



LODZ UNIVERSITY OF TECHNOLOGY

SCIENCE, RESEARCH, INNOVATION



WHAT MAKES US UNIQUE?



3rd

**place in categories:
scientific potential and internationalization
among technical universities in Poland***



6th

place in Poland among technical universities*



9th

place in Poland among academic universities*

in the 2025 university ranking
of the educational magazine "Perspektywy"



Lodz University of Technology is listed **in the most prestigious and most widely commented international university rankings**, including:



HR EXCELLENCE IN RESEARCH



Lodz University of Technology is also **highly ranked in institutional assessments and accredited by international organizations**, which is a confirmation of high quality of education, research and management.



Lodz University of Technology is **one of the 13 European universities affiliated with ECIU** – the European Consortium of Innovative Universities.

- in 2024, TUL had **the highest number of students** among all member universities participating in ECIU micromodules and challenges;
- TUL researchers benefited from grants under the **ECIU Researcher Mobility Fund programme**;
- implementation of the **JUMP educational project**;
- coordination of the **ECIU4Ukraine project**;
- participation in **international and interdisciplinary research groups**.



SCIENCE AND RESEARCH



TUL positively evaluated in the evaluation
of scientific disciplines evaluated
for the activities carried out in 2017 - 2021

A+ {

**Chemical engineering,
Chemical sciences,
Nutrition and food technology**

A {

**Information and communication technology,
Materials engineering,
Mechanical engineering,
Mathematics,
Physical sciences,
Management and quality studies.**

B+ {

**Architecture and urban planning,
Automation, electronic and electrical engineering,
Civil engineering and transport.**



TUL conducts extensive research through **interdisciplinary teams**.

The University actively participates in international research projects centrally managed by the European Commission

- **19 Horizon Europe** with a total value **of € 6 518 139**,
- **2 European Defence Fund** with a total value **of € 390 565**,
- **1 Digital** - € 778 459,
- **1 LIFE** - € 338 120,
- **1 Culture** - € 66 589.



From 2017 to 2023, TUL received funding from:

- **NCN:**
190 projects with a total value of **PLN 111,527,785**;
- **POWER:**
40 projects with a total value of **PLN 17,938,994**;
- **POIR:**
37 projects with a total value of **PLN 341,670,043**;
- **LEADER (NCBR):**
13 projects with a total value of **PLN 15,783,725.88**;
- **other international:**
12 projects with a total value of **PLN 10 739 402**.



International Centre for Research on Innovative Biobased Materials (ICRI-BioM) - International Research Agenda is established in collaboration with the German Max Planck Institute for Polymer Research in Mainz. The research centre combines **biotechnology and nanotechnology** to sustainably address global scientific challenges.

Research topics include:

- Biologically-derived polymers,
- Biology-inspired nanomaterials for optoelectronics,
- Advanced additive manufacturing,
- 2D materials for biomedicine,
- Hydrogels for tissue engineering,
- CO₂ conversion and green energy production.



Lodz University of Technology is among the 20 Polish universities implementing the "**Excellence Initiative - Research University**" program.

Participation in this program provides TUL **with an additional budget of 2% of the basic subsidy**.

These funds enabled the initiation of new activities to enhance the quality of research at Lodz University of Technology. One of them is the introduction of awards supporting the scientific excellence of employees, doctoral students, and students.

For more information on the program's implementation, see the report "**Excellence Initiative - Research University at Lodz University of Technology**". 



POLISH MAP OF RESEARCH INFRASTRUCTURE

The Ministry of Science and Higher Education has published a list of **70 distinguished scientific projects** of significant socio-economic importance. Among them are **7 from TUL**:

- PoIFEL – Polish Free Electron Laser,
- E-XFEL – Free Electron Laser,
- ESS – European Spallation Source,
- RAPID Centre for Radiological Research and Technology,
- National Photovoltaic Laboratory (NLF),
- PIONIER-LAB – National Platform for the Integration of Research Infrastructures with Innovation Ecosystems,
- National Data Repository. Universal Infrastructure for Data Storage and Sharing and Efficient Processing of Large Data Volumes.



TECHNOLOGY TRANSFER



4th

Best Polish university in the number of patents granted according to the 2023 ranking of the Polish Patent Office



80

patents granted by the Polish Patent Office



73

patented applications filed with the Polish Patent Office



Center of Innovation and Entrepreneurship (CIE)

promotes the Lodz University of Technology as a research centre that offers **innovative technologies of global standards**.

CIE offers **training and advisory** services addressed mainly to graduates and young scientists who want to implement their business ideas and set up their own companies. It offers individual **consultations with experts** to help choose an effective strategy for the commercialisation of technology and find a business partner.

Activities undertaken by the CIE are supported by a commercial company - **Tulventure of Lodz University of Technology**.



Lodz University of Technology is **a member of clusters that integrate scientific and research units.**

Among others, it belongs to:

- With the initiative of Lodz University of Technology, the **Lodz ICT Cluster** was established, bringing together **40 companies from the IT and telecommunications sectors** and **the three largest universities in Lodz.**
- **Lodz Energy Wave Cluster**, which aims to ensure local energy security, improve the environment and increase competitiveness and economic efficiency of the economy.
- Nationwide **Logistics cluster**, bringing together scientific and research units and practitioners from the transportation, freight forwarding, logistics sector.



Scientists from the Department of Microelectronics and Computer Techniques have been participating in the **ITER project - International Thermonuclear Experimental Reactor** for 14 years.

It is the construction of an experimental thermonuclear reactor with a tokamak design, also called the „**Artificial Sun**”. It is the world's largest project of this kind, with a value exceeding 25 billion euros.

TUL research group conducts studies **in the design and implementation of complex computer-electronic systems**, which will be installed in the reactor, for data acquisition, thermonuclear plasma diagnostics, and machine control.



Lodz University of Technology is one of the partners of the **TREX Center of Excellence**, financed under the Horizon 2020 programme.

Researchers from the Institute of Physics of Lodz University of Technology are involved in the creation of quantum simulation programs, which will be used for the development of computers capable of reaching the computing power of 1 exaflops i.e. 1 000 000 000 000 000 000 or 1×10^{18} operations per second!

The project will last 36 months. Its total budget is 5 million euro.

TREX is a consortium of 12 partners from the Netherlands, France, Italy, Germany, Slovakia and Austria.



INNOVATIVE TECHNOLOGIES DEVELOPED

**HAND
REHABILITATION
DEVICES;
HUMAN-CENTERED
AND SOFT ROBOTS**



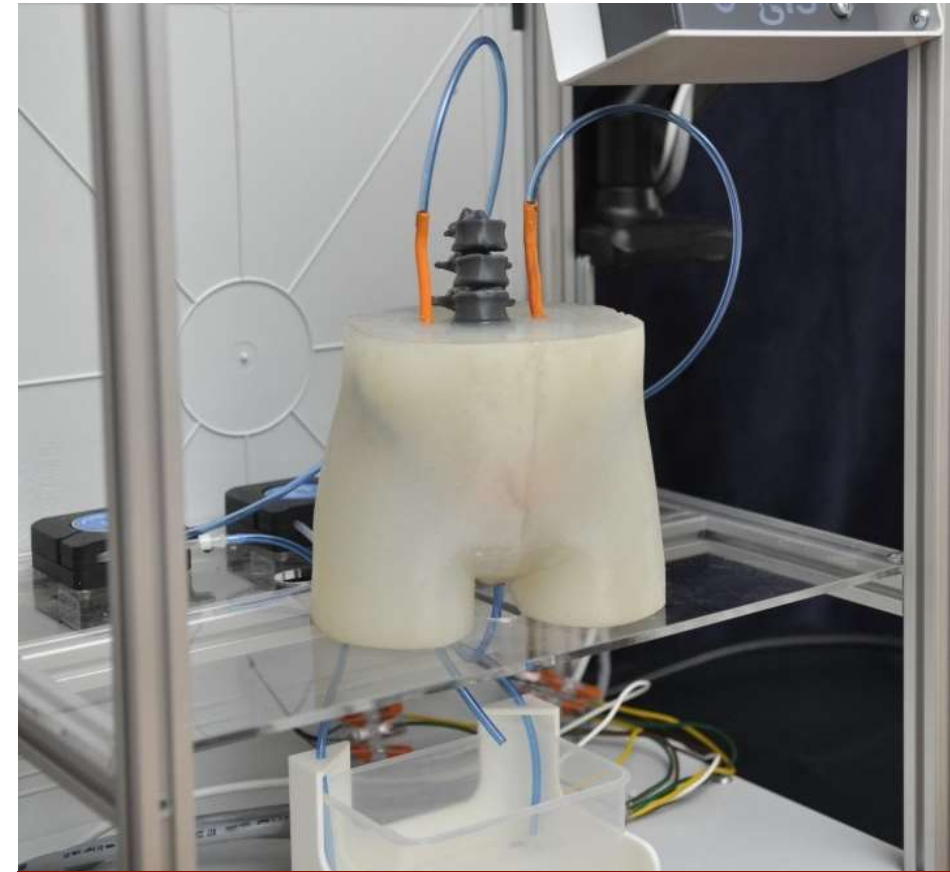
senior therapy



INNOVATIVE TECHNOLOGIES DEVELOPED



generative small urban turbine



urology phantom

INNOVATIVE TECHNOLOGIES DEVELOPED



edible packaging



product authentication

INNOVATIVE TECHNOLOGIES DEVELOPED



wastewater generated by the textile industry

SCIENTIFIC PUBLICATIONS 2019-2023

Based on:	Scopus and SciVal	Web of Science and InCities tools
Hirsch index	82	74
Number of publications	6 153	5 610
Number of citations	75 683	65 119
Number of publications with CiteScore/Impact Factor	5 507	4 825

RESEARCH PROJECTS

**Faculty of
Mechanical Engineering**

**Faculty of Electrical,
Electronic, Computer
and Control Engineering**

Faculty of Chemistry

**Faculty of Material
Technologies and Textile
Design**

**Faculty of Biotechnology
and Food Sciences**

**Faculty of Civil
Engineering, Architecture
and Environmental
Engineering**

**Faculty of Technical
Physics, Information
Technology and Applied
Mathematics**

**Faculty of Organization
and Management**

**Faculty of Process
and Environmental
Engineering**



INTERDISCIPLINARY DOCTORAL SCHOOL

The **Interdisciplinary Doctoral School (IDS)** aims to promote **education in English** and develop research in **12 disciplines**.



IDS plays a pivotal role in facilitating the selection and **networking of doctoral candidates**, and the **supervisor**, providing scientific supervision.

IDS organizes open lectures for foreign-language researchers, doctoral candidates and students.



STEER YOUR FUTURE WITH IDS

**architecture
and urban planning**

**automation, electronic,
electrical engineering and
space technologies**

**Information and
communication technology**

chemical engineering

**civil engineering,
geodesy and transport**

materials engineering

mechanical engineering

mathematics

chemical sciences

physical sciences

**management
and quality studies**

**nutrition
and food technology**



Winners of the **E²TOP - Excellence in Engineering programme: Talents in Research with Opportunities Programme** will pursue an individualized study path under the guidance of a research mentor and undertake their studies at the world's top research centres and receive an additional scholarship.





E²TOP Excellence in Engineering: Talents in Research with Opportunities Programme



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