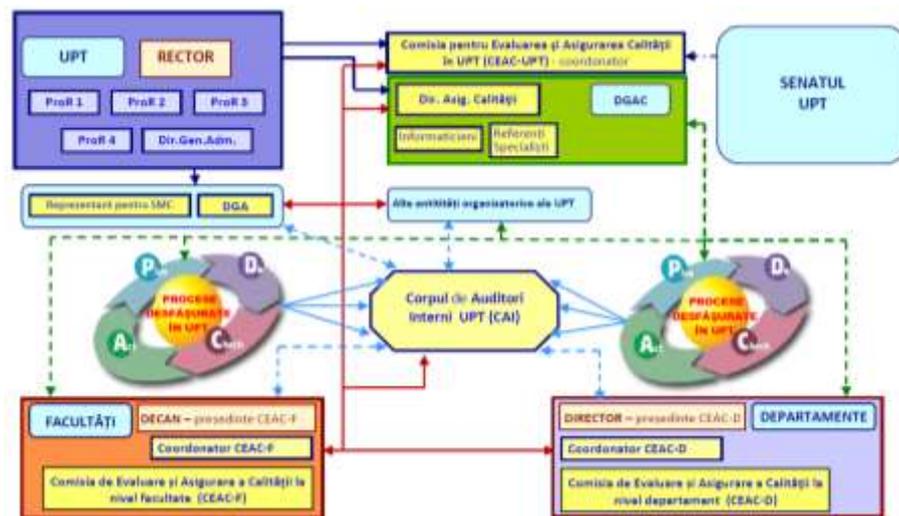


Fig. 3.1. Quality Management System Organization Chart (QMS)

In the simplified organizational chart of the Politehnica University of Timisoara, the positions of the collective bodies and of the persons with responsibilities in **the Quality Management System (QMS)** at various levels are highlighted:

A. University

A1. At the university level, the QMS is led by the **Rector**, who establishes together with the CEAC the strategy, policy, objectives and priorities in the field of quality, follows their knowledge and application throughout the institution, allocates and verifies the appropriate use of the resources related to the SMC.

A2. The **Vice-Rectors (ProR) and the General Administrative Director (Dir. Gen. Admin.)**, lead and are responsible for the design, implementation, maintenance and improvement of the QMS in the sectors for which they are responsible. They allocate and track the use of related resources in these sectors.

A3. The **Commission for Evaluation and Quality Assurance in UPT (CEAC)** is a **collective working body** of the university made up of representatives of the teaching staff, students and employers. CEAC implements the Senate Decision on Quality Assurance and prepares the Annual Report on Quality Assurance, identifies, analyses and proposes solutions and decisions

regarding the QMS. CEAC is chaired by the Rector, the operative management being delegated to a **coordinator, representative of the Rector**.

A4. The General Directorate for Quality Assurance (DGAC) is a functional support structure for the QMS at university level, directly subordinated to the rector. The DGAC includes the minimum human resources necessary for the design, implementation and support of the QMS. Its composition includes:

- **The Director with Quality Assurance (Dir. Asig. Calității)** is the representative of the Rector for the QMS. The director heads the General Directorate for Quality Assurance (DGAC), with responsibility and authority regarding the design, implementation, maintenance and improvement of the QMS at university level;
- **Specialists in the field of Quality Management (SC)** who methodologically assist the faculties and administrative services in the design, implementation and maintenance of the QMS, in the preparation and maintenance of documents, in the use of specific QMS tools;
- **Computer scientists** who design and maintain the support information system for the QMS at the level of the entire university;
- **Officers** with secretarial duties and monitoring of SMC documents;
- **Officers** with attributions related to the preparation and development of didactic processes, - research and - services from the perspective of the SMC.

A5. The Body of Internal Auditors (CAI) is a group of people from functional departments and services, who have adequate training and have as part of their service tasks the participation in internal quality assessment/audit activities.

B. Faculty

B1. The QMS at the faculty level is led by the Dean who applies and adapts the strategy, policy, objectives and priorities of the university in the field of quality in the faculty, aiming at the implementation of both general and faculty-specific aspects.

B2. The Commission for Evaluation and Quality Assurance at Faculty Level (CEAC-F) is a working body that has a role similar to that played by CEAC – UPT at university level. The commission is made up of the dean (with the capacity of president), the members of the Faculty Council and a student representative - appointed by the student organizations. The Dean may delegate the operational management of the CEAC at the faculty level to a coordinator appointed from among the members of the commission.

C. Department

C1. At the department level, the department director (Dir. Dep.) has the authority and responsibility regarding the quality of all the processes carried out within it (education, research, and organization).

C2. The Commission for Evaluation and Quality Assurance at Department Level (CEAC-D) is made up of the department director, as president, three representatives of the teaching staff and, optionally, a representative of the students or doctoral students of the department. The department director may delegate the operational management of the CEAC-D to a coordinator appointed from among the three members.

CEAC-D pursues, at the level of the department, the achievement of general and specific objectives regarding quality, both in the teaching line and in the field of research, including staff training, planning and conducting internal evaluations/audits and individual evaluations.

D. Administration

D1. At the level of the administration, the responsibility and authority related to the QMS belongs *to the General Administrative Director (Dir. Gen. Admin.)*.

D2. The General Administrative Director may appoint a representative for the QMS.

D3. At the level of the services, the responsibility and authority of the QMS belongs **to the Heads of Services**.

UPT obtained the "HIGH DEGREE OF TRUST" *rating in all ARACIS evaluations*, the latest in 2022, https://www.upt.ro/Informatii_asigurarea-calitatii-in-upt_12_ro.html.

3.3 Regulations, rules, procedures implemented by the research organization

To be completed with information on regulations/procedures developed, approved and implemented regarding research activity management, employee performance evaluation, integrity, equal opportunities, etc.

The Politehnica University of Timisoara has adopted a series of regulations and procedures for regulating and improving the research activity. They are summarized in Table 3.2.

Table 3.2 Regulations, rules, procedures implemented at the level of UPT

No.	Regulations, norms, procedures implemented at the level of the research organization
1	Incurring personnel expenses for the research team under research contracts
2	Approval of co-financing for R&D project proposals
3	Filing of patent applications/utility models and their evidence and patents/utility models
4	Record of the results of the research and development activities obtained on the basis of a financing contract from public funds
5	Record and performance of research contracts financed from public funds
6	Record and performance of research, development and consultancy contracts concluded with companies in the country and abroad
7	Record of income and expenses made from the award of research contracts

8	Operational procedure – Taking over, transmitting and recording invoices for research projects/contracts
9	Operational procedure – Promotion and implementation of projects with non-reimbursable European funding
10	Strategy for Diversity, Equity and Inclusion of the Politehnica University of Timisoara

3.4 Ethics and academic integrity in research

To be completed with information on the existence of a code of ethics, an ethics and academic integrity committee, a specific operating procedure for the committee and the extent to which the committee proves its functionality in case of complaints.

The Politehnica University of Timisoara has a complete formal framework on ethics and academic integrity: code, commission, procedures and dedicated strategies. Also, UPT has a Code of University Ethics applicable to the entire academic community: students, academics, researchers, auxiliary and administrative staff. It establishes principles and moral norms of conduct, with the aim of promoting integrity, responsibility, mutual respect and fair competition.

UPT has established the University Ethics Commission, made up of academic staff, researchers and student representatives. It is regulated by decisions of the Board of Administration and decisions of the Senate. The Commission's mandate is regularly renewed and its composition is public.

In accordance with Senate Decision (HS) no. 270/17.12.2020 and HS no. 164/25.11.2021, in 2020-2024 the composition of the UPT Ethics Commission was as follows: https://upt.ro/Informatii_arhiva-comisia-de-cercetare-disciplinara_165_ro.html, Table 3.2.

According to the Reports of the Ethics Commission for the period 2020-2023, available at https://upt.ro/Informatii_etica_164_ro.html, during this period the Commission analyzed and resolved 10 complaints submitted by the members of the UPT academic community and gave a positive opinion to a number of 4 requests for the issuance of certificates attesting to compliance with the Data Protection Regulation (GDPR) in order to publish scientific articles in specialized journals.

With the publication in the Official Gazette Part I no. 327 of 9.04.2024 of the new Framework Code of University Ethics and Deontology, https://lege5.ro/Gratuit/ge2tanbtgqzdi/codul-cadru-de-etica-si-deontologie-universitara-din-04042024#google_vignette, the UPT Senate, through SD 96/11.07.2024, **endorsed the Code of Ethics and Deontology of the Politehnica University of Timișoara**, which can be consulted on the university's website at https://upt.ro/Informatii_etica_164_ro.html and **the Operational Procedure of the University Ethics Commission**. Also, through HCA (Administration Board Decision) no. 256/19.11.2024 and

HS 146/21.11.2024, **the Regulation for the organization and functioning of the University Ethics Commission of UPT** was also approved.

The Rules of Organization and Functioning of the University Ethics Commission of UPT provide for chapters dedicated to the organizational structure of the Commission (Chap. II), the competence and powers of the Commission (Chap. IV), the specific procedures carried out by the Ethics Commission (Chap. V), detailing the Commission's attributions, the modalities of conducting the meetings, analysing the complaints, as well as the deadlines for resolution.

The information regarding the attributions, composition, mandate and selection procedure of the members of the Ethics Commission, as well as the sanctions applicable for ethical deviations are provided in **The Code of Ethics and Deontology of the UPT**. The norms of ethics and deontology in the teaching and university research activity, in the activity of communication, publication, dissemination and scientific popularization, in the exercise of the duties related to the management functions, as well as those applicable to students at all levels of studies are specified.

According to the same Code, within the Ethics and Deontology Commission there is a subcommittee dedicated to research ethics that aims to implement research ethics policies in accordance with the regulations of scientific research ethics, covering the following aspects: publication and authorship, respect for the dignity of research participants, compliance with the rules of ethics of research conducted on human subjects, experiments involving animals as well as other rules of ethics. bioethics, research data management, collaboration, conflicts of interest, fraud, ensuring efficient research environments, respectively preventing harm in research and innovation.

According to the UPT Code of Ethics and Deontology, on 7.11.2024, the selection procedure for the new members of the UPT Ethics and Deontology Commission for the 2024-2027 legislature started by publishing the announcement and the calendar of the action on the UPT website. Following the analysis of the submitted files, the members of the Ethics and Deontology Commission of UPT were selected by the Board of Administration of UPT through HCA no. 253/19.11.2024, and the Commission was approved by the UPT Senate through HS no. 148/21.11.2024 in the composition presented in Table 3.3.

Table 3.3 Composition of the ethics committee

Period	2020-2024	2024 - present
Members of the Ethics Committee	Prof. dr. Dragoş Uţu Prof. dr. Daniel Ioan Hădărugă Prof. dr. Cătălin Daniel Căleanu Prof. dr. Ana-Virginia Socalici Assoc.Prof.dr. Constantin Bărbulescu Assoc.Prof.dr. Cosmin Cernăzeanu-Glăvan Assoc.Prof.dr. Ciprian Costescu Assoc.Prof. dr. Camelia-Octavia Arieşanu Assoc.Prof.dr. Ana-Maria Branea Lect.dr. Caius Tudor Luminosu Student Raluca Teodora Cărare.	Prof. dr. Ana-Virginia Socalici Assoc.Prof.dr. Camelia-Octavia Arieşanu Assoc.Prof.dr. Ana-Maria Branea Assoc.Prof.dr. Cristian-Emil Moldovan Assoc.Prof.dr. Clara-Beatrice Vilceanu Assoc.Prof.dr. Silviu Vert Assist.Prof.dr. Valer Bocan Assist.Prof.dr. Marcus-Ioan Svoboda Assist.Prof.dr. Alin-Lucreţius-Dubcek Găureanu.

The result of the elections for the designation of the student representatives in the University Ethics Commission was validated by HS no. 8/31.01.2024, with students Roxana Alexandru, Mihaela Ardelean and Alexandru Brăescu becoming members of the Commission. Information regarding the selection process is available on the UPT https://upt.ro/Informatii_etica_164_ro.html website. At the founding meeting of the Commission on 26.11.2024, Associate Professor Camelia-Octavia Arieșanu was elected as president.

Based on the proposal of the UPT University Ethics Commission, the UPT Board of Administration Decision no. 68/25.03.2025 and Decision no. 518/112/C of 31.03.2025, it was decided the composition of the Research Ethics Subcommittee within the University Ethics Commission of UPT in the following composition:

Assoc.Prof.dr. (president) Camelia-Octavia Arieșanu

Prof. dr. Ana-Virginia Socalici

Assoc.Prof.dr. Ana-Maria Branea

Assist.Prof.dr. Valer Bocan

Student Roxana Alexandru.

In the period 2024-2025, a number of 3 notifications received from members of the UPT academic community were analyzed and resolved by Commission decisions. In the same period, the Research Ethics Subcommittee of the Commission gave a favorable opinion to a number of 10 requests made by some professors of the Politehnica University of Timișoara regarding the compliance with the legal norms on the protection of personal data and the principles mentioned in the Declaration of Helsinki, in the use of various questionnaires, studies, papers, working protocols.

All notifications addressed to the Ethics and Deontology Commission of UPT follow a standard procedure. Referrals can be made to the email address on the UPT https://upt.ro/Informatii_etica_164_ro.html website or through the UPT Registry. The commission has 5 calendar days to start analyzing the complaint, and makes a decision within 45 calendar days from the date of registration of the complaint. At the end of each meeting of the Commission, a Minutes shall be concluded, drawn up by the Secretary of the Commission and signed by the President. The pages of the minutes of the hearings in which the persons involved in the complaint (applicant, defendant, witnesses) were heard are signed by them. Each referral ends with a Report, prepared by the President, endorsed by the UPT's legal advisor and approved by the members of the Commission. On the basis of the Report, the President drafts the Commission Decision, which is also endorsed by UPT's legal adviser and approved by the members of the Commission. The decision is subsequently communicated to the person who filed the complaint, to the complained person, to the Rector of UPT and is displayed anonymously on the UPT website.

Scientific papers/specialized studies/research activities within projects for which it is requested to receive a certificate attesting that they comply with the rules of good conduct in research, that they do not contain personal information of the study participants and that the results obtained are used exclusively for academic and research purposes follow the same submission procedure described above. The positive/negative opinion is received from the Research Ethics Subcommittee, following the analysis of the documents and communicated to the author(s) of the study and the Rector of UPT.

In conclusion, the Ethics and Deontology Commission of UPT and the Research Ethics Subcommittee of the University Ethics Commission of UPT are functional commissions, which carry out their activity based on clear, transparent methodologies and procedures, easily accessible to all members of the UPT academic community.

3.5 Research infrastructure related to the mission and objectives of the research organization (how the infrastructure responds to the mission of the research organization)

To be completed with information on:

- the infrastructure and how it responds to the mission of the research organization;
- the degree of development of the research-development and innovation infrastructure in relation to the activities carried out within the research organization;
- the existence of an investment strategy and plan.

Each of the 32 research centers presented in Table 3.4 has its own research infrastructure. The research infrastructure responds to the mission assumed by UPT of advanced research and education. There has been a permanent concern of UPT to expand, diversify and modernize the research infrastructure. This was achieved through a series of projects to equip laboratories for the period 2006-2008, the establishment of the Research Institute for Renewable Energies (ICER) 2011-2013 (the largest project implemented so far being worth over 13,000,000 Euro), the institutional development projects – Projects for financing excellence in RDI (2018-2020, 2021-2023), the DigiUPT project, the project for the establishment of the Center for Innovation and Technology Transfer Politehnica 2020, etc.

Table 3.4 List of research centers in UPT

No.	Name of Research Center	Name of the center in English	Director of the Research Center
1	Institutul de Cercetări pentru Energii Regenerabile -ICER	Research Institute for Renewable Energy	Ciprian TROCAN
2	Centrul de Cercetări pentru Mecanica Materialelor și Siguranța Structurilor - CEMSIG	Research Center for Materials Mechanics and Structural Safety	Prof. dr. Dan Dubină
3	Centrul de Cercetări în Controlul Inteligent al Conversiei și Stocării Energiei - CICSE	Research Center for Smart Energy Conversion and Storage	Prof. dr. Nicolae Muntean

4	Laboratorul " Ștefan Nădășan" de Rezistența, Integritatea și Durabilitatea Materialelor, Structurilor și Conductoarelor	"Ștefan Nădășan" Research Laboratory for Strength, Integrity and Durability of Materials, Structures and Conductors	Prof. dr. Liviu Marșavina
5	Centrul de Cercetări în Știința și Ingineria Mediului - CCSIM	Research Center for Environmental Science and Engineering	Prof.dr. Florica Manea
6	Centrul de Cercetări pentru Procesarea și Caracterizarea Materialelor Avansate - CCPCMA	Research Center for the Processing and Characterization of Advanced Materials	Assoc.Prof.dr. Bogdan Radu
7	Centrul de Cercetări pentru Analiza și Optimizarea Regimurilor Sistemelor Electroenergetice- AORSE	Research Center for Power Systems Analysis and Optimization	Assoc.Prof.dr. Constantin Bărbulescu
8	Centrul de Cercetări în Calculatoare și Tehnologia Informației - CCCTI	Research Center for Computers and Information Technology	Prof.dr. Mihai Victor Micea
9	Centrul de Cercetări în Chimia și Ingineria Compușilor Organici, Macromoleculari și Naturali - CICOMN	Research Center for Organic, Macromolecular and Natural Compounds Chemistry and Engineering	Prof.dr. Daniel Hădărugă
10	Centrul de Competențe în Plasturgie - CCP	Competence Center for Plastics Processing	Prof.dr. Aurel Tulcan
11	Centrul de Cercetări în Hidrotehnică și Protecția Mediului - CCHPM	Research Center for Hydrotechnics and Environmental Protection	Prof.dr. Constantin Florescu
12	Centrul de Cercetări în Infrastructuri pentru Construcții și Transporturi - ICT	Research Center for Infrastructure for Civil Engineering and Transport	Prof.dr. Liviu Adrian Ciutina
13	Centrul de Cercetări în Ingineria Sistemelor Automate - CCCISA	Research Center for Automatic Systems Engineering	Prof.dr. Radu-Emil Precup
14	Centrul de Cercetări în Ingineria Sistemelor cu Fluide Complexe - CCISFC	Research Center for Complex Fluid Systems Engineering	Prof.dr. Romeo Susan-Resiga
15	Centrul de Cercetări în Inginerie Medicală - CCIM	Research Center for Medical Engineering	Prof.dr. Liviu Marsavina
16	Centrul de Cercetări în Inginerie Integrată - CCII	Research Center for Integrated Engineering	Prof.dr. George Drăghici
17	Centrul de Cercetări în Inginerie și Management - CCIM	Research Center for Engineering and Management	Prof.dr. Larisa Victoria Ivașcu
18	Centrul de Cercetări în Instalații pentru Construcții - CCIC	Research Center for Building Services	Assoc.Prof.dr. Călin Sebarchievici
19	Centrul de Cercetări pentru Mașini și Echipamente Termice, Transporturi și Combaterea Poluării - CCMETTCP	Research Center for Thermal Machines and Equipment, Transportation and Environmental Pollution Control	Prof.dr. Ioana Ionel
20	Centrul de Cercetări pentru Materiale Anorganice și Energii Alternative - CCMAEA	Research Center for Inorganic Materials and Alternative Energy	Prof.dr. Robert Ianoș
21	Centrul de Cercetări în Materiale și Tehnologii Industriale -CCMTI	Research Center for Materials and Industrial Technologies	Prof.dr. Teodor Hepuț
22	Centrul de Cercetări în Mecatronica și Robotică - CCMR	Research Center for Mechatronics and Robotics	Prof.dr. Inocențiu Maniu
23	Centrul de Cercetări în Metode Avansate de Studiu al Fenomenelor Fizice - CCMASFF	Research Center for Advanced Study Methods for Physical Phenomena	Prof.dr. Nicolina Rodica Pop
24	Centrul de Cercetări Multimedia - CM	Research Center for Multimedia	Prof.dr. Radu Vasiiu
25	Centru de Cercetare în Urbanism și Arhitectură - CUA	Research Center for Urban Planning and Architecture	Assoc.Prof.dr. Ileana Kisilewicz
26	Centrul de Cercetări în Prelucrarea Inteligentă a Semnalelor - CCPIS	Research Center for Intelligent Signal Processing	Prof.dr. Alexandru Isar

27	Centrul de Cercetări pentru Reabilitarea Construcțiilor - RECO	Research Center for the Rehabilitation of Buildings	Prof.dr.Tamas Nagy Gyorgy
28	Centrul de Cercetări în Sisteme Electronice Inteligente - CCSEI	Research Center for Intelligent Electronic Systems	Prof.dr. Cătălin Daniel Căleanu
29	Laboratorul de Materiale și Structuri Inteligente - SMSL	Smart Materials and Structures Laboratory	Prof.dr.Corneliu-Marius Crăciunescu
30	Centrul de Cercetări Avansate în Domeniul Traducerii - PoliCAT	Center for Advanced Translation Studies	Prof.dr. Daniel Codruț Dejica-Carțis
31	Centrul de Cercetări interdisciplinare în Comunicare și Dezvoltare Durabilă - PoliCom	Center of Interdisciplinary Research in Communication and Sustainable Development	Prof.dr. Vasile Gherheș
32	Centrul de Inovare și Transfer Tehnologic Politehnica 2020 - "CITT Politehnica 2020"	Center for Innovation and Technology Transfer Politehnica 2020 (CITT) of the Politehnica University Timisoara	Assist.Prof.dr. Nicolae-Andrei Crișan

The research centers are coordinated by the most representative researchers in the field of the center, members of the Romanian Academy Dan Dubină, Radu-Emil Precup, Liviu Marșavina, professors with very good scientific visibility in the field Larisa Ivașcu, Rober Ianos, Florica Manea, Romeo Susan – Resiga, etc.

The Politehnica University of Timisoara owns a significant number of unique equipment worth over 100,000 Euro, among which we mention TEM transmission electron microscope with ultramicrotome accessory, SEM scanning electron microscope, magnetic resonance spectrometer, advanced vacuum microfabrication equipment, X-ray diffraction equipment, Plasma sintering equipment, etc.

The Research Center in Data Engineering, Artificial Intelligence and Intelligent Systems Timisoara is on **the National Roadmap of Large Research Infrastructures**, which aims to create a comprehensive list of research infrastructures, of national interest, within a process based on both the analysis of the current landscape and a prospective substantiation of the needs in this sector.

The Romanian Artificial Intelligence Hub (HRIA) project is being implemented in UPT, which is carried out within the Smart Growth, Digitalization and Financial Instruments 2021-2027 (PoCIDIF) Programme, co-financed by the European Regional Development Fund (ERDF), Priority 4 – Development of strategic technologies for Europe – STEP, Call PCIDIF/709/PCIDIF_P4/OP1/RSO1.6/PCIDIF_A12 – Action 4.1 – Support for the development of strategic technologies for Europe – STEP, SMIS Code 2021- 351416, <https://hria.upb.ro/>. The HRIA project is implemented by the National University of Science and Technology POLITEHNICA Bucharest, as a beneficiary, in partnership with six nationally representative universities: the Technical University of Cluj-Napoca, the West University of Timișoara, the "Gheorghe Asachi" Technical University of Iași, the Politehnica University of Timișoara, the University of Bucharest, the Babeș Bolyai University of Cluj-Napoca and eight innovative SMEs, selected through a competitive and transparent process.

The HRIA project develops an ecosystem of excellence in Artificial Intelligence which, through its objectives and results, is unique in Romania in terms of the scope of research-development-innovation activities and results with a concrete impact on the economy. HRIA allows the coagulation of the efforts of the artificial intelligence community in Romania in order to increase the impact at European and global level, becoming the catalyst of this process, creating national resources for development and innovation in the field of AI and supporting all sectors of the community.

UPT's development strategy aims to improve and expand the research infrastructure. A major opportunity in this regard is the projects within the *Important Projects of Common European Interest (IPCEI)* funded by the European Commission through the PNRR, through which together with two industrial partners NXP and Continental, UPT proposed two projects worth 29,000,000 Euros through which 16 laboratories in the field of microelectronics will be established and equipped, computers and information technology, materials, mechanical engineering to carry out fundamental research projects together with industrial partners. The projects are submitted, have passed the evaluation and the contracts are expected to be signed. Among the planned investments are the arrangement of spaces for 21 laboratories and the endowment with research equipment in the field of microelectronics: clean room, power electronics, sensors and actuators, tomography computer, Drop Test, creep testing machine, bi-axial fatigue testing machine, etc.

Another ongoing UPT infrastructure development project is **UpgradeUPT** financed by **ADR Vest** in the amount of 20,604,814.94 lei. Through it, educational spaces and research laboratories will be modernized and equipment for acoustics and movement, robotics and human-machine interaction, metallography and mechanical testing, virtual reality simulator, etc. will be purchased.

3.6 The research organization is a member of scientific networks/associative bodies

To be completed with information on the capacity of the research organization to conclude agreements/protocols and other documents provided by the organization proving functionality (submission and winning of projects in partnership, organization of scientific events in partnership, joint development of scientific publications: articles/studies/books, etc.).

The Politehnica University of Timisoara has a tradition of collaborating with international research entities (universities, institutes) within networks, bilateral partnerships, but also individually between researchers. UPT has collaborations with over 200 universities and research entities around the world, most of them with European ones, but also from the USA, Canada, Japan, China, Australia, New Zealand, etc.

UPT is a member of 38 scientific networks/associative structures.

E³UDRES² is a European University Alliance with 9 partners: St. Polten University of Applied Science (Austria), Fulda University of Applied Science (Germany), Polytechnic University of Setubal (Portugal), Saxion University of Applied Sciences (Netherlands), Jamk University of Applied Sciences (Finland), Hungarian University of Agriculture and Life Sciences (Hungary), UCLL University of Applied Sciences (Belgium), Vidzeme University of Applied Sciences (Latvia) and University Politehnica Timișoara, <https://eudres.eu/> . The members of this network of higher education institutions located in Europe, have decided to collaborate closely in the fields of research, teaching, innovation and much more. Many urgent societal challenges arise from an ageing society, rural exodus and migration, as well as substantial gaps between urban areas and rural regions. Technologies and innovation contribute to and serve European values, as well as their implementation in people's lives, ideally by empowering and strengthening democracy. E³UDRES² aims to support the development, highlighting and sharing of good practices in its regions, addressing forms of neighbourhood support and the resilience of small communities. Within the E³UDRES² network, **4** Centres of Excellence have been created: Emerging Technologies of Experience Design in Arts & Culture, Intelligent Integral Robotic Systems, Business Modelling for Managing Sustainability in a Circular and Climate Neutral Economy, European Centre for Digital Health and Social Innovation, <https://eudres.eu/research-centers>, UPT being a partner in all of them.

In the framework of the **E³UDRES² Entrenovators** project, a consortium of 6 partners from the E³UDRES² project decided to collaborate on research through a specific joint research and innovation strategy and a common agenda to accelerate the transformation into a multi-institutional European research and innovation hub for smart and sustainable regions, 2023 – 2025, <https://www.entrenovators.eu/> . One of the objectives of this project is to develop good practices and a strategy for pooling research infrastructures, expertise, data and resources and for collaboration in the efficient management of and mutual access to strategic research infrastructures of the partners.

Between 2020 and 2025, the Politehnica University of Timisoara has been a member through its representatives in **37** European networks within the COST program, won through competition.

At international level, UPT is a member of: AGENCE UNIVERSITAIRE DE LA FRANCOPHONIE carrying out activities to promote the calls launched by AUF, study/research mobilities, projects; BALKAN ENVIRONMENTAL ASSOCIATION, EUROPEAN ASSOCIATION FOR INTERNATIONAL EDUCATION, EUROPEAN ASSOCIATION OF ERASMUS COORDINATORS, ASSOCIATION FOR SMART LEARNING ECOSYSTEMS AND REGIONAL DEVELOPMENT, EUROPEAN DISTANCE AND E-LEARNING NETWORK, EUROPEAN UNIVERSITY ASSOCIATION - is the collective voice of universities in Europe, EUROPEAN SOCIETY FOR ENGINEERING EDUCATION and others.

At national level, UPT is a member of the Romanian Alliance of Universities of Science and Technology together with the POLITEHNICA University of Bucharest, the Technical University of Cluj-Napoca, the "Gheorghe Asachi" Technical University of Iași, the Technical University of Civil Engineering Bucharest and the "Ion Mincu" University of Architecture and City Planning in Bucharest, representing the interests of over 85,000 students in the field of engineering sciences, architecture and urbanism; THE ROMANIAN BIOINFORMATICS CLUSTER ASSOCIATION, THE ASSOCIATION FOR THE PROMOTION OF ELECTRONIC TECHNOLOGY; CLUJ IT ASSOCIATION; THE ROMANIAN STANDARDIZATION ASSOCIATION; ASSOCIATION "NATIONAL UNIVERSITY ALLIANCE FOR NUCLEAR ENERGY", CLUSTER OF SUSTAINABLE ENERGIES IN ROMANIA - ROSENC and others.

Also, at local and regional level, UPT plays a primary role, being a member of the Timisoara University Alliance together with the other three state universities in Romania: the West University of Timisoara, the Victor Babes University of Medicine and Pharmacy Timisoara and the University of Life Sciences of Timisoara, which aims to achieve common, strategic development objectives for the municipality of Timisoara and the Western region of Romania, by assuming and carrying out joint projects and programmes. UPT is part of regional and local associations and clusters such as TIMIȘ ASSOCIATION FOR ENERGY MANAGEMENT, TEHIMPULS ASSOCIATION - REGIONAL CENTER FOR INNOVATION AND TECHNOLOGY TRANSFER, REGIONAL INFORMATION AND COMMUNICATION TECHNOLOGY CLUSTER WEST REGION ASSOCIATION, AQUA CLUSTER ASSOCIATION and others.

As mentioned, UPT researchers have relationships and collaborations around the world, capitalized through joint publications. In the period 2020 – 2024, out of the 2,207 Web of Science indexed papers, **321** (14.5%) were developed with international partners, most of them being with CNR (Italy), Politecnico di Torino (Italy), University of Ottawa (Canada), but also with universities in China, Saudi Arabia, Hungary and Serbia, Fig. 3.2.

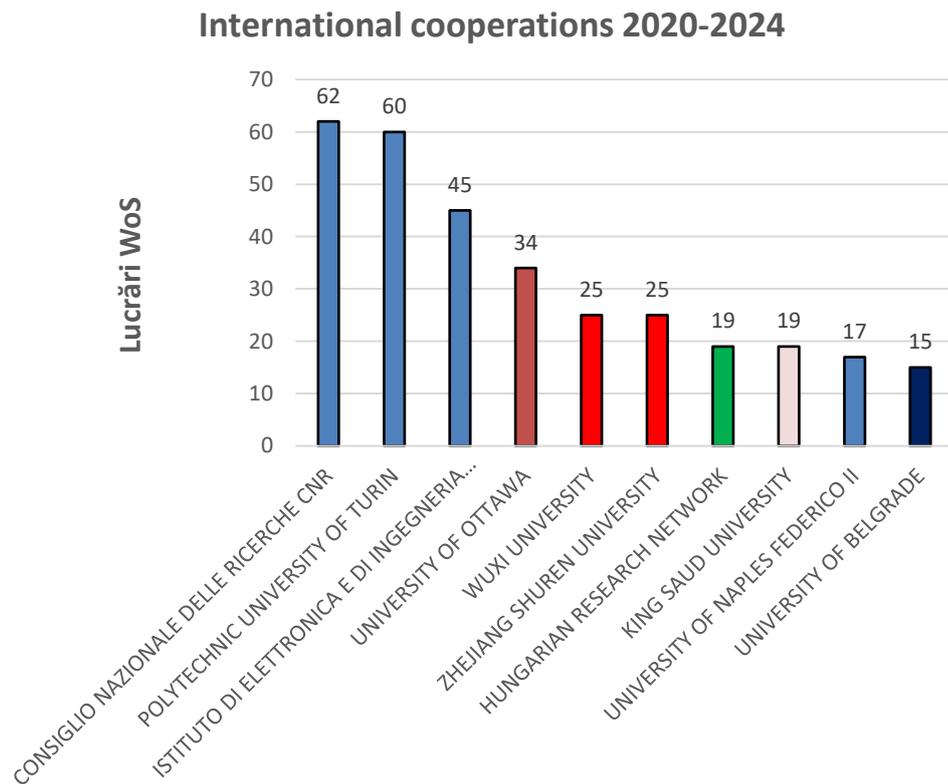


Fig.3.2 International partners in WoS indexed published articles

Fig. 3.3 presents the joint publications with the top 10 national partners, which represent over 45% (1,005 publications) of the total WoS indexed articles. At the national level, the most UPT publications indexed Web of Science between 2020 and 2024 are with researchers of the Romanian Academy (258), then with the Victor Babeş University of Medicine and Pharmacy Timisoara (226) and with the West University of Timisoara (132), in the first 10 places being the Polytechnic University of Bucharest (50) and the Technical University of Cluj-Napoca (30).

It can be seen that UPT has collaborations with the Romanian Academy, the universities of Timisoara and the other technical universities and Romania, but also with INCD research institutes.

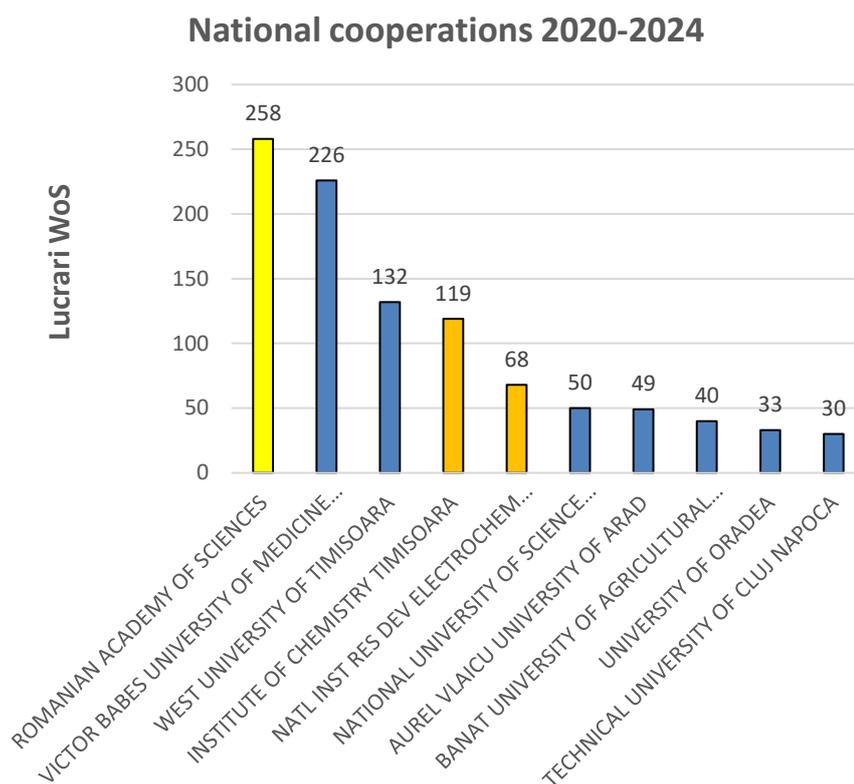


Fig.3.3 National partners in WoS-indexed published articles

3.7 Accredited/non-accredited testing, trials, analysis laboratories; Open access libraries and databases created/administered, to the extent that funding was available

To be completed with information on the extent to which the research organization is equipped with laboratories for testing, trials, analysis and their accreditation status or the existence of their own libraries, Open access databases and the intensity of their access.

The Politehnica University of Timisoara has **58** laboratories for tests, analyses, presented in detail in the supporting document 3.7 and in <https://www.research.upt.ro/page2.html#content1-7o6>. Some of these laboratories are affiliated with research centers, others are independent.

The Fuel Analysis and Investigations Laboratory <https://mediu.ro/> is accredited by RENAR. Daniel Bisorca is responsible for quality. The laboratory provides analyzes for measuring pollutant emissions, measuring air quality, respectively thermotechnical measurements in non-accredited regime.

Also, **The Laboratory of Acoustics and Vibrations** – responsible Prof. dr. Nicolae Herișanu - is accredited by RENAR, https://www.renar.ro/index.php/oec/get_oec_details/43467 and provides services for determining the characteristic parameters of noise in the environment, determining the exposure to noise in the work environment, as well as the level of exposure to vibrations.

The Research Center in Automatic Systems Engineering, coordinated by Prof. dr. Radu-Emil Precup, currently has the highest impact of the results, on the research directions: systems theory, automated systems, manufacturing systems, human-machine systems, robotics, computational and biologically inspired intelligence. Since July 2014, it has been a member of the Central European Living Lab for Intelligent Robotics (CELLI).

The "Ștefan Nădășan" Laboratory for Resistance, Integrity and Durability of Materials, Structures and Conductors is one of the most equipped in Romania for material and performance tests, ensuring the development of international research projects (H2020 Wivera Project) and national research projects (3 Bridge Grants projects, 1 PED experimental project, 2 PCE exploratory research projects). It also provides testing, testing, and analysis for the industry.

Within the laboratories **of the Research Center for Mechanics of Materials and Construction Safety**, there have been significant achievements in recent years within international RSFC and H2020 projects.

The Three-Dimensional Measurement Laboratory is certified by Hexagon Manufacturing Intelligence.

The new UPT library provides loan services, computer and internet access, a 24-hour reading room, a copy center, 3D printing, etc. <https://library.upt.ro/>. The library provides access to the BUPT Institutional Digital Repository with 44,777 views between 2020 and 2024 and access to the scientific literature <https://dspace.upt.ro/jspui/handle/123456789/1>, having 15,725 views in the same period.

3.8 Degree of digitalization of the research organization

To be completed with information on:

- the researchers' activity in relation to the IT infrastructure and current IT standards;
- the extent to which the research organization has an up-to-date website with the results of research activity carried out in the research organization available under an open access regime.

The researchers' activity in relation to the IT infrastructure and current IT standards

The Politehnica University of Timisoara has an advanced digital infrastructure, aligned with international standards in the field of research and technological education. The researchers' work is supported by a robust IT base, which allows complex projects to be carried out in areas such as artificial intelligence, high-performance computing, cybersecurity and quantum technologies.

International Certification & Compliance

UPT holds ISO/IEC 27001 certification for information security management, confirming the application of the highest standards in data protection, access control, operational continuity and

cyber risk management. This certification guarantees that the digital infrastructure and research processes are carried out in a controlled, secure and regularly audited environment.

CloudPUTing – cloud and HPC infrastructure

UPT has developed a high-performance cloud node, with heterogeneous architecture, dedicated to research and innovation activities. This platform allows the running of "compute-intensive" applications, scientific simulations and the training of artificial intelligence models.

Cloud infrastructure provides researchers with access to virtualized resources, scalable storage, GPUs for machine learning and high-speed interconnection, representing a central element of the digitization of research activities.

Microsoft ecosystem and integrated digital services

The university uses a unified digital ecosystem based on Microsoft technologies, which includes Azure services, Office 365, single digital identity, device management, and cloud resources.

This infrastructure ensures interoperability, real-time collaboration, advanced security and operational efficiency in the conduct of scientific projects.

IT security and digital infrastructure protection

UPT implements advanced cybersecurity policies and mechanisms, which include:

- continuous monitoring of the infrastructure through SIEM (Security Information and Event Management) systems;
- Network segmentation and digital identity management (IAM);
- Regular security audits and penetration tests;
- Backup, redundancy and disaster recovery policies;
- continuous training of staff on cyber hygiene and personal data protection (GDPR).

These measures contribute to the digital resilience of the university and ensure a safe environment for research and collaboration.

Ability to train AI models

CloudPUTing resources and HPC infrastructure allow researchers to train their own AI models, run deep learning experiments, and manage large volumes of data.

The platform offers the possibility of interconnection with external services and hybrid infrastructures, facilitating national and international collaboration in research.

Frontier Educational Programs: Master in Quantum Computing

UPT is the first university in Romania to offer a Master's degree in Quantum Computing, a program conducted in English, which contributes to the development of research skills in emerging fields such as quantum computing and communications.

This program positions the university as a reference player in the field of quantum technologies and stimulates the expansion of digital infrastructure and advanced research capacities.

Website and dissemination of research results

The Politehnica University of Timisoara has an updated institutional website — <https://www.upt.ro> — which centralizes information on research centers, active projects, publications, partnerships and scientific events.

Each faculty and research centre has its own web pages, where projects, results, reports, and dissemination activities are published.

By integrating the Microsoft ecosystem, researchers can collaborate digitally, share results, and manage documents in a secure and interoperable environment, according to the FAIR (Findable, Accessible, Interoperable, Reusable) principles.

The research activity of UPT is transparent, being accessible on the website dedicated to the application, which contains information on research in UPT, research infrastructure, scientometric data related to the scientific production of the researchers in the organization, research results, annual research reports, newsletter on funding opportunities, etc., <https://www.research.upt.ro/> .

UPT is currently working on the development of a new digital ecosystem – the new UPT.RO portal, which will be launched soon. It will replace the current institutional website and integrate into a unified platform all major digital components: academic communication, research, education, student services, cloud resources and collaboration infrastructure.

The new ecosystem will provide a coherent and modern experience for all categories of users and will fully reflect the university's high degree of digitalization.

Correlation of IT infrastructure with the university's mission

The mission of the Politehnica University of Timisoara is to train high-level specialists and to generate technological innovation with economic and social impact.

The existing IT infrastructure supports this mission by:

- availability of HPC and cloud resources for advanced research;
- interoperability and digital collaboration between faculties and partners;
- cybersecurity, data protection and business continuity policies;
- Compliance with ISO/IEC 27001 certification and international standards for digital

research and publishing.

Through these components, UPT positions itself as one of the most digitized universities in Romania, with an infrastructure capable of supporting modern, interdisciplinary and innovation-oriented research.

Virtual Campus

In addition to these, UPT is permanently concerned with the digitization of the teaching and research process. To this end, the UPT Virtual Campus (www.cv.upt.ro) is an **online educational**

environment for academic support for all UPT faculties and for distance learning, being extremely useful during the COVID19 pandemic (2020 – 2021).

UPT projects and initiatives have been channeled towards the development of digital culture. Thus, Dr. **Diana Andone**, together with Assist.Prof. Dr. **Vlad Mihăescu** presented to over **1,000 students of the Politehnica University of Timisoara** the digital skills courses developed within the **Digital Culture** project – improving digital skills and improving the social inclusion of adults in the creative industries – Digital Culture. During the session, they also presented to the students the **13 free online courses** developed by the project partners, as well as **the Digital Culture open digital certificates** for digital skills awarded for completing the course.

The Politehnica University of Timisoara has been continuously concerned with improving and increasing the level of digitalization. Thus, through the DigiUPT project in the amount of 26,292,016.79 lei won through PNRR Investment Measure C15: Education Reform 5 Investment 16, it is intended to increase the capacity of the educational system of the Politehnica University of Timișoara by modernizing the educational infrastructure, using advanced digital technologies, in correlation with the present and future needs of the labor market and emerging technologies and professions, able to connect students, academics, researchers and other members of the academic community, increasing the quality of the educational process in UPT and ensuring its modern character and including by modernizing the study programs, integrating digital technologies and their impact at all levels of academic training, respectively increasing the skills of the members of the UPT academic community by participating in training programs in the field of digital technologies in correlation with the European Digital Competence Framework DigiComp.

4. Research results and impact at national and international level¹

4.1 Works of wide scope and fundamental importance; books, treatises, encyclopaedias, monographs, studies and chapters coordinated/published/edited; published articles; patents applied/exploited/obtained

To be completed with information on:

- articles published in a journal indexed by Web of Science (Journal Citation Reports Q1, Q2, Q3, Q4, Emerging Sources Citation Index and, in addition, for humanities Arts & Humanities Citation Index), SCOPUS, IEEE;
- articles published in a journal indexed by CNSC (A or B), for humanities;
- treatises/books/monographs published as an author by an established publishing house from abroad;

¹ Only results for which the authors have indicated the affiliation to the evaluated research organization are mentioned. The results are divided by the number of researchers (CS I, CS II and CS III), full-time equivalent, affiliated to the evaluated research organization.

- treatises/books/monographs published as an editor/coordinator by an established publishing house from abroad;
- treatises/books/monographs published as an author by the Romanian Academy Publishing House or by a CNCS A-ranked publishing house;
- treatises/books/monographs published as an editor/co-coordinator by the Romanian Academy Publishing House or by a CNCS A-ranked publishing house;
- treatises/books/monographs published as an author by an established publishing house in the country or by a CNCS B-ranked publishing house;
- treatises/books/monographs published as an editor by an established publishing house in the country or by a CNCS B-ranked publishing house;
- chapters in treatises/books/monographs published by an established publisher from abroad;
- chapters in treatises/books/monographs published by the Romanian Academy Publishing House or by a CNCS A-ranked publisher;
- chapters in treatises/books/monographs published by an established publishing house in the country or by a CNCS B-ranked publishing house;
- dictionaries, atlases, encyclopaedias (printed or online); critical editions or translations of literary texts, scientific texts;
- registered and published patent applications;
- patents applied/exploited at national or international level or exploited at international level (with EU/OECD priority);
- variety/breed certificates applied/exploited at national or international level or exploited at international level (with EU/OECD priority);
- patents obtained at international (with EU/OECD priority) or national level;
- intellectual property, ORDA certified.

Table 4.1 summarises the number of works of wide scope and fundamental importance; books, treatises, encyclopedias, monographs, studies and chapters coordinated/published/edited; published articles; applied/exploited/obtained patents of the Politehnica University of Timișoara.

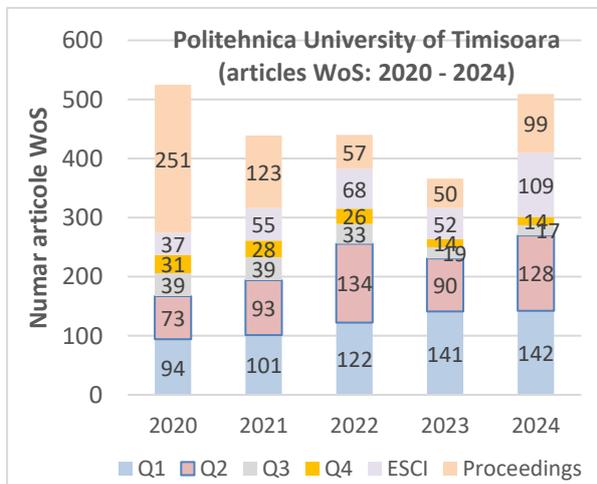
Table 4.1 Scientific results of UPT researchers.

Conference/invited papers	2020	2021	2022	2023	2024	Total
Number of treatises/books/monographs published as an author by an established publishing house abroad	5	19	1	7	7	39
Number of treatises/books/monographs published as editor/coordinator by an established publishing house abroad	2	1	5	2	9	19

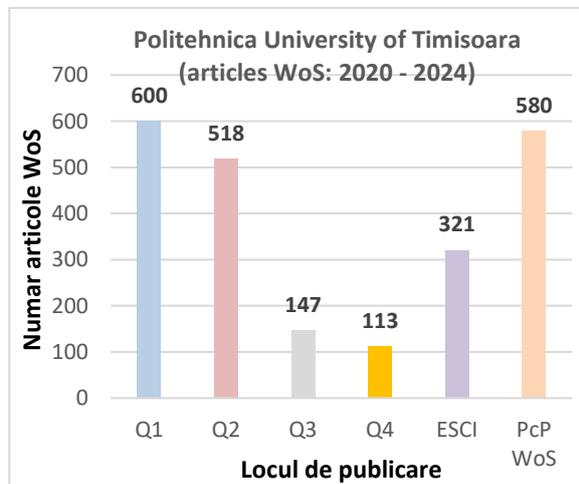
Number of chapters in treatises/books/monographs published by an established publishing house abroad	8	22	21	22	35	108
Number of articles published in a journal indexed by Web of Science (Journal Citation Reports Q1, Q2, Q3, Q4, Emerging Sources Citation Index or, in addition, Arts & Humanities Citation Index, for humanities), SCOPUS, IEEE	526	602	722	608	723	3181
Number of articles published in a journal indexed by the CNSC (A or B), for humanities	11	7	10	6	9	43
Number of patent applications registered and published	3	3	15	9	9	39
Number of patents applied/exploited at national or international level or exploited at international level (with priority EU/OECD)	0	0	0	0	0	0
Number of patents obtained internationally (EU/OECD priority) or nationally	13	8	17	4	6	48
Number of varieties/breed certificates applied/exploited at national or international level or exploited at international level (with priority EU/OECD)	0	0	0	0	0	0
Intellectual property number, ORDA certified	0	0	0	3	0	3
Number of dictionaries, atlases, encyclopaedias (printed or online); critical editions or translations of literary texts, scientific texts;	1	4	2	2	0	9
Number of treatises/books/monographs published as an author by the Romanian Academy Publishing House or by a publishing house classified CNCS A;	5	9	3	1	3	21
Number of treatises/books/monographs published as editor/co-coordinator by the Romanian Academy Publishing House or by a publishing house ranked CNCS A;	0	1	2	0	1	4
Number of treatises/books/monographs published as author by a publishing house established in the country or by a publishing house classified CNCS B;	43	16	16	38	27	140

Number of treatises/books/monographs published as an editor by a publishing house established in the country or by a publishing house classified as CNCS B;	3	4	1	2	5	15
Number of chapters in treatises/books/monographs published by the Romanian Academy Publishing House or by a CNCS classified publishing house;	1	1	10	1	1	14
Number of chapters in treatises/books/monographs published by a publishing house established in the country or by a publishing house classified as CNCS B;	4	6	2	5	1	18

The dissemination of the research results was a priority for the Politehnica University of Timișoara. Over the years, the university's management has financially stimulated the publication of scientific articles by paying *open access* fees, by financing participation in conferences for doctoral students and assistants, by awarding salaries for the publication of articles in Q1 and Q2 journals, by providing financial support for publication in ISI indexed journals. Between 2020 and 2024, UPT researchers published a total number of **2,279** WoS-indexed articles with a distribution of **525** (2020), **439** (2021), **440** (2022), **366** (2023) and **509** (2024); Fig. 4.1.a. A decrease is observed in the period 2021 – 2023, due to post-COVID conditions mainly in the articles in the volumes of some conferences (decrease from **251** in 2020 to **50** in 2023). In 2024, an increase to **509** WoS articles and **99** articles published in the volumes of WoS indexed conferences is observed. The publication in journals Q1 (**600** articles) and Q2 (**518** articles) is noteworthy, as seen in Fig. 4.1.b. Another important conclusion is the constant increase over the years of articles in Q1 journals, from **94** in 2020 to **142** in 2024 (51% increase).



a. by year of publication



b. by quartile

Fig. 4.1 The scientific production of the Politehnica University of Timișoara in journals and conference proceedings indexed Web of Science (WoS)

According to the type of articles, most are original articles published in journals (68%), followed by articles in conference volumes (27%), review articles (3%), etc., Fig. 4.2. According to the fields in which the articles have been published, most articles are in the following fields: Electrical and Electronic Engineering, Materials Science, Applied Physics, Chemistry, Mechanics, Computers and Information Systems, Telecommunications, Fig. 4.3.

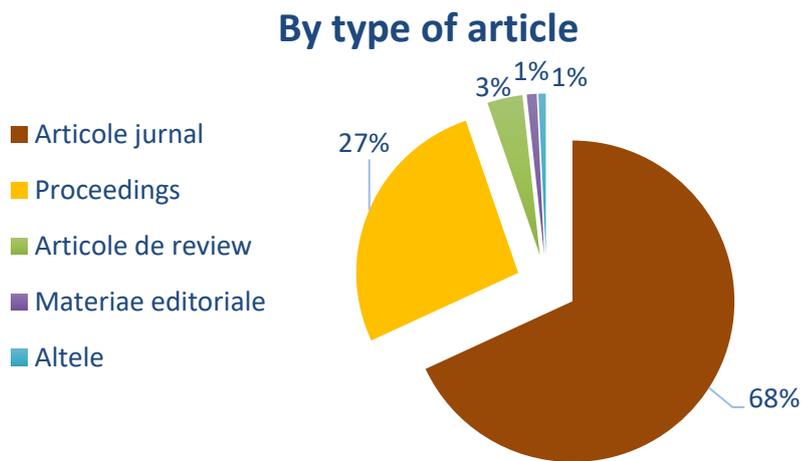


Fig. 4.2 Type of WoS publications by UPT

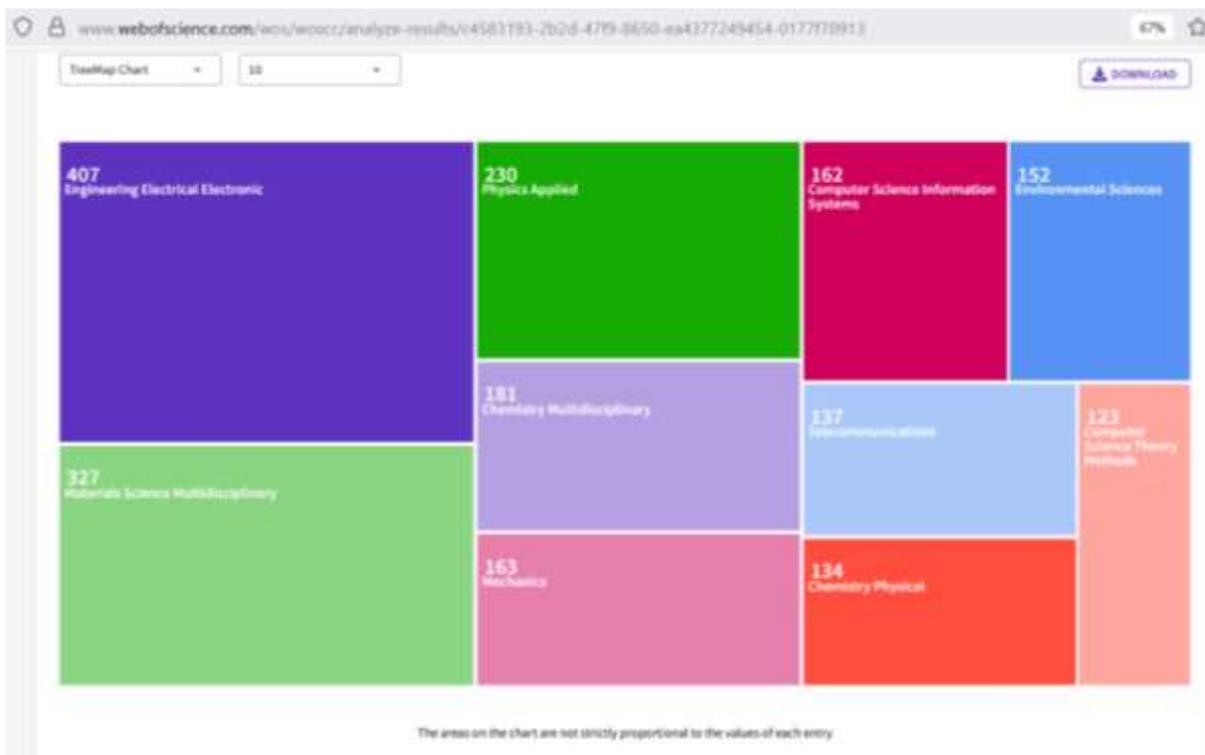


Fig. 4.3 Areas with the most WoS contributions of UPT

The number of articles published in a journal indexed by the CNSC (A or B), for humanities was 43 between 2020 and 2024.

UPT researchers have carried out an intense publishing activity, having published **39** books at prestigious international publishers Springer, CRC Press, Elsevier and Wiley. It is worth noting the publications of Acad. Ion Boldea *Induction Machines Handbook*, 3rd Edition, CRC Press 2020 and *Linear Electric Machines, Drives, and MAGLEVs Handbook*, CRC Press 2023, the book *Data-Driven Model-Free Controllers*, 1st Edition, CRC Press 2021 authored by R.-E. Precup, R.-C. Roman, A. Safaei, the paper *Optimal Auxiliary Functions Method for Nonlinear Dynamical Systems*, authors V. Marinca, N. Herisanu, B. Marinca, published by Springer Publishing House, 2021, the book authored by Pop Aniela, Manea Florica, Ilies Sorina entitled *Carbon Nanomaterials-Based Sensors: Emerging Research Trends in Devices and Applications*, published by Elsevier in 2022, respectively *Photocatalysts and Electrocatalysts in Water Remediation: From Fundamentals to Full Scale Applications*, authors Baciuc Anamaria, Negrea Sorina, Manea Florica published by Wiley Blackwell in 2023. The number of treatises/books/monographs published as editor/coordinator by an established publishing house abroad was **19**.

108 chapters of treatises/books/monographs published by an established publishing house abroad were published by UPT authors at established publishing houses. Here are some examples: Anamaria Todea, Carmen G. Boeriu, Francisc Peter, Emese Biró, *Immobilized β -D- galactosidases for improved synthesis of short-chain galacto-oligosaccharides in Biotechnological Progress and Beverage Consumption*, Elsevier, 2020; R.-E. Precup, E.-I. Voişan, R.-C. David, E.-L. Hedrea, E. M. Petriu, R.-C. Roman, A.-I. Szedlak-Stînean, *Nature-inspired optimization algorithms for path planning and fuzzy tracking control of mobile robots*, in *Applied Optimization and Swarm Intelligence*, Springer, 2021; Dan Daniel, Cristina Tănasă, *Life Cycle Cost Analysis of Energy Efficient Buildings: Theory and Study Case*, in *Environmental and Human Impact of Buildings, An Energetics Perspective*, Springer 2021; R.-E. Precup, R.-C. David, *Nature-Inspired Optimal Tuning of Fuzzy Controllers* in *Handbook on Computer Learning and Intelligence, Volume 2: Deep Learning, Intelligent Control and Evolutionary Computation*, World Scientific, 2022; Iasmina Onescu, Anna Lo Monaco, Mihai Fofiu, Nicola Grillanda, Marius Mosoarca, Michele D'Amato, Antonio Formisano, *Vulnerability Assessment of Historical Churches in Banat Seismic Region, Romania*, in *Structural Analysis of Historical Constructions. SAHC 2023. RILEM Bookseries, vol 46*, Springer 2023; Erwin-Christian, Lovasz, Emil Cristian Moldovan, Corneliu Marius Mateaş, *Overview of Special Wire Mechanisms Used for Self-balancing Mechanisms*, in *State-of-the-Art and*

Innovations in Mechanism and Machine Science, Springer 2024; Marsavina Liviu, *Linear Elastic Fracture Mechanics in Comprehensive Mechanics of Materials*, Elsevier 2024.

The number of patents obtained between 2020 and 2024 at international or national level was **48**. Between 2020 and 2024, UPT researchers submitted **39** registered and published patent applications and the group R.-E. Precup, R.-C. Roman, E.-L. Hedrea obtained **3** ORDA certificates in 2023.

Between 2020 and 2024, UPT researchers published **140** treatises/books/monographs published as an author at a publishing house in the country or at a publishing house classified CNCS B, **15** treatises/books/monographs published as an editor by a publishing house established in the country or by a publishing house classified CNCS B, **14** chapters of treatises/books/monographs published by the Romanian Academy Publishing House or by a publishing house classified CNCS, respectively **18** chapters of treatises/books/monographs published by a publishing house established in the country or by a publishing house classified CNCS B.

4.2 Papers and communications presented at scientific events

To be completed with information on:

- papers presented at an international scientific event, published in a volume indexed by Web of Science - Conference Proceedings Citation Index Science (CPCI-S), Conference Proceedings Citation Index- Social Science & Humanities (CPCI-SSH), classified IEEE proceedings;
- papers presented at an international scientific event, published in an edited volume with ISBN (non - WoS);
- invited/keynote papers presented at an international scientific event;
- invited/keynote papers presented at a national scientific event.

Between 2024 and 20426, UPT researchers presented the results of the research at almost **2,000** scientific events, of which **950** at conferences whose proceedings were indexed in Web of Science - Conference Proceedings Citation Index Science (CPCI-S), Conference Proceedings Citation Index - Social Science & Humanities (CPCI-SSH), classified IEEE proceedings, respectively **1,036** In the Proceedings of the WoS or IEEE Indexed Proceedings. A high number of publications in Proceedings WoS **272** in 2020 are noteworthy, which generally published papers from the conferences held in 2019. In 2020 and 2021, the number of conferences with physical participation decreased due to the COVID 19 pandemic. Also, the policy of Clarivate, the owners of the Web of Science database, was to stop indexing the conferences published by the European publishers Elsevier and Springer starting in 2022. This explains the higher number of non-WoS proceedings in 2022 – 2024, most of them indexed in Elsevier's SCOPUS database. The dynamics of the publication of papers in the volumes of some conferences is presented in Fig. 4.4.

Tabelul 4.2 Papers published in conference volumes, invited papers

Conference/invited papers	2020	2021	2022	2023	2024	Total
Proceedings WoS+IEEE	272	174	162	157	185	950
Proceedings nonWoS_ISBN	137	180	214	273	232	1036
Invited papers /keynote international speakers	12	19	24	29	48	132
Invited papers /national keynote speakers	0	9	6	9	5	29

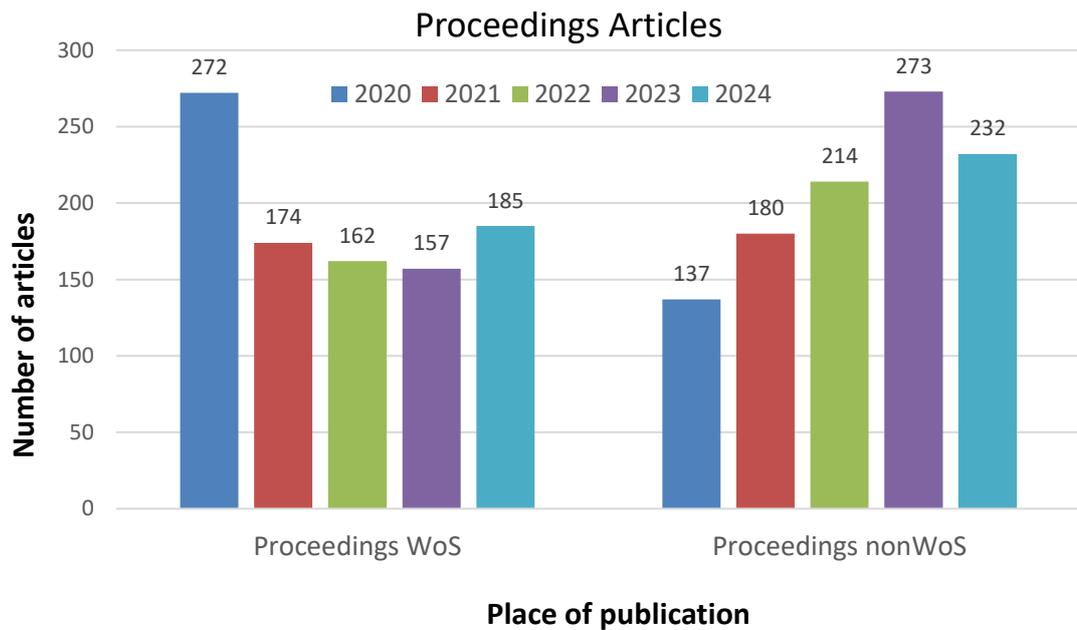


Figure 4.4 Scientific papers published in conferences proceedings

UPT researchers and academics have participated as guest lecturers/keynote speakers at international and national conferences. A significantly higher number of **132** were invited lecturers at international conferences compared to **29** national ones. The main contributions to international scientific events were made by Prof. dr. Radu-Emil Precup – corresponding member of the Romanian Academy with **13** invited papers, Prof. dr. Viorel Ungureanu with **8** invited papers, Assoc. Prof. Dr. Anca Dejica Carțiș with **6** invited papers and Prof. Dr. Liviu Marșavina – corresponding member of the Romanian Academy with **5** invited works. Among the most notable conferences at which UPT researchers have been invited lecturers are: 3rd International Symposium on New Trends in Computational Intelligence, Qingdao, (China) 2021; 9th European Conference on Steel and Composite Structures, Sheffield (UK) 2021; Infrared Remote Sensing and Instrumentation XXX, San Diego (USA) 2022; 3rd European Conference on Structural Integrity of Additively Manufactured Material, Porto (Portugal) 2023; 6th International Conference on Robotics and Computer Vision, Wuxi (China) 2024; 9th International Conference on Control and Optimization with Industrial Applications, Istanbul (Turkey) 2024.

4.3 Visibility and impact of published work²

To be completed with information on the number of citations accumulated by the research organization during the period under evaluation in the following databases:

- Web of Science;
- SCOPUS;
- IEEE;
- in addition, for humanities, Arts & Humanities Citation Index, in CNCS (A or B) indexed journals and books.

The total number of citations of researchers and academics from the Politehnica University of Timisoara from 1975 to the present day in the Web of Science database is **97,913** citations.

The number of citations of UPT in the four representative databases WoS, SCOPUS, IEEE, Art and Humanities, for the period 2020 – 2024 is summarized in Table 4.3, and the dynamics of the number of citations for the three representative databases for the engineering fields is indicated in Fig. 4.5.

An increase in the number of citations is observed for the Web of Science database, from **7,647** in 2020, to **11,493** in 2024. The increase is much more significant for the SCOPUS database where the number of citations increases from **12,485** in 2020 to **20,272** in 2024. The different dynamics between the two databases can be explained by the fact that since 2022 WoS has no longer indexed a significant number of conference volumes. Significant numbers of citations gathered the publications of UPT researchers in the IEEE **2,973** databases, respectively Arts & Humanities Citation Index, in CNCS indexed journals (A or B) and books (for humanities) **1,170** citations.

Table 4.3 Number of citations of UPT researchers

Databases	2020	2021	2022	2023	2024	Total
Number of Web of Science Citations	7647	9386	10942	10379	11493	49847
Number of SCOPUS citations	12485	14521	16156	18053	20272	81487
Number of IEEE citations	1522	391	563	384	113	2973
Number of Arts & Humanities Citation Index, in CNCS indexed journals (A or B) and books (for humanities)	228	215	203	305	298	1170

² Include only papers published by authors with a declared affiliation to the research organization under evaluation.

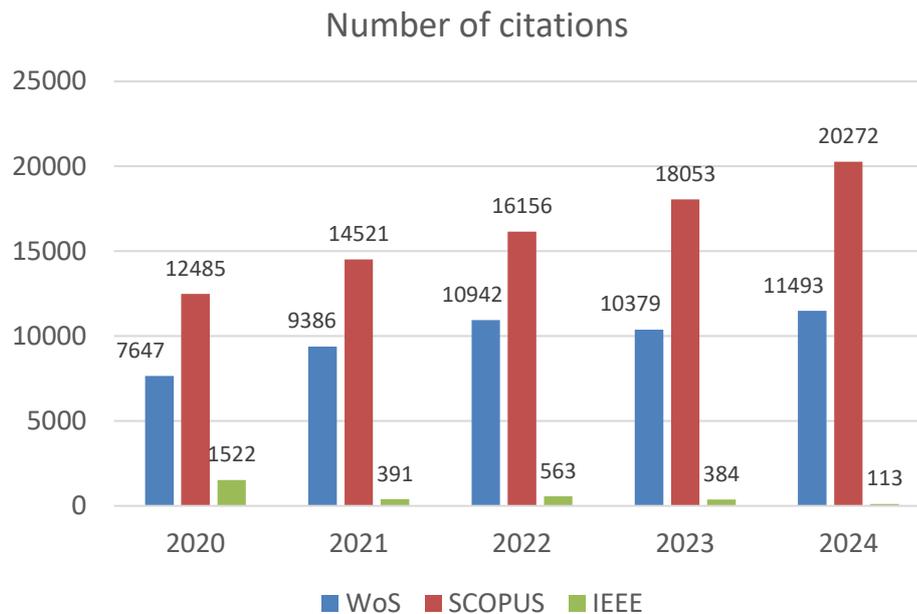


Figure 4.5 Evolution of citations

The prestige of the **Politehnica University of Timisoara** is confirmed by its continuous presence in the tops of the best universities in the world. Thus, considering only the latest editions of these rankings, UPT appears in the *Times Higher Education World University Rankings 2026* on the **1500+** position together with 15 other universities in Romania, while 7 universities occupy higher positions in the ranking, <https://www.timeshighereducation.com/world-university-rankings/polytechnic-university-timisoara>. In the *Quacquarelli Symonds (QS) UPT ranking* is ranked **751-580** on the *QS WUR Ranking by Subject in the field of Computer Science and Information systems*, respectively on the **80th** place in Europe in the same section, <https://www.topuniversities.com/universities/politehnica-university-timisoara-upt>. In the *QS World University Rankings: Sustainability 2025*, UPT ranks **12th** nationally and **1501+** globally. UPT is ranked **15th/35th** nationally, respectively in the top **57%** of universities in the overall ranking of universities out of 5051 universities ranked in the *Scimago Institutions Rankings*, <https://www.scimagoir.com/institution.php?idp=6945>. For the *Biochemistry, Genetics and Molecular Biology* field, it ranks **2nd** in Romania and **39th** in Eastern Europe. For the *Chemistry* field, it ranks **5th** in Romania and **55th** in Eastern Europe, <https://www.scimagoir.com/institution.php?idp=6945>. In the field of *Engineering*, it ranks **4th** in Romania, **46th** in Eastern Europe, **374th** in the EU and **1372** globally, respectively, and in 2 subfields UPT is the leader at national level: *Buildings and Constructions* (**1079** worldwide), *Civil and Structural Engineering* (**492** worldwide), in the subfield *Industrial Engineering* where it is ranked **2nd** in the national ranking (**818** globally), and in the *Medical Engineering* subfield (**5th** place nationally and **1240** worldwide). In the *University Ranking by Academic Performance (URAP) UPT* is ranked **1303rd** in the global

[2025](#) ranking, and national ranking is on **the 6th** place, occupying the **6th** place in "Article", the 5th place in "Citation", the 5th place in "Total Documents", 6th place at "Inter Collaboration", 5th place at "Article Impact", 4th place at "Citation Impact". In *Best Global Universities (U.S. News & World Report)*, UPT ranks **14th** in Romania and **1910** out of 2250 universities globally. In the field of Engineering, UPT ranks **3rd** nationally and **823rd** globally, <https://www.usnews.com/education/best-global-universities/universitatea-politehnica-timisoara-529464>. In the ranking compiled by *Research.com* that measures the individual impact of researchers, UPT is the leader of the ranking at national level both on the *Best Universities ranking* (1598th place globally), and on the fields of *Materials Science* (1262nd place globally) and *Engineering and Technology* (**1073rd** place globally). In the field of *Electronics and Electrical Engineering*, UPT is ranked **334th** globally and **3rd** nationally, respectively, <https://research.com/university/politehnica-university-of-timisoara>.

5. Development and innovation activity

5.1 Capacity to attract and manage research funding

To be completed with information on:

- contracts obtained/grants won by the research organization from European/international funds (number, value-amounts in accounting records);
- contracts obtained/grants won by the research organization from national organizations/institutions (number, value-amounts in accounting records);
- project applications submitted to national/international open competitions (number) during the period under evaluation;
- the research organization's budget over the last 5 years (detail basic core funding, funding obtained from competitive calls, own income and other items that the research organization considers relevant).

Between 2020 and 2024, the Politehnica University of Timișoara won and implemented **81** international projects. Of these, UPT was the coordinator of **13**. Most of the international projects were on the Digital Europe Programme 6, EEA & Norway Grants 4, Research Fund for Coal & Steel (RFCS) 4, Horizon Europe – WIDERA 3. The total value of international contracts from 2020 to 2024 was 341,674,687 lei, of which the amount that went to UPT for their implementation was 41,201,215 lei.

Table 5.1 International contracts won and implemented by UPT.

Research projects/grants	2020	2021	2022	2023	2024

Projects/grants won between 2017-2019 implemented in 2020-2024 (no)	12	5	3	3	1
Projects/grants won and implemented in the period 2020-2024 (no)	3	5	6	15	28
Annual value of projects completed and implemented in the period 2020-2024 (lei)	18664471	21442116	15582813	105102958	180882329
of which: UPT (lei)	10709396	4716321	4137912	5875186	15762400

The annual increase is observed from **3** international projects concluded in 2020 to a number of 15, 28 projects in 2023 and 2024, respectively. Also, in the last year, there has been an increase in the amounts that come to UPT from international contracts.

Between 2020 and 2024, **88** national projects won through competition were carried out in a total amount of 42,286,589 lei, Table 5.2.

Table 5.2 National contracts implemented by UPT.

Research projects/grants	2020	2021	2022	2023	2024
Projects/grants concluded and implemented in the period 2020-2024 (no)	38	8	13	4	25
Annual value of projects completed and implemented in the period 2020-2024 (lei)	22279368	8800508	4204158	33747	6968808

By types of projects, in 2020 there were implemented **13** projects of the type "Experimental Demonstration Project" (PED), **9** projects of the type "Postdoctoral Research Projects" (PD), **9** projects of the type "Research projects for stimulating young independent teams (TEs), **3** projects of the type "Complex projects carried out in RDI consortia" (PCCDI), **1** "EUROSTARS" project, **1** project "Transfer projects to the economic operator" (PTE), **1** project "R&D Excellence Financing Project" (PFE) and **1** "Awarding Horizon 2020 Participation" project (H2020 Premieres). In 2021, **2** PCE projects, **2** H2020 premiere projects, **1** TE project, **1** PFE project, **1** bilateral project Romania – Walloon Community (Belgium) and **1** "Mobility projects for experienced researchers from the diaspora" (MCD) were implemented. In 2022, **13** projects were carried out: **8** PED projects, **3** PTE projects and **2** PD projects. In 2023, **4** mobility projects were carried out (signed) for experienced researchers from the MCD diaspora. In 2024, UPT carried out **25** projects: **10** "Mobility Projects for Researchers" (MC), **3** PED projects, **2** "Solutions" projects, **2** PCE projects, **2** "Mobility Projects for Experienced Researchers from the Diaspora" (MCD), **2** projects of the type "Bilateral projects

Romania – Walloon Community (Belgium), 1 project of the type "Digital Europe", 1 project of type "Horizon Europe Premieres – Institutions", 1 project type PTE type and 1 project of type "Organization of Scientific Events".

It should be noted that during this period there were very few national grant competitions, and the success rate at some of them was extremely low 2-3% for some competitions.

UPT researchers have submitted a sustained activity of developing project proposals. Thus, a significant number of funding applications for national/international projects were submitted in the open competitions during the evaluated period. Thus, between 2020 and 2024, **106** international projects were submitted, since 2022 over **25** projects annually. In the national competitions, **271** projects were submitted, most of them over **100** in 2021 and 2024 when there were several competitions, respectively no project in 2022 being launched in any competition, Table 5.3.

As a trend, it is observed that in 2023 and 2024 the number of international projects implemented and their value was higher than for national grants, which highlights the internationalization of research activity. Also, the success rate was higher at international project competitions compared to national ones.

Table 5.3 Projects submitted in international and national competitions

Submitted projects	2020	2021	2022	2023	2024	Total
International	12	15	27	25	27	106
National	21	117	0	30	103	271

The university's budget in the last 5 years is broken down in the table below.

Table 5.4 Budget of the Politehnica University of Timișoara

Source of funding	2020	2021	2022	2023	2024	Total
Total budget – revenues (thousands of lei)	284405.69	269156.15	298325.69	320445.31	354992.27	1527325.13
Revenues from the state budget (thousands of lei)	227593.82	226913.97	231834.10	244387.09	296069.22	1226798.20
Funds attracted through projects, contracts won through competition (thousands of lei)	34404.36	20563.88	35694.08	40653.47	20422.05	151737.84

Own income (thousands of lei)	21645.45	16933.05	30103.20	37455.05	37344.46	143481.22
Other relevant funds, sponsorships, etc. (thousands of lei)	119.83	157.80	164.50	254.76	93.70	790.59

Of the total budget revenues, revenues from the state budget represent **80.3%**, funds attracted from research **9.9%**, own revenues **9.7%**, and the remaining **0.1%** other funds, sponsorships, etc.

5.2. Scientific events organized

To be completed with information on:

- disseminating the results of scientific research at international scientific events (congresses, conferences, symposia, workshops) or international summer schools organized both as coordinator and in partnership with other research organizations;
- disseminating the results of scientific research at national scientific events (congresses, conferences, symposia, workshops) or national summer schools organized both as coordinator and in partnership with other research organizations.

The Politehnica University of Timisoara is constantly involved in organizing high-level scientific events and in disseminating research results. In this context, during the reporting period, **200** international scientific events were organized (**43** as the main organizer), respectively **183** national scientific events (**102** as the main organizer), broken down by year in the table below:

Table 5.5 Centralized report of organized scientific events.

Organized scientific events	2020	2021	2022	2023	2024	Total
International	28	36	45	51	40	200
National	33	46	37	40	27	183

Among these scientific events are some that have become a tradition and are regularly organized by UPT, such as: *Symposium on Applied Computational Intelligence (SACI)* organized annually, or *International Conference of Advanced Materials and Structures (AMS)* organized every two years. Also, during this period, UPT organized the editions of some itinerant conferences of the *International Conference on Computational Methods and Applications in Engineering (ICCMAE)* series organized in partnership with Mississippi State University, USA; *IEEE International Conference on Advanced Learning Technologies and Technology-enhanced Learning*; or from the *EDEN Research Workshop* cycle or events within the European COST program. As for national scientific events, they are addressed to local, regional and national partners. Some examples are: *UPT*

– *ASR Symposium – Challenges and Perspectives of University Education in the Field of Welding Engineering*, *APA Symposium – The Essence of Life (AquaSensTim)*, *National Conference on Electrical Drives*. The following conclusions can be drawn regarding the organization of scientific manifestations:

- UPT constantly organizes large-scale international events: having guests from abroad, frontier research topics, international collaborations.
- The topics are interdisciplinary: from materials and manufacturing, to robotics, medical informatics, artificial intelligence, construction, communication, etc.
- An increase in the frequency of events is observed: after 2022, the years 2020 and 2021 were marked by reduced mobility due to the COVID19 pandemic.
- The organized events include educational components (summer/winter schools) involving students, academic exchanges, international cooperation.
- The format of the scientific events includes plenary sessions, specialized sections, scientific communications, prestigious guests, social aspect (festive opening, networking).
- Most of the events were hosted in the UPT infrastructure (Conference Center, faculties, campus) which brings visibility to the university as an academic hub.

All of this reflects the university's total commitment to disseminating research results and strengthening its role in the international and national scientific community.

5.3. Capacity to develop services, technologies, products

To be completed with information on:

- products/technologies/methodologies developed through research activities resulting from economic or scientific research contracts;
- technologies and services made available through a contract/collaboration project (including posted on EERTIS - <https://eertis.eu/>) or Open access;
- reports/studies of public interest or with private beneficiaries.

In order to meet market requirements, UPT has developed a series of products/technologies/methodologies resulting from research activities following contracts with economic or scientific research agents. Also, technologies and services were made available on the basis of contracts and collaborations, and reports and studies of public interest and for private beneficiaries were made.

An overview thereof is presented in Table 5.6.

Table 5.6 Services, technologies, methodologies, products, reports, studies

Services, technologies, products	2020	2021	2022	2023	2024
Products/technologies/methodologies	69	84	95	46	56

Contract-based technologies and services	153	154	154	155	155
Public Interest Reports/Studies	71	94	77	65	75

Among the beneficiaries of the products, technologies and methodologies we can mention the company Continental Automotive, Romania, YAZAKI COMPONENT TECHNOLOGY SRL from Arad, SMART WOOD ROMANIA SRL, HELLA ROMANIA SRL, etc.

The list of products and services made available to other research centers on a contract/collaboration basis is Open Access and can be found on the EERTIS platform, www.eertis.eu.

The reports and studies of public interest and with private beneficiaries were the result of research contracts with partners such as: I.N.C.D.T.I.M. from CLUJ-NAPOCA, THE NATIONAL COMPANY FOR ROAD INFRASTRUCTURE ADMINISTRATION S.A. through the REGIONAL DIRECTORATE OF ROADS AND BRIDGES CLUJ, CONSTANTA MUNICIPALITY, VOESTALPINE AUTOMOTIVE COMPONENTS ARAD SRL, TMK HYDROENERGY POWER SRL, HAMILTON CENTRAL EUROPE SRL, VITESCO TECHNOLOGIES ENGINEERING ROMANIA SRL, etc.

5.4. Editing and publishing the research organization's own journals or with the involvement of researchers from the research organization

To be completed with information on:

- editing and publishing the research organization's own journal indexed by Web of Science (Journal Citation Reports Q1/Q2/Q3/Q4, Emerging Sources Citation Index and, in addition, for humanities, Arts & Humanities Citation Index), Scopus;
- editing and publishing the research organization's own journal indexed by CNCS (A or B) or a journal indexed in recognized international databases (IDB);
- persons affiliated with the evaluated research organization fulfilling the role of editor-in-chief of a journal indexed by Web of Science (Journal Citation Reports Q1/Q2/Q3/Q4, Emerging Sources Citation Index or, in addition, for humanities, Arts & Humanities Citation Index), Scopus;
- persons affiliated with the evaluated organization fulfilling the role of editor-in-chief of a CNCS (A or B) indexed journal or a recognized IDB journal.

The Politehnica University of Timisoara is concerned with supporting its own journals, so the *Journal of Electrical Engineering*, editor-in-chief Acad. Ion Boldea, was indexed by SCOPUS. The Politehnica University of Timișoara has **11** journals indexed in various other databases and/or CNCS, these are: the scientific bulletins of UPT: *Scientific Bulletin of the Politehnica University Transactions on Hydrotehnics*, *ANNALS of Faculty of Engineering Hunedoara – International*

Journal of Engineering, SCIENTIFIC BULLETIN of the POLITEHNICA Transactions on MATHEMATICS & PHYSICS, Scientific Bulletin of the Politehnica University of Timisoara, Professional Communication and Translation Studies, Scientific Bulletin of Politehnica University of Timisoara, Transaction on Engineering and Management, BULLETIN OF POLITEHNICA UNIVERSITY OF TIMISOARA, ROMANIA, SERIES OF CHEMISTRY AND ENVIRONMENTAL ENGINEERING, ACTA TECHNICA CORVINIENSIS – Bulletin of Engineering, Journal of Architecture, Urbanism and Heritage, Nonconventional Technologies Review – the journal of the Association of Unconventional Technologies and the journal MASTERCOM – Politehnica Graduate Student Journal of Communication – intended for master's students.

A number of researchers from UPT (14) have carried out a rich editorial activity as editor-in-chief/associate editor of Web of Science indexed journals. Thus, Radu-Emil Precup is the editor-in-chief of the *Romanian Journal of Information Science and Technology*, edited by the Romanian Academy and indexed WoS, Oana Boncalo is editor at *Microprocessors and Microsystems* at Elsevier, Emanoil Linul was guest editor at 15 Special Issues, and Liviu Marşavina at 2 special issues of the journal *Engineering Fracture Mechanics* (Q1) totalling a number of 31 journals/special journal issues.

BDI reviews by UPT: *ANNALS OF FACULTY OF ENGINEERING HUNEDOARA - International Journal of Engineering* și *ACTA TECHNICA CORVINIENSIS – Bulletin of Engineering* have Imre Kiss as editor-in-chief, *Scientific Bulletin of the Politehnica University of Timișoara* and *Professional Communication and Translation Studies* have Daniel Dejica Cartiș as editor-in-chief.

5.5. Capacity to train young researchers (PhD, postdoc)

To be completed with information on:

- doctoral theses prepared or postdoctoral fellowships carried out in sectors/departments within the research organization;
- teaching staff/researchers affiliated with the research organization who have participated as members of doctoral thesis public defence committees or doctoral thesis guidance committees;
- PhD supervisors working in the research organization;
- POSDRU/POCU/MSCA/ PNCDI/PNRR postdoctoral and doctoral research projects won/implemented by the research organization;
- PhD students / postdoctoral researchers within the research organization.

Doctoral studies are the higher cycle of university studies whose purpose consists in the development of human resources competent in carrying out scientific research, capable of insertion on the highly qualified labor market. They consist of training through research for research, development and innovation, and constitute a professional research experience, completed, after defending the doctoral thesis, by awarding the title of doctor.

UPT has a single Doctoral School with **14** doctoral fields: Materials Engineering, Civil and Installation Engineering, Chemical Engineering, Geodetic Engineering, Electrical Engineering, Energy Engineering, Electronic Engineering, Telecommunications and Information Technologies, Computers and Information Technology, Systems Engineering, Industrial Engineering, Engineering and Management, Mechanical Engineering, Environmental Engineering, Architecture. The Doctoral School currently has **155** doctoral supervisors: tenured professors in UPT, retired doctoral supervisors and doctoral supervisors from other educational institutions in the country, as The Romanian Academy (Dr. Sebastian Muntean and Dr. Sandor Bernard in the field of Mechanical Engineering), but also from prestigious European universities (TU Delft in the Netherlands - Prof. dr. Ioana Ileana Popescu in the field of Civil Engineering and Installations, respectively from ETH Zurich – Switzerland, Dr. Mihai Stoica in the field of Materials Engineering). The number of doctoral supervisors increased from **139** in 2020 to **155** in 2024, by the habilitation of some researchers/academics.

The capacity to train young researchers through doctoral and postdoctoral research programs carried out by UPT is summarized in Table 5.7. UPT Doctoral School.

Table 5.7 Results on the Capacity to train young researchers

	2020	2021	2022	2023	2024
Number of doctoral theses prepared or postdoctoral fellowships carried out in sectors/departments within the research organization	22	31	38	60	36
Number of PhD supervisors working in the research organization	139	145	152	154	155
Number of POSDRU/POCU/MSCA/PNCDI/PNRR postdoctoral and doctoral research projects won/implemented by the research organization	0	0	1	1	0
Number of PhD students/postdoctoral researchers within the research organization	647	717	759	740	727
Number of academics/researchers affiliated to the research organization who participated as members of the doctoral thesis public defense committees or doctoral thesis guidance committees	413	426	441	518	497

Annually, more than **400** to **518** (in 2023) professors-researchers participated as members of the **doctoral thesis public defense committees or doctoral thesis** advisory committees. It should be noted that a remarkable number of **293** professors participated in doctoral thesis defense committees at other universities in Romania (Politehnica University of Timișoara, Technical University of Cluj-Napoca, Technical University Gh. Asachi Iași, Transilvania University of Brașov, University of Medicine and Pharmacy V. Babeș Timișoara, West University of Timisoara, Romanian Academy, etc.), but also at prestigious universities abroad: Cranfield University (UK), University of

Trento (Italy), Politecnico di Milano (Italy), Politecnico di Torino (Italy), University of Seville (Spain), University of Castilla-La Mancha (Spain), University of Canterbury (New Zealand), NTNU Trondheim (Norway), University of New South Wales (Australia), Czech Technical University Prague (Czech Republic), Delft University of Technology (Netherlands), etc.

21 doctoral theses have been developed in co-supervision with prestigious universities in Romania (Technical University of Cluj Napoca, Gh Asachi Technical University of Iași, Technical University of Civil Engineering Bucharest, West University of Timișoara, Polytechnic University of Bucharest, Carol Davila University of Medicine and Pharmacy Bucharest, University of Medicine and Pharmacy "Victor Babeș" Timisoara) and abroad: University of Salerno (Italy), Université du Québec a Trois-Rivieres (Canada), University of Limoges (France). During the period under evaluation, **2** theses in co-supervision were defended with universities abroad: University of Lyon (France) and University of Limoges (France).

The total number of doctoral students in internship or extension varied between 647 in 2020 and 759 in 2022. Annually, the Politehnica University of Timisoara receives between 80 and 90 budgeted places for doctoral studies, of which 40 are scholarships. In addition to these, about 20 places are subject to a fee. The total number of doctoral theses defended between 2020 and 2024 was **187**, with a maximum number of theses in 2023, **60** theses. This was the year when the project "*Network of excellence in applied research and innovation for doctoral and postdoctoral study programs*" (InoHubDoc, POCU/993/6/13/153437) was coordinated by Prof. dr. Liviu Marsavina, project through which **93** doctoral students from the Politehnica University of Timișoara, the Technical University of Cluj-Napoca and the Gh. Asachi Technical University of Iași and 24 postdoctoral researchers benefited from a 1 year scholarship to complete their doctoral theses, respectively to carry out postdoctoral research. The program was financed through the Human Capital Operational Program 2014-2020, was implemented between 17.06.2022 – 16.12.2023 and had a funding of 5,666,629.23 lei.

The doctoral school has a series of agreements with companies through which their employees are doctoral students in the Politehnica University of Timisoara, the doctoral topics being developed in consultation with the industrial partner in order to solve concrete problems, and the company undertakes to logistically support the doctoral student. Such agreements exist with the companies: - Continental Automotive Romania since 2014, with ICPV S.A. Arad, signed in 2016 and RAAL - Bistrița, signed in 2016.

6. Performance and socio-economic impact

6.1 The extent to which the activity responds to public interests of national or local importance

To be completed with information on:

- the activity carried out by the organization in relation to public interests of national or local importance correlated with its mission;
- studies, sectoral projects, research projects with local or national impact;
- research services for or in partnership with commercial entities;
- coordinating or participating in the development of complex works with national and local impact.

The Politehnica University of Timisoara has been strongly involved, since its establishment, in the training of specialists for the labor market in the Western area of Romania. It also provides services to public institutions at national, regional, and local level. Among the national organizations for which UPT has provided services we can mention: THE COMPANY FOR THE PRODUCTION OF ELECTRICITY IN HYDROELECTRIC POWER PLANTS HIDROELECTRICA S.A. IN BUCHAREST, THE NATIONAL INSTITUTE OF FORENSIC EXPERTISE IN BUCHAREST, THE NATIONAL COMPANY ROMARM SA BUCHAREST SUBSIDIARY UZINA MECANICA CUGIR SA. UPT has provided consultancy services to the CARAS-SEVERIN COUNTY COUNCIL, TIMIȘ COUNTY COUNCIL, for various municipalities like Constanta, Arad, Bozovici, Ineu, Curtici, etc., local companies AQUATIM SA Timisoara, COLTERM SA LOCAL HEATING COMPANY IN TIMISOARA, A.N. APELE ROMANE - BANAT WATER BASIN ADMINISTRATION IN TIMISOARA, etc.

Thus, between 2020 and 2024, **75** contracts with national local authorities were developed, of which we can mention:

- Expert Services - Technical assistance, issuance of reports, participation in working sessions and hearings within the international arbitration action ICC 22482/MHM for Hidroelectrica S.A, 2020.
- Study on the socio-economic impact of the application of the HCL on the approval of the car access regulation in the Peninsular Area of the municipality of Constanta, 2021.
- Specialized technical consultancy services, for the elaboration of the award documentation in the IT field and for the organization of the procedure, respectively the award of the integrated digital platform implementation contract within the Timis County Council, 2021 - 2022.
- Traffic study to improve the car and pedestrian traffic conditions in Dumbravița commune, Timis county, 2022.
- Technical consultancy services in the field of IT&C for the project entitled "Works Contract (CL) 02: Design and execution of SCADA system for the localities of Timisoara,

Buzias, Deta, Faget, Jimbolia, Sannicolau Mare", for AQUATIM SA IN TIMISOARA, 2022.

- Energy management services for industry, according to the provisions of law 121/2014, for COLTERM SA LOCAL HEATING COMPANY IN TIMISOARA, 2023.

- Expertise in 9 hydrotechnical works in order to renew the safe operating authorizations, for A.N. APELE ROMANE - BANAT WATER BASIN ADMINISTRATION IN TIMISOARA, 2024.

In line with the university's mission to solve industry problems, UPT is actively involved through its researchers in solving concrete problems in the industry through contracts with companies and SMEs. Thus, between 2020 and 2024, UPT carried out **442** contracts with economic operators, and the total value of these projects was 10,096,293 lei, broken down by year in Table 6.1.

Table 6.1 Contracts with economic operators.

	2020	2021	2022	2023	2024
Contracts with economic operators 2020-2024 (no)	88	116	88	67	83
Annual value of contracts with economic operators 2020-2024 (lei)	1280582	2555502	2344252	1941296	1974561

Among the main economic agents for which contracts have been drawn up, we can mention: FLEXTRONICS ROMANIA SRL, BERG BANAT SRL, SMITHFIELD ROMANIA SRL, CONTITECH ROMANIA SRL, MAHLE COMPONENTES DE MOTOR SRL, NANO INTELIFORM SRL, ORACLE ENGINEERING SRL, DAR DRAXLMAIER AUTOMOTIVE SRL, etc.

Under the motto "Shine your light, Light up your city!", the *Timișoara 2023* program focused on its values of multiculturalism, avant-garde history (being the first European city with electric street lighting in 1884 and the city where the 1989 Revolution started) and cultural innovation, hosting hundreds of events aimed at revitalizing the local cultural scene and connecting it with the European one.

At the regional level, Timișoara and the city of Szeged in Hungary implement the *Szeged & Timișoara Data Space* project, with partners like Public Transport Company of Szeged (SZKT), Public Transport Company Timișoara (STPT), University of Szeged, Politehnica University of Timișoara, Clarity Consulting, Griff Soft, Frontier Penta and Rockwood Digital Europe. According to the project, a new sensor system will be installed in Timisoara for collecting data on pollution with PM2.5, NO₂, CO₂, SO₂ and O₃, using the existing digital infrastructure. The Timisoara municipality will coordinate the integration of the sensor network with STPT systems, and the data will be processed in real time, facilitating proactive measures to reduce pollution. UPT is a beneficiary

partner in the project with the role of research and innovation partner that will deal with the analysis of pollution data, the development of prediction models and correlation of pollution data with traffic data, and will take part in the evaluation and validation process of the implementation of the pilot project, <https://www.ds4sscc.eu/stids>.

Another project with major regional implications is **EDIH DIGIVEST (European Digital Innovation Hub West Romania)**, the key entity in the digital transformation of the West Region. EDIH DIGIVEST is part of the European network of Digital Innovation Hubs, created by the European Commission to accelerate the digitization of economies and societies. It is a strategic instrument to support SMEs and the public sector. The European Digital Innovation Hubs (EDIHs) are a strategic tool designed by the European Commission to accelerate the digital transformation of economies and societies in the European Union. They function as complex ecosystems made up of companies, associations and organizations dedicated to supporting SMEs, Local Public Authorities (LPAs) and other institutions that encounter difficulties in the digitization process. Issues addressed by EDIHs include lack of funding, lack of know-how, and difficulties in adopting digital technologies. UPT, indirect partner, through its presence in **the Regional Cluster of Information and Communication Technology and the Techimpuls Association** provides technical and academic support and access to the testing infrastructure,

<https://www.b2match.com/e/digivest-2024/components/43681/nxYMc8m3ydaF> .

An eloquent example of involvement in a high-impact localized project was **Timișoara – European Capital of Culture 2023**. The European Capital of Culture (ERC) programme is one of the best known and most successful initiatives of the European Union, launched in 1985 at the proposal of the Greek Minister of Culture, Melina Mercouri. Out of the 23 projects financed by Norwegian funds on the occasion of *Timișoara, European Capital of Culture*, the Politehnica University of Timișoara coordinated 7 projects and was a partner in another. Some examples are:

- **Bright Cityscapes** is a multidisciplinary program and design lab carried out within the *Timisoara 2023 - European Capital of Culture* initiative, with the main objective of exploring and transforming the city through the lens of design, architecture and digital culture.
- **Spotlight Heritage Timișoara** is a large-scale digital cultural initiative, developed by the Politehnica University of Timișoara in partnership with the National Museum of Banat. The project functioned as a model for the creation of intangible digital cultural heritage outsourced to the public through the use of state-of-the-art digital technologies (virtual reality (VR) and augmented reality (AR) installations, mobile applications, theatre and dance performances that integrated digital elements).

- **UPT Creative Campus.** This was UPT's strategic vision, transforming the campus into an accessible, experimental and inclusive space. It served as a platform for most of the events organized by the Politehnica, emphasizing the role of science and technology as an integral part of cultural life.
- **MV Sci-Art.** MV Sci-Art is a Cultural Center for Contemporary Art and Science, resulting from the strategic partnership between the Politehnica University of Timișoara (UPT) and the artistic organization META Spatiu and is a laboratory open to research, learning and experimentation, focusing on transdisciplinary collaborations between science, technology, engineering and art.

Another large-scale initiative at local level is *the Regional Consortium for Dual West Education Timișoara*. The Politehnica University of Timișoara (UPT) has a leading and coordinating role in the development of dual education in the Western region of Romania. UPT is the beneficiary (leader) of the project and ensures the strategic coordination of the entire consortium, bringing together the university, pre-university environment, public administration and private companies. The consortium is a broad partnership structure, including: 3 Universities (UPT, West University of Timișoara, University of Life Sciences Timișoara), UAT Timișoara Municipality, School Inspectorate, 7 technological high schools, and a large number of Economic Operators (21 large companies in fields such as Automotive, Information Technology and Computers, Electronics, HORECA, Construction) and Business Associations. The major objective is to develop a complete integrated dual education route (from high school/post-secondary level to university level), adapted to the requirements of the labor market in the Western region.

6.2 Capacity to develop national and international collaborations

To be completed with information on:

- the capacity of the research organization to develop national and international collaborations that have as main outcomes the joint use of components of the research infrastructure;
- providing access for researchers from other research organizations to different components of their own infrastructure (including IOSIN);
- support services for other research organizations or researchers outside the organization;
- co-opting partner organizations or researchers from other organizations in initiated projects;
- high degree of infrastructure sharing joint use with other research organizations, making components of the research infrastructure available for use by researchers from other research organizations;
- providing services to other research organizations or researchers within them, attracting researchers or research organizations into inter- and trans-disciplinary research projects.

As a member of the alliance of European universities E³UDRES², UPT is part of a network with 8 other European universities whose goal is to become an engaged and entrepreneurial European University as a driver for smart and sustainable European regions. It is intended to carry out joint study programs, implement research projects and regional involvement. An example of projects implemented by the E³UDRES² consortium is the *Entrenovators project* through which the human research resource and the research infrastructure were mapped in order to make more efficient use of the research infrastructure through the access of partners, <https://www.entrenovators.eu/>

The Politehnica University of Timisoara has international collaborations with **85** universities and research centers in the form of framework cooperation agreements, memoranda of understanding, or in other forms. These partners come from all over the world (Brazil, Chile, USA, India, Japan, Turkey, China, etc.), but most of them from Europe (Germany, Hungary, Italy, Finland, Slovakia, Moldova, Spain, France, etc.), <https://international.upt.ro/cooperare-internationala/acorduri-cadru-de-cooperare/> .

The Politehnica University of Timisoara has been permanently concerned with attracting foreign researchers through different mechanisms: mobility programs for Romanian researchers in the diaspora, by including foreign researchers in the implementation of research projects, first mobilities within international projects, on bilateral collaboration projects.

Among the foreign researchers involved in the implementation of research projects in UPT, it is worth mentioning: Prof. dr. Carmen Gabriela Boeriu from Wageningen University & Research (The Netherlands) in the field of chemistry with **98** WoS publications, over 3,600 citations and an H-Index 27, Prof.dr. Filippo Berto (NTNU Trondheim and La Sapienza University Rome) in the field of mechanical engineering with over 1,000 scientific articles, over 31,000 citations and an H-Index 83, and Dr. Zahara Kalantari from KTH Royal Institute of Technology (Sweden), a specialist in the field of environment and ecology, with over 160 WoS indexed papers and over 6,500 citations and H-Index 41.

33 research projects implemented by the Politehnica University of Timisoara aimed to attract elite researchers, especially established researchers from the diaspora, but also researchers at the beginning of their careers. Among the researchers from the diaspora we mention Matekovits Ladislau - Politecnico di Torino (Italy), Strimbu Bogdan - Oregon State University (USA), Pop Ion Octavian - Université de Limoges (France), Tudor Bratosin Mihaela-Alexandra - Paul Valéry University of Montpellier 3 (France), Goma Sergio - Qualcomm Technologies (USA). UPT has been a partner in a series of bilateral mobility contracts with the Republic of Moldova, Turkey, France, Belgium (Wallonia). Also, within international research projects, a number of researchers have carried out visits or training internships in UPT. Among these, the project *Structural Integrity and Reliability of Advanced Materials obtained through additive Manufacturing*, H2020-WIDESPREAD-2018-03,

Grant No. 857124 coordinated by UPT through Prof. dr. Liviu Marşavina through whom Farzad Tatar - Parma University (Italy), Aleksa Milovanovic and Isaak Trajkovic - University of Belgrade (Serbia), Ladislav Poczklán - IPM Brno (Czech Republic), respectively Li Liang and Pietro Foti - NTNU Trondheim (Norway), <https://www.siramm.unipr.it/> have carried out research internships in UPT for 2 months.

6 foreign researchers, including 3 doctoral students and 3 postdoctoral researchers, carried out 3-month research internships in UPT within the Eugen Ionescu - AUF program, 2 researchers coming from Morocco, Madagascar, Cameroon, Gabon and Algeria each.

The Politehnica University of Timisoara has been concerned with attracting world-renowned researchers and personalities to its community by awarding the titles of Doctor Honoris Causa and Honorary Professor. Thus, between 2020 and 2025, 12 Doctor Honoris Causa titles and 4 Honorary Professor titles were awarded. Personalities such as Acad. Dorel Banabic – Head of the Technical Sciences Section of the Romanian Academy, Prof. Marco Ceccarelli – Tor Vergata University Rome (Italy) – Prof. Dan Frangopol – Lehigh University (USA) – the most visible researcher in the field of civil engineering, Prof. Pavol Bauer – Delft Technical University (The Netherlands), but also to some personalities from the cultural world – Mr. Ioan Holender – the longest-serving director of the Vienna Opera (Austria), former UPT student, respectively dr. Christian von Albrichsfeld – manager of Continental Automotive Romania. Among the titles of honorary professor, it is worth mentioning Prof. Daniela Rus from MIT (USA) and Dr. Andreas Wild from Arizona State University (USA).

6.3 Contribution to national and world science and culture

To be completed with information on:

- landmark works for national and world science and culture in terms of the contributions made by the research organization and evidence of the degree of recognition of their impact by the national and international scientific community;
- published reference works in the field;
- organization of dissemination activities of the results of scientific work through large-scale events/studies/papers with proven prestige in the national and international scientific community.

The Politehnica University of Timisoara is engaged in organizing activities to disseminate the results of scientific activity through large-scale events/studies/reports and with proven prestige in the national and international scientific community. Between 2020 and 2024, 72 events were organized that could be categorized into:

- scientific events: Bright Cityscapes: Mirroring the Ecosystem, Tech Talk by UPT, annual notoriety event attended by: in 2024 World Chess Champion Garry Kasparov and Andreas Ekström (Google), Jimmi Wales – co-founder of Wikipedia, Dragoş Margineanţu – Boeing AI Chief Technologist, Marius Stan – leader of the smart

materials program at Aragonne National Laboratory in 2023 and many other personalities in the leading fields of Technology; Smart Diaspora 2023 conference; Open Campus Night organized within the European Researchers Night;

- educational events: ELITHh Anniversary Gala, 100 years after the first generation of UPT graduates in 2024, Open Education & Science Workshop 2024, Workshop "DigiSkills – digital skills in artificial intelligence and community"; SPARK by UPT conference in the field of entrepreneurship,
- sporting events: Poli Bike Challenge; Rollout - launch of the new Formula Student single-seater; Relay Race UPT,
- cultural events: *Capital of Culture* with Cătălin Ștefănescu, and 10 Romanian researchers from the diaspora with remarkable results in architecture (Oana Stănescu), medicine (Alexandru Mărmureanu), music (Cristian Măcelaru, George Petean), ballet (Francesca Velicu), astrophysics (Aurora Simionescu), mathematics (Adrian Constantin), information technology and artificial intelligence (Raluca Popa, Dragoș Mărgineanțu), philosophy (Anca Vasiliu); throughout 2023, on the occasion of *Timișoara European Capital of Culture*, various events, such as the Cucuteni exhibition.

7. Human Resources³

7.1 Structure of staff by scientific grade and share of PhD supervisors, and career development opportunities

To be completed with information on:

- career development opportunities offered by the research organization to its members;
- structure of scientific research staff by scientific grade;
- number and share of PhDs, PhD supervisors;
- the quality of the research team as a whole and the extent to which it is suitable to the mission and activities carried out by the research organization.

The structure of the teaching staff by didactic/scientific degrees is presented in Table 7.1.

Table 7.1 Structure of the academic staff by didactic / scientific position

Staff structure		2020	2021	2022	2023	2024
Researchers, level 1 (prof; researcher I)	Number	103.42	94.88	88.24	94.66	94.44
	FTE	52.42	50.88	47.74	51.16	50.94

³ Only results for which the author has indicated the affiliation to the research organization under evaluation are included.

Researchers, level II (assoc.prof., researcher II)	Number	134	149	152	155	155
	FTE	53.6	60.8	63.2	63.8	63.2
Researchers, level III (assistant prof., researcher III)	Number	310	300	287	273	277
	FTE	95.8	88.4	86.1	81.9	84.5
Researchers - assistants	Number	61	49	44	39	40
Total	Number	608.42	592.88	571.24	561.66	566.44

The highest number of academics/researchers was 608.42 in 2020, and the lowest in 2023 was 561.66.

The share by didactic/scientific positions is presented in Fig. 7.1, including doctoral supervisors who have a contract only on the doctoral school with the related share given by the relation (2.1). A relatively constant percentage of academics/researchers is observed between 17% in 2020 and 15.4% in 2022. The percentage of associated professors/CSII has steadily increased from 22% in 2020 to 27.6% in 2023. The share of assistant professors/lecturers/CSIII is the highest in UPT, their percentage decreasing from 51% in 2020 to 48.9%. The lowest share is held by assistant lecturers/researchers and is decreasing from 10% in 2020 to 6.9% in 2023.

Table 7.2 Share of PhDs and PhD supervisors

Staff structure	2020	2021	2022	2023	2024
Number of Doctors of Science	608.42	592.88	571.24	561.66	566.44
Share of Doctors of Science	100%	100%	100%	100%	100%
Number of PhD supervisors	129	146	143	144	142
Share of doctoral supervisors	21.20%	24.62%	25.03%	25.63%	25.06%

The Politehnica University of Timisoara has a well-trained professional body, all of whom have the title of doctor with high performance in research, Table 7.2. Also, the share of doctoral supervisors increased from 21.2% in 2020 to 25% in 2024.

The recognition of the prestige of the researchers from the Politehnica University of Timișoara is also highlighted by the fact that 5 professors from UPT are currently members of the Romanian Academy: Acad. Ion Boldea, Acad. Dan Dubină, Prof. dr. Vasile Marinca, Prof. dr. Radu-Emil Precup, and Prof. dr. Liviu Marșavina. They represent the largest share in the Technical Sciences Section of the Romanian Academy, of all institutions in Romania.

The high number of citations of UPT researchers is confirmed by the Top 2% *Scientist in the World* compiled by Prof. Ioannidis from Stanford University (USA) based on the number of citations in Scopus, which compiles this annual ranking for the entire career, respectively for the previous year.

The Politehnica University of Timisoara, in the 2024 ranking for the entire career, had **14** researchers, and for 2023, **15** researchers included, as seen in Table 7.3. It was one of the universities in Romania with the most researchers listed, <https://elsevier.digitalcommonsdata.com/datasets/btchxktzyw/7>. It should be noted the presence for 2023 of young researchers Linul Emanoil, Popa Calin, Ancuti Codruța, Ancuți Cosmin, Roman Raul, which shows that there is potential for development and growth in the research area, thanks to these young researchers with remarkable results.

Table 7.3 Researchers in the Top 2% Stanford

Number	Whole career	Year 2023
1	Boldea Ion	Albulescu Claudiu
2	Precup Radu – Emil	Boldea Ion
3	Sarbu Ioan	Sarbu Ioan
4	Lascu Cristian	Precup Radu Emil
5	Marinca Vasile	Ancuti Codruta O.
6	Dubina Dan	Ancuti Cosmin
7	Gheju Marius	Linul Emanoil
8	Ianos Robert	Lascu Cristian Vasile
9	Marsavina Liviu	Popa Călin Adrian
10	Matekovits Ladislau	Marsavina Liviu
11	Andreescu Gheorghe	Dubina Dan
12	Belega Daniel	Roman Raul Cristian
13	Linul Emanoil	Boeriu Carmen Gabriela
14	Duma Virgil	Marinca Vasile
15		Duma Virgil

Every year, UPT researchers have distinguished themselves through a significant number of papers: *Highly cited* and *Hot* appear on the Web of Science. Thus, between 2020 and 2024, 116 were *Highly cited*, and their number has steadily increased from 17 in 2020 to 30 in 2024. Of these, 15 papers were classified as *Hot Papers*, as seen in Table 7.4.

Table 7.4 Featured WoS Works in *Highly Cited* and *Hot Papers*

WoS Works	2020	2021	2022	2023	2024
No. of HIGHLY CITED and HOT highlighted papers on WOS, of which:	17	20	24	25	30
HOT on WOS	0	3	7	4	1

UPT offers opportunities for career development and supports the promotion of its valuable researchers. Between 2020 and 2024, promotion competitions were organized for all teaching positions, between **39** (in 2020) and **51** (in 2024), Table 7.5. Most of the competitions in the mentioned period were organized for the positions of associate professor **84**, respectively assistant professor **80**, and the least of 24 for the position of professor.

Table 7.5 Promotion competitions

Promotion competitions	2020	2021	2022	2023	2024
Researchers I (prof; researcher I)	3	10	4	3	4
Researchers II (assoc.prof, researcher II)	11	19	11	24	19
Researchers III (assist.prof., researcher SIII)	19	16	16	12	17
Assistant researchers	6	5	9	7	11

7.2 Members in the editorial board of a national/international journal (rated by Web of Science, Thomson Reuters or indexed in a IDB) or in the editorial board of established international publishing houses; members in an international think tank/ expert group at European/global level; members (fellow, senior) of an international scientific society

To be completed with information on:

- how the researchers from the research organization, through their results and their prestige, contribute to increasing the visibility of the research organization, of the Romanian scientific research in the field at international and European level;
- the presence of researchers from the research organization in the editorial boards of prestigious national and international journals, in the editorial boards of established international publishing houses, in international think tanks/expert groups at European/global level, their membership (fellow, senior) in prestigious international scientific societies in the field.

The Politehnica University of Timisoara has a professional body of researchers, who, through their results and prestige, contribute to increasing the visibility of the research organization, of scientific research at national, European and international level. Between 2020 and 2024, **41** researchers from UPT received the quality of members (fellow, senior) of prestigious international scientific societies for their field. Among them we can mention: Radu – Emil Precup - president of the *Institute of Electrical and Electronics Engineers (IEEE) Systems, Man, and Cybernetics Society, Romania Chapter*; Liviu Marsavina - Honorary Member of the *Italian Group of Fracture* in 2020 and *Fellow of the European Structural Integrity Society* in 2020; Daniel Dejica Carțiș - vice-president of *Deutsche Gesellschaft für Übersetzungs- und Dolmetschwissenschaft* in 2024; Peter Francisc - *Fellow of American Chemical Society* 2020-2024; Pop Mirela-Cristina - expert member of the *Commission scientifique internationale SHS 3, Fonds de la Recherche Scientifique FNRS*, Brussels; Bistriean Diana-Alina - fellow of the *Society for Industrial and Applied Mathematics* SIAM 2023 -2024, etc.

The presence of UPT researchers in the editorial boards of prestigious national and international journals, in the editorial boards of established international publishers is significant due

to the presence in **152** editorial boards during the period under evaluation. It should be noted the presence in:

- top journals (Q1) at prestigious publishers and journals with high impact on the international flow of publications. Some examples of members of editorial boards are Hădărugă Daniel-Ioan at the journal *Food Chemistry* at Elsevier, Viorel Ungureanu at *Thin Walled Structures* (Elsevier), Liviu Marsavina at *Fatigue and Fracture of Engineering Materials and Structures* (Wiley),
- The 5 researchers from UPT who are members of the Romanian Academy: Ion Boldea, Dan Dubină, Vasile Marinca, Radu-Emil Precup and Liviu Marsavina, members of the Editorial Board of the Proceedings of the Romanian Academy Series A: Mathematics, Physics, Technical Sciences, Information Science. Moreover, Prof. Liviu Marsavina is Editor-in-Chief of *The Romanian Journal of Technical Sciences. Applied Mechanics*, also edited by the Romanian Academy.

7.3 Membership in the scientific board/committee of an international organization/association in the field

To be completed with information on:

- representatives of the research organization in the scientific boards/committees of prestigious international organizations/associations;
- the presence of researchers from the research organization in the management/scientific boards of prestigious international organizations/associations.

UPT representatives occupy important positions in the leadership/scientific committees of prestigious international organizations/associations. Thus, between 2020 and 2024, **32** positions are occupied by researchers from UPT: among them, it should be mentioned: Lăcrimioara Stoicu-Tivadar is President of the *European Federation of Medical Informatics* (2018 – 2020) and Vice President for Europe at the *International Medical Informatics Association* (2018 – 2020), Daniel-Ioan Hădărugă is Vice-President of the *EUROFOODWATER* Association (2020 – 2024), Dan Lascu is Vice-President of the *Power Electronics and Motion Control Europe Council* from 2024, Erwin Lovasz is Secretary General of *the International Federation of the Promotion of Mechanism and Machine Science* (2020-2027), Liviu Marsavina is Vice-President of the *European Structural Integrity Society* (2020-2024), Francisc Peter is a Member of the Scientific Committee of the *European Society of Applied Biocatalysis*, and Mihai Micea is President of IEEE SSIT Chapter Romania (2019 – 2023).

7.4 Members/experts in joint committees/working groups of public authorities at national level

To be completed with information on:

- solving current societal problems through its researchers;
- the presence of researchers from the research organization as members or experts in joint committees/working groups set up by public authorities at national level for substantiating and drafting legislation, strategies and policies, action plans, policy papers, etc.;
- connecting through researchers to the real needs of society and providing evidence that the research organization is carrying out actions with a societal, economic and social impact.

UPT's policy is to encourage UPT researchers to take part as members or experts in commissions/joint working groups set up by public authorities at national level for substantiating and elaborating draft normative acts, strategies and policies, action plans, programmatic documents, etc. The most important presence is in CNADTCU, where 14 academics are part of the specialized commissions (Civil Engineering, Mechanical Engineering, Electrical Engineering, Energy Engineering, Geodesy, Environmental Engineering, Materials Engineering, Architecture), https://www.upt.ro/Informatii_reprezentanti-upt-in-comisii-cnatdciu_855_ro.html, or from the Panel for Engineering Sciences. Their contribution to the development of the criteria for defending doctoral theses, for the habilitation, associate professor and university professor, developed in 2024, should be noted. The new CNADTCU criteria that come into force from 2025 for doctoral students and from 2026 for teaching staff and researchers have a major impact on the academic community in Romania.

UPT is represented in UEFISCDI by Lăcrămioara Stoicu-Tivadar, in the commission for Longevity Medicine, and Aldo de Sabata in the Consultative College for Research, Development and Innovation. In the National Council for Scientific Research (CNCS), Prof. dr. Radu-Emil Precul was a member of the Information Science and Technology Commission, Prof. dr. Liviu Marsavina was a member of the Commission for Engineering Sciences (2020 -2024), and, since 2024, a permanent member of the CNCS and President of the Commission for Engineering Sciences. CNCS and UEFISCDI organize competitions for funding research projects and research policies and strategies, also having a major impact on the entire research ecosystem.

It is remarkable the involvement of the members of the UPT academic community in the commissions of the Ministry of Development, Public Works and Administration (MDLPA) Specialized Technical Commission no. 2 for the approval of technical agreements in construction, Safety in operation for constructions - Subcommittee on civil, industrial, agricultural constructions, Committee for the implementation of the National Strategy for Long-Term Renovation.

At the National Body for Standardization, UPT has 6 representatives in different commissions and committees.

Arch. Dr. Ileana Maria Kisilewicz is part of the National Commission for Historical Monuments within the Ministry of Culture and of the UNESCO Organizing Committees - Wooden Churches in Maramures and Moldova. We also have members in the Romanian Order of Architects.

Prof. dr. Romeo Susan-Resiga was part of the Advisory Council on Sustainable Development, for a term of 3 years, from 2021 to 2024, being directly involved in the development of strategies on sustainable development policies.

5 academics from UPT are part of the ARACIS commissions.

Among the actions carried out by UPT researchers with social, economic and social impact, we can mention:

- Involvement in solving societal problems induced by the COVID-19 pandemic (2020–2021)
 - local support campaigns and actions: UPT communicated measures, materials and initiatives to support the community in the context of COVID-19 (information, recommendations, coordination with DSP, production and supply of disinfectants, masks, visors). The institution organized monitoring and support activities.
 - carrying out local support projects: "Oxygen for Timișoara" and initiatives for concentrators/pulse oximeters — initiatives published by the UPT associated channels to help patients with medium/acute forms.
- Strengthening technology transfer and industry/community support:
 - establishment and development of CITT (Center for Innovation and Technology Transfer) — active role in connecting UPT research with industry and community, support for spin-offs, SMEs and applied capitalization of scientific results. This center is a key piece in the societal impact through job creation, technical solutions for local companies and joint projects.
 - Partnerships with companies in the western part of Romania, multinational companies (e.g.: Continental, Vitesco, Hella, Draxlmayer), local authorities (AQUATIM, RATT), municipalities
 - collaborations that support application projects (partnerships for Bridge Grants, PED, internships, know-how transfer and regional development).
- Social inclusion, support for vulnerable students and educational activities (2021–2024).
 - Through CNFIS - FDI projects and other institutional grants aimed at "developing social inclusion mechanisms and support for students from vulnerable categories" (e.g. projects launched/implemented in 2024 and related to the 2021–2024 period). These projects have a direct social impact through inclusion measures, scholarships, support programs.
- Entrepreneurship, practical training and employment projects (2020–2024):

- Supporting start-ups and spin-offs through support mechanisms, facilitating the transition from research to products/services for society.
- Traineeships/educational collaborations (Erasmus+, EU digital skills projects and traineeships) that increase students' employability and respond to regional skilled labour needs.

7.5 Members of a University Doctoral School Council or Doctoral School Council (CSUD); member (fellow, senior) of a national scientific society; member in the scientific/editorial board of a prestigious national journal

To be completed with information about:

- the capacity to contribute in the academic environment and in society, to the coordination and quality enhancement of the training process of doctoral students, to the development of knowledge in the specific research field, to maintaining high standards of quality and respect for ethics and academic integrity in the specific research field, through the researchers;
- the presence of researchers from the research organization in the scientific governing bodies of doctoral and postdoctoral schools (council of a university school or council of a doctoral school), their presence as members in national scientific societies in the research field, in scientific/editorial boards of prestigious journals, etc.
- the capacity to contribute, both as an institution and through its researchers, to the coordination and quality enhancement of the training of doctoral students, to the development of knowledge in the specific research field, to the maintenance of high standards of quality and respect for ethics and academic integrity in the specific research field.

Academics from UPT carry out a sustained activity within the CSUDs and CSDs of the Politehnica University of Timișoara, but also of other universities in Romania. Thus, 7 academics from UPT are members of the CSUD of UPT https://www.upt.ro/Informatii_scoala-doctorala_310_ro.html, coordinated by Prof. dr. Radu-Emil Precup – corresponding member of the Romanian Academy. Three members of the academic community are members of the CSD of UPT. The recognition of UPT researchers is highlighted by the fact that Prof. dr. Radu-Emil Precup – corresponding member of the Romanian Academy has been a Member of the Council of the Doctoral School of Automation and Computers at the Polytechnic University of Bucharest between 2020 and 2024, Prof. dr. Sorin Mușuroi has been a Member of the Council of Doctoral Studies at the V. Babeș University of Medicine and Pharmacy Timisoara between 2020 and 2024, Prof. dr. Liviu Marșavina – corresponding member of the Romanian Academy has been a Member of the Council of the Doctoral School of Dental Medicine at the V. Babeș University of Medicine and Pharmacy Timisoara in the period 2020-2024, and, since 2024, a Member of the Council of Doctoral Studies at the V. Babeș University of Medicine and Pharmacy Timisoara.

15 academics hold positions within national associations/ societies/sciences. The following can be highlighted: Radu-Emil Precup - President of the Timisoara Branch of the Romanian Robotics Society, Daniel-Ioan Hădăruță of the Romanian Chemical Society - President of the Timisoara Branch, Adrian Ciutina - Vice-President of the Romanian Society of Geotechnics and Foundations, Liviu Marsavina - Vice-President of the Romanian Association of Breaking Mechanics, Mihaela - Ruxandra Lascu - National Society of Medical Engineering and Biological Technology (member - responsible for the Timisoara branch), etc.

UPT researchers are involved in the editorial boards of national journals other than those edited by UPT. The 5 members of the Romanian Academy of UPT are part of the editorial board of the Proceedings of Romanian Academy - Series A (https://acad.ro/institutia/proceedings_consiliu.html). Also, Daniel-Ioan Hădăruță is a member of the scientific council of the Journal of Agro-alimentary Processes and Technologies.

7.6 Awards/distinctions/titles

To be completed with information on:

- the prestigious results of the research organization and researchers benefit are recognized (through awards/distinctions/titles) by national and international established forums, awarded by the Romanian Academy, awarded by state institutions/authorities (ASAS, AOSR, ASTR, branch academies, CNCSIS, etc.), the award of researchers by a national scientific society, national awards in the field, the award of the title of Doctor Honoris Causa to members of the research organization;
- the results and professional prestige of the research organization and its researchers are recognized and validated by the Romanian Academy, state institutions and authorities, national and international scientific societies, universities, following selection processes, etc.

The Politehnica University of Timișoara is the university/institute with the most members in the Technical Sciences Section of the Romanian Academy 5: academicians Ion Boldea, Dan Dubină, Ladislau Vekas and corresponding members Prof. dr. Vasile Marinca, Prof. dr. Liviu Marșavina. Prof. dr. Radu-Emil Precup is a corresponding member of the Information Science and Technology Section.

Also, the Politehnica University of Timisoara has **27 members within the Romanian Academy of Technical Sciences in 9 of the 10 sections**: Technical Mechanics Section, Mechanical Engineering, Electrotechnics-Energy, Electronics-Automatics, Information and Communication Technology, Computers and Telecommunications, Construction and Urban Planning, Transport Engineering, Materials Science and Engineering, Chemical Engineering, https://astr.cs.upt.ro/index.php?page=membri&tipmemb=membri_domenii.

The table below summarizes the number of awards obtained by UPT research professors between 2020 and 2024. Of the 243 awards, 38 have been obtained at international and national invention salons, 11 were prizes of the Romanian Academy, prizes of other academies of the Romanian Academy of Technical Sciences, the Romanian Academy of Scientists, prizes of international organizations and 3 titles of Doctor Honoris Causa.

Table 7.6 Awards

Year	2020	2021	2022	2023	2024	Total
Number of awards	37	66	38	73	29	243

Among the remarkable achievements and recognition of UPT researchers we mention:

- the three titles of Doctor Honoris Causa awarded to Prof. dr. Viorel Aurel Șerban by the Polytechnic University of Bucharest in 2020, to Prof. dr. Corneliu Bob by the University of Oradea in 2023, and to Prof. dr. Liviu Marsavina by the Technical University of Cluj-Napoca in 2024.
- the 11 prizes of the Romanian Academy awarded to: Prof. dr. Emanoil Linul, "Aurel Vlaicu" Award in 2020; Dr. Raul-Cristian Roman and Prof. Dr. Radu-Emil Precup, "Tudor Tănăsescu" Award in 2020; Prof. dr. Codruța O. Ancuți and Prof. dr. Cosmin Ancuți, "Gheorghe Cartianu" Award in 2020; Assoc. Prof. Dr. Octavian Cornea, Dr. Dan Hulea, Prof. dr. Nicolae Muntean, "Aurel Vlaicu" Award, in 2021; Prof. dr. Claudiu-Tiberiu Albuлесcu, "Petre S. Aurelian" Award in 2021; Ileana Torac, Mihaela-Codruta Paicu (Ancuți), Ana-Adela Popa, Andy-Sorin Isfănuți, "Henri Coanda" Award in 2022; Prof. dr. Sorin Mușoi, Assoc.Prof.dr. Cristian Lascu, Dr. Valeriu Nicola Olarescu, "Constantin Budeanu" Award in 2022; Prof. dr. Daniel Dan and Prof. dr. Valeriu-Augustin Stoian, "Anghel Saligny" Award in 2023; Assist. Prof.Dr. Elena-Lorena Hedrea, "Tudor Tănăsescu" Award in 2023; Prof. dr. Radu-Emil Precup, Diploma of Academic Merit; Robert-Gabriel Ianoș, Cristiana-Iulia Rus, Radu-Ioan Lazău, Cornelia-Silvia Păcurariu, "Nicolae Teclu" Award in 2024. There is an average of two Romanian Academy Awards per year, awarded to researchers in various fields of Computers and Information Technology, Electrical Engineering, Mechanical Engineering, Civil Engineering, Electronic Engineering and Telecommunications and Chemical Engineering
- a series of international awards obtained by UPT researchers, among which the Honorary Professor awarded to Assoc.Prof.dr. Florin Dragan by the Óbuda University of Budapest in 2021, the "Paolo Lazzarin" Medal awarded by the Italina Group of Fracture to Prof.dr. Liviu Marsavina in 2021, the 2021 "Outstanding Achievement Award" awarded by EPE-ECCE Europe / IEEE to Acad. Ioan Boldea, the title of

Fellow of the International Academy of Health Sciences Informatics for Prof. dr. Lăcrămioara Stoicu – Tivadar in 2021, the European Network for Cultural Tourism Award, awarded for the "Spotlight Heritage Timișoara" project, in recognition of its innovative approach to digital cultural heritage, community involvement and the promotion of Timișoara's historical identity through immersive technologies, to the team coordinated by Dr. Diana Andone in 2024.

8. Strategic development plan for the next 5 years

8.1 The quality and feasibility of the proposed strategic objectives in relation to the mission of the research organization and the field in which it operates

To be completed with information on:

- the feasibility of the strategic objectives and the extent to which the proposed strategic development directions support the achievement of these objectives, in line with the mission of the research organization;
- the quality of the institutional strategic plan for the period under evaluation and for the following years; the quality of the SWOT analysis of the research organization in relation to the environment in which it operates;
- the degree of correlation and the integration of the organisation's specific research directions in the specific directions of the national and European research, development and innovation space;
- how the HR policy complies with the requirements of the European Charter for Researchers, the Code of Conduct for the Recruitment of Researchers and the commitment to the Human Resources Strategy for Researchers - HRS4R.

The Strategic Plan of the POLITEHNICA UNIVERSITY OF TIMIȘOARA for institutional development 2024 – 2029 for research activity emphasizes that in recent years important steps have been taken in UPT in the organization and development of research, technology transfer and innovation activities. These include the establishment, authorization and certification of the Center for Innovation and Technology Transfer CITT Politehnica 2020, the financial support for the participation of doctoral students and university assistants in international conferences indexed WoS, the awarding of articles published in WoS indexed journals, patents and participation in national and international grant competitions, the organization of research grant competitions for young people, financed from its own revenues and from funds attracted from companies on the principle of "Seal of Excellence", the coagulation of research activities around the Research Institute for Renewable Energies.

The main objective in the field of scientific research, innovation and technology transfer is to increase the funds attracted by the university, to diversify the ways of financing research activities

and to offer complex services to partners in the private sector. In order to achieve these objectives, the following will be stimulated:

- Development of research infrastructure starting from large projects (IPCEI, HRIA);
- Establishing partnerships with the economic environment to identify common research topics, identify funding instruments and apply for funding;
- Stimulating researchers to intensify scientific networking "Networking for a Better Future" with prestigious research communities in the country and abroad, which will materialize at least with joint project proposals, jointly developed research papers, etc.;
- Improving the internal evaluation of research, implementing mechanisms to stimulate researchers with international visibility;
- Identifying several research areas of excellence (mainly interdisciplinary, but not exclusively) in UPT and stimulating the respective research teams to take on the role of regional leaders. Continuing to award the best young researchers (master's students, doctoral students, academics) at excellence galas;
- Correlation of research topics with priority areas in the Horizon Europe programme;
- Continuing to provide financial support to doctoral students and assistants for participation in WoS indexed international conferences and awarding articles/payment of the publication fee for articles published in WoS indexed journals;
- Continuing the financing of internal grant competitions, intended for young researchers, following the model of those previously carried out and as a novelty, organizing a new competition of research projects on multidisciplinary topics, with the participation of mixed groups of researchers from ARUST member universities, respectively the other universities in Timișoara (ATU-Timișoara University Alliance);
- Analyzing doctoral theses and establishing those with the potential to be transformed into spin-offs, providing financial mechanisms for their development with periodic monitoring, with the ultimate goal of selling them for the benefit of the university, for the development of other similar entities;
- Setting reference rates for labour and costs in research projects with third parties;
- Developing an internal mechanism for reimbursement of expenses between research centers for research activities;
- Inventory of equipment and software applications or licenses dedicated to research and quantification of their maintenance costs or extension of licenses, certification, where appropriate and a market need is identified, of employees or equipment;
- Establishing market needs in terms of certain equipment or measuring/certification laboratories for which costs and time can be reduced by investing in an equipment/laboratory in the

Politehnica and their acquisition by the university, with a clear estimate of the amortization of expenses and a possible involvement of the private sector;

- Internationalization of research, by participating in international projects, signing collaboration agreements with prestigious international universities, inviting prestigious researchers from abroad, conferring the titles of Honorary Professor and Doctor Honoris Causa to international personalities, attracting valuable researchers from abroad or Romanian researchers from the diaspora for the implementation of research projects in UPT and organizing prestigious scientific events in collaboration with universities abroad;
- Attracting postdoctoral researchers to advanced research, postgraduate training and continuous development projects;
- Stimulating academics and researchers to attract research funds;
- Increasing the visibility of research, technology transfer and innovation activities by publishing information about outstanding achievements, inventions, patents, spin-offs on specialized websites, at invention salons/fairs, thematic seminars, and participation in researchers' night.

The strategic objectives regarding the internationalization of research are:

- Supporting scientific partnerships with universities, research centers and companies abroad and annual monitoring of these partnerships,
- Promoting research networks by encouraging multiple affiliations to prestigious research institutions, research internships and publications written in partnership with reputable researchers from abroad,
- Operationalizing and supporting the research centers of excellence developed at the level of the E³UDRES² alliance,
- Supporting young researchers in carrying out research activities at international level and their affiliation to international research organisations,
- Financial support for the work of young researchers and awarding the results of experienced researchers in order to increase the number of publications in international journals and the volumes of international conferences indexed in databases,
- Participation of UPT in international scientific associations, including by providing financial support in order to acquire the membership of such organizations for researchers from the Politehnica University of Timișoara,
- Developing doctoral research projects in partnership with universities abroad and encouraging international thesis co-supervision agreements that ensure UPT doctoral students' access to high-performance research resources,
- Supporting international partnerships in order to submit applications for research grants funded by European and international funds,

- Annual organization of international scientific events by the Politehnica University of Timisoara, aiming to achieve a percentage of at least 25% in terms of participants from abroad,
- Continue to fund access to scientific resources and international databases,
- Submission of the application for the European HR Excellence in Research Award provided by Euraxess, for the definition by UPT of the Human Resources Strategy for Researchers (HRS4R).

Regarding the activities within the Doctoral School, in recent years important progress has been made, such as the introduction of scholarships from own income for doctoral students, the start of a discussion with companies for a form of "industrial doctorate", the evaluation of the research results of doctoral students after each year of internship, the continuation of attracting master's students to doctoral studies by offering research scholarships for master's studies, accessing professional training programs to financially support doctoral and postdoctoral researchers. These efforts need to be intensified and, at the same time, new measures are needed to ensure an increase in both the number of doctoral students and the number of completed theses. These are:

- Clarifying and communicating the benefits package that a doctoral student of the Politehnica has. This means clearly establishing for doctoral students who carry out research activities in the university of the space in which they carry out their activity, the devices or facilities to which they have access as well as the benefits they have as a doctoral student of UPT (types of scholarships, financial resources for mobility and participation in conferences, access to sports facilities, etc.);
- Establishing a budget for the Doctoral School and a procedure for its use for the benefit of doctoral students and doctoral supervisors, in accordance with the results obtained;
- Expanding the "industrial doctorate", as we define it internally, by attracting valuable doctoral students from Timisoara companies, on their topics, by continuing and expanding the dialogue with them;
- Attracting additional monthly scholarships for doctoral students, offered by the university's partner companies, with the obligation for them to be involved only in the university's activities;
- Monitoring the activity of the university's doctoral students throughout the study period in order to be able to intervene, with the help of doctoral supervisors, to increase the number of completed theses and to have a relevant activity report for each doctoral student;
- Establishing a clear system of financing from own revenues to support doctoral students without a scholarship or even those who benefit from a scholarship, with an annual review correlated with the results obtained by each doctoral student. Additional benefits can be created for doctoral students who do not have a job outside the university or for those with a fee but with very good results;
- Attracting funds for the financing of post-doctoral programs, in order to keep doctoral students who are only interested in continuing their research activity in the university. Thus, a complete

funding system is established for young researchers on the doctoral – post-doctoral – teaching staff axis;

- Extending collaboration agreements and stimulating doctoral supervisors to carry out doctoral theses in co-supervision;
- Attracting PhD students from abroad (Republic of Moldova, Serbia, emerging or Asian countries), by accessing AUF, Marie Curie scholarships, Horizon Europe projects, in order to increase the university's visibility and scientific performance.



Fig. 8.1 Research Organization SWOT Chart

UPT has taken steps to adopt the Code of Conduct for the recruitment of researchers as well as the commitment to the Human Resources Strategy for Researchers (HRS4R). This project was

assumed within the project of the alliance of European universities E³UDRES² and the Entrenovators project and the application was submitted this year, <https://www.hrs4r.upt.ro/> .

The SWOT analysis in Fig. 8.1 presents the strengths, weaknesses, opportunities and threats to the research activity of the UPT.

8.2 Extent to which the scientific and institutional objectives are linked to relevant trends in the organization's scientific field and societal needs

To be completed with information on:

- action taken towards setting up an international scientific advisory board;
- the existence of an enabling framework to support innovation and technology transfer;
- the degree of correlation of scientific and institutional objectives with relevant national and international trends in the organization's scientific field and societal needs.

Action taken towards setting up an international scientific advisory board

At present, the Steering Committee, being made up of the managers of the main companies in the western area, most of them multinationals, plays this role. For the future, the establishment of an international scientific advisory council is being envisaged.

The existence of an enabling framework to support innovation and technology transfer

The Politehnica University of Timisoara (UPT) promotes a culture of excellence in research, innovation and technology transfer, through a coherent set of measures aimed at strengthening the scientific capacity of the institution and increasing the visibility of results at national and international level.

1. Research infrastructure development:

- continuous modernization of laboratories and research centers, through investments made from structural, national and international funds.
- the creation of interdisciplinary research platforms that bring together skills from complementary fields (engineering, IT, energy, materials, environment, health, etc.).
- ensuring open access to digital research infrastructures and resources, in line with Open Science principles.

2. Supporting human resources and scientific performance:

- implementation of internal funding programs for the initiation and development of research projects (UPT internal grants).
- rewarding scientific performance through financial incentives for articles published in impact factor journals, patents and international awards. Annual award ceremony for the best performing master's student, doctoral student and young researcher (aged 40).

- promoting young researchers and PhD students through mentoring programs, international mobility (participation in conferences) and internships in centers of excellence.

- supporting continuous training in emerging fields (artificial intelligence, green technologies, digital research).

3. Increasing participation in international research programmes and networks:

- encouraging the participation of academics and research teams in competitions under the Horizon Europe, Erasmus+, Digital Europe, EUREKA programmes, etc.

- strengthening partnerships with prestigious international universities and institutes, in particular through the E³UDRES² university alliance.

- the creation of an institutional office dedicated to supporting the preparation and submission of international projects and the establishment of a "task force" from the representatives of each faculty to identify international funding opportunities, map scientific skills and promote international cooperation.

4. Stimulating technology transfer and collaboration with the economic environment:

- development and support of the Politehnica Technology Transfer Center and innovation incubators for capitalizing on research results.

- promoting direct collaborations with companies, industrial parks and regional clusters through applied research contracts.

- organizing thematic events (PoliTech Innovation Days, TechTransfer Forum, etc.) to facilitate dialogue between academia and industry.

5. Increasing the visibility and impact of research:

- implementation of a unitary system for reporting, monitoring and promoting scientific results.

- supporting publication in internationally indexed journals and participating in prestigious conferences.

- Promoting scientific values and the social impact of research through public communication and community involvement.

Through these measures, UPT strengthens a high-performance academic ecosystem, oriented towards excellence, international competitiveness and active contribution to the development of the knowledge-based society.

The degree of correlation of scientific and institutional objectives of the Politehnica University of Timișoara with relevant national and international trends in the organization's scientific field and societal needs.

The Politehnica University of Timișoara (UPT) defines its scientific and institutional objectives in full accordance with the strategic directions established at national and European level,

ensuring a permanent correlation between academic activity, advanced research and the real needs of society.

At the national level, UPT's objectives are aligned with the National Strategy for Research, Innovation and Smart Specialization (SNCISI) and the National Strategy for Higher Education, promoting priority areas such as digitalization, energy efficiency, sustainability, smart mobility, emerging technologies and balanced regional development.

At European and international level, the university aims to integrate into the European Education and Research Area, through active participation in programs such as Horizon Europe, Erasmus+, Digital Europe and university alliances such as E³UDRES², strengthening international cooperation and knowledge transfer.

The scientific objectives of UPT are oriented towards increasing the relevance and impact of research through interdisciplinary approaches, promoting excellence in technical and engineering fields, as well as stimulating innovation and technology transfer to the economic environment. In this regard, the university develops strategic partnerships with industry, public administration and the regional socio-economic environment, contributing to the formation of the skills necessary for a knowledge-based economy.

Through its educational, research and innovation activities, the Politehnica University of Timisoara responds to the demands of modern society, supporting the digital and green transition, promoting equity and inclusion, as well as sustainable development at regional, national and international level.

In conclusion, the degree of correlation of UPT's scientific and institutional objectives with the relevant trends in the field and with the needs of society is high, reflecting a coherent strategic vision, oriented towards competitiveness, internationalization and sustainable societal impact.

9. Conclusions

This Self-Assessment Report presents a synthesis of the research activity at the Politehnica University of Timișoara between 2020 and 2024. UPT has assumed the mission of a university of advanced research and education, a fact confirmed by the 2011 university classification. Also, UPT obtained the qualification "**HIGH DEGREE OF TRUST**" IN ALL ARACIS INSTITUTIONAL EVALUATIONS.

UPT is a traditional university, the oldest in the west of the country, with its 105 years of existence. Over time, UPT has had and still has a highly qualified human resource, which is certified by the research results, the awards and distinctions obtained, but also by the recognition by electing its members in the Romanian Academy, the Romanian Academy of Technical Sciences, etc. The

recognition at global, European and national level is given by the constant presence of UPT in international rankings.

UPT has consolidated its main research directions with highly topical research topics in the field of engineering sciences as follows: Digital technologies, artificial intelligence, cybersecurity, Internet of Things (IoT); Energy-efficient materials and technological processes; Energy and mobility; Climate change, sustainable development, environment.

The most important scientific performances of the members of the UPT academic community, normalized at ENI (CSI+CSII+CSIII) are summarized in Table 9.1. It is noted that:

- the number of scientific papers (WoS+Scopus+IEEE) reported to FTE is 2.6 in 2020 and steadily increases to 3.6 in 2023 and 2024.
- the number of papers published in the volumes of WoS+IEEE+ non-WoS indexed conferences reported to FTE is around 2.
- the number of cumulative WoS + Scopus + IEEE citations normalized at FTE has steadily increased from 107 in 2020 to 160 in 2024.
- the cumulative number of international, national projects won/implemented and third-party contracts normalized at FTE is between 0.7 (in 2020) and 0.45 (in 2023).
- in the period 2020 – 2024, UPT researchers developed between 1.35 (2023) and 1.66 services, technologies and products.

Table 9.1 Performance indicators reported to FTE (Researcher I, Researcher II and Researcher III)

Indicators	2020	2021	2022	2023	2024
FTE: CSI + CSII + CSIII	201.82	200.08	197.04	196.86	198.64
Indexed papers (WoS+Scopus+ IEEE)/FTE	2.61	3.01	3.66	3.09	3.64
Proceedings (WoS + IEEE+non_WoS)/FTE	2.03	1.77	1.91	2.18	2.10
Total number of citations (WoS+Scopus+IEEE)/FTE	107.29	121.44	140.38	146.38	160.48
Research contracts (International+National+third parties)/FTE	0.70	0.67	0.56	0.45	0.69
Services/technologies/products/FTE	1.45	1.66	1.65	1.35	1.44

The socio-economic impact of UPT researchers is evidenced by the large number of contracts with the economic environment, with associations and local and national authorities for solving real problems in society, this being the role of the Polytechnic School of Timișoara assumed since its establishment over 100 years ago.

UPT has been deeply involved in promoting national science and culture, by organizing events with national and global impact, such as involvement in the events held under the aegis of *Timișoara European Capital of Culture in 2023*, the Tech Talk technology conferences, etc.

Starting with 2020, UPT has taken a series of measures to stimulate scientific performance:

- awarding research grants worth 10000 Euros from their own income for young researchers (assistant professors, assistant lecturers) who obtained 80 in internal grant competitions, based on the "Seal of Excellence" principle,
- financial support for participation in conferences for doctoral students and assistant lecturers within the limit of 2400 Euro,
- awarding WoS articles,
- payment of Open Access fees for journal articles,
- awarding in salary for 12 months the works Q1 (800 lei/no. authors) and international patent (1,000 lei/no. authors), Q2 (500 lei/no. authors) and national patent (1,000 lei), obtaining 85% of the maximum score of international (1,500 lei) or national (1,000 lei) competitions.

UPT has a large number of international collaborations with universities from the European E³UDRES² alliance, with other universities, as well as mechanisms to attract renowned researchers from abroad by awarding the titles of DhC, Honorary Professor, through mobility programs for researchers from the diaspora, through involvement in the implemented research projects.

By enhancing the tradition and promoting the outstanding results accumulated during the evaluated period, as well as through the sustainable development of human resources and the modernization of the research infrastructure, the Politehnica University of Timisoara will strengthen its status as a university of advanced research and education, with valuable contributions to national research programs, and in solving some strategic issues in collaboration with partners from the country and abroad.

