

# REPORT

on the activities of Lodz University of Technology

# 2020



Lodz University of Technology

# TABLE OF CONTENTS

CALENDAR .....	5
COMMUNITY OF LODZ UNIVERSITY OF TECHNOLOGY .....	10
STUDENTS .....	11
PHD STUDENTS .....	13
EMPLOYEES .....	15
SUPPORT FOR THE TUL COMMUNITY .....	17
EDUCATION .....	20
ADMISSIONS .....	21
EDUCATION OFFER .....	24
ACCREDITATIONS .....	31
ENTRY ON THE LABOR MARKET .....	32
TUL FOR THE LOCAL COMMUNITY .....	34
TUL UNIVERSITY OF THE THIRD AGE .....	35
CHILDREN'S UNIVERSITY OF LODZ .....	36
PUBLIC SECONDARY SCHOOL OF TUL .....	36
"ZATOKA SPORTU" TUL'S SPORTS AND EDUCATION CENTRE .....	37
CULTURAL EVENTS .....	38
RESEARCH .....	39
STAFF SCIENTIFIC DEVELOPMENT .....	40
RESEARCH PROJECTS .....	42
ICRI-BIOM .....	45
PUBLICATIONS .....	46
EXCELLENCE INITIATIVE - RESEARCH UNIVERSITY .....	52
COOPERATION .....	55
COOPERATION WITH THE ECONOMIC ENVIRONMENT .....	56
INTERNATIONAL COOPERATION .....	63
UNIVERSITY MANAGEMENT .....	69
ORGANISATION .....	70
MARKETING ACTIVITIES .....	73
FINANCES .....	77
INFORMATION TECHNOLOGY .....	82

Ladies and Gentlemen,

My term of office as Rector of Lodz University of Technology ended on August 31, 2020. Looking back over the last few months of my tenure, 2020 was a difficult period for all of us. The whole country, including our university, faced the SARS-CoV-2 virus pandemic overnight.

The start of the year presented many challenges and previously unknown threats. As a result, our entire community was forced to start working and learning remotely.

During this difficult time, I created a Crisis Management Centre at Lodz University of Technology, headed by the then Vice-Rector, now Rector, Prof. Krzysztof Józwik. Thanks to hard work and often courageous decisions, we managed the university very well through this crisis situation.

I would like to thank his Magnificence and all my associates.

We were cited as an example of a university that made an exemplary transition to remote teaching and functioning, a fact of which I am extremely proud.

While ensuring the safety of employees and students, we continued work for the development of Lodz University of Technology. One of many examples of this was the launch of the 5G research network on the campus of Lodz University of Technology, as part of the DIH5G (Digital Innovation Hub 5G) consortium, a unique project on a national scale. I am pleased to see that our scientific activity is contributing to the economic development of the region and the country.

In 2020, Lodz University of Technology celebrated its 75th anniversary. On this occasion, we were preparing a festive celebration, but the limitations related to the ongoing pandemic prevented their implementation. This was extremely sad for our community and for me personally, as we had many plans to celebrate this important anniversary together.

The election calendar also had to be changed. I am happy that the academic community chose Prof. Krzysztof Józwik for the Rector of Lodz University of Technology for the 2020–2024 term, giving him such a strong mandate.

During the inauguration of the academic year, I handed over the insignia of the Rector's authority with the conviction we were passing the baton in accordance with the best academic tradition, in a spirit of continuity and friendship.

I would like to thank the entire academic community for their cooperation and support in this difficult time. Without your involvement, the university would not be able to maintain its high level of research and education.



Prof. Sławomir Wiak  
Rector 2016–2020



Ladies and Gentlemen,

*I encourage you to read this report on the activities of Lodz University of Technology in 2020. The period it covers was a challenging one for our university. The Coronavirus pandemic had an impact on the functioning of all areas of TUL's activity. Thanks to the solidarity, responsibility and commitment of the entire academic community, I am proud to say that we coped with this challenge superbly.*

*In order to ensure safety, we had to switch to remote forms of education and university management. This forced changes in plans, e.g. concerning the celebration of the 75th anniversary of Lodz University of Technology and numerous other events, including the 2020 elections of university authorities. I am grateful to my predecessor, Prof. Sławomir Wiak, and to the Vice-Rectors in the 2016–2020 term for organizing the functioning of the university in the first months of the pandemic and for excellent cooperation during the transfer of power. I would like to thank his Magnificence Prof. Sławomir Wiak for his trust and for the excellent leadership of our university in recent years. Together with the current Vice-Rectors, we will continue to pursue the strategic goals of Lodz University of Technology, while adjusting to new challenges.*

*Building a research university is undoubtedly one of our priorities. This task is made much easier by the participation of TUL in the Excellence Initiative – Research University program. In 2020, we launched a series of activities supporting the scientific excellence of employees and students of Lodz University of Technology. We strive to make Lodz University of Technology an increasingly attractive workplace for scientists and to educate the next generations to an even higher level. This is possible thanks to the development of cooperation with international partners, establishing new contacts with other universities, institutions and companies.*

*We are aware of the growing emphasis on social responsibility, which is why we continue to undertake initiatives that respond to the needs of the environment. This applies to learning, education and involvement in universally important programs.*

*I am very glad that Lodz University of Technology is a consistently popular destination for candidates. Our responsibility is to provide the best possible opportunities for them to develop their knowledge and interests, which is reflected in their future individual and team successes.*

*I am aware that the period we are summarizing in this report was full of challenges, which makes the achievements of our community in 2020 all the more impressive. A small selection of our accomplishments is presented in the calendar of events that begins this report.*

Prof. Krzysztof Józwiak  
Rector 2020-2024

## JANUARY

### Status of an accredited Innovation Centre

The Centre for Cooperation with the Economy, Innovation and Technology Transfer of TUL obtained the status of an accredited Innovation Centre, awarded by the Ministry of Development.

### Internationalization Star 2020

The "Internationalization Star" in 2020 in the "Management Star" category was awarded to Dr Eng. Dorota Piotrowska, TUL Prof., Head of the International Cooperation Centre of Lodz University of Technology. The award promotes people who embody the ideals of the Polish academic community for openness towards the world.

### Ranking of General Secondary Schools 2020

The Public Secondary School of Lodz University of Technology once again took first place in the Lodz Province in the Ranking of General Secondary Schools 2020, organized by the Perspektywy Educational Foundation.

In the field of research activity, an award was given to members of the Quantum Chemistry Team at the Institute of Physics, Lodz University of Technology, for the "Development of a computationally effective method for describing electron correlation in multi-reference molecular systems".

For organizational activity, the 2nd degree individual award was given to Dr Eng. Dorota Piotrowska, TUL Prof., Head of the International Cooperation Centre at TUL.

Employees of the Institute of Architecture and Urban Planning at TUL, together with the members of the Municipal Urban Planning Studio, received an award for outstanding creative achievements in the field of spatial planning and development.

In the Master's thesis category, Elżbieta Janiszewska, a graduate of architecture at the Faculty of Civil Engineering, Architecture and Environmental Engineering, received an award for her thesis titled "Industrial Garden of Impressions as an element of the urban greening system and Green Line public spaces".

## FEBRUARY

Two Awards from the Minister of Science and Higher Education

Two Awards from the Minister of Development of the Republic of Poland

## MARCH

### Genius Universitatis Award

At the XXXIII International Educational Salon Perspektywy 2020, TUL received the Genius Universitatis award for a creative university campaign, for organizing the Pi Number Day.

### 6th position of TUL in the ranking of engineering studies

TUL was placed sixth, jointly with Wroclaw University of Science and Technology, in the EngiRank (European Ranking of Engineering Studies) prepared by the Perspektywy Education Foundation in cooperation with the Foundation for the Development of the Education System (FRSE).

### TUL academic community supports medical staff

Students and employees of Lodz University of Technology contributed to the production of protective equipment for medical personnel. Using 3D printing technology, they produced protective helmets and masks, as well as helping to maintain radio communication in hospitals.

## APRIL

Lodz University of Technology is the first and only Polish university to obtain HCERES accreditation (Haut Conseil de l'évaluation de la recherche et de l'enseignement supérieur).

TUL is the first university in Poland to receive the international French HCERES accreditation

Lodz University of Technology became the leader of a consortium of universities from Europe and Asia, which has received one million euros to implement new education programs in the field of automation and power engineering in Nepal, Bhutan and Indonesia.

TUL is the leader of a consortium of universities from Europe and Asia

Lodz University of Technology and the Polish Mother's Memorial Hospital Research Institute received almost PLN 12 million for the creation of a medical database and modern diagnostics.

A joint project between TUL and the Polish Mother's Memorial Hospital Research Institute

The second MathUp Mathematics Applications Conference was held. Senior students prepared papers sharing their interests. The main prize was the Dean's Cup awarded by the Faculty of Electrical, Electronic, Computer and Control Engineering.

2. Applications of MathUp Mathematics Conference

## MAY

Launching a 5G research network in Lodz

DIH5G (Digital Innovation Hub 5G), a consortium linking the National Research Institute (leader), Lodz University of Technology, Ericsson and Fundingbox announced the launch of a 5G research network at Lodz University of Technology.

First virtual open day in the history of TUL

The first virtual open day in the history of TUL was held, and was a great success among candidates. The event was watched on YouTube by nearly 3 000 people.

TUL in the RUR World University Rankings

Lodz University of Technology was one of three Polish technical universities classified for the first time in the RUR (Round University Ranking) World University Rankings.

## JUNE

VIGO System S.A. together with scientists from Lodz University of Technology and Warsaw University of Technology developed the first Polish prototype of a Vertical-Cavity Surface-Emitting Laser (VCSEL). VCSELs are the smallest sources of laser light.

First prototype of the VCSEL laser in Poland

A consortium comprising PHIN Consulting (leader) and Lodz University of Technology (scientific partner) is working to create tools for remote monitoring of the health of stoma patients.

Researchers from Lodz University of Technology for stoma patients

In the field-based Shanghai ranking, Lodz University of Technology was classified in two disciplines: biotechnology and mechanical engineering.

TUL in the Shanghai ranking

## JULY

Election of the Rector of Lodz University of Technology

Prof. Krzysztof Jóźwik became the Rector of Lodz University of Technology for the 2020–2024 term. The elections took place on July 8, more than a month later than originally planned, due to the coronavirus pandemic.

Made in Poland title for TUL

Lodz University of Technology received the Made in Poland 2020 award for making “a significant impact on the development of the national economy through cooperation between enterprises and local governments and the promotion of Polish higher education”.

TUL wins higher position in the university ranking prepared by the Perspektywy Educational Foundation

Lodz University of Technology was ranked 4th among technical universities and 8th among all academic universities (jointly in both lists with Gdańsk University of Technology).

The first virtual open day for international students

The first edition of TUL Open Day Online took place, addressed to future international students of Lodz University of Technology.

The Smart Hives project by students of Lodz University of Technology won third place in the international competition Cisco Global Problem Solver 2020. Over 520 teams from universities all over the world entered the competition.

Lodz University of Technology was included in the Innovation Incubator 4.0 program and received significant funds to support research work applicable in industry.

The Senate of Gdynia Maritime University awarded the title of doctor honoris causa to Prof. Andrzej Napieralski.

## AUGUST

Intelligent hives made by Lodz University of Technology students awarded in an international competition

Success of Lodz University of Technology in the Innovation Incubator 4.0 program

Honorary doctorate for Prof. Andrzej Napieralski

## SEPTEMBER

Researcher from Lodz University of Technology wins prestigious award

Assoc. Prof. Eng. Agnieszka Ruppert, TUL Prof. at the Faculty of Chemistry, won the prestigious Polish Intelligent Development Award 2020 in the Scientist of the Future category.

Dr Joanna Sztobryn-Giercuskiewicz becomes a KRASP committee member

Dr Joanna Sztobryn-Giercuskiewicz, head of TUL's Disabled Persons Office, was elected a member of the Commission for Equal Educational Opportunities at the Conference of Rectors of Academic Schools in Poland.

## OCTOBER

Prof. Krzysztof Józwik, Rector of Lodz University of Technology, became vice-chairman of the Conference of Rectors of Polish Universities of Technology and chairman of the Conference of Rectors of Public Universities in Lodz.

This was the first inauguration of the academic year by the new authorities for 2020–2024. Following many years of tradition, the previous Rector, Prof. Sławomir Wiak, handed over the insignia of power – the scepter and chain – to the new Rector, Prof. Krzysztof Józwik.

Success of TUL students at the Academic Polish Championships for swimming in Lublin: 19 medals in the OPEN category and 11 in individual races.

Lodz University of Technology began activities with TREX: the European Centre of Excellence in Exascale Computing.

Magdalena Śmiałkowska, a student of architecture at Lodz University of Technology, won the prestigious Antalya International Challenge archery competition. Thanks to this victory, she was promoted to 51st position, becoming the highest-ranked Pole in the world of archery.

The university was visited by the Ambassador of the Kingdom of Denmark in Poland, Ole Toft, and by the Ambassador of France in Poland, Frédéric Billet.

Prof. Łukasz Albrecht, Vice-Rector for Science, was elected to the College of Vice-Rectors for Science and Development of Public Higher Technical Schools in Poland.

Rector of Lodz University of Technology in rectoral bodies

Lodz University of Technology inaugurated the new academic year

Success of TUL students at AMP in Lublin

TUL at the European Centre of Excellence

The best Polish archer is studying at Lodz University of Technology

Ambassadors visit TUL

Prof. Łukasz Albrecht from TUL in the Presidium of KPNIR

## NOVEMBER

Work in the field of artificial intelligence

Lodz University of Technology signed a cooperation agreement with the US-based Artificial Intelligence Economic Development Corporation (AIEDC), covering the implementation of common goals in the field of research and development related to artificial intelligence.

Competition for the creative as part of Lodz IT Days

Students took part in dozens of lectures and workshops. A competition was prepared for secondary school students in which teams coordinated by teachers could demonstrate their knowledge and creativity, and win valuable prizes.

First virtual job fair

Virtual ATP took place on a specially dedicated platform, where participants could chat directly with employers, download information materials and receive an e-catalog for the fair.

## DECEMBER

The university received nearly PLN 15 million to meet the needs of students with disabilities and university employees as part of the NCBiR competition “Accessible University”.

Lodz University of Technology took 2nd place in the prestigious Polish Academic Championships. Athletes from Lodz University of Technology won 33 medals, including 13 gold, 11 silver and 9 bronze medals.

Prof. Krzysztof Jóźwik presented awards to the winners of this year’s four Rector’s prizes in Lodz University of Technology. He also honored four retired scientists with diplomas for Senior Professors of Lodz University of Technology.

In the QS Emerging Europe and Central Asia University Rankings, TUL was classified in 91st position, rising 10 places compared to the previous year.

Researchers from Lodz University of Technology were recognized by the Council for Higher Education and Science on behalf of the President of the City of Lodz. They received two Lodz Eureka awards for achievements promoting the development of the city: one in the Technology category, the other in the Science category.

Lodz University of Technology and the Lodz Region have concluded a cooperation agreement in the field of cybersecurity. They plan to create the first center of competence for Computer Forensics and Cyber Security in Poland. The first step will be a “digital crime scene modeling workshop”, which will be equipped with specialized equipment.

TUL a beneficiary of the “Accessible University” competition

TUL on the AMP medal podium

Rector of Lodz University of Technology presents awards and diplomas

TUL’s position in international rankings is rising

Two Lodz Eureka awards for researchers from Lodz University of Technology

Cybersecurity laboratory to be established at TUL

# THE COMMUNITY OF LODZ UNIVERSITY OF TECHNOLOGY



**2 622**  
employees

**1 204**  
academic teachers

**578**  
PhD students

**2 962**  
graduates

**417**  
international students and PhD students

**12 440**  
students

# STUDENTS

In 2020, a total of 12,440 students were educated at Lodz University of Technology, i.e. 7.83% fewer than in the previous year. The decreasing number of students is mainly the result of demographic changes.



Women accounted for **39.3%** of all students



There were **164 students with disabilities**, including 142 full-time and 22 part-time students



Vice-Rector for Student Affairs Assoc.  
Prof. Eng Witold Pawłowski PhD, DSc.

*During the pandemic, students have shown extraordinary responsibility and commitment. Not only were they actively involved in the crisis management center, participating in making decisions related to the functioning of Lodz University of Technology, but they also helped medics by preparing personal protective equipment, which was especially needed at the beginning of the pandemic. I would also like to emphasize the involvement of students in distance learning, as well as their participation in student organizations and student research groups. Thanks to their dedication, we witnessed numerous individual and team successes, as they reached for the highest national and international awards.*

## TUL students in 2018–2020\*

2018

2019

2020



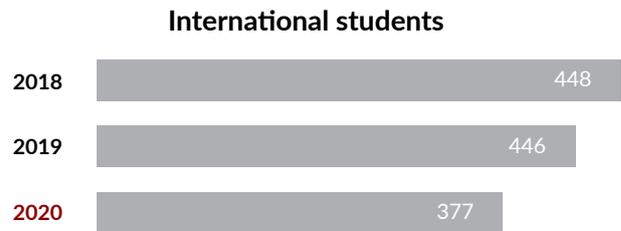
	2018	2019	2020
Overall	14 993	13 497	12 440
Full-time studies	12 095	10 951	10 205
Part-time studies	2 898	2 546	2 235

\* as of December 31

The largest numbers of students attended the Faculty of Electrical, Electronic, Computer and Control Engineering (25.8% of the total number of students), the Faculty of Management and Production Engineering (15.6%) and the Faculty of Civil Engineering, Architecture and Environmental Engineering (14.1%).

377 international students studied at Lodz University of Technology, including:

- full-time – 353
- part-time – 24

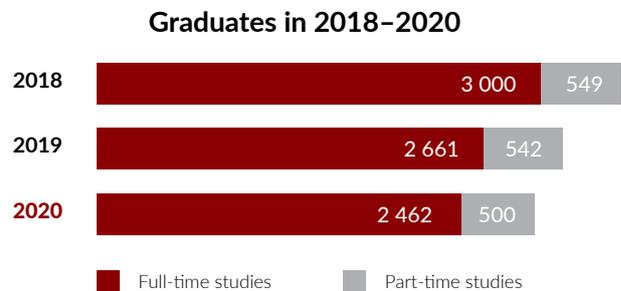


International students at TUL accounted for 3% of the total number of students.

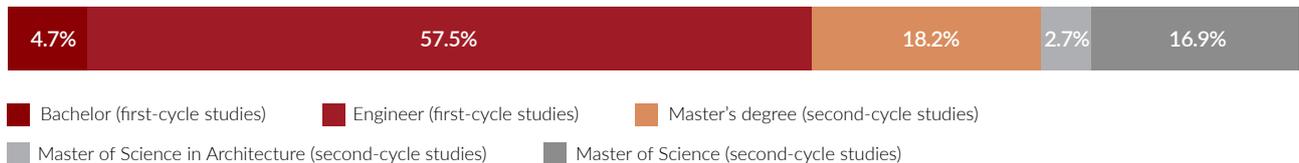
Most of the international students came from Ukraine (126), Belarus (60), France (41), Spain (40), and Italy (14).

## Graduates

In 2020, 2 962 people graduated from Lodz University of Technology, including 98 international students.



## Diplomas issued in 2020



## Student Government

In 2020, new regulations for the TUL Student Government were prepared and adopted.

Student Government activities included:

- E-sport tournament – League of Legends
- “TUL Champion in Fifa20” tournament
- Minecraft TUL
- Creating good habits with the Student Government
- Cultural quarantine

## Student organizations

- Floorball Academy
- Academic Orchestra of TUL
- Academic Choir of TUL
- ENACTUS
- ESN-EYE
- TUL Photography Club
- TUL Motorcycle Club
- KU AZS University Sports Association of TUL
- NZS University organization of TUL
- Council of Students with Disabilities
- RAPP Academic Movement "Pod prąd"
- Student Tourist Club "Płazik"
- Student Association of Beskid Guides
- Student Radio ŻAK

## Academic Club AZS TUL

From 1st October 2020, the AZS TUL University Club at Lodz University of Technology began operating as a regulatory unit without legal personality. From October 7, the following men's and women's sections operated in the AZS TUL Club: basketball, handball, volleyball, football/futsal, powerlifting, sport aerobics, table tennis, judo, athletics.

A record number of individual medals were won in the Polish University Championships (AMP) 2020:

- General classification: 13 gold, 10 silver, 9 bronze
- Classification of technical universities: 14 gold, 6 silver, 8 bronze



## PHD STUDENTS

In 2020, there were 578 doctoral students at Lodz University of Technology (full-time doctoral students and doctoral students at the Interdisciplinary Doctoral School).



Women accounted for **45.8%** of all PhD students



There were a total of **13** doctoral students **with disabilities**

TUL PhD students in 2018–2020 \*

	2018	2019	2020
			
<b>Overall</b>	<b>612</b>	<b>570</b>	<b>578</b>
Full-time doctoral studies	612	463	376
Interdisciplinary Doctoral School	-	107	202

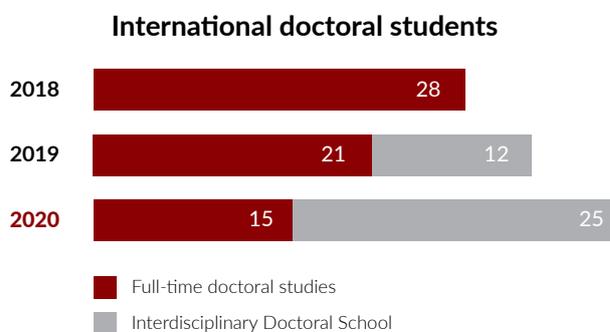
\* as of December 31

In 2020, Lodz University of Technology had 18.8% fewer full-time doctoral students than in the previous year. The decline in the number of doctoral is related to the changing provisions of the Law on Higher Education and Science. 38 full-time PhD students received scholarships in 2020.

PhD students at the Interdisciplinary Doctoral School conduct research in the units where their supervisors are employed. IDS TUL enables implementation of the entire degree program in English.

In 2020, **international students** accounted for **6.9%** of the total number of doctoral students, including 13 women.

Most international doctoral students came from the Islamic Republic of Iran (7), Ukraine (6), China (3), India (3) and Pakistan (3).



## Doctoral Students Government

Representatives of the Doctoral Students Government sat in the University Senate and participated in the work of Senate and Rector committees and teams. The Doctoral Students Government financially supports scientific, educational, cultural, sporting and integration initiatives by organizing a regular “Doctoral Student Day”. In 2020, they cooperated with the National Representatives of PhD Students and with the Alliance of Doctoral Students of Technical Universities. In 2020, a Rector’s Ordinance was issued to ensure compliance between the Regulations of the Government of Doctoral Students of Lodz University of Technology, the Law on Higher Education and Science and the Statutes of Lodz University of Technology.

# EMPLOYEES\*

In 2020, the total number of employees decreased by 55 compared to the previous year.

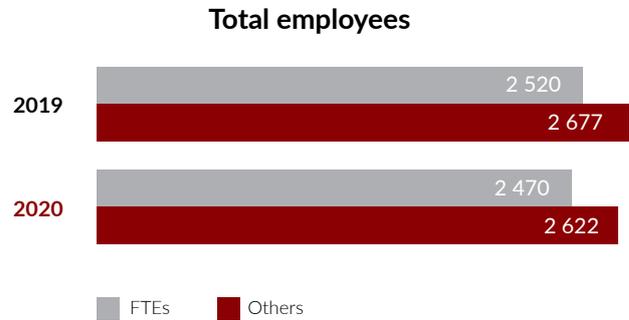


Women accounted for **51%** of all employees

40 people with disabilities, including:



- 16 people with slight disabilities
- 24 people with moderate disability

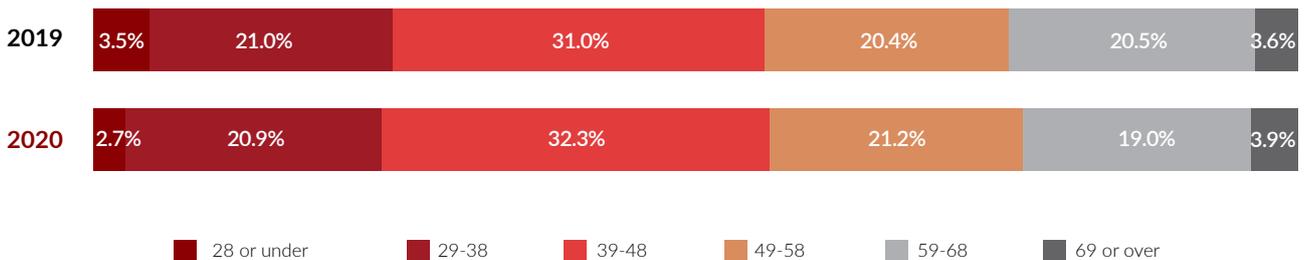


In 2020, TUL employed a total of **31** foreigners.

A total of 118 people have retired, including:

- 80 employees who are not academic teachers,
- 38 academic teachers.

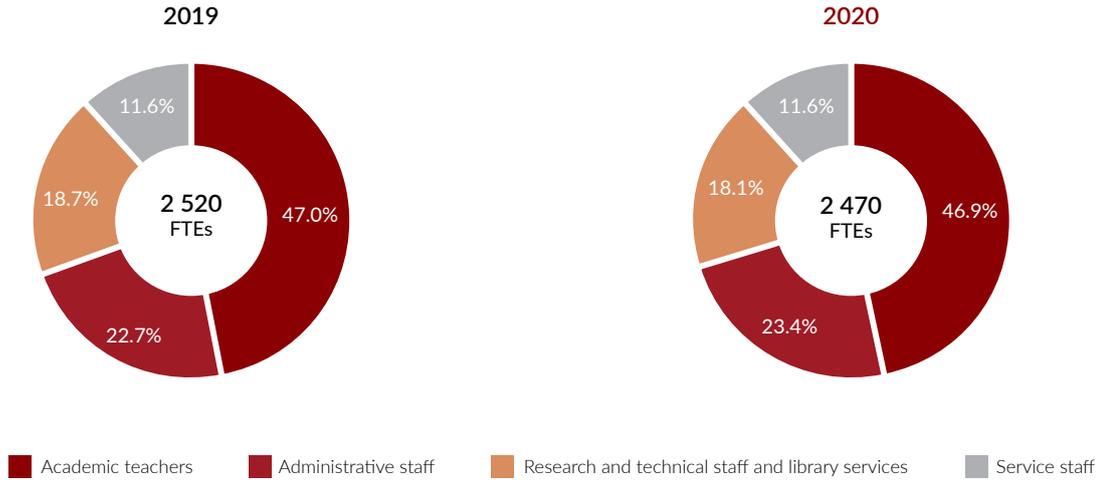
## Age structure of Lodz University of Technology employees in 2019–2020



Summarizing the age structure of all employees at Lodz University of Technology, the largest age group is 39–48. In 2020 there was a noticeable drop of 0.8 percent in the number of employees under 28 years of age.

\* as of December 31

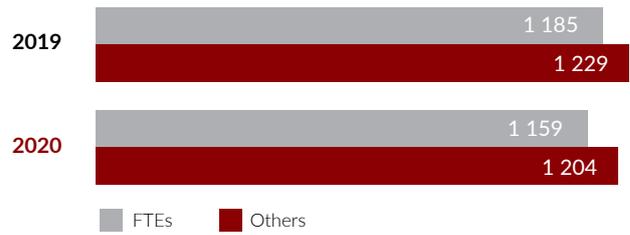
Employment structure by groups of employees



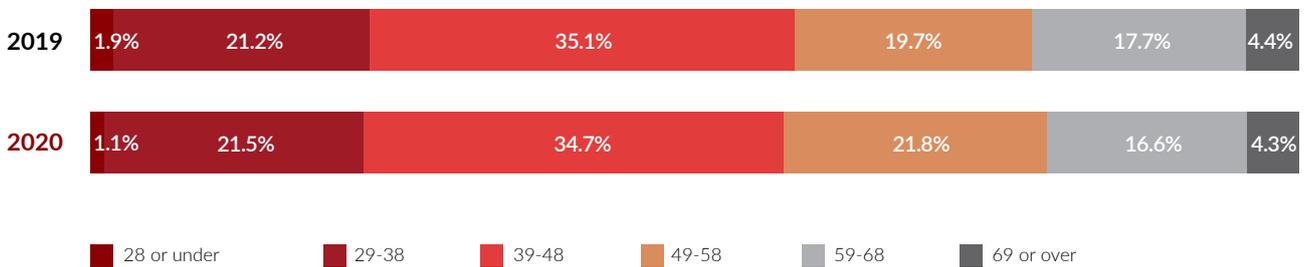
Academic teachers

Compared to 2019, employment in the group of academic teachers decreased by 25 people. The university employed 23 foreigners as academic teachers, which is the same number as in the previous year.

Academic teachers in full-time positions



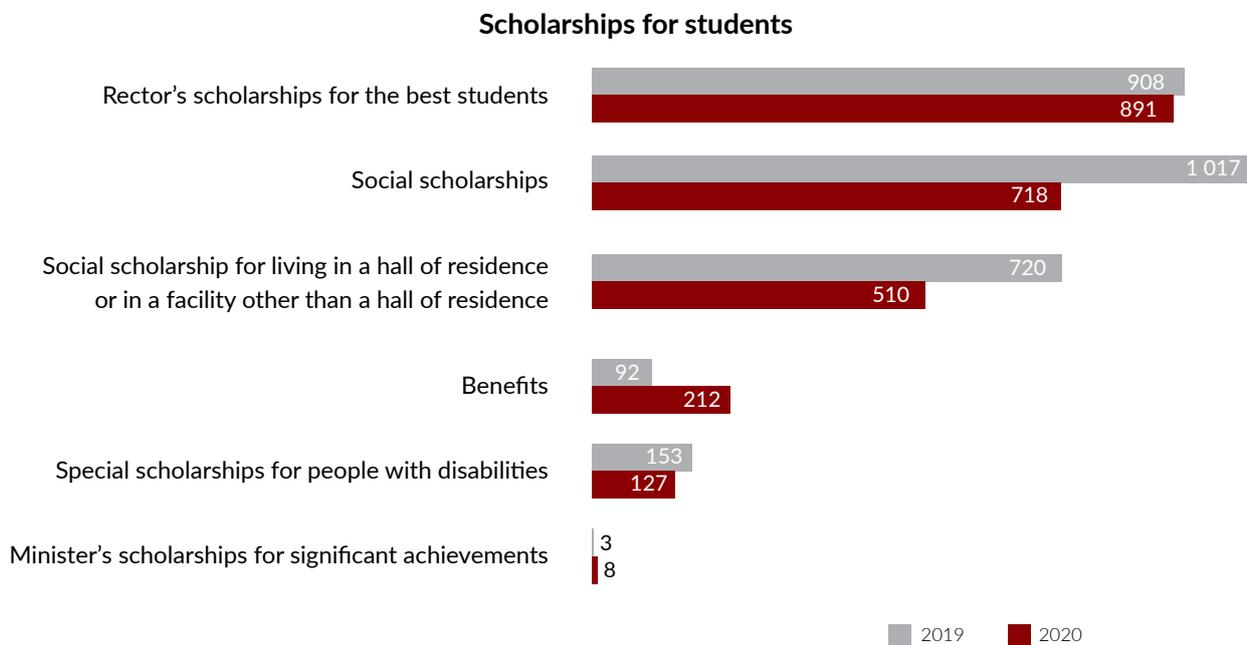
Age structure of academic teachers in 2019–2020



# SUPPORT FOR THE TUL COMMUNITY

## Scholarships for students

The chart below presents the types and numbers of scholarships awarded in 2019–2020.



## Residential Area

In the academic year 2020/2021, the following numbers of people were accommodated in the halls of residence:



## Staff welfare matters

Type of contribution from the Company Social Benefits Fund (ZFŚS)	Number of beneficiaries
Subsidies for various forms of holiday recreation in TUL holiday resorts	1 471
Individual holiday subsidies	4 302
Holiday subsidies	2 298
Leisure activities for children of eligible persons	2 605
Christmas allowance for children	728
Payments for day nurseries and kindergartens	102
Benefits	280
Senior Club (trips, theater tickets, concerts, club meetings)	approx. 50
Recreational (fishing club, excursions) and cultural-educational activities (concerts, meetings and TUL gallery)	approx. 150
Loans for renovation and modernization of housing	126
Loans for the purchase of an apartment, improvement of housing conditions	9
Employee pension scheme	1 392
Sailing Club	approx. 150

## Office for People with Disabilities (BON)

In 2020, approximately 175 students with disabilities (including 9 PhD students) used the services of BON.

The funding obtained in 2020 for the implementation of the project “Accessible Lodz University of Technology” will include a Universal Design Center, VR laboratories and digital campus map. Architectural barriers will be eliminated, training for employees will be carried out, modern evacuation equipment will be purchased and accessibility coordinators will be appointed.

## Psychological consultations



- Support in the event of crisis, anxiety related to the coronavirus and problems with adaptation in new and difficult situations.
- Free individual psychological consultations for students, doctoral students, graduates and employees of Lodz University of Technology.
- Appointments with a psychologist in the form of a chat or video meeting.

## [koronawirus.p.lodz.pl](https://koronawirus.p.lodz.pl)

In 2020, during the COVID-19 pandemic, a huge effort was made to ensure the safety and health of workers. A crisis management team was established with the participation of employees and students of the university. Recommendations and announcements were issued to regulate the functioning of the university. A number of preventive mechanisms were implemented. Body temperature measurement points were introduced and disinfectants provided. Information and recommendations as well as ordinances related to the coronavirus epidemic were posted on a specially created website.

## Occupational Health and Safety

In 2020, the OHS department carried out:



initial occupational health and safety training for 320 new employees



periodic occupational health and safety training: 403 people trained in the form of guided self-education, 22 people in the form of instruction



pre-medical first aid  
- 5 people trained



use of thermometers  
- 96 people trained

### COVID-19 related inspections



5 inspections



751 recommendations issued



# EDUCATION



**6 682**  
candidates for first and second-cycle studies (first priority)

**281**  
candidates from abroad

**4 173**  
first-year students enrolled in first- and second-cycle studies

**59**  
fields of study

**2**  
International accreditations obtained in 2020

# ADMISSIONS

Data on admissions in 2020 include admissions for first- and second-cycle studies starting in the winter semester of the 2020/2021 academic year and admissions for second cycle studies in the summer semester of the 2019/2020 academic year.

## Candidates

Included in a single enrollment fee, the university gave each candidate the opportunity to choose as many as 8 fields of study according to their preferences.

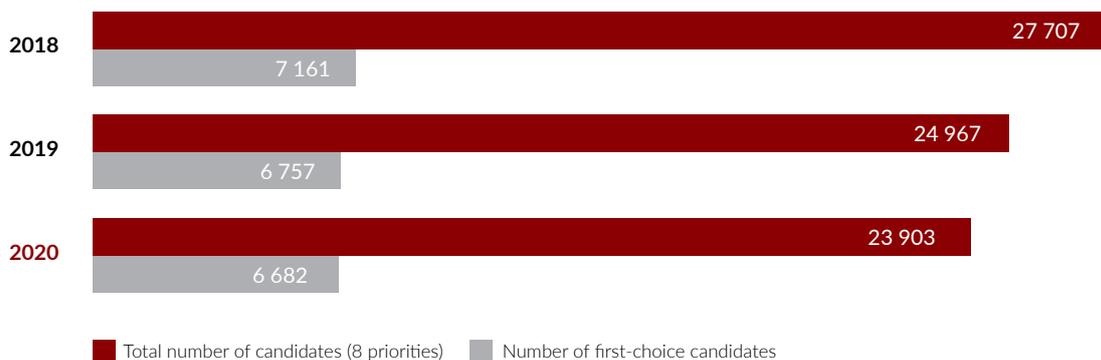


Vice-Rector for education Assoc. Prof. Eng. Andrzej Romanowski PhD, DSc.

*Lodz University of Technology is constantly improving its education process. We consistently and successfully apply for further prestigious national and international accreditations. In cooperation with companies, we adjust study programs to the needs of the labor market. We are a leader in developing active education methods. We are also glad that despite the difficulties related to the COVID-19 pandemic, the recruitment for studies went very well and we efficiently implemented distance learning.*

According to the report of the Ministry of Science and Higher Education on admissions for studies in 2020/2021, technical universities were the most popular among candidates. Lodz University of Technology took 4th place in Poland.

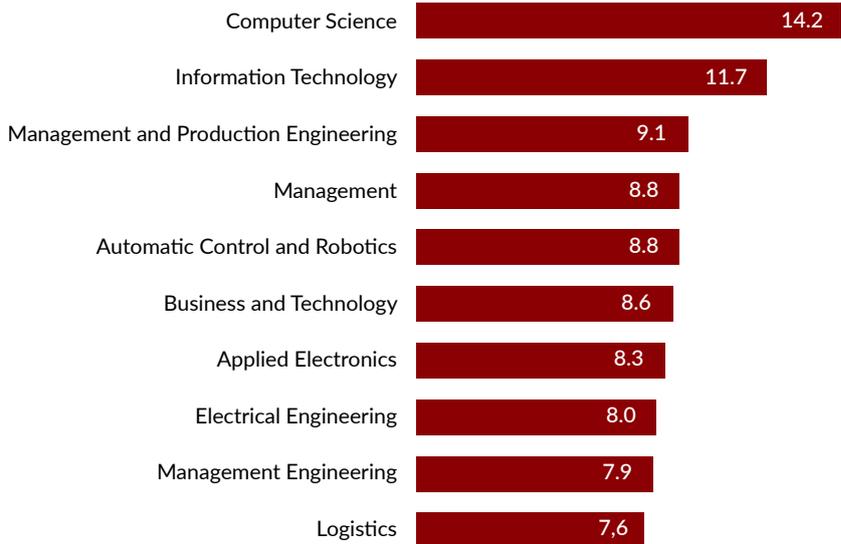
Number of candidates for first- and second-cycle studies



281 international students took part in the admissions, i.e. 69.3% more than in the previous year. Active online promotion and adaptation of admission conditions to the pandemic (including extended recruitment deadlines) contributed to the increase. The creation of a new waiting list made it possible to accept an additional pool of candidates (in the event of the withdrawal of candidates from the main pool). A second round of admissions (supplementary admissions) was organized for courses where there were still vacancies.

Lodz University of Technology launched seven new fields of study in 2020. The most popular were Business and Technology, Modeling and Data Science and Business Studies.

Most popular first-cycle studies according to the number of candidates for one place



Students admitted to the first year of studies\*

In 2020, a total of 4 173 students were accepted for first- and second-cycle studies (full-time and part-time), i.e. 4.9% fewer than in the previous year:

● **2 884** students (including 57 international students)

**FIRST-CYCLE STUDIES**

● **1 289** students (including 41 international students)

**SECOND-CYCLE STUDIES**

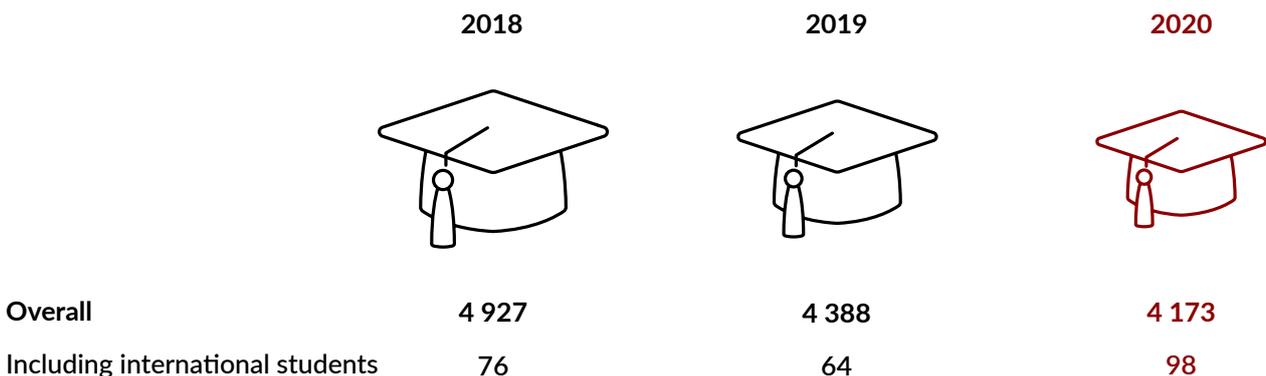


**1 567**

(37.6% of all first-year students enrolled in the admissions procedure)

The largest numbers of international students who started their studies in the first year (first- and second-cycle) came from Ukraine (41.8%), followed by Belarus (18.4%), France (5.1%), Armenia (3.1%), Egypt (3.1%) and Nigeria (3.1%). 17 students qualified for NAWA scholarship programs (most for the new “Solidarity with Belarus” program).

Number of first-year students admitted to first- and second-cycle studies



22 students admitted to the first year of first-cycle studies (69% more than in the previous year) were winners and finalists of the middle school Olympiads in the following fields:

<b>1</b> Automatic Control and Robotics	<b>1</b> Automation and Robot Control
<b>1</b> Construction	<b>1</b> Computer Science
<b>1</b> Electronic and Telecommunication	<b>3</b> Information Technology
<b>1</b> Computer Science	<b>3</b> Applied Computer Science
<b>1</b> Advanced Design and Technology	<b>1</b> Applied Mathematics
<b>3</b> Mechanical Engineering	<b>1</b> Mechanics and Mechanical Engineering
<b>1</b> Food and Nutrition Manager	<b>2</b> Textiles and Fashion Industry
	<b>1</b> Design

\* as of December 31

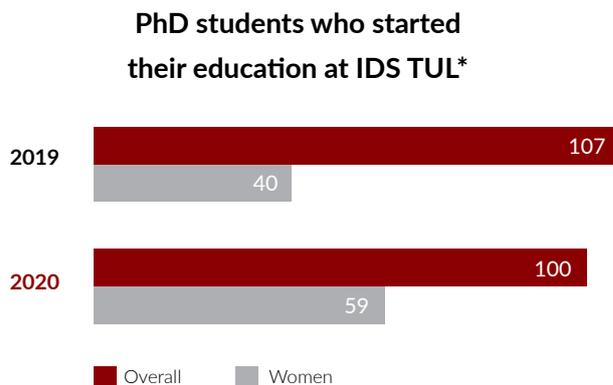
## Admissions to the Interdisciplinary Doctoral School

Admission of candidates to IDS TUL was conducted via the TUL Admissions Portal:

- a) as part of the MNISW program “Implementation Doctorate”
- b) in normal mode

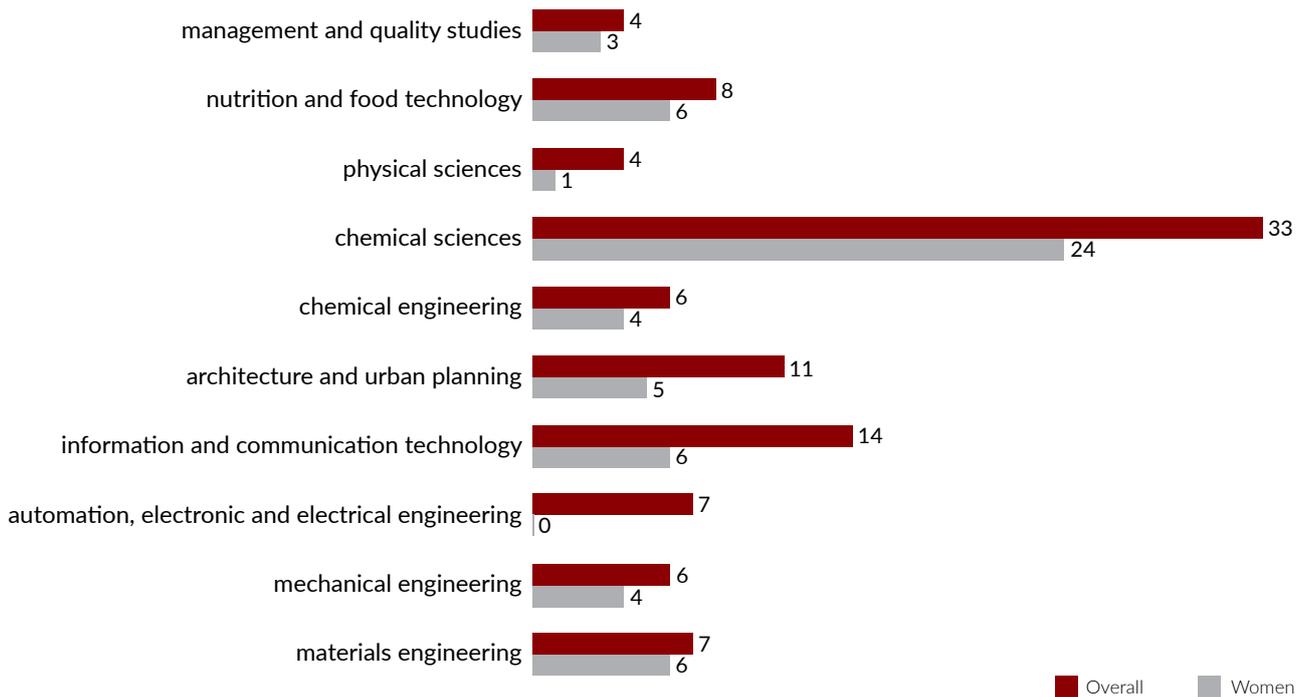
Admissions to IDS TUL were conducted by the university for the second time (establishment of IDS TUL in April 2019).

In 2020, 9 students were accepted from countries including Italy, China, the Islamic Republic of Iran, Ukraine, Nigeria, Serbia and Moldova.



\* as of December 31

PhD students who started education at IDS TUL in 2020 by discipline



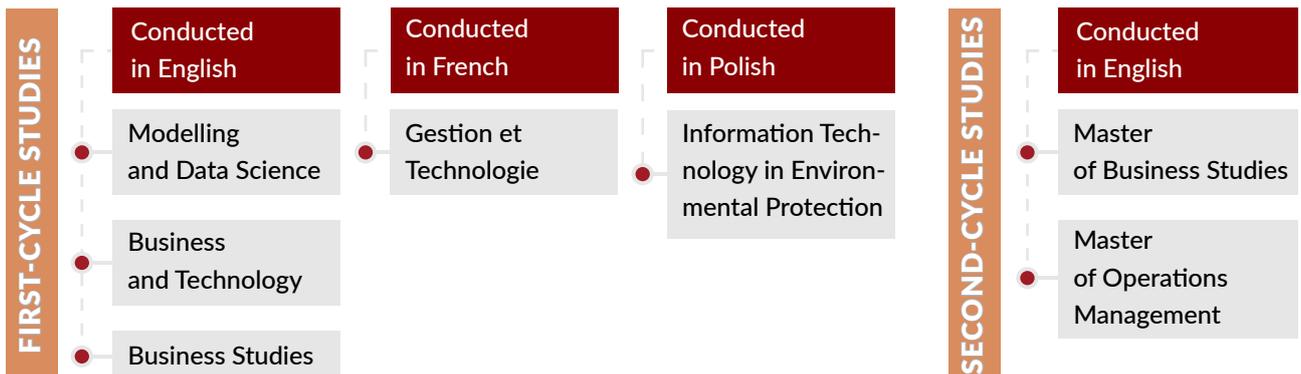
# EDUCATION OFFER

## First- and second-cycle studies

The educational offer at Lodz University of Technology is becoming richer each year, thanks to cooperation with industry. While reviewing and analyzing study programs, company representatives indicate priority areas for the development of a future professional career.

In 2020, the university offered education in 59 fields of study, including 14 in English and one in French. Education at Lodz University of Technology took place at 9 faculties, at the International Faculty of Engineering (IFE) and at the Center of Papermaking and Printing.

### New fields of study



As part of the double diploma program, the university offered students the opportunity to obtain two diplomas during one course of study:

- from Lodz University of Technology
- from a partner university

Among the new fields of study in 2020, most were programs conducted in English, developed in cooperation with international partners from leading European and American universities, as well as in cooperation with representatives of the management of global companies.

## Interdisciplinary Doctoral School at TUL

IDS TUL offers education in 12 disciplines (in 4 scientific fields) conducted in English.

For the purposes of the Interdisciplinary Doctoral School of Lodz University of Technology, a new flexible education program has been developed, consisting of 4 modules including: course curriculum and entrepreneurship, elective course, soft and transferrable skills and lectures from visiting professors.

To ensure high-quality education, understood as an individual and personalized approach, unique rules for the implementation of elective subjects were introduced as part of “research workshops”. Doctoral students choose subjects depending on their individual needs from a range of over 80 courses in the categories of research and skills workshops, implementing an interdisciplinary education program within various disciplines.

IDS TUL, with the aim of further intensive development and increasing its recognition and strengthening its position as a renowned center for education and training of young scientists, submitted an application under the program of the National Agency for Academic Exchange “**STER: Internationalization of Doctoral Schools**”. The project “Curriculum for advanced doctoral education and training – CADET Academy of Lodz University of Technology” was positively assessed and received a maximum grant of PLN 1 980.0 thousand. The project will be implemented in the years 2021–2023.

## Postgraduate studies

32 POSTGRADUATE  
STUDY PROGRAMMES

including 5 new programmes

Advice and Control in the Field of Health and Safety (program entered into the Integrated Qualifications Register)

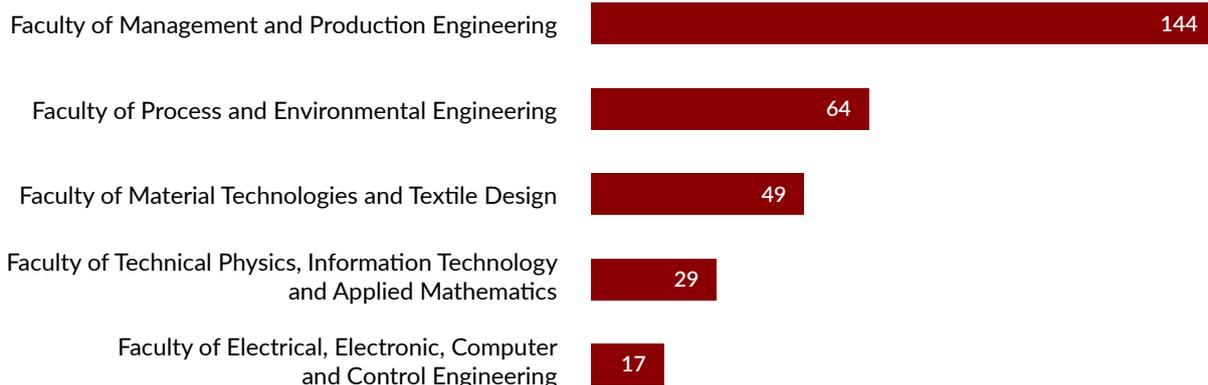
Technology and Quality in the Sugar Industry

3D.MED – 3D Technologies in Medicine

Data Science

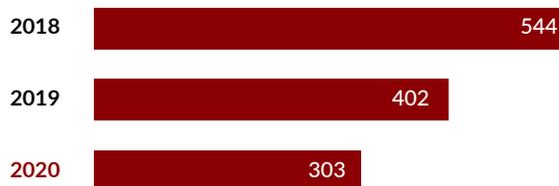
Modern Technologies in Papermaking

### Postgraduate students in 2020 by faculty



The number of postgraduate students in 2020 was 303 (including 135 women). This was 24.6% lower than in the previous year.

### Number of postgraduate students in 2018-2020



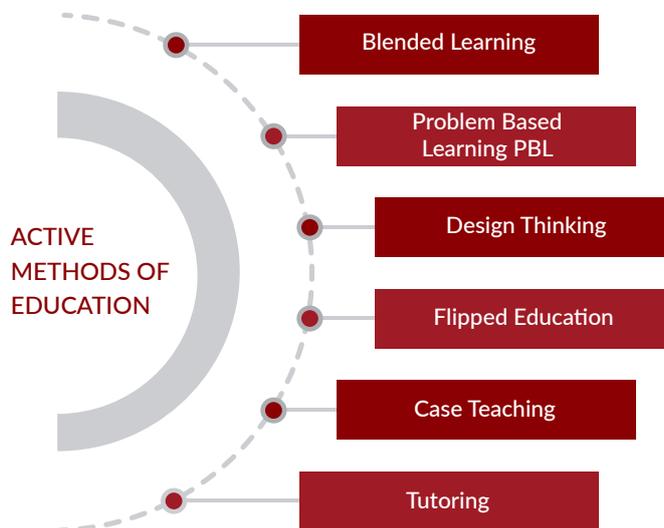
### Active methods of education

Providing students with the highest level of education is key to the university's success, which is why TUL develops and intensively implements active education methods.

In 2020, the **Lodz PBL Academy** was launched. Its aim is to implement an effective, coherent process for improving competences in the field of teamwork and communication (Team Building and Communication Skills - TBCS) and working with problem-based learning (PBL).

The education model is implemented with the use of modern teaching methods (blended-learning, co-teaching, tutoring). In 2020, **Introduction to PBL** classes and the **Interdisciplinary Problem Project** were introduced, piloting new didactic solutions under IFE programs:

- students working in interdisciplinary teams
- teachers working in tandem (co-teaching)



- peer observations, i.e. peer observations by staff conducting PBL training courses
- developing teaching materials

These new solutions can be used by students, employees and other universities in Poland. 40 employees of Lodz University of Technology have been trained in Problem Design and Assessment by specialists from the University of Aalborg, employees of the UNESCO Center for Problem-Based Learning.

In November, the TUL Centre for Teaching and Learning conducted the first commercial training in PBL methodology, the beneficiary of which was the WSB University in Gliwice.

### Gamification/gamification in science

The gamification method was implemented for courses in mathematics and information technology. As part of an alternative method/path of education, a game scenario was proposed for the existing syllabuses in science subjects, using the university's WIKAMP platform and teaching tools. Training courses for mathematicians were carried out and training for IT specialists was started.

### Competency exam using Case-Teaching method

In the winter semester, a new formula for an examination verifying aggregated learning outcomes achieved by the student throughout the course of study was implemented on a pilot basis. Members of the Study Program Councils, teachers conducting diploma theses and students were invited to participate in this didactic experiment. The competence examination is based on a case study prepared and approved by the Council of a given field of study. It consists of analyzing descriptions of selected, specific events in a given field.



The implemented model included:

- training for teachers in the case-teaching methodology, within which examination sets (case reports, assessment criteria) were developed. 30 teachers from 5 faculties were trained
- conducting a 'mock exam' as part of the diploma seminar
- supervision, i.e. continuous support from the case-teaching method trainer in the implementation of the project

The pilot examination was conducted in 5 fields of second-cycle studies:

- Mechanics and Mechanical Engineering
- Electrical Engineering
- Applied Electronics
- Computer Science
- Applied Computer Science

### New forms of support for teachers conducting classes remotely

The Computing and Information Services Centre (UCI) conducted a series of trainings preparing educators for mass migration of education to the virtual space. In addition to technical training in the use of university tools (WIKAMP, MS Teams and webinars) offered by UCI, teachers had the opportunity to take part in many workshops and meetings initiated by other units of Lodz University of Technology.



The Centre for Teaching and Learning together with the Information Technology Centre (CTI) prepared an overview of free teacher-friendly applications for creating teaching materials and conducting online classes.

Peer observations were conducted. The teachers received feedback and guidance.

The action “Mechanicy Mechanikom” was initiated at the Faculty of Mechanical Engineering – a system of meetings in the form of webinars to discuss useful teaching techniques and tools.

### Flipped Education

The implementation of the student-centered learning model, commonly known as the Flipped Classroom or Flipped Education, continues. About 80 academic teachers were trained. 33 subjects in IFE programs will be adapted to the Flipped Education model, with the participation of foreign experts. The use of the peer learning method in the TUL expert-teacher relationship will allow educators to gain valuable knowledge and experience. Lodz University of Technology started searching for and establishing relationships with foreign lecturers and experts who will be involved in co-teaching and consulting on diploma theses.



### Tutoring

The third edition of the “Masters of Didactics” project began, under which academic teachers are trained in tutoring methods. The main goal is to develop and implement new solutions in the field of education in the form of tutoring, in cooperation with foreign universities in the top hundred of the Shanghai ranking. Thanks to continuing participation in the project, the university gained the opportunity to conduct more classes for students using the tutoring method. 59 academic teachers received training in the project.

## Cooperation with secondary and primary schools

Lodz University of Technology is committed to the development of skills and competences in the field of exact and technical sciences. This is made possible thanks to the provision of modern research and teaching laboratories to students, in which expert assistance is provided by the research and teaching staff of Lodz University of Technology.

In 2020, employees of Lodz University of Technology conducted over 100 classes for school students from Lodz and the Lodz Voivodeship. The students broadened their knowledge of basic and technical subjects, and were prepared to participate in national and European subject competitions.



At the EEIA Faculty, competitions in physics, mathematics and computer science were conducted for high school students (in cooperation with the Lodz Region Physics Teachers Association), and additionally in chemistry and English for elementary school students. About 1 000 students from over 150 schools participated in the competitions.

In 2020, the second edition of the online mock Matura exams took place. The mock exams were attended by over 3 000 students from all over the country, which was possible thanks to the use of a specially developed system, available at [www.infimat.p.lodz.pl](http://www.infimat.p.lodz.pl). Matura exams in mathematics at both levels, as well as in advanced level physics and chemistry, were carried out three times a year.

Employees of Lodz University of Technology held meetings with young people from participating schools on remote work platforms, introducing them to the fields of study offered by Lodz University of Technology.

The University co-organizes the annual National Educational Toy Competition, which was held remotely in 2020. The aim of the competition is to interest primary school children in natural science and technical subjects and to encourage them to participate in various forms of creative activity.

In 2020, three large IT projects were implemented, the beneficiaries of which were students and teachers of primary and secondary schools:

The **IT without borders project** in which TUL is the leader. The project was co-financed by the Knowledge Education Development Operational Program:

- 210 courses (semester, annual and summer)
- 1 275 beneficiaries (students aged 7–16)
- cooperation with 21 schools from the Lodz, Masovian and Greater Poland voivodeships

**Design the Future project**, in which TUL is a partner and the leader is Stowarzyszenie Cyfrowy Dialog [Digital Dialog Association]. The project was financed by the European Regional Development Fund under the Operational Program Digital Poland for 2014–2020.

Design	Teachers	Pupils	Schools	Educators
Design the future #16	280	5 366	44	50
Design the future #62	255	4 599	42	50
Design the future #65	193	3 506	30	50
Design the future #48	268	4 852	46	50
Design the future #21	213	4 117	43	50

**IT Championship Center**, in which TUL is the leader, co-financed by the European Union from the European Regional Development Fund under the Operational Program Digital Poland for 2014–2020:

- classes conducted by 744 people, including 297 for the first time (teachers and a small number of educators)
- students in the project: 14 653 students aged 9–19
- number of schools included in the project: 854 (two editions)

### French Academy of Young Engineers (FAMI)

In 2020, the 4th edition of the French Academy of Young Engineers project took place, in which 30 students of secondary and primary schools in Lodz participated. FAMI teaches participants French while implementing projects in a creative way. The FAMI project is one of the elements of the promotion of studies in French at Lodz University of Technology and contributes towards obtaining a double diploma. In 2020, two of the participants in last year's FAMI edition received IFE indices.

## Educational events

### Lektor High-Tech 2020 conference

The third edition of the Lektor High-Tech conference was organized by TUL Language Centre, in cooperation with IATEFL Polska and included in the international conference for English language teachers – 29th Professional Development Event IATEFL PL On-line Meet-up 2020. There were over 50 sessions and 22 online workshops for over 600 participants. Participants had the opportunity to take a virtual walk around Lodz and the campus of Lodz University of Technology, and to see films promoting the university.



### MathUP conference

The MathUP conference was also held online, bringing together a wide group of students, employees of Lodz University of Technology and company representatives, with the aim of showing mathematics as a fun and useful science in every aspect of our lives. The organizer was the Centre of Mathematics and Physics of Lodz University of Technology.

### National Academic Representation

Support program for students with outstanding sporting achievements. As part of the program, students are entitled to 100 hours of individual classes per calendar year with academic teachers. The first edition in 2020 was attended by 9 student athletes representing the following disciplines: swimming, athletics, diving, archery, karate. At the end of 2020, TUL submitted an application to launch the second edition of the project, and was again met with approval. The co-financing will enable 10 people to pursue a sports career and study at the same time.

### Academic Legion

The Academic Legion is a military education program for students. Classes are conducted in two modules: basic and for non-commissioned officers. After completing the basic module, students receive the rank of private reserve. After the non-commissioned officer module they receive the rank of reserve corporal. Lodz University of Technology is already running the 4th edition of the Academic Legion program. Currently, TUL is the only state university in the Lodz region that conducts classes within the Academic Legion program. In 2020, 24 students were trained from Lodz University of Technology, the University of Lodz, the Medical University of Lodz, the University of Music in Lodz and the Military University of Technology.

## ACCREDITATIONS

The high quality of education provided by Lodz University of Technology is confirmed by national and international accreditations.

In 2020, the Polish Accreditation Committee decided to grant a positive assessment for a period of 6 years to studies in the fields of:

- technical physics (Faculty of Technical Physics, Information Technology and Applied Mathematics)
- biotechnology (Faculty of Biotechnology and Food Sciences)

Chemical Technology, a major at the Faculty of Chemistry, received accreditation from the **Accreditation Commission of Universities of Technology (KAUT)** and was awarded the **EUR-ACE® Bachelor Label (European Accredited Engineering bachelor's degree)**. KAUT made the decision at an online meeting. After analyzing the Report of the Evaluation Team, the experts granted accreditation for 5 years, which is the maximum period allowable.

In their assessment, the experts of the Commission emphasized the strengths of the faculty, including excellent equipment for technological laboratories, which is so important in the practical preparation of engineers for professional work. According to KAUT, the active involvement in the didactic process of the Business Council at the faculty and of experienced industry specialists in the also contributed to the quality of education. The involvement of students of the faculty in research work, often resulting in scientific publications was noted during the accreditation process, as well as the active participation of students in student research groups.

### HCERES institutional accreditation

Lodz University of Technology became the **first university in Poland** to be awarded this international French accreditation. The accreditation process took two years. Over 170 employees, students, graduates and partners of Lodz University of Technology participated in meetings with specialists from France. Lodz University of Technology did very well in all 6 assessed criteria and received a positive assessment for 5 years.

In the final report, the HCERES Team (Haut Conseil de l'évaluation de la recherche et de l'enseignement supérieur) – the French High Council for Evaluation of Research and Higher Education highly appreciated the rich offer of education at TUL and its adaptation to the needs of the labor market. They also emphasized the wide range of cooperation between TUL and the socio-economic environment and the fact that the university is a valued partner.

In the area of research, HCERES appreciated the work of TUL in defining priority research areas and taking into account the results of research in the education of students. The Council noted the very well-developed network of international student exchanges, as well as the involvement of the academic community in building a culture of quality and their awareness of the principles of professional ethics. The final report emphasized the great involvement of employees, students and partners of the university in the implementation of joint activities.



The number of international accreditations currently held by TUL is **18** (3 institutional accreditations and 15 program accreditations).

Lodz University of Technology is the most active Polish university in the project of the Ministry of Science and Higher Education titled “Foreign accreditations”, part of the Knowledge Education Development Operational Program co-financed by the European Social Fund. It has submitted and obtained funding for 24 applications for international accreditations/re-accreditations or education quality certificates.

## ENTRY ON THE LABOR MARKET

Lodz University of Technology Careers Office helped students and graduates to find work and internships via the website [www.biurokarier.p.lodz.pl](http://www.biurokarier.p.lodz.pl).

Applications from students and graduates were sent to 80 cooperating employers.

In 2020, the following were registered:

- over 1700 job offers
- almost 200 work placement offers
- over 280 internship offers

Through the Careers Office, 149 people took up employment or other gainful work.

Individual consultations were conducted, including in English, offering career counseling, career coaching, competency tests, financial advice, etc.

In 2020, the Careers Office organized a number of initiatives for students, doctoral students and graduates of Lodz University of Technology:

- **Business coaching** – the development of the service was possible as a result of another 3 employees of the Careers Office obtaining the International Coaching Community certification. Certification was financed from EU funds dedicated to the development of staff at the university. Over 420 hours of coaching were completed. One-off sessions and entire development processes were conducted.
- Conducting an **entrepreneurship course for doctoral students** of Lodz University of Technology as part of the Interdisciplinary Doctoral School, including: classes in business planning, design innovation, running spin-off companies and startups, technology transfer and intellectual property.
- **Advisory program** for doctoral students and young scientists in the field of professional development: development of soft skills, the selection of career paths and determination of professional predispositions. 43 individual consultations took place.
- Another edition of the **employers' survey** about university graduates.

- **The Academic Job Fair (ATP)** was held online. About 50 companies and institutions participated in ATP and presented nearly 100 jobs, work placements and internships (often paid). Nearly 10,000 people participated in the event.
- **Business in Practice** (3rd edition) – practical training for students, doctoral students and employees of Lodz University of Technology in planning and setting up a business.
- **"YOUTH IN ŁÓDŹ - I have an idea for a startup!"** is a competition in which Lodz University of Technology is a strategic partner, selected innovative scientific, technological and creative/artistic projects at an early stage of development. The most promising individuals/teams were given access to training, consultations and mentoring from experienced entrepreneurs, investors and VC fund representatives.

The Careers Office was the organizer or co-organizer of many cyclical events:

As part of the performance budget, the TUL Careers Office organized:

- **Professional formal, legal and financial consultancy for clients of the TUL Careers Office.** Cooperation agreements were signed with: Kancelaria Adwokackie Peredzyńska i Walaszek – a law firm specializing in advising entrepreneurs on formal and legal issues related to running their own businesses and all forms of companies, and My Advice – a tax advisory office specializing in advising entrepreneurs in taxation and financial matters related to running their own businesses and all forms of companies.
- 2nd edition of the competition for the **"Best Employer of the Lodz Region according to students of Lodz University of Technology"**. Ericsson was the winner for the second time.

The project **"Better preparation of graduates of Lodz University of Technology to enter the labor market through the development of the services of the Careers Office"** under the European Social Fund, Operational Program Knowledge Education Development, was completed. 748 people joined the project. Support in the form of consultations was received by 725 people. 168 people participated in the Academy of Entrepreneurial Competences (including 99 students of Lodz University of Technology in 7 training courses). 94 people received mentoring from enterprises cooperating with the university.

# TUL FOR THE LOCAL COMMUNITY



**1 000**

children aged 8-12 participated in the Children's University of Lodz at TUL.

**557**

students took part in the University of the Third Age at TUL.

**1st place**

The Public Secondary School of Lodz University of Technology took 1st place in the Lodz province ranking of General Secondary Schools 2020 (Perspektywy Educational Foundation).

Lodz University of Technology is open to the entire local community, offering the opportunity to use the knowledge and experience of its lecturers as well as the premises and laboratory facilities of the university. The educational program is adjusted to each group of recipients, from the youngest to the oldest.

## UNIVERSITY OF THE THIRD AGE

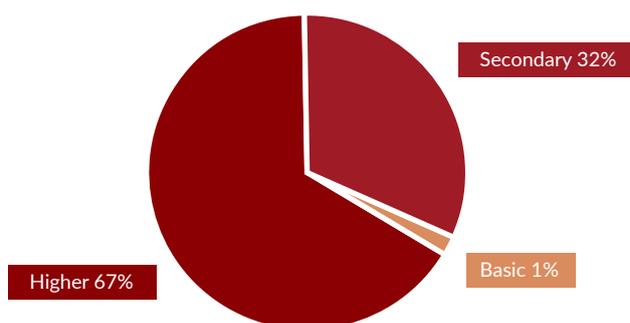
The University of the Third Age (UTW) at Lodz University of Technology enables older people to further their intellectual and psychophysical development. In the 2020/21 academic year, there were **577** active students participating in distance learning at the University of the Third Age, including 18 new participants.

### University of the Third Age (UTW) students



The age range of the students is very wide, from those born in 1924 to those born in 1964.

### Level of education of UTW students



Forms of remote classes at the University of the Third Age during the pandemic:

- Recordings of lectures – a special internet platform was created, dedicated exclusively to the students of UTW.
- Real-time online classes – including: English, digital photo editing, smartphones for everyone, history and local history, art.
- Correspondence learning – this form was used because of the time-consuming and individual nature of creating artworks, which were presented by sending photos as attachments by e-mail.

### Police, ZUS and NFZ for seniors

UTW students had meetings with representatives of institutions on issues of great importance to the lives of seniors. The purpose of the meetings was security in the broad sense, in terms of everyday life, finances and health and safety.

# CHILDREN'S UNIVERSITY OF LODZ

The Children's University of Lodz (ŁUD) is an out-of-department unit in which children develop curiosity about the world and learn the secrets of technical knowledge in a simple and fun way.



- 1000 children aged 8-12 participated in the program.
- "Paths of Young Explorers" – 215 children and 70 parents.
- 4 lectures – 560 participants.
- 3 recorded lectures instead of the remaining 3 lectures in the summer semester.
- 190 workshops (winter sem.)
- 36 workshops from a different perspective – 220 participants.
- "Holidays with ŁUD", 26 workshops – 170 participants.
- Meetings of the Young Explorer's Club team – a program run by the Copernicus Science Centre.
- Phereclos project consortium meetings (workshops for teachers).
- Building "Local educational clusters" and starting preparations for a children's conference.
- Boeing grant.

# PUBLIC SECONDARY SCHOOL OF TUL

**1st  
place**

in the Lodz Voivodeship in the Ranking of General Secondary Schools by the Perspektywy Education Foundation, which gave the school its highest place in the country so far (18th position in the national ranking).

**1st  
place**

in the Lodz Voivodeship in the Ranking of Olympic Secondary Schools by the Perspektywy Educational Foundation.

The successes and achievements of secondary students in 2020 include:

- 2nd place in Poland and 22nd in the world in the "High School Students A" category in the international competition "10th Online Physics Brawl".
- Eight finalists of the Jagiellonian Mathematics Tournament.
- Selection and appointment of a student of the Public Secondary School of Lodz University of Technology to the 34-person Youth Ecological Council (MRE) at the Ministry of the Environment.
- 2nd place of a high school student in the national Russian poetry competition organized by the Russian Center for Science and Culture in Warsaw at the Russian Embassy.

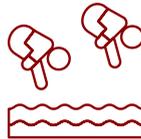
The students obtained above-average results in their matura exams, especially in mathematics and English. Students of English (basic and extended level) won 1st place in the Lodz Voivodeship.

# “ZATOKA SPORTU” TUL SPORTS AND EDUCATION CENTRE

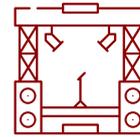
Zatoka Sportu is one of the most modern sports facilities in Poland, open not only to the university community, but also to athletes and residents of Lodz and the region.



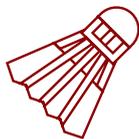
50-meter Olympic swimming pool



25-meter swimming pool (diving, synchronized swimming)



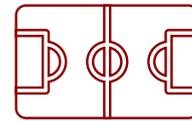
sports and entertainment hall



badminton and squash



17-m high climbing wall



playground for team games and strength sports

From March to the end of July, the swimming pool at the Sports Bay was primarily a training facility for the Polish National Swimming Team and the Polish National Diving Team, which regularly used the facility for training camps. At that time, it was the only operating facility in Poland with an Olympic-size swimming pool.

A total of 16 events took place at the swimming pool, including in the second part of the year cyclical competitions such as the Disabled Swimmers Competition and the Arena Grand Prix Polish Swimming Cup. The Polish diving championships for seniors and juniors were held in the Sports Bay in December. This was the first competition since the introduction of restrictions. Nearly 100 participants of all ages joined the competition.

13 events took place in the Sports Hall, including floorball extra-league matches, Polish University Championships (AMP) in women's and men's basketball, basketball matches and the Polish Sports Dance Championship for Children and Younger Juniors.



## CULTURAL EVENTS

In the [Thursday Culture Forum](#) series in 2020, one live meeting was held, with Mr. Sławomir Kowalewski as the guest speaker. The series continued with podcasts presenting archived interviews. Seven episodes were released, featuring, among others Zbigniew Wodecki, Krzysztof Zanussi and Krzesimir Dębski.

The [Music at Lodz University of Technology series](#) has been gathering music lovers for over 25 years. In 2020, 3 concerts were held in the Mirror Room of the Faculty of Management and Production Engineering, and then, from May, the performances took place online. 5 recordings of the concerts were published on YouTube.

[The Academic Choir](#), whose performances have been admired for 45 years, is one of the best amateur choirs in Poland. The members share a passion for singing and work on a repertoire that includes music of different styles and eras. The Academic Choir of Lodz University of Technology conducted rehearsals until they were suspended on March 13, 2020. In October, the TUL Choir performed live during the inauguration of the academic year at the International Faculty of Education (IFE). The choir prepared and presented 7 songs online.



[The repertoire of the Academic Orchestra](#) includes classical and entertainment pieces, as well as film music. The Academic Orchestra held 10 rehearsals. In January, the Orchestra played a concert in Gorzkowice, in cooperation with the Community Brass Orchestra. As of March, due to the introduction of an epidemic emergency, on-site rehearsals have been suspended. The Academic Orchestra has prepared [5 audiovisual pieces](#).

# RESEARCH



- 11** people were awarded the title of professor
- 38** were awarded doctoral degrees
- 23** doctor habilitatus degrees were awarded
- 118** national NCN grants were implemented in 2020
- 57** articles by PhD students from IDS TUL were published in 2020

# STAFF SCIENTIFIC DEVELOPMENT

## Scientific degrees and titles

In 2020, 11 people were awarded the academic title of professor:

- Faculty of Mechanical Engineering

Professor Łukasz Kaczmarek  
Professor Jerzy Wojewoda
- Faculty of Chemistry

Professor Wojciech Pisula  
Professor Krzysztof Strzelec  
Professor Dorota Świątła-Wójcik  
Professor Piotr Ułański  
Professor Mariusz Wójcik
- Faculty of Biotechnology and Food Sciences

Professor Alina Kunicka-Styczyńska
- Faculty of Civil Engineering, Architecture and Environmental Engineering

Professor Renata Kotynia
- Faculty of Technical Physics, Information Technology and Applied Mathematics

Professor Adam Niewiadomski
- Faculty of Management and Production Engineering

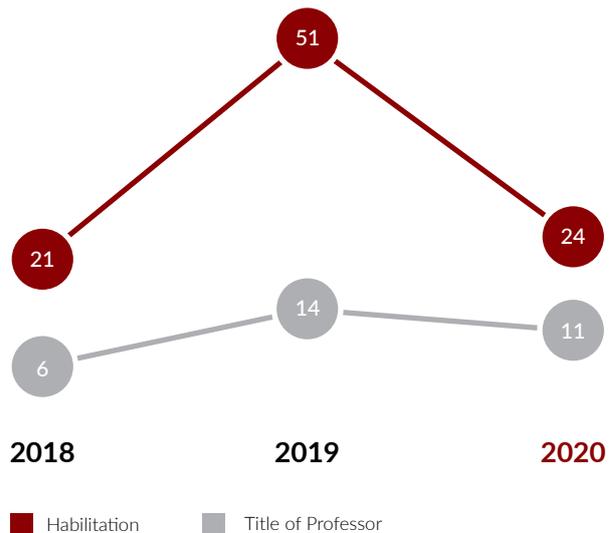
Professor Filip Chybalski



Vice-Rector for Science  
Prof. Łukasz Albrecht PhD, DSc

*The scientific activities of Lodz University of Technology are related to the pursuit of the status of a research university. I am very glad that thanks to participation in the IDUB program, we were able to launch awards supporting the scientific excellence of employees and students of Lodz University of Technology. In the context of our objectives, the achievements of researchers are extremely important, and we were pleased to note the large number of promotions, professorial appointments, doctoral promotions and post-doctoral promotions. It is also worth emphasizing the important role of internationalization, a good example of which is the activity of the Interdisciplinary Doctoral School providing education in English.*

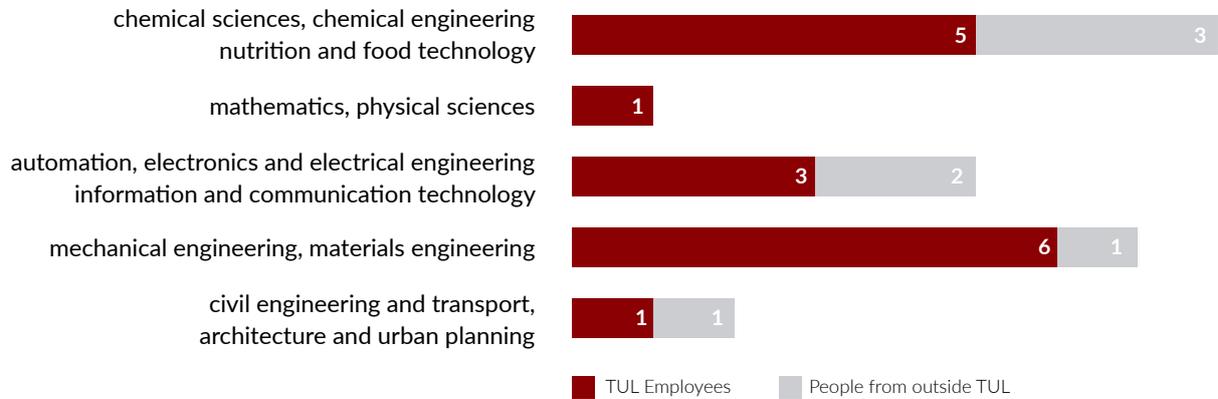
Academic degrees and titles obtained in 2018–2020



In 2020, Lodz University of Technology awarded 38 doctoral degrees and 23 habilitations (TUL employees – 16, people from outside TUL – 7).

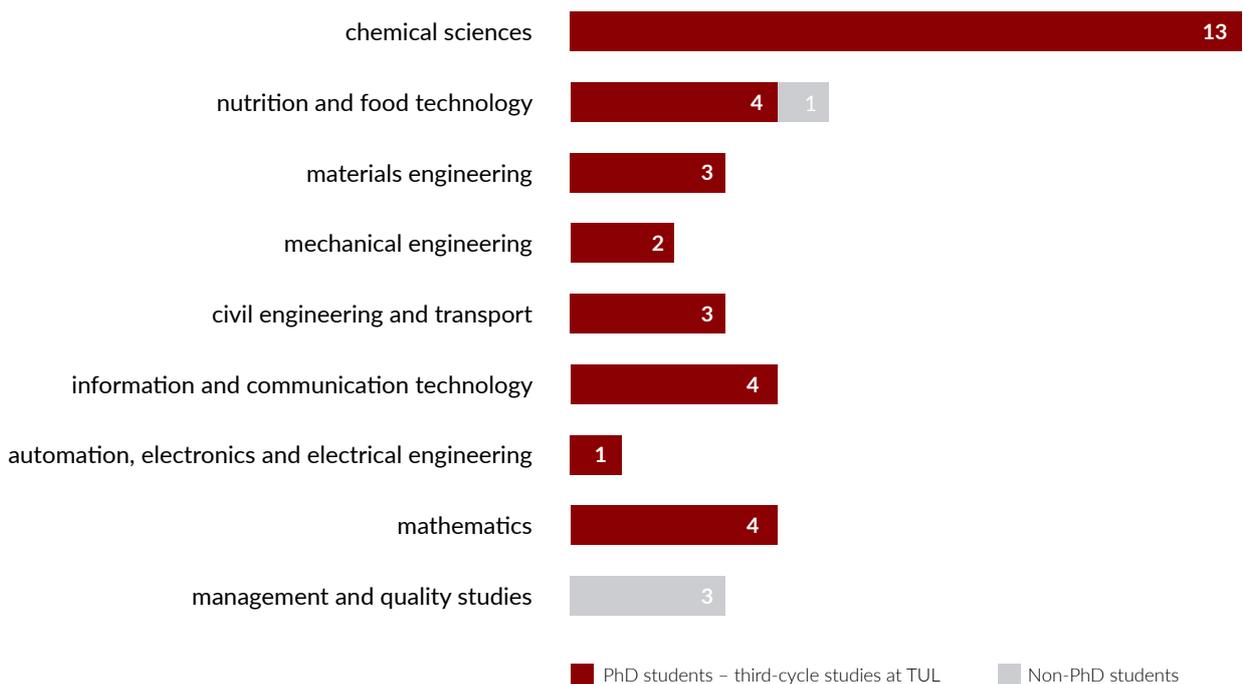
### Post-doctoral degrees awarded by TUL in 2020

#### Disciplines:



### PhDs awarded by TUL in 2020

#### Disciplines:



## Research scholarships for employees and PhD students

TUL's Scholarship Fund is addressed to active and scientifically successful people following a path of professional development at Lodz University of Technology. The award is granted on a competitive basis to those who meet the formal criteria.

In the 13th edition of the competition for the Scholarship Fund, the Vice-Rector for Science, in consultation with the TUL Scholarship Fund Committee, awarded 25 scholarships to:

- 4 professors,
- 5 post-doctoral students
- 12 doctoral students
- 4 master's students

## RESEARCH PROJECTS

In 2020, 196 applications were submitted for research project calls, 18 more than in the previous year. 44 projects were approved for implementation.

A total of 229 research projects were implemented in 2020 with a cost value of PLN 52 677.1 thousand. The most projects were implemented by the Faculty of Chemistry (67), the Faculty of Mechanical Engineering (51) and the Faculty of Electrical, Electronic, Computer and Control Engineering (38).

### International projects

In 2020, funding received for international projects at TUL increased by 15.9% compared to the previous year and by as much as 57.2% compared to 2018. As part of Horizon 2020, the university implemented projects worth PLN 1 189.6 thousand. The value of international projects implemented with funding from the National Science Centre amounted to PLN 1 160.5 thousand, and as part of the National Centre for Research and Development to PLN 764.3 thousand.

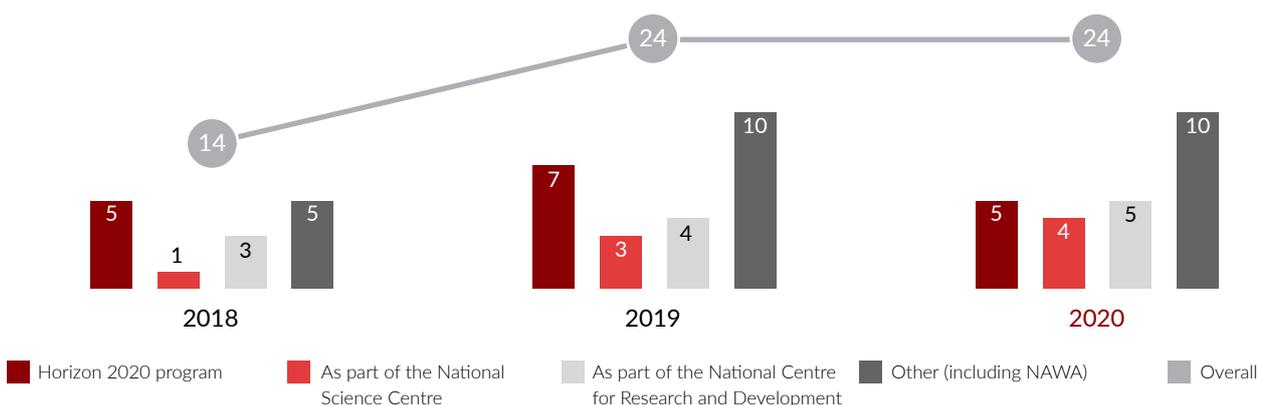
#### Total value of international projects in thousand PLN

2018	3 429.4
2019	4 653.4
2020	5 391.1



Co-financing for the implementation of other international projects amounted to PLN 2 276.7 thousand, which was the highest cost value among the total international research projects carried out. This value resulted mainly from the participation of TUL scientists in the international team working on the ITER project – an experimental thermonuclear reactor.

#### International projects implemented in 2018–2020



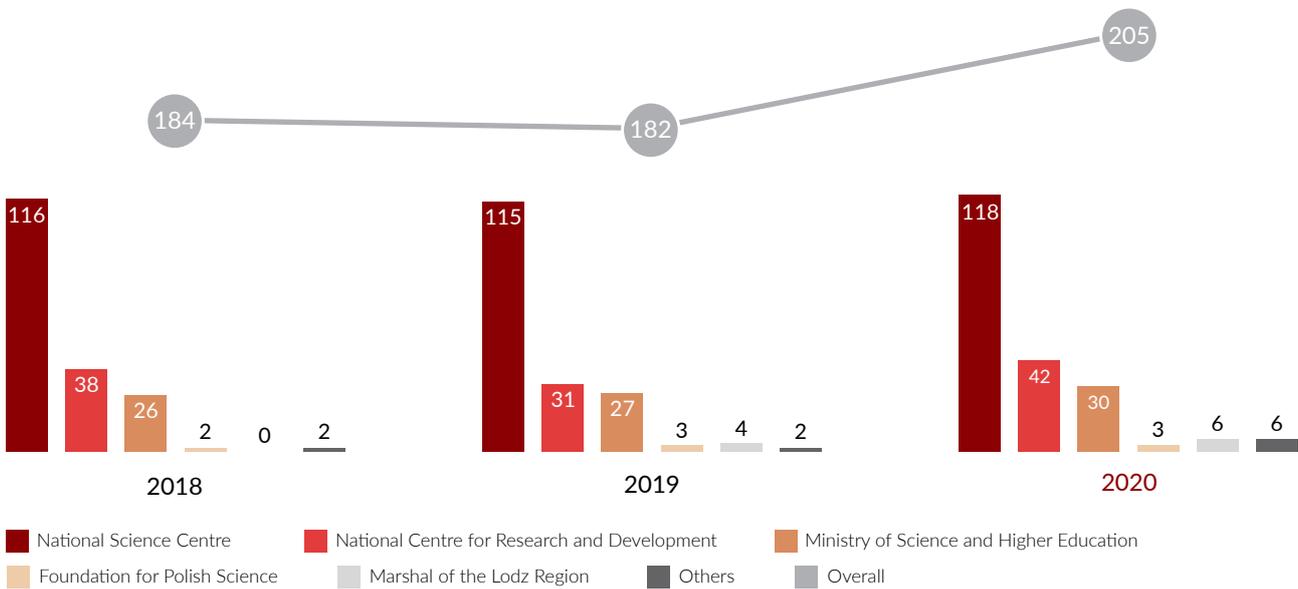
## National projects

In 2020, 12.6% more national projects were implemented than in the previous year. The largest number of national projects were financed by the National Science Centre (57.6%).

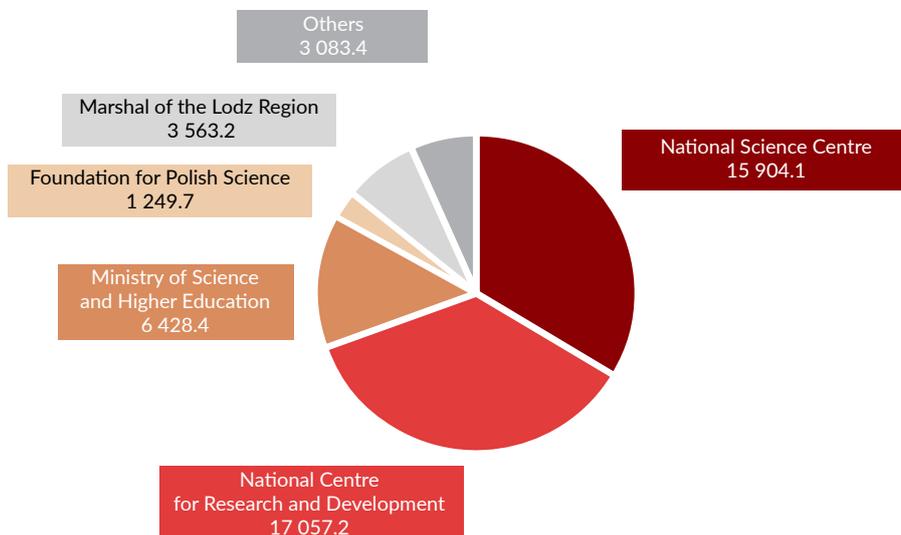
Total value of implemented national projects in thousand PLN	
2018	35 842.8
2019	43 537.9
2020	47 286.0



National projects implemented in 2018–2020

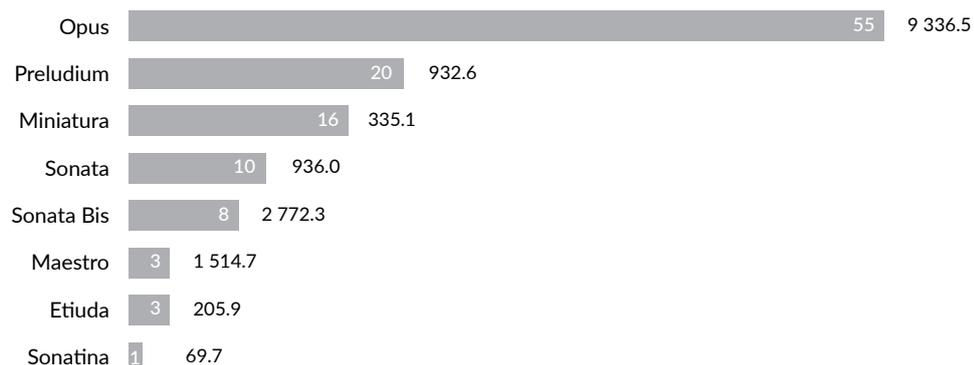


Value of national research projects carried out in 2020 (in thousand PLN)

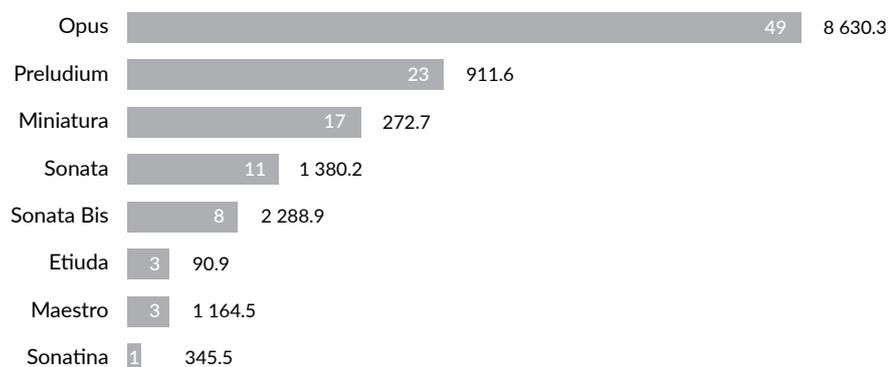


## Number and value of national projects financed by the National Science Centre (in thousand PLN)

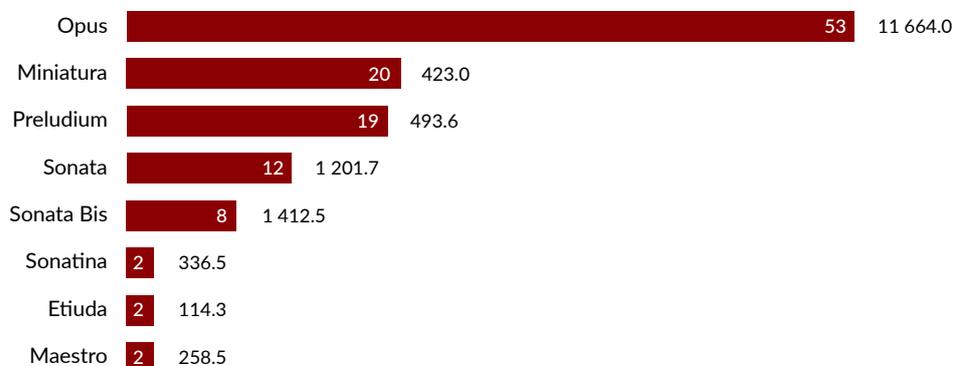
2018



2019



2020



## Awards for young researchers in 2020

The winner of the Diamond Grant in the 9th edition of the competition organized by the Ministry of Science and Higher Education is Jakub Radosław Niedźwiedzki MSc, a graduate of Computer Science at the Faculty of Electrical, Electronic, Computer and Control Engineering. The project titled "Simultaneous localization and construction of a map of triangles on the basis of data from a 3D laser scanner" will be carried out during doctoral studies at the Faculty of Mechanical Engineering at Lodz University of Technology.



The Minister of Science and Higher Education awarded **scholarships for outstanding young scientists**:

- Dr Eng. Katarzyna Nawrotek
- Eng. Dominik Banat, MSc
- Dr Dawid Dudkowski
- Dr Eng. Dorota Urszula Kamińska

For the 28th time, the Foundation for Polish Science awarded **scholarships in the START program** to the most talented young scientists from all over Poland. Among the winners was Dominik Banat, MSc from the Faculty of Mechanical Engineering at TUL.

The prize for a doctoral dissertation awarded by the Prime Minister was presented to Dr Eng. Anna Kaczmarek from the Institute of Materials Science and Engineering at the Faculty of Mechanical Engineering, TUL.

## **INTERNATIONAL CENTRE FOR RESEARCH ON INNOVATIVE BIO-BASED MATERIALS (ICRI-BioM) – INTERNATIONAL RESEARCH AGENDA**



The International Centre for Research on Innovative Bio-based Materials (ICRI-BioM) – International Research Agenda is a scientific and research center established in June 2019 as part of Lodz University of Technology. The center was established in collaboration with the Max Planck Institute for Polymer Research (MPI-P) in Mainz, Germany. The main field of interest of scientists at ICRI-BioM is research on polymers and biomolecules using experimental and theoretical methods to obtain new materials.

ICRI-BioM is co-financed under the MAB PLUS program implemented by the Foundation for Polish Science with EU funds from the European Regional Development Fund, Intelligent Development Operational Program. Co-financing was granted for the period from September 1, 2019 to December 31, 2023 for a total of PLN 31 million.

In December 2020, Prof. Alexander Steinbüchel, a world-class microbiologist, took over duties as the head of ICRI-BioM. He secured the position by winning an international competition advertised in Nature and Euraxess, among others.

In 2020, the first two publications with the ICRI-BioM affiliation were published:

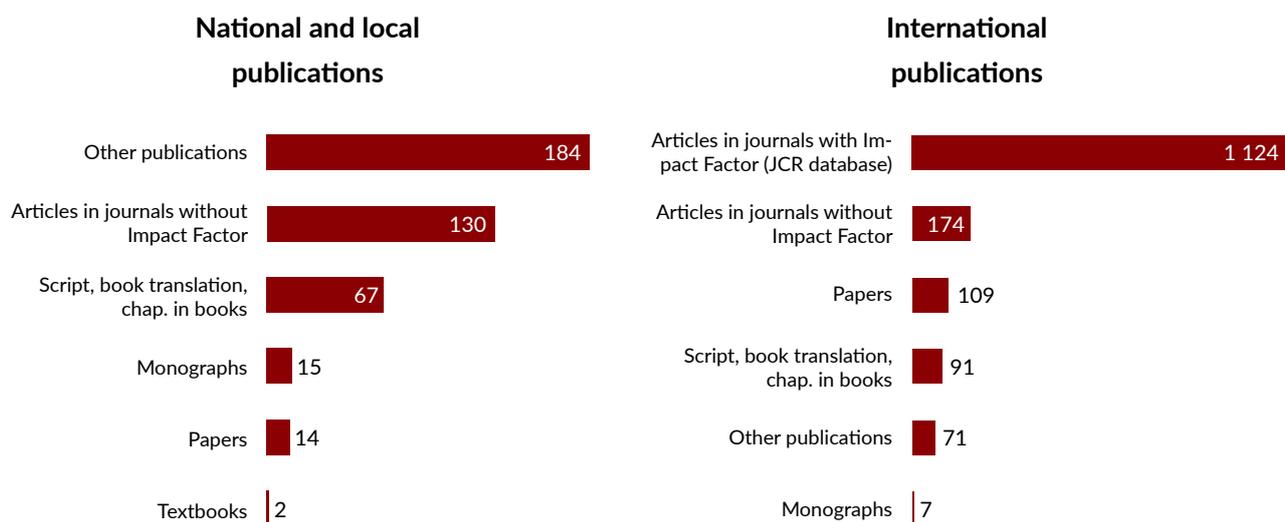
1. “Water structure and hydration of polymer network in PMEO2MA hydrogels” – Krzysztof Piechocki, Marcin Kozanecki, Jakub Saramak.
2. “Docking and QSAR of Aminothiureas at the SARS-CoV-2 S-Protein – Human ACE2 Receptor Interface” – Wojciech Płonka, Agata Paneth, Piotr Paneth.

The Center cooperates with Polish business partners such as: ADAMED, FUJITSU FQS-POLAND and Stowarzyszenie Klaster Biogospodarki.

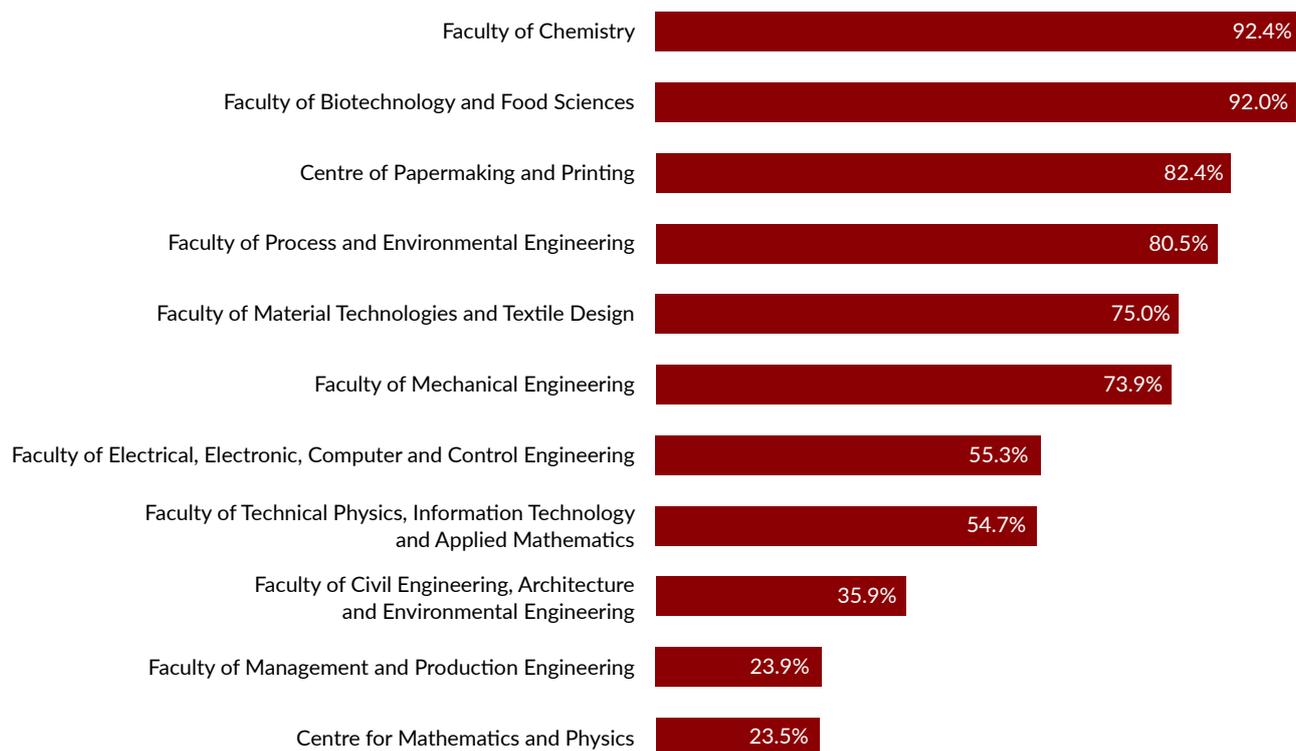
## PUBLICATIONS

In 2020, publications with international impact accounted for 79% of all publications at the university.

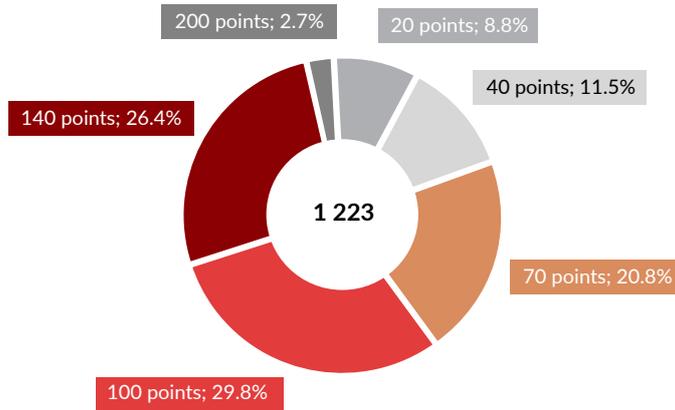
	International publications	National and local publications
Faculty of Mechanical Engineering	287	21
Faculty of Electrical, Electronic, Computer and Control Engineering	228	31
Faculty of Chemistry	329	32
Faculty of Material Technologies and Textile Design	68	15
Faculty of Biotechnology and Food Sciences	200	41
Faculty of Civil Engineering, Architecture and Environmental Engineering	78	23
Faculty of Technical Physics, Information Technology and Applied Mathematics	172	11
Faculty of Management and Production Engineering	67	35
Faculty of Process and Environmental Engineering	113	19
Library	-	17
Language Centre	-	4
Centre of Mathematics and Physics	17	10
Centre of Papermaking and Printing	17	19
Sports Centre	-	4
Information Technology Centre	-	1
International Cooperation Centre	-	18
Centre for Cooperation with the Economy, Innovation and Technology Transfer	-	2
Rector's office	-	1
Careers Office	-	2
Multimedia Centre	-	1
Press Office	-	84
Promotional Services	-	16
Human Capital Management Centre	-	5



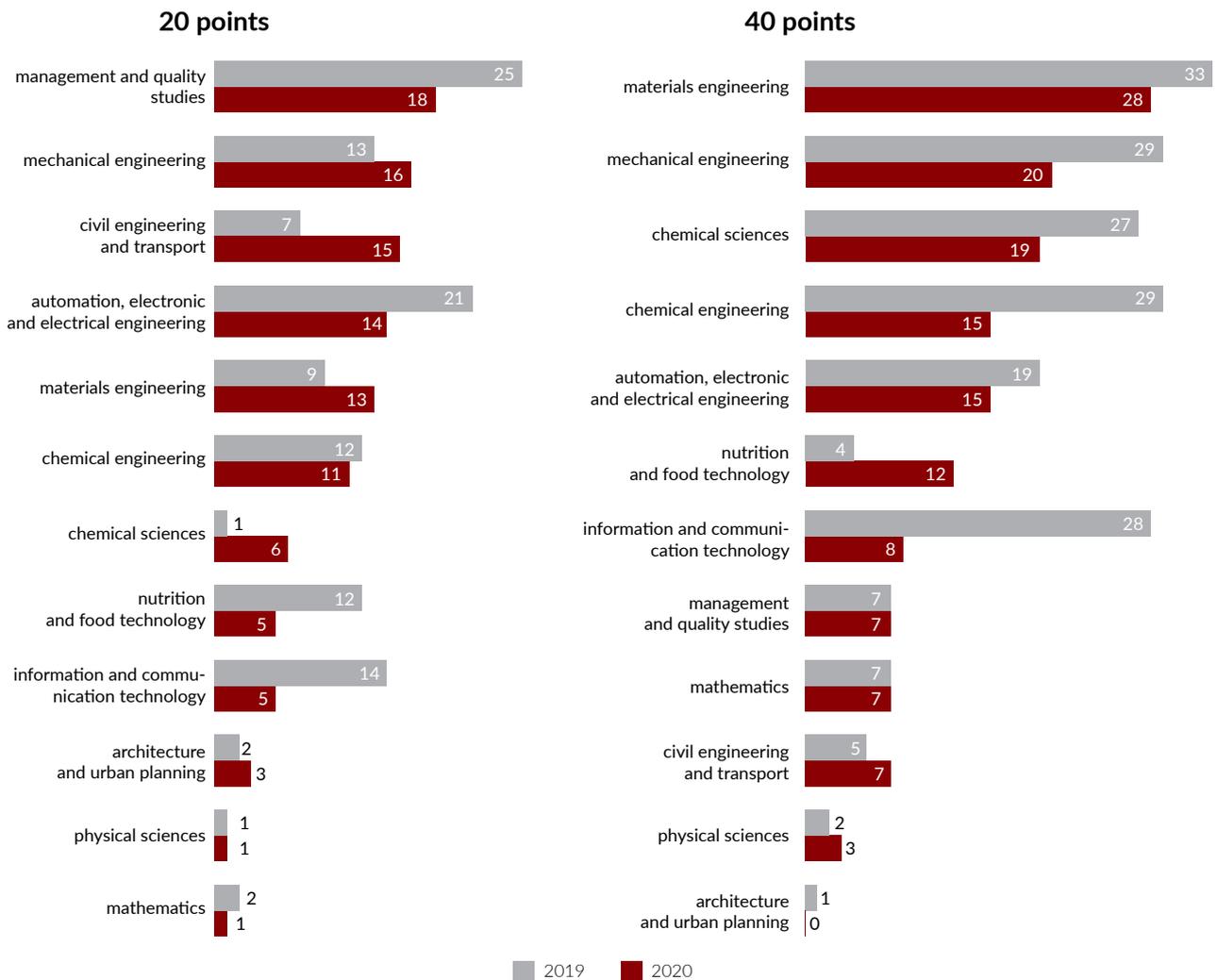
### Articles in journals with high Impact Factor (from JCR database) as a percentage of total international publications in 2020 by organizational unit



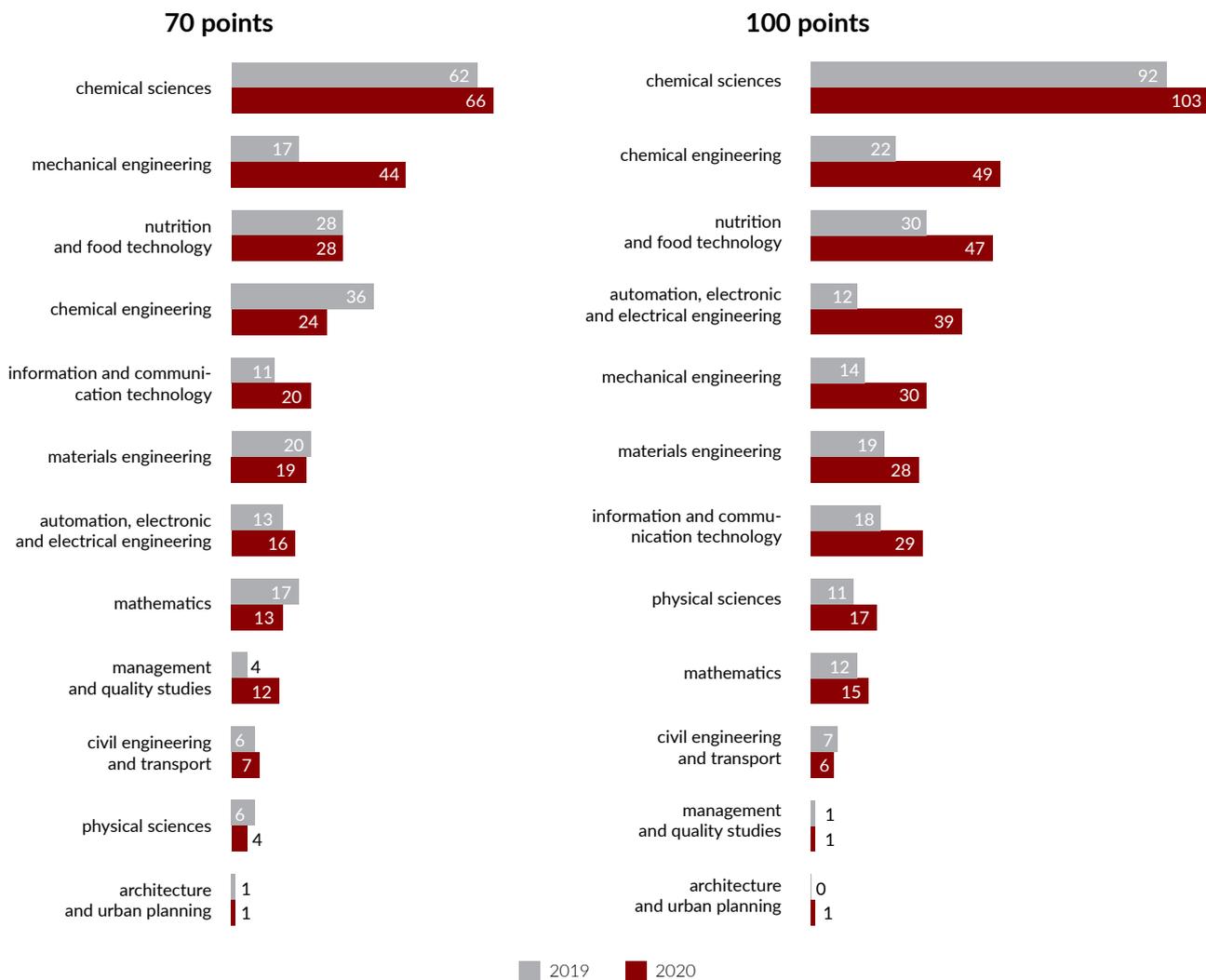
**Publications in journals included in the ministerial list of scientific journals and peer-reviewed materials from international conferences according to the scoring in 2020**



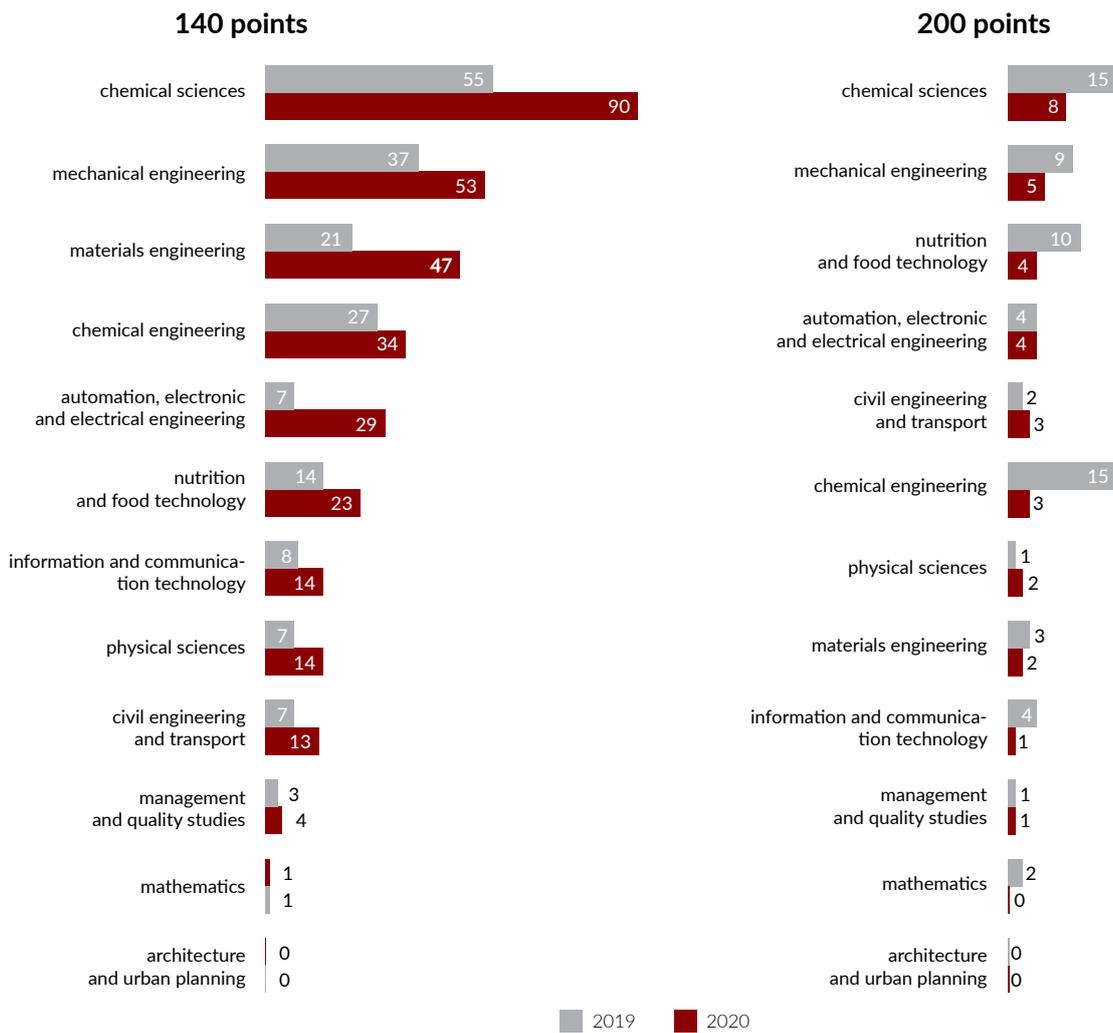
**Publications in journals included in the ministerial list of scientific journals and peer-reviewed materials from international conferences by points and disciplines**



Publications in journals included in the ministerial list of scientific journals and peer-reviewed materials from international conferences by points and disciplines

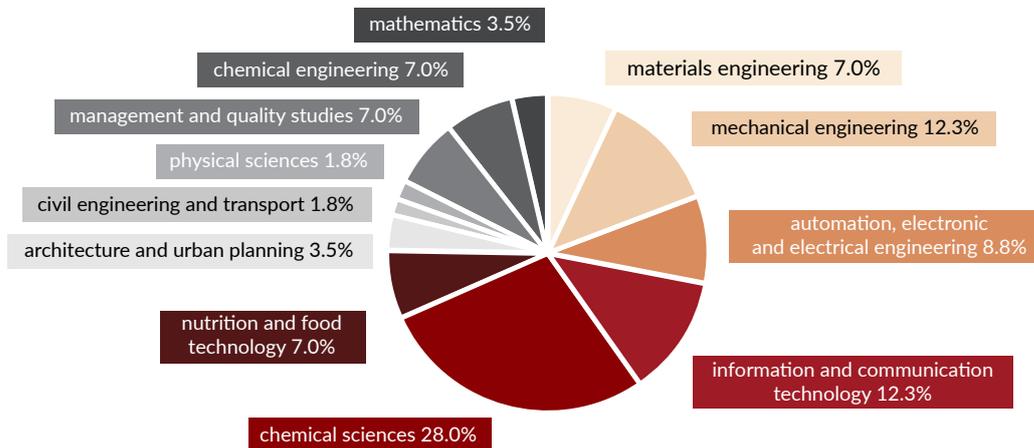


### Publications in journals included in the ministerial list of scientific journals and peer-reviewed materials from international conferences by points and disciplines

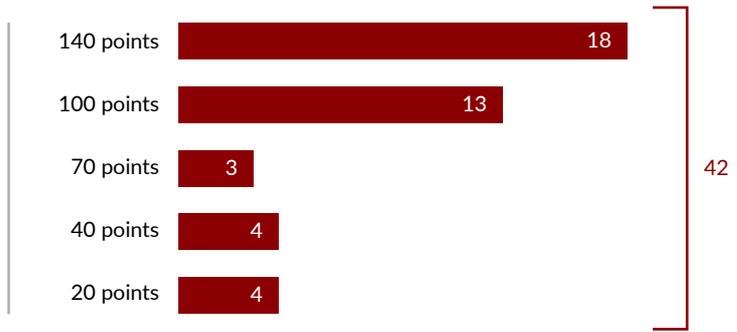


The research activity of doctoral students from the Interdisciplinary Doctoral School resulted in 57 publications published in 2020, 42 of which appeared in journals included on the ministerial list of scientific journals and peer-reviewed materials from international conferences.

### Total publications by IDS doctoral students in 2020 by discipline



Publications by IDS doctoral students in journals included on the ministerial list of scientific journals and peer-reviewed materials from international conferences



Open access publishing

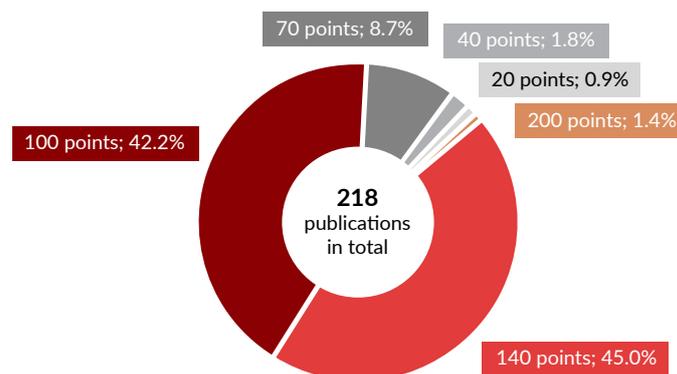


The Library has been promoting the idea of open access to scientific publications for many years, organizing or co-organizing events during the world Open Access Week. This commitment has recently been extended by the promotion and support of open access publishing programs, obtaining the status of a local administrator of the “Elsevier Open Access Platform”. Access to the administrator account makes it possible to verify the eligibility of authors, affiliating their publications with Lodz University of Technology, to benefit from Part B of the Elsevier Open Publishing Program (publishing with a 20% discount off the APC fee).

A one-year agreement was signed extending the participation of Lodz University of Technology in the MDPI open publishing program (Lodz University of Technology employees and PhD students receive a 10% discount). Extensive outreach was carried out, responding to and preparing information on national open access publishing schemes and sources of funding for open access publishing.

In addition, Lodz University of Technology subsidized Open Access publications to the amount of **PLN 1 615 278.78** in 2020.

Open Access publications subsidized in 2020 by points



## Publishing House of Lodz University of Technology

In 2020, 40 publications (monographs, magazines, textbooks, conference materials, reprints) were issued with a circulation of 4 440 copies and a volume of 502 publishing sheets. TUL Publishing House distributed a total of 4 265 books.

## Library collections of Lodz University of Technology

Providing access to printed collections throughout the TUL library network:



- books – 278 131
- other non-electronic collections – 231 329
- magazines – 135 948
- current magazines – 309

Lodz University of Technology library and institute libraries of the Lodz University of Technology were visited by 47 915 users, a decrease of approx. 28% compared to 2019. 27 936 copies of the collection were lent outside (a decrease of approx. 50% compared to 2019), 12 423 were made available on site (a decrease of approx. 84% compared to 2019).

Providing access to electronic collections:



- electronic sources (databases and services): 87
- full-text book titles (in Polish and foreign languages): 4 63 970
- titles of journals and other publications with full text access: 50 805

In 2020, a total of 232 049 searches were conducted and 748 266 documents were downloaded.

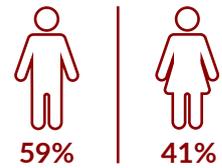
## EXCELLENCE INITIATIVE – RESEARCH UNIVERSITY

Lodz University of Technology is one of 20 Polish universities implementing the Excellence Initiative – Research University (IDUB) program. As part of Ordinance No. 53/2020 of the Rector of Lodz University of Technology, a Rector's committee was appointed responsible for the implementation of plans related to the IDUB program.

Participation in this program gives TUL additional funding of 2% of the basic subsidy. These funds enable new actions to be taken to improve the quality of research at Lodz University of Technology. One was the introduction in 2020 of **Regulations for awards supporting the scientific excellence of employees, doctoral students and students** (Ordinance No. 67/2020 of Rector of TUL of 30 November 2020) for the following scientific achievements:

- publications in the best journals included in the current ministerial list of scientific journals and peer-reviewed proceedings of international conference
- conference papers in the best peer-reviewed materials from international conferences included in the current ministerial list of scientific journals and peer-reviewed materials from international conferences
- scientific monographs or chapters in peer-reviewed scientific monographs published in the current level II publishing houses included in the ministerial list
- national and international patents
- research grants

A total of 868 people were awarded for scientific achievements in 2020 as part of awards supporting the scientific excellence of staff, doctoral students and students, the largest group being academic staff – 616 people.



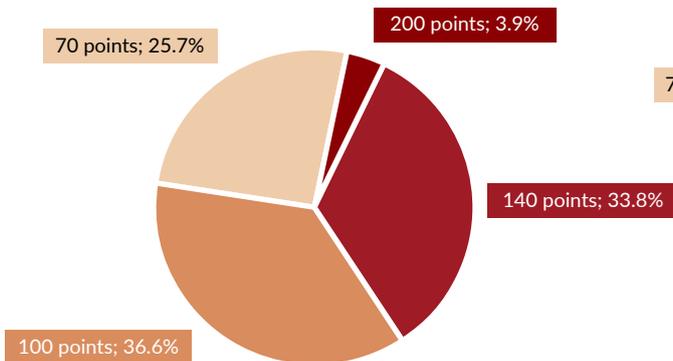
**Awardees by author status**



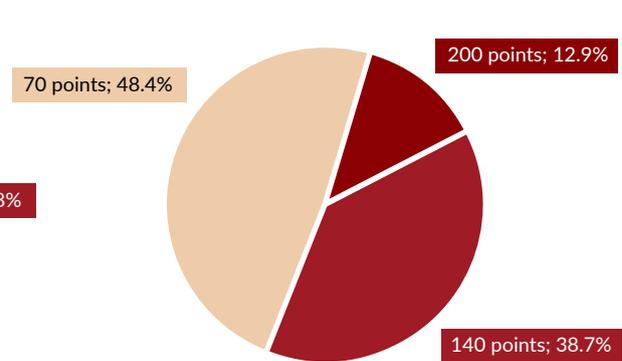
Among the winners there were people awarded for more than one scientific achievement. Most prizes were awarded for publications in the best journals included in the current ministerial list of scientific journals and peer-reviewed materials from international conferences.

The prizes were awarded for publications in journals and conference papers that, according to the ministerial list of scientific journals and peer-reviewed materials from international conferences, achieved at least 70 points. The shares of individual point values in publications are presented in the chart below.

**Publication in journals by point value**

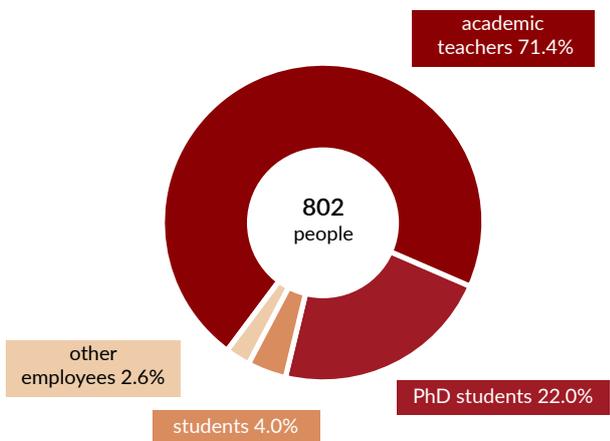


**Conference papers with point values**

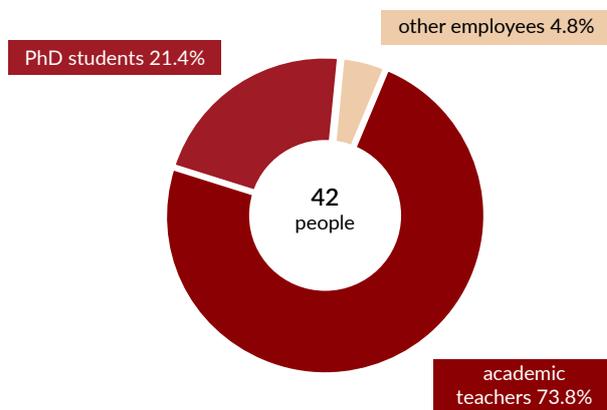


### Awards for scientific achievements

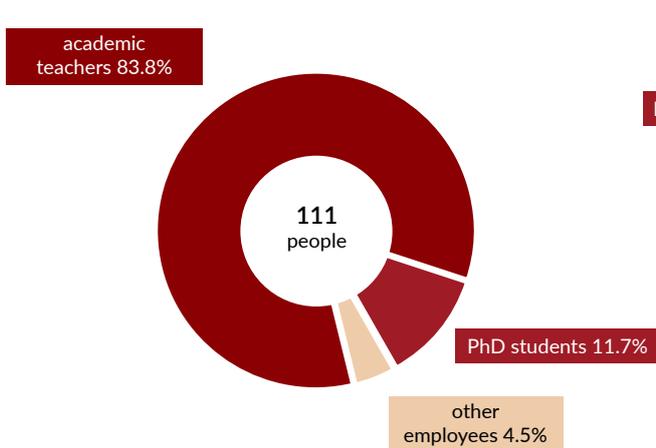
Publications in journals



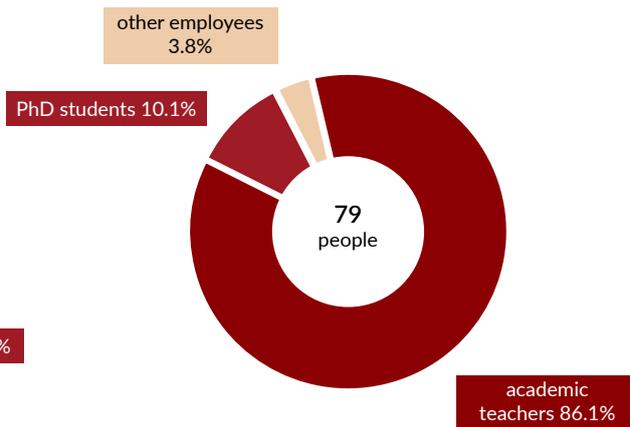
Conference papers



Patents



Grants



Scientific monographs

1 academic teacher

Total net amount in PLN for scientific achievements



# COOPERATION



**5**  
accredited testing laboratories

**10**  
spin-off companies

**70**  
protection titles obtained at the Patent  
Office of the Republic of Poland

**187**  
international organizations

**13**  
projects implemented under  
the Erasmus+ program Action 2 –  
Strategic partnerships for higher  
education

# COOPERATION WITH THE ECONOMIC ENVIRONMENT

## Clusters

Lodz University of Technology is a member of the following clusters:

The ICT Central Poland Cluster was established on the initiative of Lodz University of Technology, acting as a coordinator. It is the largest cluster in Poland, bringing together enterprises from the ICT sector, business institutions and universities in Lodz.

The Bioeconomy Cluster Association, which TUL joined in December 2020. Cluster members combine the perspectives of science and business to identify the most important directions for development in industries related to the bioeconomy.

Lodz Custer Fala Energii. The work of the Cluster is coordinated by TUL. The mission of the Cluster is to ensure local energy security, protect the natural environment and increase the competitiveness and economic efficiency of the local economy.

The “LODZistics – Logistics Business Network of Central Poland” group brings together companies from the logistics industry, local governments, research and development units, business environment institutions, and other entities operating in the logistics sector. It undertakes activities aimed at increasing the competitiveness of the region, with particular emphasis on the logistics sector.

By initiating and coordinating the activities of the clusters ICT Central Poland, Energy Wave and LODZistics, Lodz University of Technology is an example of a university that perfectly integrates the academic community with the economic environment and the local government of Lodz and the voivodeship.

In 2020, Lodz University of Technology together with the ICT Central Poland Cluster, with the support of Lodz City Hall, organized the “Joint IT in Lodz” campaign, which aims to support the idea of lifelong learning and develop competences within the IT education offer at Lodz universities.

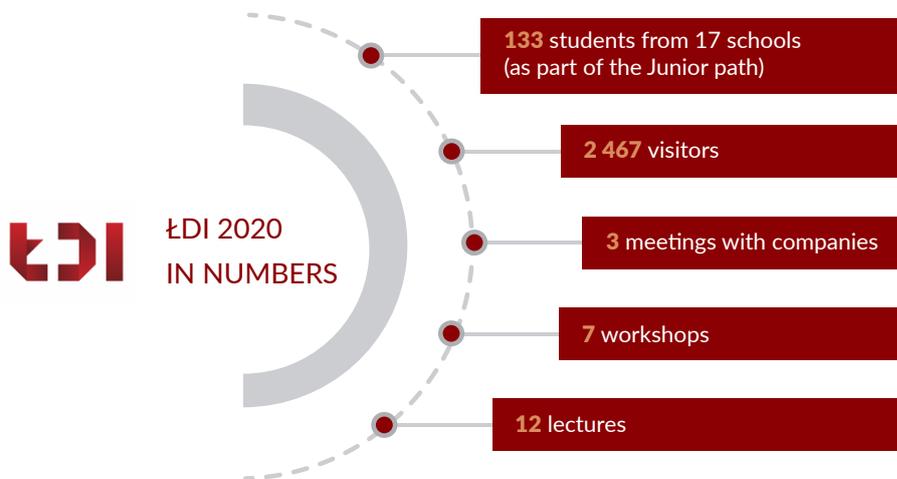
Lodz IT Days (ŁDI) is the largest event related to the IT and telecommunications industry in Lodz, organized by the ICT Central Poland Cluster, Lodz University of Technology, the University of Lodz and the Foundation of Lodz University of Technology. The event is aimed at students, secondary school students and specialists in the ICT industry who take part in lectures, workshops and meetings with employers.



Vice-Rector for Development  
Prof. Paweł Strumiłło PhD, DSc.

*A modern university responds to the needs of its environment. It is a place where innovative solutions are created and applied in various branches of the economy and the community. I am very happy with the increasing activity of Lodz University of Technology employees in this area. We continue to expand the group of partners with whom we cooperate, building a strong position for TUL in the national and international arenas. Activities related to the implementation of the 3rd mission of the university are also noteworthy. TUL understands the importance of social responsibility, which is why we have established a team for sustainable development, which conducts popularization activities, engages in cooperation with local authorities and institutions, etc.*

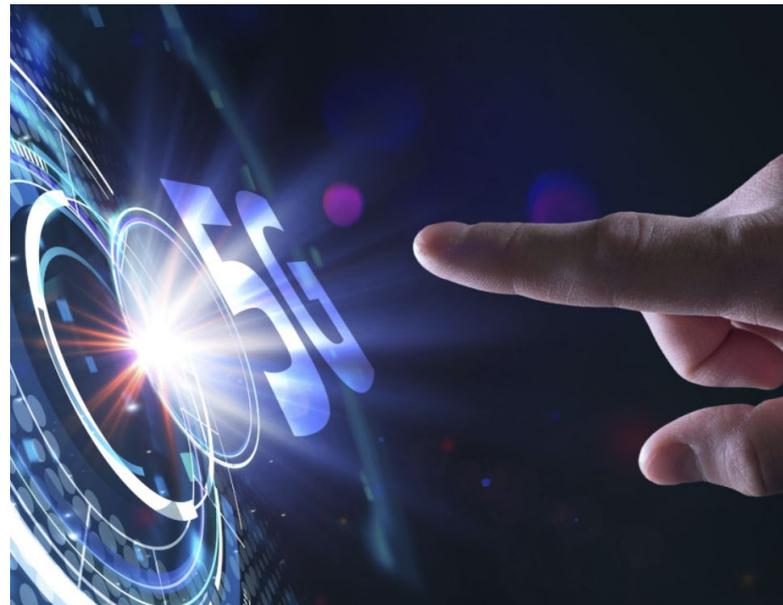
In 2020, the 4th edition of the Lodz IT Days took place on-line and gathered over 2 500 participants. ŁDI was co-financed by the Lodz City Hall and the Marshal's Office of the Lodz Voivodeship.



## 5G network

The construction of the 5G pilot research network on the campus of Lodz University of Technology began in November 2019, was launched in May 2020. It is the first network of its type in a Polish university.

The construction of the 5G network and services was financed by the Ministry of Development as part of the DIH5G Digital Innovation Hub 5G. The hub brings together the Communications Institute of the National Research Institute (leader), Lodz University of Technology, Ericsson and the FundingBox company. As part of the project, Ericsson delivered a radio access network (RAN) consisting of four network cells installed on the campus of Lodz University of Technology.



Since February 2020, a new unit has been operating at the university: the **5G Competence Centre of Lodz University of Technology**, bringing together a group of experts from Poland and abroad. As part of its activities, the 5G Communication Portal was created.

The unit is co-financed in the amount of PLN 750.0 thousand by the Marshal's Office of the Lodz Voivodeship. The contribution of Lodz University of Technology amounted to PLN 250.0 thousand.

## Selected projects obtained in 2020 in cooperation with business:

The National Centre for Research and Development granted funding for application projects for researchers from Lodz University of Technology cooperating with business:

*System for non-invasive monitoring and diagnosis of functional disorders of the lower urinary tract using electrical and ultrasound tomography*

Institute of Applied Computer Science (head: Prof. Volodymyr Mosorov), Netrix SA, Polish Mother's Memorial Hospital Research Institute. Amount of funding for TUL: PLN 2.33 million.

*Development of an absorbable dressing based on active exogenous tropocollagen from fish skin with the addition of modified carbon nanopowders*

Department of Knitting Technology and Textile Machines (head: Prof. Zbigniew Mikołajczyk), Interdepartmental Institute of Radiation Technology, Institute of Turbomachinery, Sancoll sp. Z oo, Nicolaus Copernicus University in Toruń. Amount of funding for TUL: PLN 3.42 million.

*Composite structures with reduced flammability and defined biostatic properties with additives facilitating degradability or compostability*

Specialist Department of Communication Upholstery TAPS Maciej Kowalski (managing director: Dr Sławomir Krauze), Institute of Polymer and Dye Technology (scientific head: Prof. Anna Masek). Amount of funding for TUL: PLN 2.87 million.

Under the Horizon 2020 program, co-financing was awarded for the following project: **FIBRE 4 YARDS**

*Technologies for the production of fibrous composites used in shipyards for automation and modular construction*

The consortium consists of Lodz University of Technology and 13 partners representing research centers and shipbuilding companies from France, Portugal, Spain, the Netherlands and Hungary. Amount of funding for TUL: PLN 900.0 thousand.

In the program Investments of enterprises in research and innovation under the ROP of the Lodz Voivodeship for 2014–2020:

*PRO-MIS Area Reclamation Program – Monitoring and Strategy – a model solution for water reservoirs based on R&D work carried out at the Sulejów Reservoir*

Research work in the project is carried out by Lodz University of Technology, the University of Lodz and the University of Warsaw. The project leader is a consortium consisting of companies: AQUA INSTITUTE Sp. z o.o. and WINKLER Innovation Group Sp. z o.o. Sp. k. Amount of funding for TUL: PLN 11.66 million.

## Innovation Incubator 4.0

Lodz University of Technology is the leader of the Innovation Incubator 4.0 program. The project is carried out jointly with the Jan Długosz University of Humanities and Sciences in Częstochowa. Co-financing to the amount of PLN 1 899.1 thousand was obtained for direct support of research works for industry. Innovation Incubator 4.0 is the 3rd project implemented at Lodz University of Technology that supports the commercialization of the results of scientific research and development.

## Implementation doctorate

The Ministry of Science and Higher Education launched a program in 2017 to support research conducted by doctoral students, the results of which may have practical application in business. In the 4th edition of this program, funding was awarded to 7 PhD students of Lodz University of Technology. In total, 51 scholarship holders have prepared doctoral theses in the program.

Financing in 2020 under  
the Implementation  
Doctorate program  
**PLN 2 458 763.45**

## Scientific and research work, service and expertise

In 2020, 638 research and service works were performed at the request of economic entities, with a total value of PLN 12 718.6 thousand.

## Diploma and design theses carried out in cooperation with industry



**122**  
completed design works  
with industry



**70**  
completed diploma theses  
with industry

## Protection of intellectual property

In 2020, Lodz University of Technology obtained 70 protection titles from the Patent Office of the Republic of Poland. Pending cases before the Patent Office of the Republic of Poland included 225 applications for the granting of patents for inventions and 5 applications for the granting of protection rights for utility models.

Exclusive rights upheld in the Patent Office of the Republic of Poland:

- 357 patents for inventions
- 7 protection rights for utility models
- 27 protection rights for trademarks

### Applications to the Patent Office of the Republic of Poland



**Inventions**

2019 - 85

2020 - 69



**Utility  
models**

2019 - 1

2020 - 2



**Patents**

2019 - 96

2020 - 68



**Utility  
models**

2019 - 5

2020 - 2



**Trademarks**

2019 - 1

2020 - 0

### Protection titles awarded by the Patent Office of the Republic of Poland

In foreign patent offices in 2020, the university

- submitted 2 inventions
- obtained 4 patents (in 2019 – one patent)

Exclusive rights upheld in foreign patent offices:

- 3 European patents in Great Britain, Switzerland and Germany
- 2 European patents in France

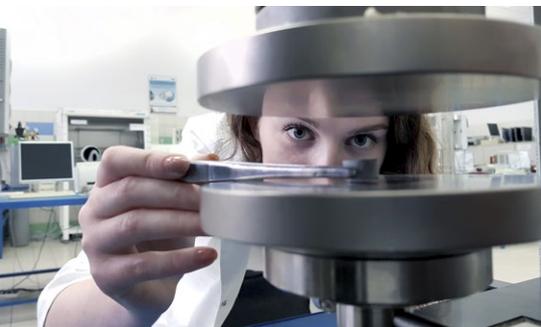
## Spin-offs

In 2020, 10 spin-off companies were established to commercialize the research results of Lodz University of Technology, including HETBOT Sp. z o. o. which develops unified and standardized modules for mobile robots, including indoor/outdoor location systems, power systems and drive modules.

## Licenses

In 2020, two licenses were granted and one intellectual property was sold – a hybrid thread for electromagnetic induction created by the Department of Knitting Technology and Textile Machines. The licensing revenue received by TUL in 2020 amounted to PLN 116.0 thousand.

## Accredited Testing Laboratories



In 2020, TUL operated 5 accredited research laboratories:

- Specialist Laboratory of Sugar Analytics
- LabNOISE acoustic measurements laboratory
- LAB-TEX textile and clothing technology laboratory
- Building Materials and Structures Research Laboratory
- Research Laboratory of Building Materials and Building Physics

## Selected successes and awards\*

During the 14th edition of the International Warsaw Invention Show (IWIS), 8 solutions from Lodz University of Technology were awarded medals.



Research teams from TUL received:

- 4 gold medals
- 3 silver medals
- 1 bronze medal

The exhibition presented 3 solutions from the Institute of Applied Computer Science (Faculty of Electrical, Electronic, Computer and Control Engineering). The Faculty of Chemistry was also represented. Medals were awarded for 2 innovative pro-ecological technologies proposed by a team from the Institute of Polymer and Dye Technology (Faculty of Chemistry).

\*Information on successes and awards is also listed in the Calendar.

The next 3 medals went to the interdisciplinary team from the Institute of General and Ecological Chemistry (Faculty of Chemistry) and the Institute of Materials Science and Engineering (Faculty of Mechanical Engineering).

The event was organized by the Association of Polish Inventors and Rationalizers in cooperation with the Patent Office of the Republic of Poland and the International Federation of Inventors' Associations (IFIA).

In 2020, the IWIS included the **9th World Competition for Chemical Inventions**. The main prize was awarded to Małgorzata Latos-Brózio, MSc, and Assoc. Prof. Anna Masek from the Institute of Polymer and Dye Technology (Faculty of Chemistry) for thermoplastic polymer products with increased resistance to oxidation and environmental factors. This technology was also awarded a gold medal by the jury of the international exhibition of inventions IWIS.

Prof. Beata Kolesińska from the Faculty of Chemistry and Dr Eng. Katarzyna Znajdek from the Faculty of Electrical, Electronic, Computer and Control Engineering were the winners of the first edition of the "Merit for Intelligent Development" award. This distinction is recognition for 5 years of activity of organizing the Polish Intelligent Development Award.

In the international invention competition Concours Lépine, the gold medal was awarded to a solution submitted by the consortium by the Department of Electrical Apparatus, Lodz University of Technology (leader) and Zakład Aparatury Elektrycznej WOLTAN Sp. z o. o. (partner) titled *USH:ultra-fast hybrid systems for securing DC circuits with high magnetic energies, including: 1a - DCU-HM family for DC1 and DC2 systems of railway traction, 1b - DCSS family for protection of superconducting electromagnets*.

## STUDENT SUCCESSES

The *Generative Urban Small Turbine* project implemented by members of the Student Research group in the field of power engineering took 1st place in the "ECO-innovative Student Project" category in the national competition **Eco-innovators 2020**. Its aim is to choose pro-ecological solutions developed by students of Polish universities.

In the 6th edition of the **KOKOS Student Structures Competition**, Lodz Solar Team won in the Vehicle category. Eagle Two is the second version of the solar car developed by designers from the Student Research Group of Automotive Enthusiasts.

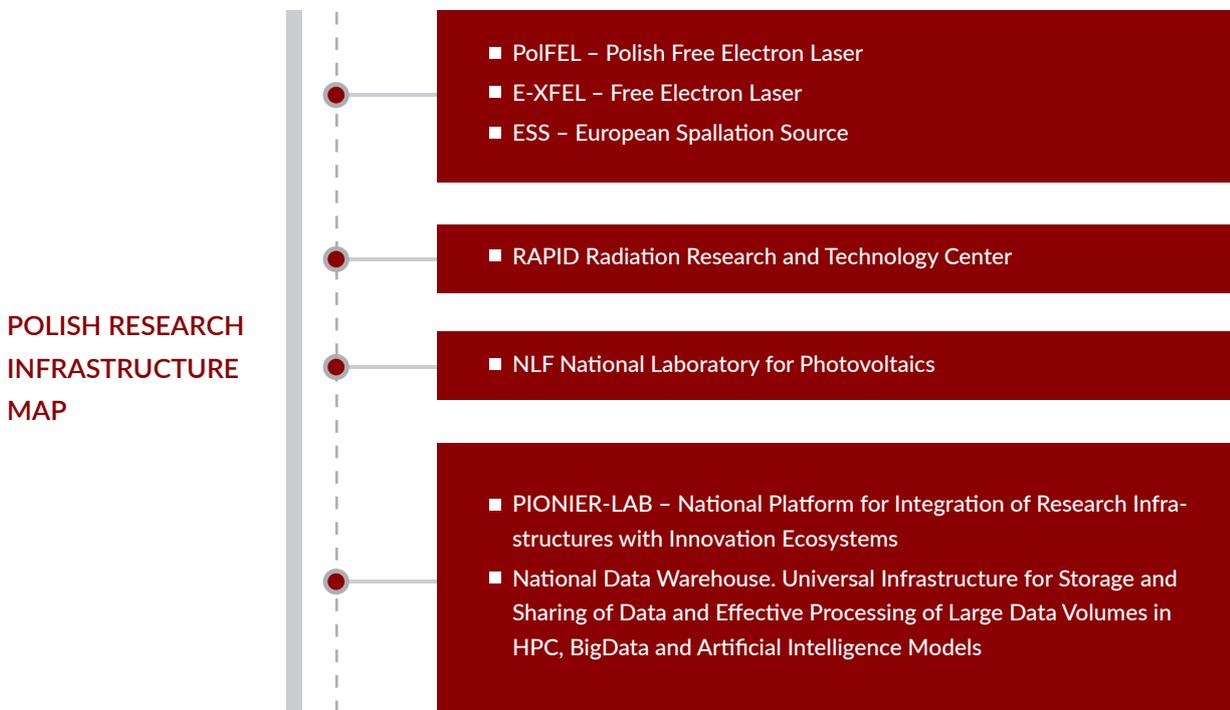
Magdalena Kierzek, Paulina Wielec and Amanda Nowaczyk, students from the Faculty of Management and Production Engineering, were awarded in the **Stena Circular Economy Award for the design of an application for recognizing the type of waste and thus facilitating effective recycling**.

In the 12th edition of the “I have a Startup Idea!” competition, 5 projects from Lodz University of Technology won awards:

- **A modular robotic system** is a range of devices (modules) from which any robot can be assembled.
- **Biodegradable packaging** for food with shelf-life extending properties – “Biofoil with chicory”. The innovative biodegradable food packaging film with the addition of chicory extract has improved physical properties and an antimicrobial effect.
- **Poly Coat** uses polyurea systems to improve the strength and durability of structural elements used in construction.
- **KanapkaMan** is an application that helps you manage your breakfast business, food orders and deliveries.
- **AquainGon** is a water recovery system, which includes a rainwater collection system and a shower cubicle with water recirculation.

### Polish Map of Research Infrastructure

In 2020, the Ministry of Science and Higher Education published a list of 70 outstanding, ambitious scientific ideas of great socio-economic importance. Among them are 7 projects in which TUL is participating:



# OVERSEAS COOPERATION

## Strategic partners

In 2020, TUL continued cooperation with international strategic partners including:

- The French Embassy in Poland

International institutions:

- Agence Universitaire de la Francophonie – AUF (Kanada)
- European Organization for Nuclear Research – CERN (Switzerland)
- Fraunhofer Center for Sustainable Systems (USA)
- International Atomic Energy Agency – IAEA (Austria)
- French Institute (Poland)
- The International Association for Management Development in Dynamic Societies – CEEMAN (Slovenia)

Universities:

- Arts et Métiers (France)
- Catholic University of Leuven (Belgium)
- Charles University (Czech Republic)
- Hochschule für Technik und Wirtschaft (Germany)
- Lappeenranta University of Technology (Finland)
- Polytechnic Institute of Coimbra (Portugal)
- Polytechnic Institute of Porto (Portugal)
- Pontificia Universidad Católica de Chile (Chile)
- Saxion University of Applied Sciences (Netherlands)
- Shibaura Institute of Technology (Japan)
- Southern Federal University (Russia)
- Technological Federal University of Parana (Brazil)
- University of Alcalá (Spain)
- University of Aveiro (Portugal)
- University of Lisbon (Portugal)
- University of Ljubljana (Slovenia)
- University of Twente (Netherlands)
- University of Rey Juan Carlos (Spain)
- University of Naples Federico II (Italy)
- Uppsala University (Sweden)



Industry / companies with foreign capital:

- ACCENTURE
- AIRBUS HELICOPTERS
- AMAZON
- AMCOR
- BSH
- ERICSSON
- FAURECIA
- HUTCHINSON
- NORDZUCKER AG
- PROCTER&GAMBLE

## Educational projects

As part of **Action 2 of the Erasmus+ program Strategic Partnerships for Higher Education**, Lodz University of Technology implemented 13 educational projects in 2020. These included 3 projects that the university acquired in the reporting year:



In September 2020, another international project coordinated by Lodz University of Technology began. *Mixed Reality on Universal Design's Secret Service* combines the experiences of five teams from three countries: Poland, Portugal and Estonia. It focuses on the issue of Universal Design. The primary target group for the project is design professionals. The project is distinguished by the use of Mixed Reality technology, Augmented Reality and Virtual Reality. The European Commission allocated a budget of 329 000 Euro for this project.



Design students are participating in the international educational project *Project-Product-Promotion. International Collective for Design*, which aims to develop a new educational method for art and design studies. The European Commission has allocated a budget of over 130 000 Euro for this purpose. The partners of Lodz University of Technology in the project are Eskisehir Osmangazi University (Turkey) and Centro de Investigacao e Formacao em Artes e Design, Lda (Portugal). A supporting institution from outside the EU is the College for Creative Studies (USA).



Since October 2020, Lodz University of Technology has been the coordinator of the Design4Climate project: *Addressing Climate Change through Design Thinking, for a Green, No Waste Economy*. Its aim is to develop basic skills in the field of the green economy. Together with TUL, the consortium includes: the University of Thessaly in Greece, the University of Library Studies and Information Technologies in Bulgaria, Halsingland Education Association in Sweden and Agrupamento De Escolas De Silves in Portugal.

As part of **Action 1 Erasmus+ Educational mobility**, TUL is implementing the Erasmus+ KA103 project, promoting the academic mobility of students and employees between the countries of the program. The project will last until July 2022. Employees of TUL have the opportunity to travel for teaching or training purposes to countries covered by the program: EU countries, Turkey, Serbia, North Macedonia, Iceland, Liechtenstein and Norway.

As part of **Action 1 Erasmus+ Educational Mobility**, TUL implemented three Erasmus+ KA107 projects promoting academic mobility of students and employees with partner countries, one of which started in 2020. TUL received funding of 200 000 Euro for the student and employee mobility project implemented jointly with 62 universities from partner countries, such as: Israel, Georgia, Ukraine, Belarus, Russian Federation, El Salvador, Mexico and the United States. The project started in September and will run until July 2023.

Lodz University of Technology is a beneficiary of the **Education Program (EEA funds)**. As part of component II of the Education-Mobility in Higher Education Program, TUL uses funding for the implementation of academic mobility for students and employees, in cooperation with partner universities from Iceland and Norway. The project is being implemented in 2020–2022.

As part of the **PROM program of the National Agency for Academic Exchange**, Lodz University of Technology is implementing the next edition of the international doctoral exchange project and co-financing short-term mobility for 80 people, including 40 doctoral students from abroad and 40 doctoral students of Lodz University of Technology.

The aim of the project is to increase the international mobility of doctoral students at the university, improve the quality and internationalization of third-cycle education and increase cooperation with foreign universities.

## Student Mobility

334 students pursued studies and student internships in 2020, which is 260 fewer than the year before. In the reporting year, 305 students came to Lodz University of Technology, i.e. 475 fewer students. Trips under the Erasmus+ program still dominated. Due to the COVID-19 pandemic, in 2020 the program was carried out remotely. As part of **Erasmus/Erasmus+**, 285 people departed. In contrast, in 2019 a total of 345 people departed and 549 arrived.

11 students took advantage of the possibility of attending the Summer/Winter University in 2020, compared with 15 students in 2019.

### Departures and arrivals of students on study programs and internships



#### ARRIVALS

2019 – 780

2020 – 305

#### DEPARTURES

2019 – 594

2020 – 334

## Double diplomas

In 2020, TUL implemented double diploma contracts with the following universities:

- Arts et Métiers, France
- ECAM Lyon (École Catholique d'Arts et Métiers), France
- ECAM Strasbourg (École Catholique d'Arts et Métiers), France

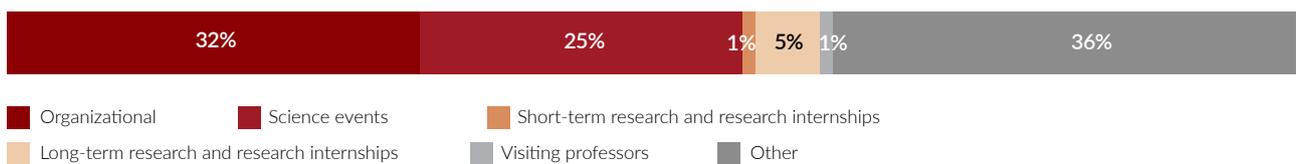
- EXCELIA GROUP (La Rochelle), France
- HTW Saarlandes, Germany
- Southern Federal University, Russia
- Università Degli Studi di Napoli Federico II, Italy
- Université d'Artois, France

In 2020, 20 students left and 29 students arrived under the double diploma program. The number of double diplomas completed was 33.

### International contacts of employees and doctoral students

In 2020, employees of Lodz University of Technology planned 227 trips abroad of various types. There were 145 departures. 82 departures were not carried out due to the COVID-19 pandemic.

Employee mobility by destinations



PhD students of Lodz University of Technology planned 39 trips abroad, of which 27 took place. 12 trips did not take place due to COVID-19.

Departures of TUL PhD students by destination



In 2020, Lodz University of Technology welcomed the arrival of 91 foreign guests, including 11 Visiting Professors.

Arrivals of international guests by destination



## Membership in international organizations

Lodz University of Technology as an academic institution and its employees are members of 187 international organizations, including:

- ACE – Association of Chemistry and the Environment
- ACEEU – Accreditation Council for Entrepreneurial and Engaged Universities
- AMS – American Mathematical Society
- AUF – Agence Universitaire de la Francophonie
- BUP – Baltic University Programme International Board
- CEEMAN – International Association for Management Development in Dynamic Societies
- ChERD – Chemical Engineering Research and Design
- EAEA – European Architectural Envisioning Association
- ECNP – European Center for Nanostructured Polymers
- EFB – European Federation of Biotechnology
- ESAO – European Society for Artificial Organs
- EUA – European University Association
- IACM – International Association of Computational Mechanics
- IAES – International Atlantic Economic Society
- IEEE – Institute of Electrical and Electronics Engineers
- IFKT – International Federation of Knitting Technologists
- IFMS – International Association for Urban Climate
- IMAPS – International Microelectronics and Packaging Society
- UIA – International Union of Architects
- The Association of TOP 500 Innovators

## Seminars, lectures abroad

In 2020, employees of Lodz University of Technology gave 16 invited lectures at universities including Daffodil International University (Bangladesh), Sorbonne University (France), University of New Brunswick (Canada), Oslo Metropolitan University (Norway), Saint Petersburg University (Russia), University of Michigan (USA), University of Bologna (Italy).

The university organized 11 courses and seminars with the participation of international specialists, of which 7 were organized by the Faculty of Mechanical Engineering.

## International events

In 2020, Lodz University of Technology hosted the conference “**International students in Poland 2020**”, attended by over 300 participants. During the meetings of experts, discussions were held on how to interest more international students in studying in Poland, as well as on the need to support the internationalization of Polish universities, including through cooperation with companies and social partners.



### **BOMA Momentum Viewing Party**

Students and employees of Lodz University of Technology as well as representatives of external institutions met at the International Faculty of Engineering (IFE) to jointly participate in the Paris conference “Boma Momentum” on ecology, combating racism and corporate social responsibility. The event was organized by the international chain Boma Global. Thanks to the conference, Lodz University of Technology has strengthened its cooperation with Boma.

### **“Smart and Livable Cities” conference as part of the 6th Partner Cities Forum**

In October 2020, the 6th edition of the Partner Cities Forum “Smart and Livable Cities” was held at Lodz University of Technology. This year the Forum was co-organized by the Embassy of the Kingdom of Denmark. Representatives of partner cities participated in panels, exchanging experiences in the following thematic areas:

- green and friendly city
- revitalization of buildings for a better climate and cleaner air
- sustainable urban mobility
- new technologies supporting modern cities
- city water

### **Conference “Social competences - a new dimension to the traditional mission of higher education”**

In February 2020, IFE students took part in the international conference “Social competences – a new dimension to the traditional mission of higher education”, which took place in Warsaw and concerned the development of social competences as an important element of higher education.

# UNIVERSITY MANAGEMENT



**PLN 4.1 million**  
net profit

**PLN 59.7 million**  
in investments

**PLN 95.9 million**  
subsidy to maintain research potential

# ORGANISATION

## University authorities

term of office 2016–2020  
until August 31, 2020

term of office 2020–2024  
from September 1, 2020

### RECTOR

Prof. Sławomir Wiak

Prof. Krzysztof Józwik



### VICE-RECTORS

#### Vice-Rector for Development

Prof. Dariusz Gawin

#### Vice-Rector for Development

Prof. Paweł Strumiłło

#### Vice-Rector for Science

Prof. Ireneusz Zbiciński

#### Vice-Rector for Science

Prof. Łukasz Albrecht

#### Vice-Rector for Education

Prof. Grzegorz Bąk (until 31/12/2019)

Prof. Krzysztof Józwik

(from 01/01/2020)

#### Vice-Rector for Education

Associate Professor Andrzej Romanowski

#### Vice-Rector for Student Affairs

Associate Professor Witold Pawłowski

#### Vice-Rector for Student Affairs

Associate Professor Witold Pawłowski

### DEANS

#### Faculty of Mechanical Engineering

Prof. Tomasz Kubiak

Prof. Tomasz Kubiak

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

Associate Professor Sławomir Hausman

Associate Professor Jacek Kucharski

#### Faculty of Chemistry

Prof. Małgorzata Iwona Szykowska

Prof. Małgorzata Iwona Szykowska-Józwik

#### Faculty of Material Technologies and Textile Design

Associate Professor Katarzyna Grabowska

Prof. Katarzyna Grabowska

#### Faculty of Biotechnology and Food Sciences

Prof. Maria Koziołkiewicz

(until 30/09/2019)

Associate Professor Anna Diowksz

(from 01/10/2019)

Associate Professor Anna Diowksz

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

Prof. Marek Lefik

Prof. Dariusz Gawin

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

Prof. Piotr Liczberski

Associate Professor Adam Wojciechowski

**Faculty of Management and Production Engineering***(until October 2017 under the name of the Faculty of Organization and Management)*

Associate Professor Zbigniew Wiśniewski

*(until 30/09/2019)*

Prof. Agnieszka Zakrzewska-Bielawska

*(from 01/10/2019)*

Prof. Agnieszka Zakrzewska-Bielawska

**Faculty of Process and Environmental Engineering**

Associate Professor Piotr Kazimierski

*(until 30/09/2019)*

Associate Professor Hanna Kierzkowska-Pawlak

*(from 01/10/2019)*

Associate Professor Grzegorz Wielgosiński

**COUNCIL OF LODZ UNIVERSITY OF TECHNOLOGY** (term of office until December 31, 2020)

Chairperson: Dariusz Szewczyk, President of the Management Board of "Radio Łódź" SA

Members:

- Prof. Andrzej Bartoszewicz
- Dr Eng. Tomasz Krysiński, Vice President of Innovation, Research and Development for Airbus Helicopters
- Julia Chojnacka, President of the Student Government at TUL
- Associate Professor Jacek Sawicki
- Agnieszka Sygitowicz, Vice President of the Management Board of Lodz Special Economic Zone
- Prof. Wojciech Wolf

**HEADS OF SCIENTIFIC DISCIPLINES**

- Prof. Marek Balcerzak – *mathematics* in the field of natural sciences
- Associate Professor Sławomir Hausman – *automation, electronic and electrical engineering* in the field of engineering and technology
- Prof. Łukasz Kaczmarek – *materials engineering* in the field of engineering and technology
- Associate Professor Hanna Kierzkowska-Pawlak – *chemical engineering* in the field of engineering and technology
- Prof. Maria Koziółkiewicz – *food technology and nutrition* in the field of agricultural sciences
- Prof. Tomasz Kubiak – *mechanical engineering* in the field of engineering and technology
- Prof. Marek Lefik – *civil engineering and transport* in the field of engineering and technology
- Prof. Marek Pabich – *architecture and urban planning* in the field of engineering and technology
- Associate Professor Robert Sarzała – *physical sciences* in the field of natural sciences
- Prof. Michał Strzelecki – *information and communication technology* in the field of engineering and technology
- Prof. Małgorzata Iwona Szynkowska-Jóźwik – *chemical sciences* in the field of natural sciences
- Prof. Agnieszka Zakrzewska-Bielawska – *management and quality studies* in the field of social sciences

## Activity



15 sessions  
of the TUL Senate



138 resolutions  
of the Senate



76 ordinances  
of the Rector of TUL

## Changes in management and organization ensuring the smooth operation of the university



- Regulations of the Lodz University of Technology Own Scholarship Fund were established.
- Remuneration regulations have been established.
- Rules of operating at universities and funding university student organizations, university doctoral student organizations and university student and doctoral associations at Lodz University of Technology were introduced.

The following changes were made to the organizational structure of the university:

### Rector's Division

- In the central administration, in the Rector's division, the Sports Department was created.
- The Rector's Secretariat was separated from the Rector's Office and subordinated to the Rector.
- The **Financial Section** was separated from the Rector's Office and subordinated to the Rector.
- The Rector's Office and the position of Head of the Rector's Office were liquidated.
- The Legislation Department was liquidated.
- The position of Ombudsman for Social and Economic Affairs was liquidated.
- The position of University Information System Specialist was liquidated.

### Vice-Rector for Development Division

- The Secretariat of the Vice-Rector for Innovation and University Development was transformed into the Secretariat of the Vice-Rector for Development.
- The **Technology Transfer Section**, the **Intellectual Property Office**, and the **Careers Office** were combined.
- The **Academic Entrepreneurship Centre** was established.

### Department of the Vice-Rector for Education

- The Centre for Teaching and Learning was established.
- The following were created at the Centre for Teaching and Learning: Curriculum Division, Technical and Administrative Support, Instructional Support Section.
- The Education Department was liquidated along with the Education Section and the Diploma Section.
- The Education Strategy Section was liquidated.

### Other University Units

- A university-wide unit was created: **5G Competence Centre at Lodz University of Technology**, subordinate to the Rector
- The Centre for Cooperation with the Economy, Innovation and Technology Transfer of TUL was liquidated

### Faculty administration

- The **Faculty IT Section** was created at the Faculty of Electrical, Electronic, Computer and Control Engineering,

## MARKETING ACTIVITIES

Lodz University of Technology effectively switched to the promotion of its online educational offer. Promotional Services and the International Cooperation Centre, in cooperation with student research groups, as well as with the Admissions Section, the Student Government and the Multimedia Centre carried out a number of activities aimed at candidates.

Due to the unique epidemic situation and out of concern for safety, for the first time in the history of TUL a virtual open day was organized, in which about 500 high school graduates participated on the first day. During the event, candidates could walk around Lodz University of Technology virtually, connecting remotely with all departments of Lodz University of Technology and the International Cooperation Centre. Students were given the opportunity to ask questions in the chat, which were answered by the employees of the Admissions Department and representatives of the Student Government. Preparatory classes for the matura exam in mathematics, physics and chemistry were conducted by employees of the Centre of Mathematics and Physics, the Faculty of Chemistry and the Secondary School of Lodz University of Technology. The viewership of the virtual open day grew dynamically. After five days, the number of views on YouTube reached **1 647**, and on Facebook Rekrutacja PL **3 000** views.

Two promotional campaigns, "**Potęguj możliwości**" (49 interviews and 7 films) and the "**#PoznajPL**" film campaign were carried out for candidates for studies. As part of the Virtual Door Always Open campaign, 13 popular science films were prepared.

The TUL Online Open Day Internet open door was addressed to future international students of Lodz University of Technology. The main focus was on promoting full-time full-cycle studies. During live connections, TUL Open Day





participants had the opportunity to learn about the offer of individual units of Lodz University of Technology and the Interdisciplinary Doctoral School, as well as to talk to representatives of the International Faculty of Engineering (IFE).

University employees took part in almost 20 education fairs around the world. There was a large increase in interest in the Lodz University of Technology Facebook page (**over 2 000 followers**). Additionally, with foreign candidates in mind, regular promotional materials were published in the social media of Lodz University of Technology.

Traditionally, the opportunity to study without tuition fees at Lodz University of Technology is very popular among international candidates. For the best applicants with additional achievements (participation in competitions, projects, etc.) 20 places were offered with no tuition fees.

Other promotional activities aimed at attracting candidates for studies include, among others: the cycle **"TUL: I chose well"**, in which TUL graduates discussed their professional perspectives after graduation, and the campaign **"Girls as Engineers!"**, the goals of which include a gradual increase in the number of female students at Lodz University of Technology. Moreover, in cooperation with the Perspektywy Education Foundation, the Promotional Services coordinated the participation of TUL in the online conference **"Women in Tech Summit"**. Lodz University of Technology employees further participated in the **E(x)plory** science festival, which was also held online.

On the occasion of the university's jubilee, a series of interviews (articles and films) was prepared with exceptional graduates (e.g. Prof. Jacek Moll, Alexander Nawrocki, Hanna Zdanowska, Adam Kszczot). They represented all faculties, various fields of study and multiple career paths.

A new series of interviews, "Unscientific pursuits of TUL scientists", was launched. In the interviews presented on the TUL website, the profiles of outstanding scientists and their extraordinary passions were presented. Among the featured speakers were Prof. Krzysztof Jóźwik, Prof. Jan Krysiński and Prof. Katarzyna Pernal.

Promotion of the university during the organization of conferences, symposia, competitions and other scientific and promotional events was supported by free promotional materials provided to the units for participants by the Promotional Services. The organizers of about 190 events took advantage of this form of support.

## Websites and social media

The main emphasis was placed on the development of the university information system through constant supervision of the configuration, information and graphic content and evolution of the standard of the TUL website, including the launch of a new web page. Activities included ensuring high positioning of web pages related to the university, as well as administrating and editing content on several TUL websites.



- [www.p.lodz.pl](http://www.p.lodz.pl)
- [www.rekrutacja.p.lodz.pl](http://www.rekrutacja.p.lodz.pl)
- [www.blog.p.lodz.pl](http://www.blog.p.lodz.pl)
- [www.75lat.p.lodz.pl](http://www.75lat.p.lodz.pl)
- [www.koronawirus.p.lodz.pl](http://www.koronawirus.p.lodz.pl)

A promotional campaign for summer and winter recruitment for online studies was prepared, i.e.:

- [www.perspektywy.pl](http://www.perspektywy.pl)
- [www.otouczelnie.pl](http://www.otouczelnie.pl)
- [www.studentnews.pl](http://www.studentnews.pl)
- [www.uczelnie.pl](http://www.uczelnie.pl)
- [www.kierunkistudiow.pl](http://www.kierunkistudiow.pl)
- [www.studyinlodz.com.pl](http://www.studyinlodz.com.pl)

In 2020, the website of the [International Cooperation Centre](#) was developed and pages were adapted to the needs of people with disabilities (WCAG).

At the same time, work was carried out on the creation of two multilingual advertising websites (so-called landing pages) concerning [the double diploma program at Lodz University of Technology](#) and [the Francophone activities of Lodz University of Technology](#). In 2020, the ongoing editing of Lodz University of Technology's official online showcase pages continued, i.e.:

- [NAWA](#)
- [STUDY IN LODZ](#)
- [STUDY IN POLAND](#)

The Lodz University of Technology fanpage was developed on Facebook, and in cooperation with the Promotional Office a fully bilingual account of Lodz University of Technology was introduced on Instagram, along with an English-language series of instastories about Poland, Lodz and Lodz University of Technology. An account was also created on the Russian-language equivalent of Facebook, i.e. VKontakte.



16 articles  
42 153 views



12 episodes on Spotify  
and Soundcloud



13 interviews



The number of subscribers to the newsletter increased by 1 417 and currently amounts to 3 526.



250 posts  
the number of followers  
increased by 4 194



240 items of published  
content – the number  
of followers increased  
by 431



200 posts – the number  
of followers increased  
by 450



94 film premieres,  
800 333 views,  
1 140 subscriptions

The Lodz University of Technology Fanpage saw a 47.2% increase in the number of viewers (in total 544 000), a 102% increase in the number of followers and a 90% increase in activity compared to 2019.



The Lodz University of Technology Fanpage saw a 4519% increase in the number of viewers (in total over 285.5 thousand), a 296 % increase in the number of followers and a 90% increase in activity compared to 2019.

The fanpage Rekrutacja PŁ recorded a 77.1% increase in the number of viewers (in total 189.2 thousand), a 307% increase in the number of followers and a 30.8% increase in activity compared to 2019.

## TUL in the media

Various media channels were used to spread news related to Lodz University of Technology.



107 press releases, published  
simultaneously on the online  
“Press Release” service



Dozens of responses to inquiries  
from editorial offices for materials  
in the form of comments, expert  
statements and interviews



34 items of information viewed  
a total of 15 125 times as of  
September 2020



Lodz University of Technology  
appeared 12 551 times in the  
media according to the Institute  
of Media Monitoring – 2020



press and trade magazines  
– 1 544 items



radio  
– 1 274 media items



television  
– 249 media items



Internet portals  
(excluding social media)  
– 9 484 media items

**życie uczelni**  
BIULETYN INFORMACYJNY POLITECHNIKI ŁÓDZKIEJ

4 issues, 196 pages,  
[www.zycieuczelni.p.lodz.pl](http://www.zycieuczelni.p.lodz.pl)  
– 234 articles, 77 500 page  
views, 39 590 visitors



The advertising equivalent expressed in PLN in 2020 was estimated by the Institute of Media Monitoring at **PLN 61 808 329**.

On the occasion of the 75th anniversary of Lodz University of Technology and the 35th anniversary of *Życie Uczelni*, the “**My University of Technology**” competition was organized. 60 works remembering the participants’ time at the university were submitted, with authors representing different generations and fields of study. The jury awarded the main prize and two honorable mentions, and the texts were published in *Życie Uczelni*.

## FINANCES

The year 2020 was another year in which there was a stable financial and payment situation for the University, and the result of sound management was the achievement of a positive financial result. Total revenues in 2020 amounted to PLN 469 130.74 thousand, with costs amounting to PLN 464 926.60 thousand. The gross financial result amounted to PLN 4 204.14 thousand which was reduced by the corporate income tax by PLN 87.01 thousand.

The achieved net result (+PLN 4 11.13 thousand) increased by depreciation amounting to PLN 6 868.81 thousand totals PLN 10 985.94 thousand which is of great importance for the development of the university. TUL is able to make investments with the help of subsidies from the Ministry of Science and Higher Education, EU structural funds and other European funds.

Thanks to this, TUL is an economically reliable partner that can demonstrate the ability to finance its own activities, which is a necessary condition for the allocation of EU funds.

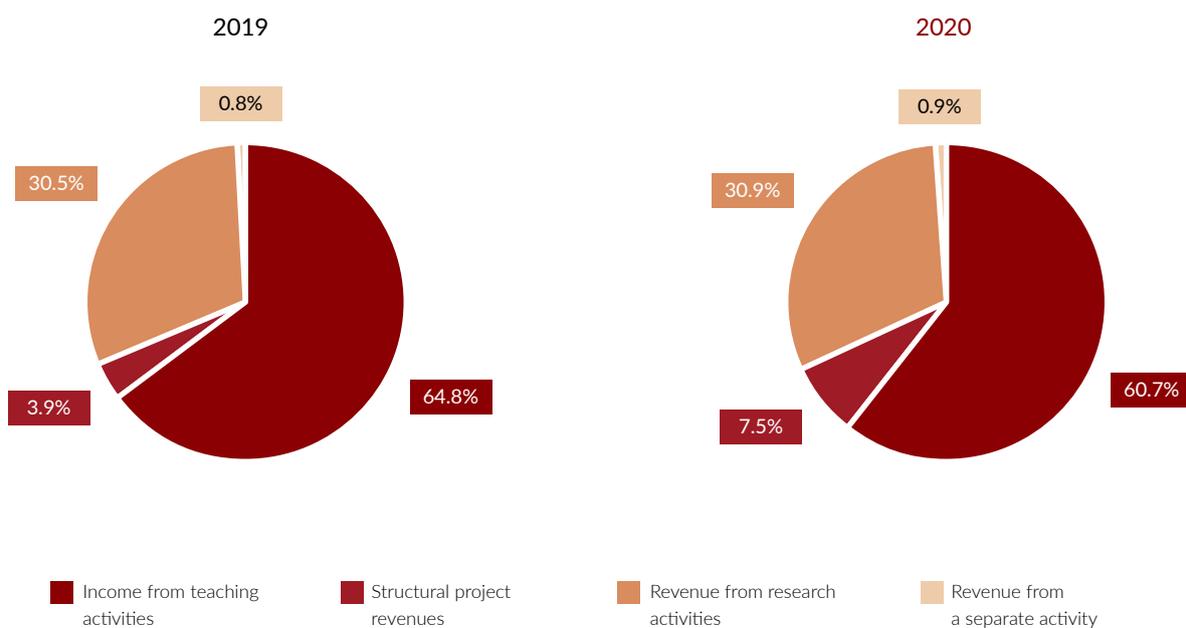
### Comparative income statement for 2019–2020 (in thousand PLN)

	2019	2020
Sales Results	4 025.85	-7 371.43
of which:		
- teaching activities	2 206.08	-9 524.82
- research activities	1 815.95	2171.7
- separate business activity	-69.43	-108.46
- sale of goods and materials	73.25	90.15
Results from other operations	10 417.11	11 700.37
including:		
Depreciation equivalent	12 259.94	11 379.86
<b>Operating profit</b>	14 442.96	4 328.94
Results for financial operations	-1 424.84	-124.8
Gross profit/loss	13 018.12	4 204.14
Corporate tax	85.46	87.01
<b>Net profit/loss</b>	12 932.66	4 117.13

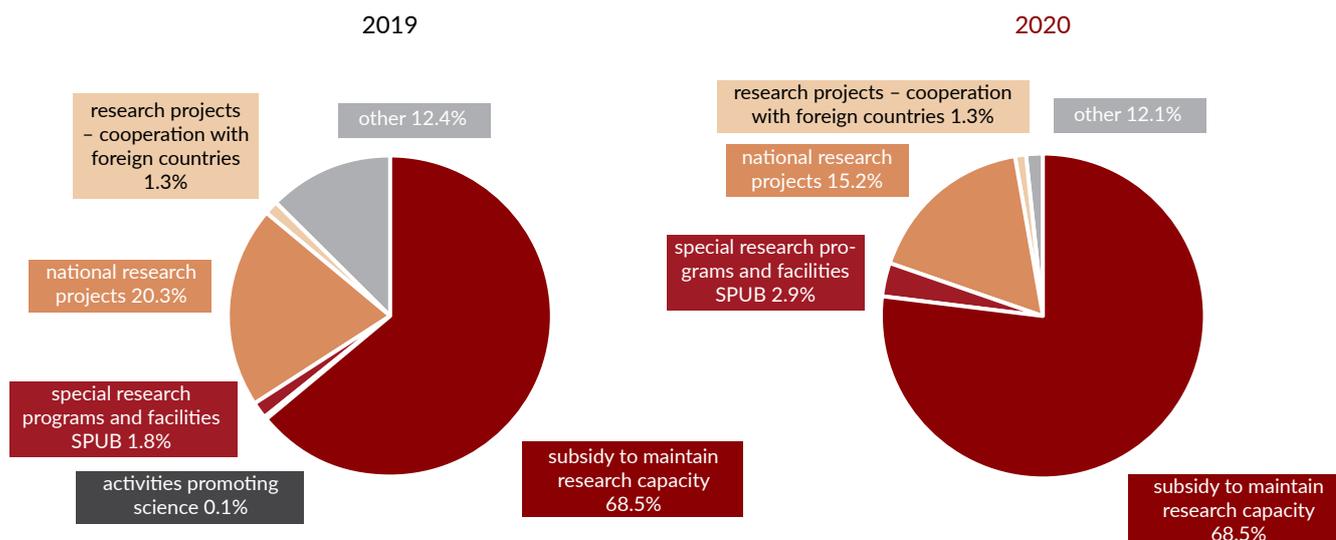
## Revenues from core activities in 2019–2020 (in thousand PLN)

	2019	2020
<b>Revenue from basic operating activities</b>	<b>468 262.97</b>	<b>453 798.56</b>
of which:		
<b>Income from teaching activities</b>	<b>303 257.03</b>	<b>275 240.18</b>
including:		
subsidy for the maintenance of teaching potential	237 970.30	222 107.82
subsidies from the state budget, including a pro-quality subsidy	1 887.25	2 212.71
fees for educational services	20 654.36	15 796.78
other	42 745.12	34 249.92
<b>Structural project revenues</b>	<b>18 057.57</b>	<b>34 249.92</b>
<b>Revenue from research activities</b>	<b>143 143.63</b>	<b>140 061.73</b>
including:		
a subsidy to maintain research capacity	91 701.45	95 931.18
including:		
IDUB subsidy	-	7 083.90
activities promoting science	132.70	0.00
special research programs and facilities SPUB	2 640.98	4 089.73
national research projects	29 006.22	21 279.21
research projects – cooperation with foreign countries	1 933.73	1 778.96
other (e.g. service and research work with business entities)	17 728.55	16 982.65
<b>Revenue from a separate activity</b>	<b>3 804.74</b>	<b>4 246.73</b>

## Structure of revenues from basic activities



## Structure of revenues from research activities



## Teaching subsidies in 2019–2020 at current prices (in thousand PLN)

	2019	2020
Subsidies from the Ministry of Science and Higher Education	338 125.85	327 439.00
including:		
subsidy to maintain teaching potential	237 970.31	222 107.82
subsidy to maintain research capacity	91 701.45	95 931.18
subsidy to finance fixed assets	8 454.09	9 400.00
<b>teaching subsidy per 1 student</b>	<b>21.91</b>	<b>19.44</b>

In accordance with the rules adopted by the Senate for the distribution of subsidies for the maintenance and development of teaching and research potential in 2020, the following were identified:

- funds remain in the Rector's reserve to the amount of PLN 24 076.36 thousand, including: a reserve in accordance with the Senate resolution of PLN 13 376.36 thousand funds for the implementation of projects as part of the task-oriented budget in the amount of PLN 2 200.0 thousand; funds for financing costs related to writing off the Retirement Benefits Fund and for the repayment of interest on an investment loan in the amount of PLN 2 500.0 thousand; funds to ensure the implementation of important strategic objectives of the university of PLN 6 000.0 thousand
- funds for organizational units from the centralized group of PLN 63 608.41 thousand were distributed in accordance with the rules adopted by the Senate
- funds for organizational units from the decentralized group of PLN 220 825.23 thousand were divided according to the rules adopted by the Senate and according to the applicable MNiSW algorithm. As part of the funds from the subsidy for decentralized units, PLN 9 400.0 thousand was used for the purchase and construction of fixed assets.

Funds from the Rector's reserve were used to subsidize the costs of promotion, student organizations, student and doctoral student self-government and current tasks and repairs at the request of organizational units, to subsidize increased activity by the International Cooperation Centre and central administration, amounting to PLN 8 873.06 thousand. The reserve funds for the implementation of tasks within the task-oriented budget were allocated to decentralized units according to the costs incurred for the implementation of tasks included in the plan, amounting to PLN 2 207.86 thousand. The remaining funds from the Rector's reserve amounting to PLN 4 495.44 thousand are included in the financial result.

IDUB subsidy funds were used to finance Open Access publications and awards supporting the scientific excellence of employees, doctoral students and students. Funds amounting to PLN 754.15 thousand were secured to finance costs in the first quarter of 2021. Funds were also secured in the reserve for the first quarter of 2021 to finance purchases related to increasing the potential of the university in providing remote education.

## Salaries

The total gross salary costs in 2020 amounted to PLN 250 587.12 thousand, including personnel remuneration costs of PLN 230 799.12 thousand.

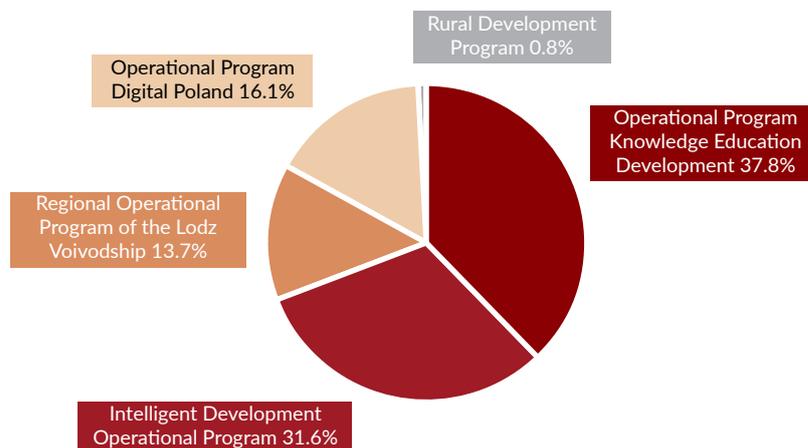
## Structural funds

In 2020, Lodz University of Technology implemented 86 projects from structural funds in the following operational programs:

Operational Program Knowledge Education Development	37 projects
Intelligent Development Operational Program	30 projects
Regional Operational Program for the Lodz Voivodship	9 projects
Operational Program Digital Poland	7 projects
Rural Development Program	3 projects

Structure of funds obtained under the Structural Funds in 2014–2020

As part of the structural funds in 2014–2020, TUL received co-financing for a total amount of PLN 313 059.6 thousand, including PLN 32 446.4 thousand in 2020.



## Investment and renovation activities

In 2020, investment outlays amounted to PLN 59 700.08 thousand including PLN 5 681.57 thousand for investments started in the reporting year.

Investments (in thousand PLN)		
	2019	2020
Outlays	34 458.80	59 700.08
by sources of financing:		
Ministry of Science and Higher Education	21 691.20	28 076.91
Structural funds	5 188.40	7 949.60
Own funds	3 652.10	8 109.72
Funds from subsidies	3 848.70	7 869.21
Other	78.40	7 694.64

Investments in 2020 included:



- Continuation of the construction of the modern building of the Faculty of Chemistry **“ALCHEMIUM – THE MAGICAL FUTURE OF CHEMISTRY”**. The first stage, planned for 2018–2020, included the construction of an auditorium for 500 people and 14 modern classrooms. In the second stage, in the years 2021–2024, two laboratories and teaching buildings will be built, with modern chemical and scientific laboratories. The total construction cost is PLN 113.1 million. Lodz University of Technology received funding from the Ministry of Science and Higher Education for the amount of PLN 97.5 million,
- *Continuation of the Innovative Textile Industry 2020+ project (investment in new research infrastructure),*
- *Interdisciplinary Center for Advanced Materials and Intelligent Management Systems in Construction 2020+ (investment in IT infrastructure),*
- Reconstruction and equipping a room for the needs of the Instrumental Analysis Laboratory at the Institute of Fermentation Technology and Microbiology (investment started in 2020),
- Expansion of the Lodman 2020 Municipal Computer Network Computing and Information Services Centre.

### Renovation costs (in thousand PLN)



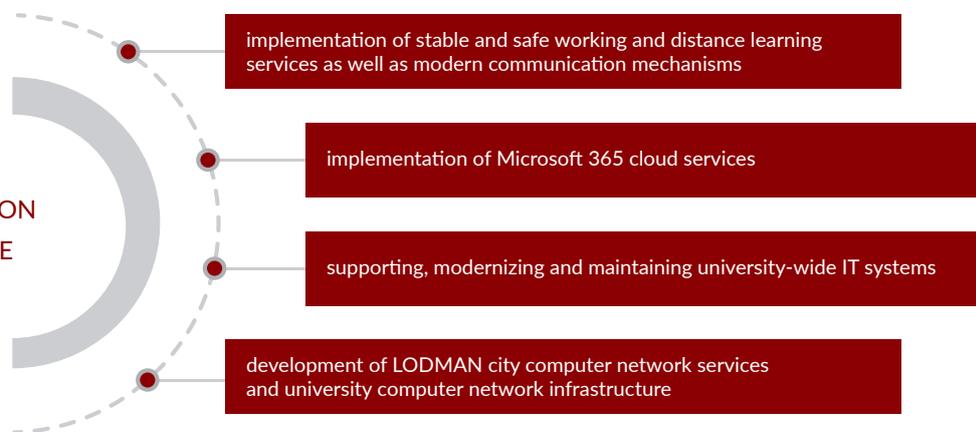
	2019	2020
	15 709.6	7 818.9

Repairs included ongoing works aimed at keeping the property in proper technical condition. The reconstruction of Reinhold Richter's villa, the former seat of the rector's office of Lodz University of Technology which was destroyed in a fire in 2016, continued. All renovation works to date, including the replacement of the window joinery in 2020, are aimed at restoring the former state of the building.



## INFORMATION TECHNOLOGY

### COMPUTING AND INFORMATION SERVICES CENTRE AT TUL



Completed tasks under the activities of UCI TUL

#### Remote work mechanisms

- The BLUE OCEAN computing cluster was made available for the needs of classes with selected groups of students.
- The internal documentation of the Microsoft 365 system was expanded and made available to all employees and students.

#### Safety and reliability

- The optical network of the University Computer Network (USK) was expanded, enabling on the one hand expansion of more reliable backbone network topologies, and on the other the flexible creation of virtual networks for the needs of various classes of services. The culmination was the construction of a network of nodes ensuring data transmission in the piloted 5G technology.

#### Server infrastructure

- In the area of cloud computing and data, reorganization of storage space and implementation of a container environment (docker) was continued, mainly for the needs of PLATON and MAN-HA computing clusters, but also for new projects such as the Centre for IT Mastery, Accessible University, Medical Databases, construction of a microservices system for modern authentication using SMS mechanisms or the new Teacher's Terminal.

Completed tasks under the activities of UCI TUL

### Data storage

- Services were optimized to migrate to the Microsoft cloud. ZIMBRA, Courier and Files in the Cloud services expired. Due to time limits for cloud mail transmission, new servers in the info.p.lodz.pl domain were reinforced, ensuring efficient functioning of the mechanisms for TUL Announcements, Rector's Announcements and handling several thousand discussion forums functioning on the WIKAMP platform.

### IT systems

- The Integrated Teaching Information System was adapted to the new statutory requirements, the SID commission's findings and changes to the POL-on data reporting system. Work continued on the redevelopment of this system towards full service integration and the creation of a new multi-platform Integrated Teacher Terminal using SMS second factor authentication. The first version of the system was launched in December 2020.

### Development of information technology infrastructure for science

- Within the PIONIER consortium, work continued in the PRACE-LAB project aimed at expanding the IT for science infrastructure and launching specialized innovative HPC and Cloud Computing services for the purposes of scientific and R&D work.



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