



Wrocław  
University  
of Science  
and Technology



# WROCŁAW UNIVERSITY OF SCIENCE AND TECHNOLOGY



unite! | University Network for Innovation,  
Technology and Engineering



HR EXCELLENCE IN RESEARCH



Co-funded by  
the European Union

# History

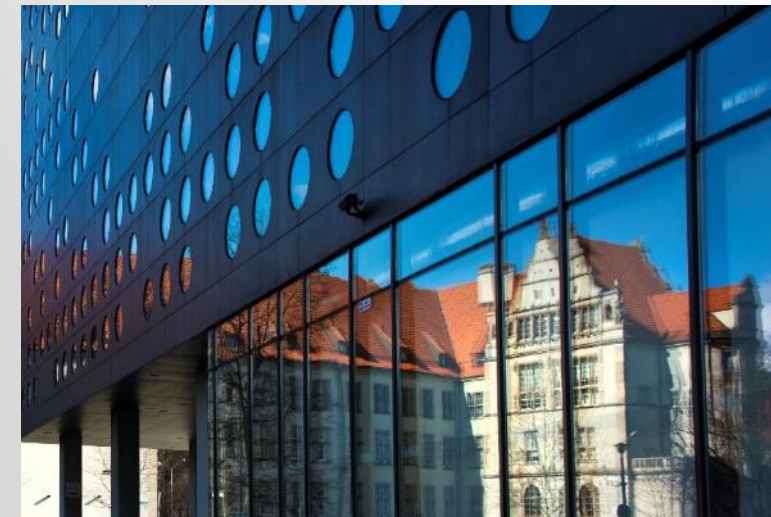
Today's Wrocław University of Science and Technology is the heir to the material legacy of the German Königliche Technische Hochschule Breslau and the intellectual and research traditions of the Lviv University of Technology.

**The university is using its current name since 1945.** It was established and organized by scientists from Lviv and Warsaw. Since the very beginning of its existence, it has been an important centre of technical education.

**Today it is one the best technical universities in Poland – 21 046** students study here under the guidance of **2 378** academic teachers, at 14 Faculties in Wrocław and 3 branches in Jelenia Góra, Legnica, Wałbrzych.



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# Mission

Through research, teaching, and collaboration we inspire and support the development of individuals who, based on knowledge, ethical standards and displaying sensitivity to the needs of society and global challenges, shape the future with courage and responsibility.



# Numbers

**21 046**

students including

**758**

Phd students

**1 401**

international  
students

**2 378**

permanent  
academic staff

**14**

scientific disciplines in

**4**

fields of science, including  
all from Engineering  
& Technology

**58**

BSc/Eng fields  
of studies

**53**

scientists  
on Stanford TOP 2%  
list of world's most  
influential  
researchers

**14**

faculties  
and

**3**

regional branches

**54**

MSc/Eng fields  
of studies

**33**

programmes  
in English

# Doctors Honoris Causa

José Manuel Barroso  
Daniel Józef Bem  
Horst Berthold  
Eckhard Beyer  
Georgij Konstantynowicz  
Boreskow  
Andrzej Burghardt  
Philippe Busquin  
Jerzy Buzek  
Gabriel Crean  
Eugeniusz Dembicki  
Georgij Iwanowicz Denisenko  
Karel Dušek  
Rafał Dutkiewicz  
Kurt Feser  
Alfred Forchel  
Elbert Kirtley Fretwell  
Kardynał Henryk Gulbinowicz  
Henryk Hawrylak  
Stanisław Hückel  
Giennadij Aleksiejewicz Jagodin  
Andrzej Jellonek  
Bogusława Jeżowska-  
-Trzebiatowska  
Moisey I. Kaganov

Alan R. Katritzky  
Igor Ignacy Kisiel  
Joseph Klafter  
Jan Kmita  
Ferenc Krausz  
Stanisław Kulczyński  
Krzysztof Kurzydłowski  
Philippe Lebrun  
Stanisław Lem  
Jerzy Leszczyński  
Nikołaj Nikołajewicz Malinin  
Marja Makarow  
Achim Mehlhorn  
Jean Meinel  
Angela Merkel  
Gérard Mourou  
Anatolij Nikołajewicz  
Minkiewicz  
Kazuo Nakamoto  
Reimund Neugebauer  
Jean Nougaro  
Volodymir V. Panasyuk  
Zdzisław J. Pręgowski  
Ilya Prigogine

Günter Pritschow  
Bengt Ranby  
Błażej Roga  
Jurij Rudawski  
Wacław Franciszek Sierpiński  
Jerzy Ignacy Skowroński  
Dionizy Smoleński  
Joachim Klaus Strzodka  
Frans Louis H. M. Stumpers  
Karol Széchy  
Zygmunt Szparkowski  
Władysław Ślebodziński  
Ryszard Tadeusiewicz  
Hamadoun I. Touré  
Jan Trojak  
Włodzimierz Trzebiatowski  
Kazimierz Urbanik  
Zenon Wiłun  
Andrzej Wiszniewski  
Wojciech Witkiewicz  
Władysław Karol Włosiński  
Michel Virlogeux



2022, **prof. Michel Virlogeux** (École Nationale des Ponts et Chaussées, France) French structural engineer and bridge specialist; designer of Millau Viaduct



2024, **prof. Ferenc Krausz** (Max Planck Institute of Quantum Optics, Germany) Hungarian scientist; Nobel Prize 2023 in physics for: attosecond pulses of light

# Wrocław Tech in the rankings

## Perspektywy University Ranking 2024

- 7<sup>th</sup> place in the general ranking of universities
- 4<sup>th</sup> place among Polish technical universities



## Shanghai Global Ranking of Academic Subjects 2024

- Mechanical Engineering ranked 101-150



## Center for World University Ranking 2024-2025

- 13<sup>th</sup> place among 41 Polish universities and scientific institutions included in the ranking



## QS World University Rankings 2025

- 9<sup>th</sup> place among Polish universities
- 28<sup>th</sup> place in QS Europe University Rankings – Eastern Europe



# Key Strategic Areas

To implement the University's mission and vision and to support and promote its values, this Strategy defines five key strategic areas:

- **Education**
- **Research and Innovation**
- **Cooperation with the Environment**
- **Community**
- **Infrastructure.**





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# EDUCATION





# Fields

## **Engineering and technology:**

- Architecture and urban planning
- Automation, electronics, electrical engineering and space technologies
- Biomedical engineering
- Chemical engineering
- Civil engineering, geodesy and transport
- Environmental engineering, mining, and energy
- Information and communication technology
- Materials engineering
- Mechanical engineering

## **Natural sciences:**

- Chemical sciences
- Mathematics
- Physical sciences

## **Social sciences:**

- Management and quality studies

## **Medical and health sciences:**

- Medical sciences

# 14 Faculties



Architecture



Civil Engineering



Chemistry



Information and Communication Technology



Electrical Engineering



Geoengineering, Mining and Geology



Environmental Engineering



Management



Mechanical and Power Engineering



Mechanical Engineering



Fundamental Problems of Technology



Electronics, Photonics and Microsystems



Pure and Applied Mathematics



Medicine

- Doctoral School
- Academic High School
- > 10 Interdisciplinary Research Centers
- Networking and Supercomputing Center
- Entrepreneurship Incubator, Tech Transfer Centre, Business & Innovation Centre

3 BRANCHES



# Doctoral school

The Wrocław University of Science and Technology Doctoral School began its operation on October 1, 2019. Candidates can take up education in one of thirteen disciplines:

## Field of engineering and technical sciences

- Architecture and Urban Planning
- Automation, Electronics, Electrical Engineering and Space Technologies
- Information and Communication Technology
- Biomedical Engineering
- Chemical Engineering
- Civil Engineering, Geodesy and Transport
- Mechanical Engineering
- Materials Engineering
- Environmental Engineering, Mining and Energy

## Field of exact and natural sciences

- Mathematics
- Chemical Sciences
- Physical Sciences

## Field of social sciences

- Management and Quality Studies



# Education quality and accreditation

## European Chemistry Thematic Network

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- Chemistry Doctorate Eurolabel Certification for studies in Chemical Engineering
- Eurobachelor Certification for studies in Chemistry and Industrial Analytics, Chemical Technology
- Euromaster Certification for studies in Chemistry and Chemical Technology

## Science Evaluation Committee (KEN) discipline assessment 2017-2021:

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### Category A+:

- Physical sciences
- Chemical sciences
- Mathematics
- Chemical engineering

### Category A:

- Architecture and urban planning
- Automation, electronics and electrical engineering
- Technical informatics and telecommunications
- Biomedical engineering
- Civil engineering and transportation
- Mechanical engineering
- Material Engineering
- Environmental engineering, mining and energy
- Management and Quality Sciences



## European Consortium for Mathematics in Industry

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- accreditation for II degree of education studies in Applied Mathematics

## Accreditation of Studies with a Future 2024

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- Sustainable Biomass and Bioproducts Engineering (SBBE)

## European Accreditation of Engineering Programmes

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- accreditation for studies in Electrotechnics
- accreditation for studies in Civil Engineering
- accreditation for Biotechnology, Chemical and Process Engineering, Chemical Technology

## Association of Academic Centers for Teaching Foreign Languages

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- Department of Foreign Languages of Wrocław Tech – distinctive grade

## IES and ICI international certificate for graduates

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- accreditation for studies in Management
- accreditation for studies in Business Engineering

*All graduates of the certified educational programs are entitled to receive the IES and ICI international certificates*

# HR Excellence in Research

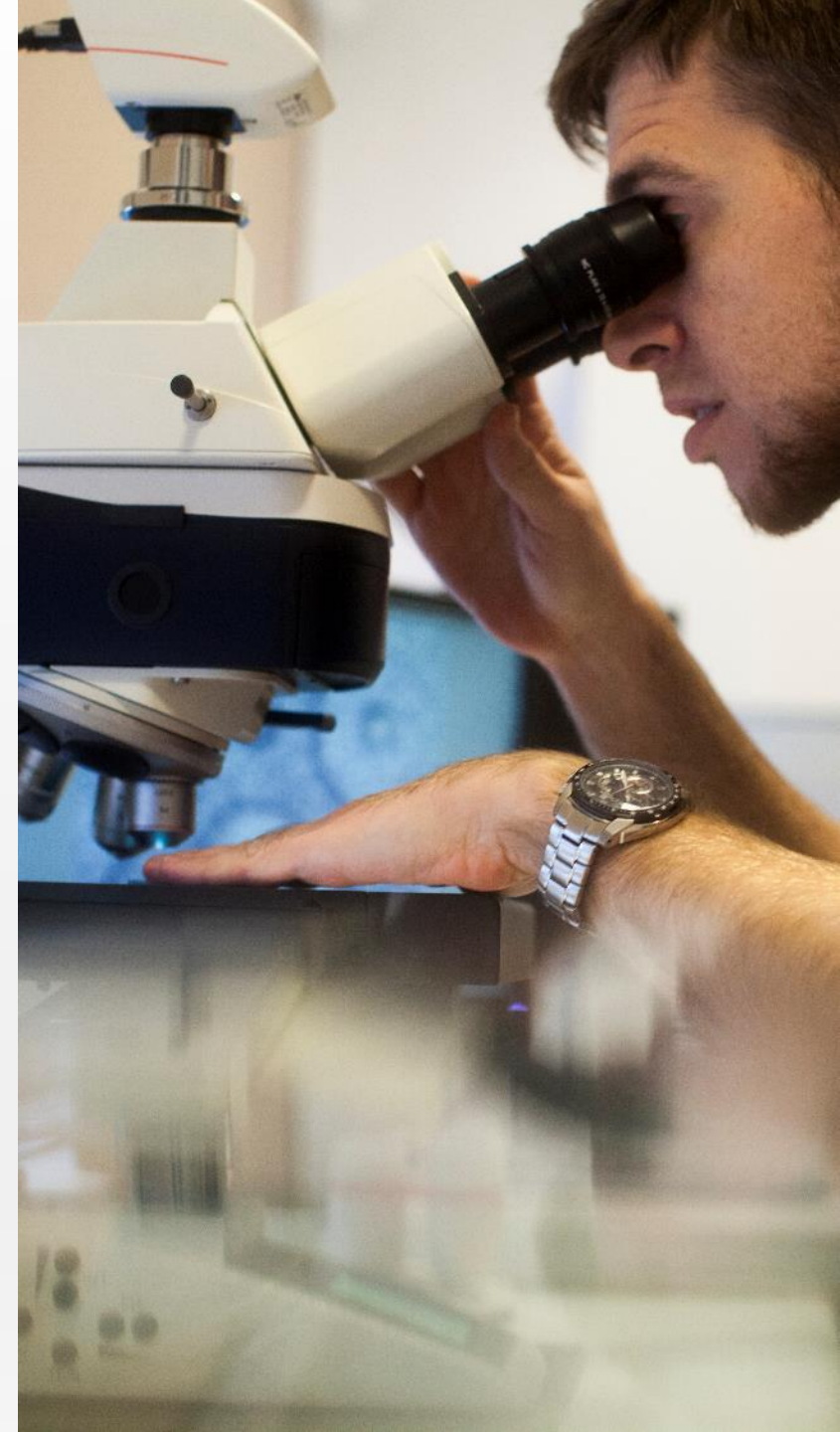
In June 2016 European Commission granted our University the logo "Human Resources Excellence in Research". The logo is given to those institutions that apply the principles of the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers.



HR EXCELLENCE IN RESEARCH

Logo "HR Excellence in Research" is awarded, among others, in international grant competitions of the European Commission, national grant competitions of the National Center for Science and the National Centre for Research and Development and competitions and funding programs of the Ministry of Science and Higher Education.

Logo "HR Excellence in Research" emphasises the Wrocław University of Science and Technology importance as an institution which creates the best working conditions for scientists, implementing research and scientific development in accordance with the European standards.



# Wrocław Tech in „Unite!”

In 2022 Wrocław Tech joined the European university alliance „Unite!” – University Network for Innovation, Technology and Engineering.

The aim of this elite organization, uniting universities from nine EU countries, is to create a model of education that responds to the challenges of the modern world. The member universities focus on continuous improvement of the teaching process, development of joint research projects and a flexible study path, and combining science and humanities in the process of educating students.





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# INTERNATIONAL COOPERATION



# Current international agreements

- **Bilateral cooperation agreements** - inter-university and inter-faculty  
**148** partners from **41** countries
- **Bilateral student exchange agreements** (student exchange)  
**33** partners from **16** countries
- **Double diploma agreements**  
**11** partners from **6** countries
- **Agreements regarding academic mobility in the Erasmus + program**  
**700** active European agreements and **200** with partners from other countries of the world.

INTERNATIONALISATION	2024/2025
Foreign students on I study degree	968
Foreign students on II study degree	236
Foreign students in Doctoral School	89
Incoming students including ERASMUS+	259
Students exchange including ERASMUS+	187





## Participation of the Wrocław Tech students and doctoral students

Program	2024/2025
Erasmus+ studies	134
Erasmus+ student internships	5
Erasmus+ short-term mobility	48
Erasmus+ graduate internships	12
Exchange	8
Double Diploma	14
<b>TOGETHER</b>	<b>221</b>

## Arrivals of students and doctoral students

Erasmus+ studies	2024/2025
Erasmus+ KA 131	254
Erasmus+ KA 171	5
Visiting Student	0
Exchange	20
Erasmus Mundus	46
Double Diploma	2
<b>TOGETHER</b>	<b>327</b>



# Program ERASMUS+



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## Staff arrivals

Program	2024/2025
Erasmus+ KA103 (lectures)	6
Erasmus+ KA103 (training arrivals)	38
Erasmus+ KA107 (training arrivals)	3
<b>TOGETHER</b>	<b>47</b>

## Staff travels

Program	2024/2025
Erasmus+ KA103 (lectures)	25
Erasmus+ KA103 (training)	47
Erasmus+ KA107 (lectures)	3
<b>TOGETHER</b>	<b>75</b>





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# WROCLAW TECH FOR THE YOUTH



# Wrocław University of Science and Technology for the youth

- Open days
- International Week
- Team programming contests
- Lower Silesian Festival of Science
- Competition in maths and logic games
- Chemistry contest
- Young Researchers Academy
- Courses for candidates
- Cooperation with secondary schools
- Polilab
- Studium talent
- Robotic Arena
- PWr Challenge
- Girls' TechPower



# Student activities

- **214 Scientific organizations**

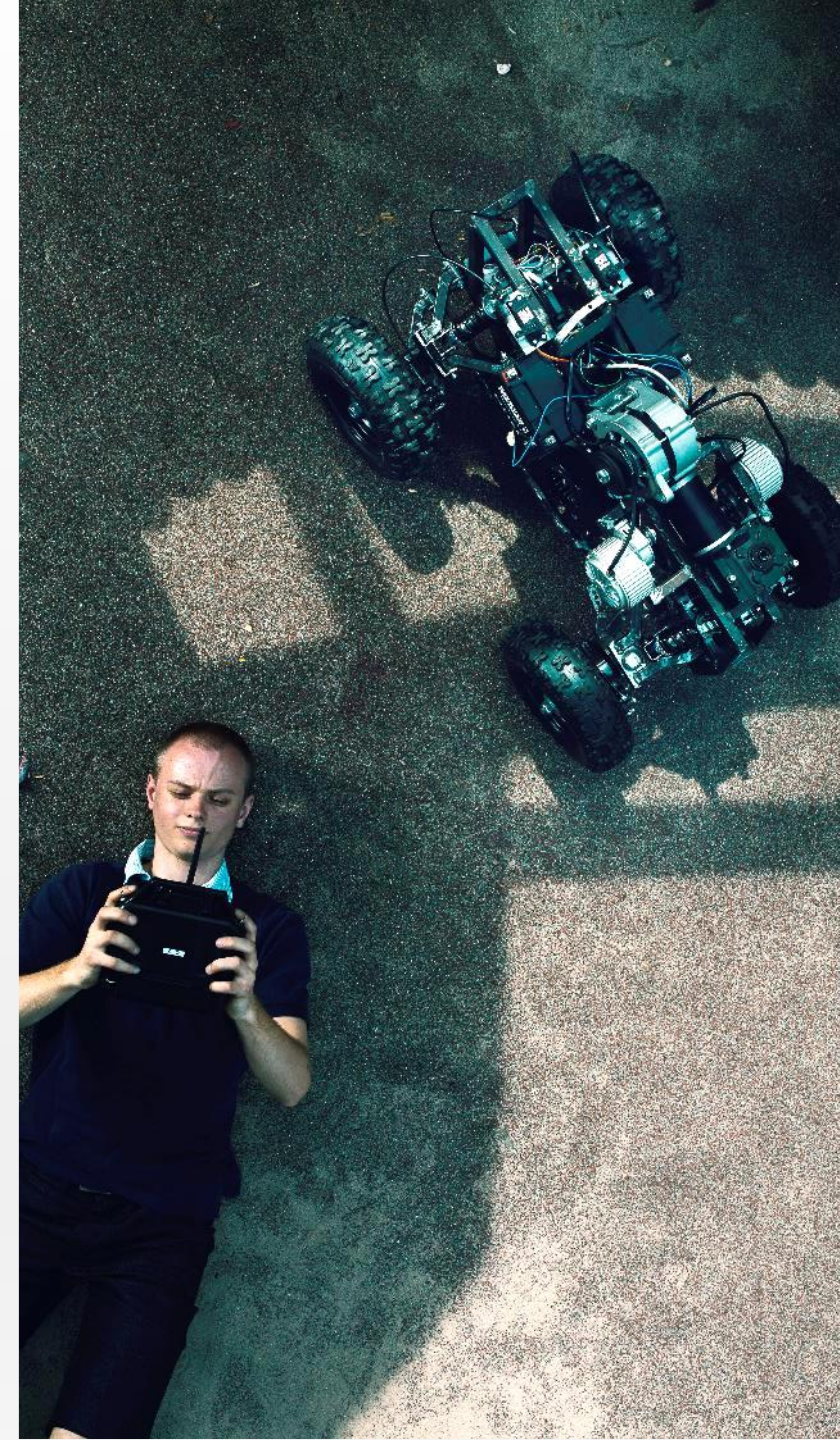
Among others: PWR Racing Team, PIRM Mobile Vehicles and Robots Scientific Circle, Students Scientific Society KoNaR, Academic Aviation Club, Bio-Top, ALLIN, Wireless Group, PWR Solar Boat Team, Energy Loop, Audio Engineering Society AES

- **29 Student associations**

Among students' organizations, the ones with national or international span are the most distinguishing and active: BEST Wrocław, AIESEC, NZS, IAESTE, SEP, Erasmus Student Network ESN.

- **21 Student culture centres**

Among others: POLITECHNIKA Film Discussion Club, Wrocław University of Science and Technology Academic Choir, BIG BAND music group, FOSA Academic Filmmakers Club, SpAF Association of Para-artistic Photography, University's Orchestra, STYK Students Television.



# Modern University

## Prospective students:

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- on-line registration at: [rekrutacja.pwr.edu.pl/en](https://rekrutacja.pwr.edu.pl/en)
- official website: [pwr.edu.pl](https://pwr.edu.pl)

## Students:

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- electronic student ID
- electronic student record book
- cooperation with companies and institutions, opportunities for internships and trainings [biurokarier.pwr.edu.pl](https://biurokarier.pwr.edu.pl)

## Teaching:

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- studying in foreign languages





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# RESEARCH AND INNOVATION



# Scientific research results

- **24 847** publications in journals on the ISI Master Journal List
- **22 985** publications in JCRI indexed journals
- **6 279** registered inventions, including utility models
- **2 822** patents obtained





# Cooperation with industry



TRAINING



RESEARCH



TECHNOLOGY



EXPERTISE



APPLICATION

## Goals

- Joint research and implementation work in various industry sectors
- Development of new technologies
- Cooperation on using research, teaching and training facilities
- Opportunities for internships, student stays and diploma theses
- Alumni career support
- Development of academic entrepreneurship
- Commercialization of research results
- Preparation and implementation of projects financed from domestic and foreign funding
- Promotion of modern technologies



# Priority Research Areas

- 1) Information Technology, Data Science and Artificial Intelligence
- 2) Innovative Materials and Advanced Manufacturing
- 3) Sustainable Living Environment
- 4) Smart Cities and Future Society
- 5) Health and Medical Technologies
- 6) Extreme Technologies
- 7) Basic Research for Technology and Innovation

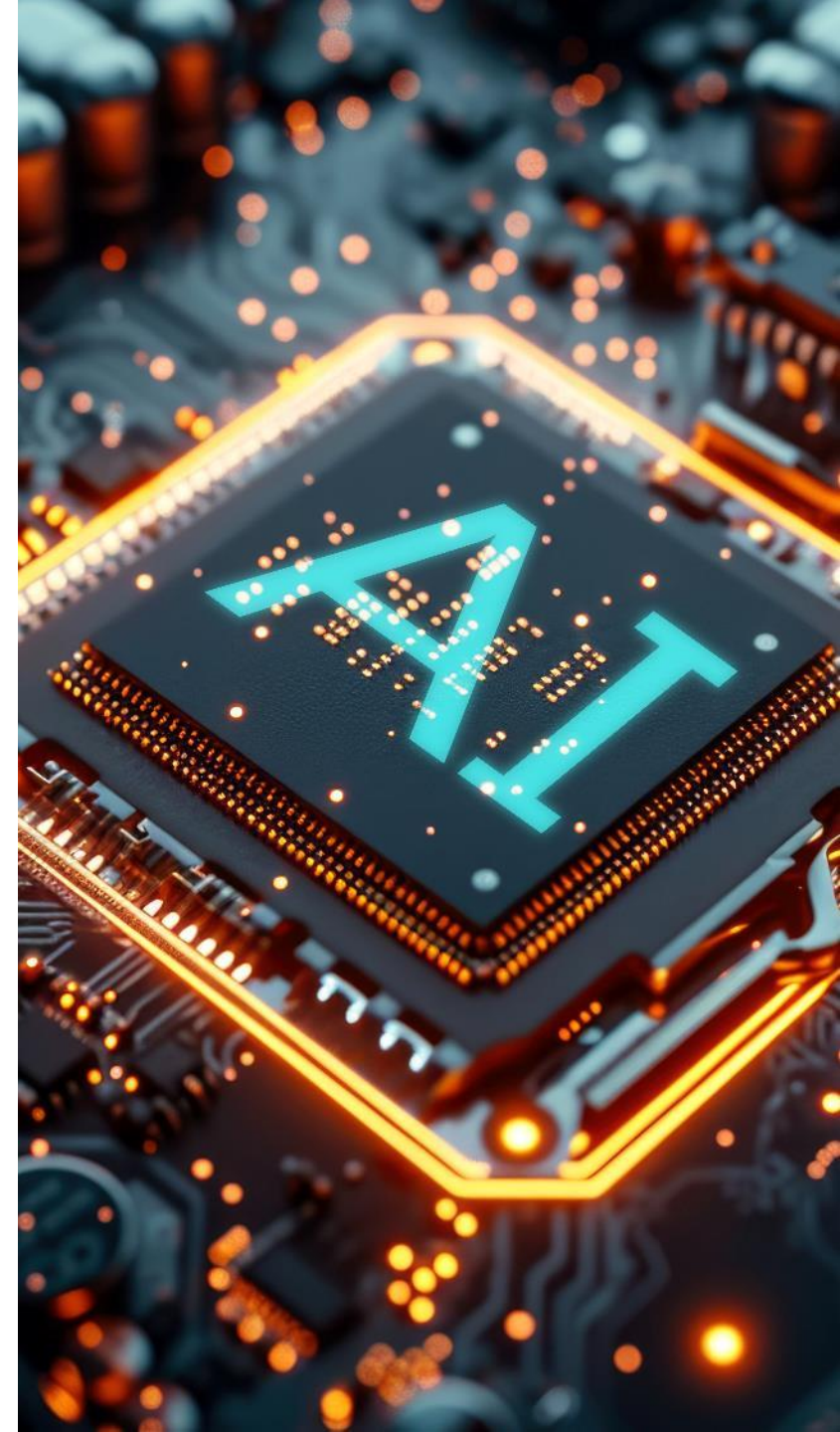
All priority research areas are **interdisciplinary** and **cross the structure of faculties**. They collectively represent every research topic in which Wrocław Tech either currently plays or aims to assume a leading role in Poland and the global impact.



# Information Technology, Data Science and Artificial Intelligence (1/7)

Computer science, algorithmics and software engineering, artificial intelligence and machine learning, human-computer interaction, methods of data analysis and visualization, mathematical statistics, classification and forecasting, natural language processing, quantum computing, data storage and transmission engineering, information processing and privacy, cybersecurity and cryptography, telecommunication, computer and mobile networks, cyber-cloning and virtualization, augmented and virtual reality, multimedia techniques, medical informatics and neuroinformatics, autonomous systems.

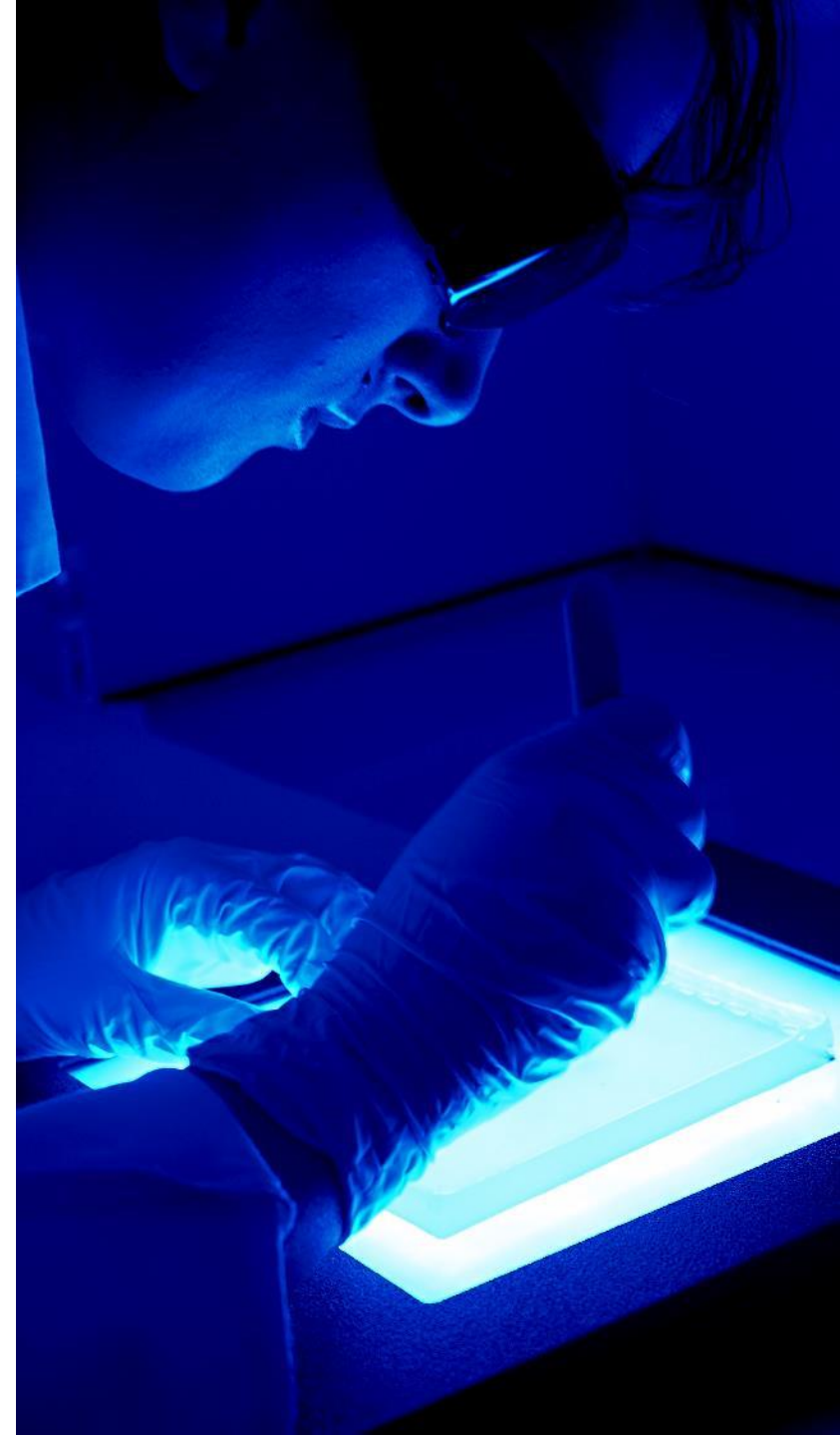
- Centre for Information and Communication Technologies
- Centre for Trusted Information and Telecommunication Systems
- Centre for Defence and Security



# Innovative Materials and Advanced Manufacturing (2/7)

Basic research and materials engineering, Industry 4.0 (digitization, automation and hiper-automation, robotization, and intelligent production systems), additive technologies, high-precision technologies, green technologies using a renewable resource base and valorization of waste, sustainable and energy-saving technologies, use of innovative methods and tools, and control systems.

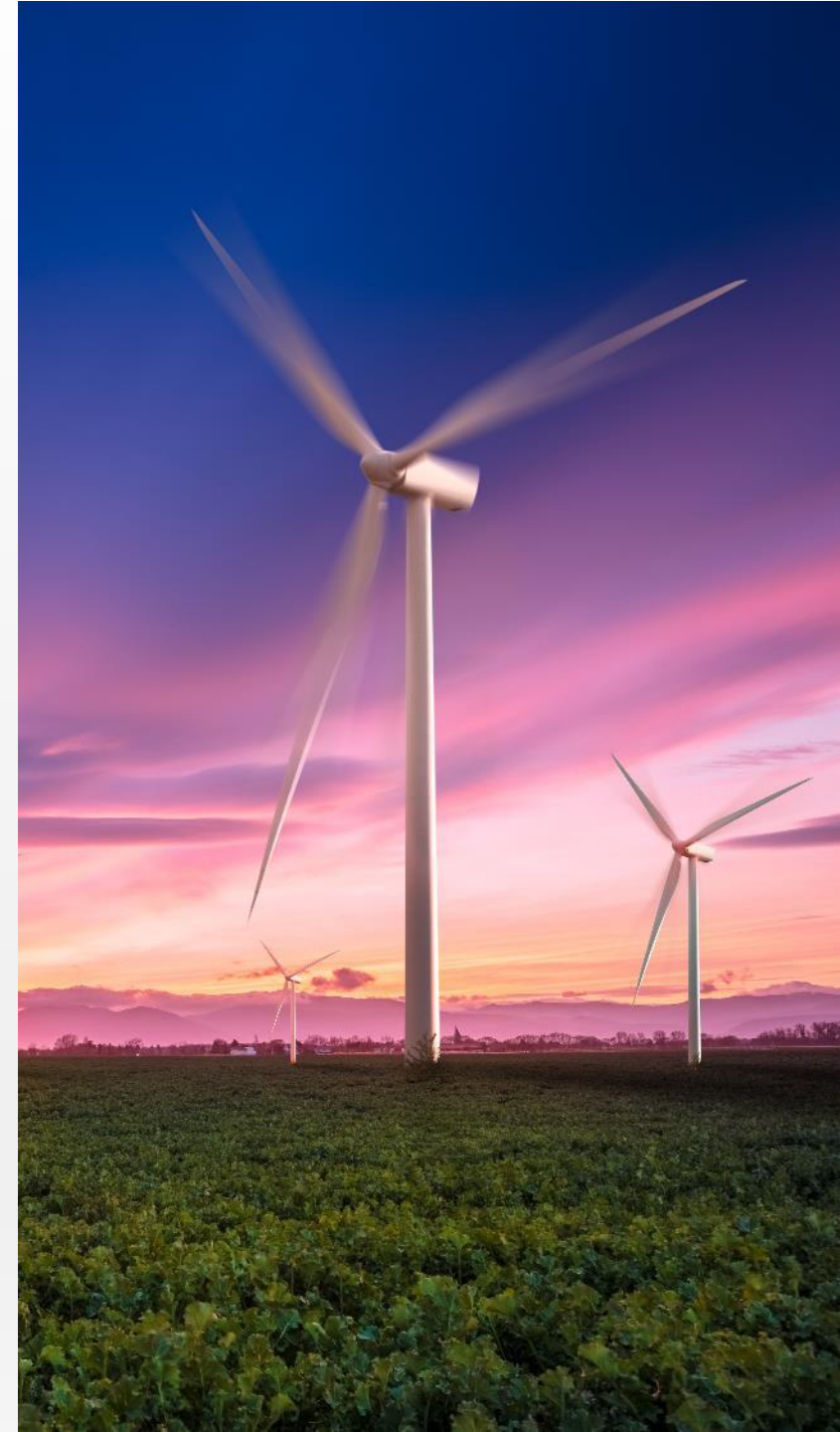
- Centre for Material Engineering and Metal Forming
- Centre for Advanced Materials and Nanotechnology
- Centre for Defence Innovation and Technology



# Sustainable Living Environment (3/7)

This area includes, among others, resource management, energy sources (conventional, renewable, and nuclear energy), energy system transformation, human- and environment-friendly technologies (e.g., electromobility), protection of climate as well as natural and cultural environment, water management, identification of environmental hazards and response to natural disasters, as well as all aspects of sustainable development, circular economy, and social acceptance of changes.

- Centre for Sustainable Development and Climate Protection
- Centre for Advanced Raw Materials and Energy Technologies
- Research Centre for Sustainable Built Environment



## Smart Cities and Future Society (4/7)

Holistic design and construction of human-friendly buildings, estates, and cities using modern technologies, application of innovative and safe materials, broadly understood communication and mobility – including intelligent and autonomous transport systems, universal design, prevention and counteraction of social, energy and digital exclusion, research on human-machine interactions, as well as analysis, prediction, and management of social and economic processes.

- Centre for Urban Innovation: Architecture, Engineering, Technology, Mobility



# Health and Medical Technologies (5/7)

This area reflects the ongoing process of medical technization and an increasingly close relationship between progress in medicine and technological development.

It includes interdisciplinary research at the intersection of health sciences and basic and technical sciences, as well as strictly medical research. In particular, it includes such areas as biochemistry and biological chemistry, bionics, biomedical engineering, biomechanics, materials mimicking nature and promoting health, medical electronics and sensors, bioinformatics, analysis of images and large sets of medical data, medical diagnostics, personalized and precision medicine, digital technologies for health and medicine, telemedicine, human augmentation, and research on the health effects of environmental factors and social processes.

- Health Tech Synergy Hub
- Centre for Biomedical Engineering



## Extreme Technologies (6/7)

Nanotechnology, microelectronics and photonics, metrology, megastructures (large buildings, machines, devices, power grids, etc.), quantum technologies, cryogenic, space, marine, and underground technologies, i.e., research on phenomena of extreme scales and engineering of objects with extreme parameters or operating under extreme conditions.

- Research Terahertz Technique Centre
- Aviation Research and Development Centre
- Centre for Micro-/Nanoelectronics, Micro-/Nanosystems, and Micro-/Nanoengineering





# Basic Research for Technology and Innovation (7/7)

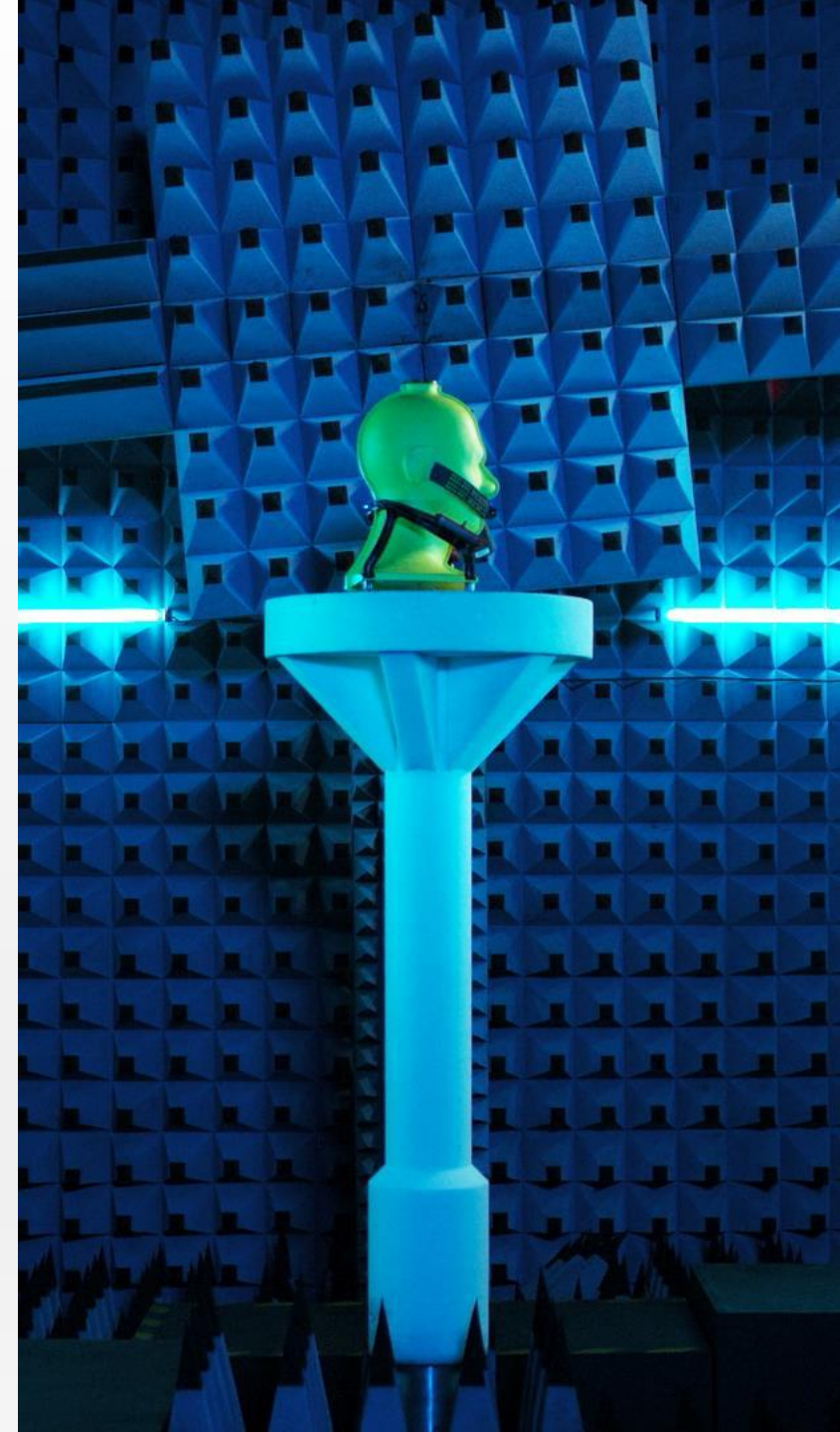
Research on fundamental objects, models, and theories important for understanding complex systems – from materials and processes to biological and social systems. It considers the application of universal concepts and laws to the analysis of real phenomena and supports the development of technology and civilization and the improvement of human life quality and the state of the natural environment. It includes in particular research in the field of natural sciences (including mathematics, physics, and chemistry) as well as social sciences and humanities.

- Hugo Steinhaus Centre
- Ryll-Nardzewski Centre



# Certified laboratories

- Accredited Laboratory of **Standards and Metrology of the Electromagnetic Field** (research and calibration laboratory),
- Accredited **Acoustics** Testing Laboratory,
- Accredited **Belt Transport** Laboratory,
- Accredited **Work Safety** Laboratory,
- Accredited Testing Laboratory for **Transport Infrastructure Facilities**,
- Accredited Laboratory for **Electromagnetic Compatibility**,
- Accredited Laboratory of **the Department of Machine Design and Testing**,
- Accredited **Chemical Laboratory for Multi-element Analyzes**





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# INFRASTRUCTURE



# Research and teaching facilities

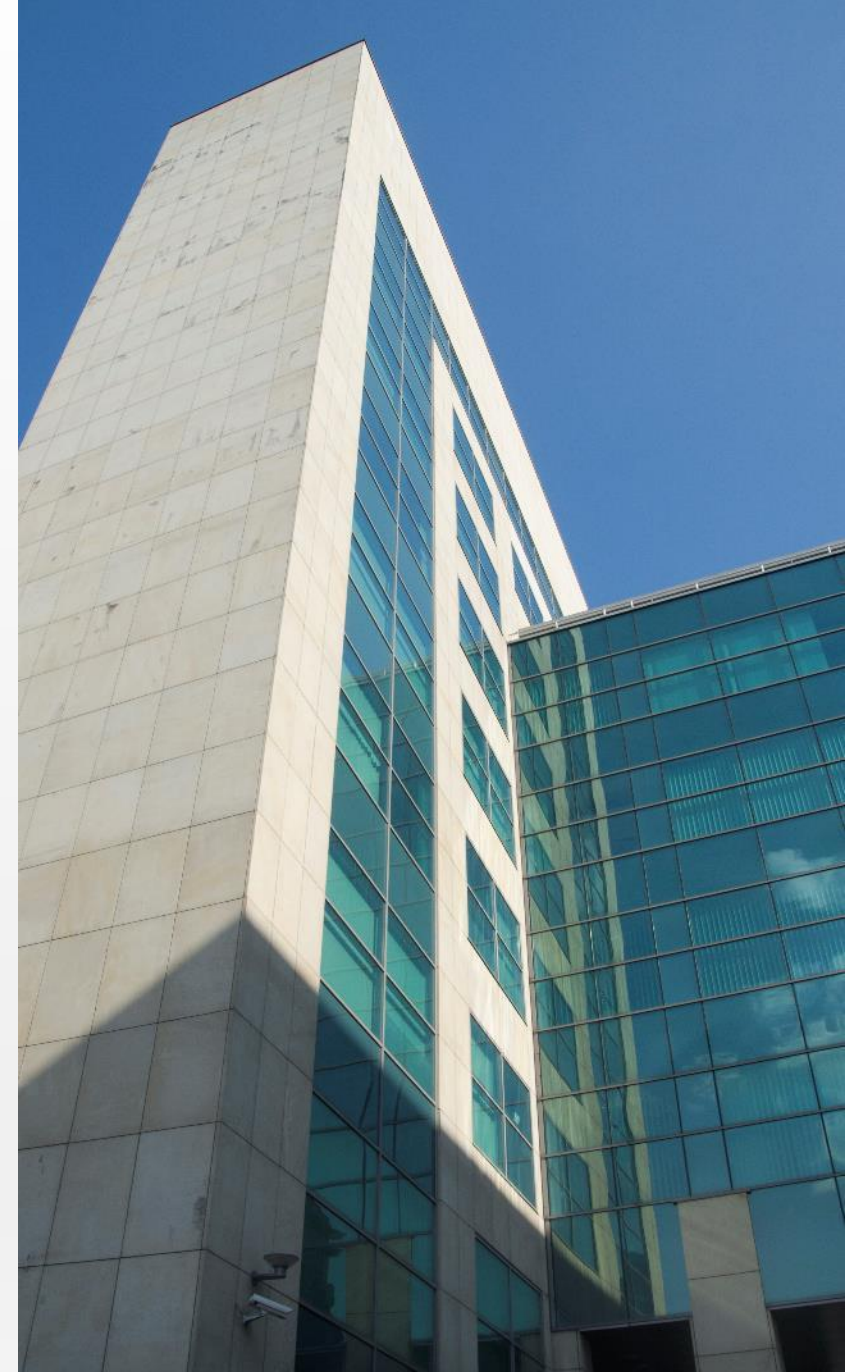
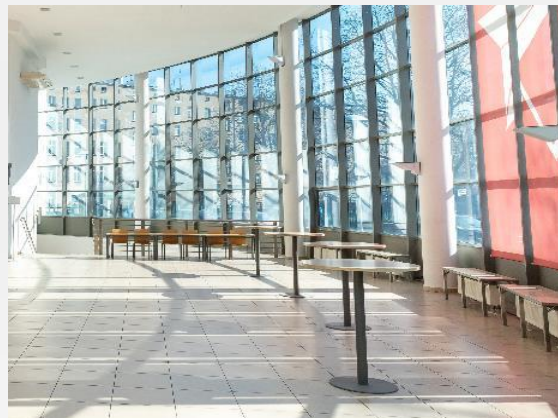
- **116** buildings with modern laboratories, libraries and multimedia teaching rooms
- sports centre
- computer laboratories and reading rooms with 24h Internet connection
- **581** didactic laboratories
- **407** research laboratories
- **108** research and teaching laboratories
- **472** teaching rooms and lecture halls



# The Wrocław University of Science and Technology Congress Centre

The Congress Centre comprises three conference halls with a total capacity of 620 seats. The centre can be divided into modules in a theatre-style arrangement, in the following ways: one hall with 620 seats, one hall with 320 seats, one hall with 300 seats, hall with 460 seats, 2 halls with 160 seats each.

- 3 conference hall+ 3 smaller seminar rooms
- Professional equipment, including a system for simultaneous translations
- Sound recording of the conference
- Wireless internet
- Variable lighting system
- Exhibition complex
- Professional event service





# Wrocław Tech Strategy 2023-2030

As a European technical university affirming freedom, truth, curiosity and the joy of learning, we conduct interdisciplinary research and educate to meet the expectations of society and the economy.

The values on which we are founded are:

- **Excellence** – working for progress and sustainability, we foster personal development based on the highest standards in education, research and innovation.
- **Interaction** – nurturing academic, economic and social partnerships, we combine talents and commitment to effectively achieve individual and social goals.
- **Openness** – being open to new ideas and challenges, drawing on the diverse experiences and aspirations of members of the academic community, we respond flexibly to changes, treating them as inspiration and motivation to actively participate in the development of science, economy and society.





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# Thank you for your attention

More information:  
[pwr.edu.pl/en](http://pwr.edu.pl/en)

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unite! University Network for Innovation,  
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HR EXCELLENCE IN RESEARCH



Top International  
Managers in Engineering



ACADEMIA EUROPAEA  
WROCLAW KNOWLEDGE HUB

Evaluated by  
**IEP** INSTITUTIONAL  
EVALUATION  
PROGRAMME  
[www.iep-qaq.org](http://www.iep-qaq.org)