SUSTAINABLE DEVELOPMENT GOALS

GDAŃSK UNIVERSITY OF TECHNOLOGY

REPORT

2016-2021

GDAŃSK UNIVERSITY OF TECHNOLOGY

RESEARCH UNIVERSITY
EXCELLENCE INITIATIVE

Gdańsk University of Technology publishes for the first time a report on the implementation of the Sustainable Development Goals set out in the resolution adopted by the General Assembly of the United Nations (UN) on 25 September 2015. There are 17 of them in total.

Currently, the implementation of the Sustainable Development Goals is particularly important, because we have experienced the effects of the refugee crisis, global pandemic, climate change and other dramatic events that require us to take an active attitude and introduce radical changes to our daily lives. These events prompted everyone to think about poverty eradication, peace maintenance, social and environmental well-being and health.

The strategic planning period 2020–2030 is an exceptional time in the history of Gdańsk University of Technology. We have a unique opportunity to take on challenges that were previously beyond the scope of our interests. The atmosphere of mobilization, increased aspirations and faith in one's own abilities are elements of the cultural change taking place among the University community. We have adopted an ambitious strategy well suited to the opportunities and challenges. In line with its guiding principle, we wish to serve society and our planet in the best possible way, in particular by contributing to the achievement of the UN Sustainable Development Goals. One of the most important values cultivated by Gdańsk University of Technology is care for the conditions and quality of life of the present and future generations. The university actively participates in the implementation of the UN Sustainable Development Goals and the European Green Deal of the European Commission.

It is also a signatory of the Universities' Declaration of Social Responsibility and an active subject of activities aimed at shaping social attitudes conducive to the implementation of the declaration's postulates. It should be emphasized that recently our University has undertaken many important activities for the benefit of the environment. One of them was the establishment of the EcoTech Center, which deals with shaping a harmonious, sustainable space for human life, which is extremely important in the face of current environmental challenges, climate change as well as social and demographic changes. We have also started the construction of the Eco-innovation Center, which will be one of the most important scientific units in Poland dealing with the development of pro-ecological solutions and environmental technologies.

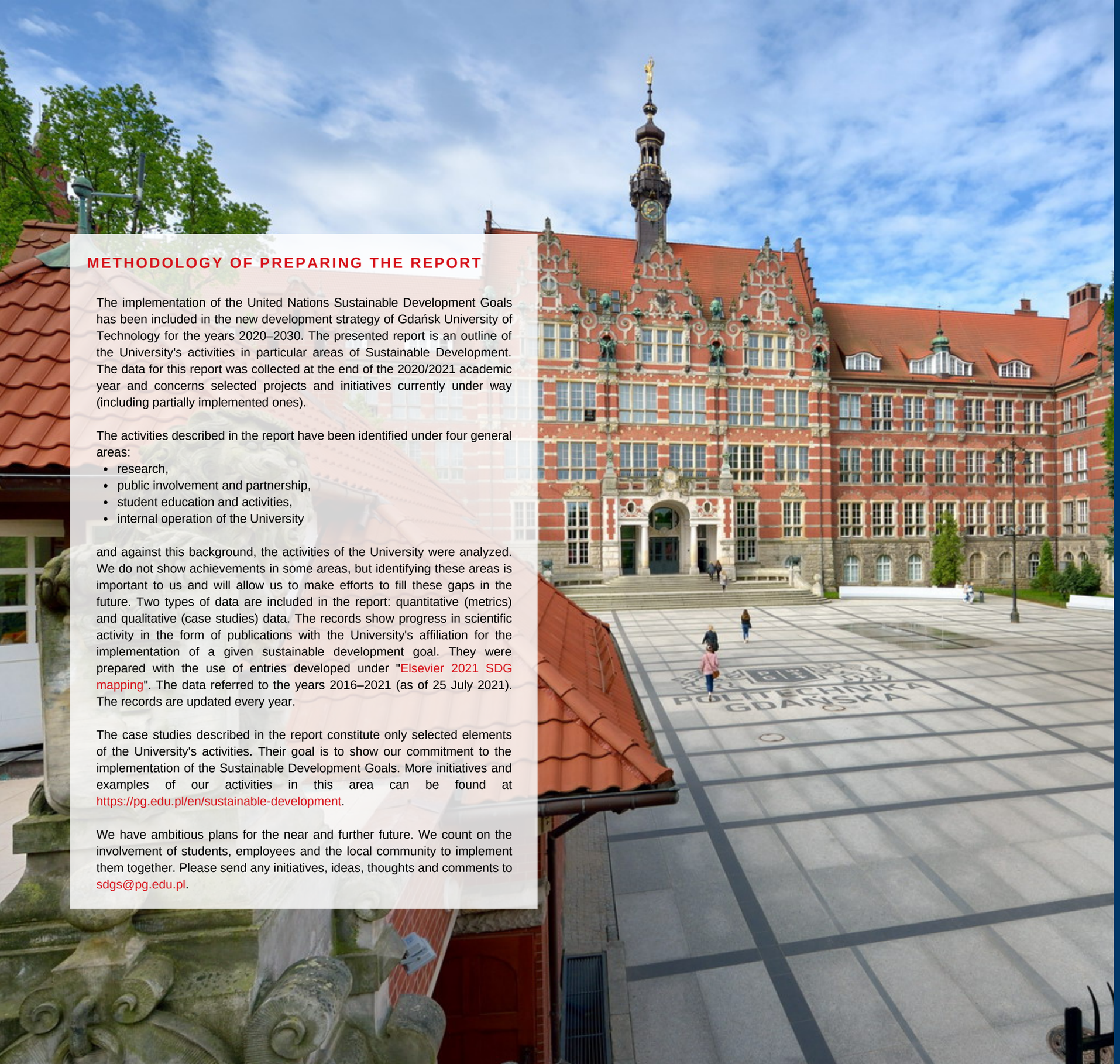
The activities of the Center will be focused on several important areas, such as the environment, energy, construction, mobility, revitalization, training of future staff focused on creating innovative ecological solutions, and industry. We plan to finish the investment in autumn 2022.

This report presents only selected activities of our University that significantly contribute to the achievement of the Sustainable Development Goals.

Despite our most sincere intentions, we are not able to discuss all the activities and initiatives of our employees and students in it. We want to use these examples to emphasize the commitment and contribution of the entire academic community to sustainable development for a better future for our common planet.

Rector of Gdańsk University of Technology

prof. Krzysztof Wilde, PhD, DSc, Eng.
Corresponding member of the PAS



METHODOLOGY OF PREPARING THE REPORT

The implementation of the United Nations Sustainable Development Goals has been included in the new development strategy of Gdańsk University of Technology for the years 2020–2030. The presented report is an outline of the University's activities in particular areas of Sustainable Development. The data for this report was collected at the end of the 2020/2021 academic year and concerns selected projects and initiatives currently under way (including partially implemented ones).

The activities described in the report have been identified under four general areas:

- research,
- public involvement and partnership,
- student education and activities,
- internal operation of the University

and against this background, the activities of the University were analyzed. We do not show achievements in some areas, but identifying these areas is important to us and will allow us to make efforts to fill these gaps in the future. Two types of data are included in the report: quantitative (metrics) and qualitative (case studies) data. The records show progress in scientific activity in the form of publications with the University's affiliation for the implementation of a given sustainable development goal. They were prepared with the use of entries developed under "Elsevier 2021 SDG mapping". The data referred to the years 2016–2021 (as of 25 July 2021). The records are updated every year.

The case studies described in the report constitute only selected elements of the University's activities. Their goal is to show our commitment to the implementation of the Sustainable Development Goals. More initiatives and examples of our activities in this area can be found at https://pg.edu.pl/en/sustainable-development.

We have ambitious plans for the near and further future. We count on the involvement of students, employees and the local community to implement them together. Please send any initiatives, ideas, thoughts and comments to sdgs@pg.edu.pl.

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1 NO POVERTY

Research in numbers:
606
1% of all Poland publications

End poverty in all its forms everywhere

RESEARCH

GDAŃSK TECH SCIENTISTS ON POVERTY

Researchers from the Faculty of Management and Economics at Gdańsk Tech undertook research covering 144 countries in the period 1990–2010. The aim was to show the general situation in terms of the scale of poverty of people deprived of access to basic amenities and elementary achievements that make up human well-being. The research results are discussed in the article [1] Human poverty - measuring relative deprivation from basic achievements. A comparative study for 144 world countries in the time span 1990–2010.

FINANCIAL BEHAVIOR OF POLES

Researchers from the Faculty of Management and Economics [2] undertook an analysis of the interdependence between financial awareness, financial behavior and the well-being of households in Poland. The aim of the project was to obtain answers to questions concerning the scope of knowledge of financial issues, taking into account gender, age, social status, as well as economic well-being, interdependencies between the attitude towards saving, investment, debt and wealth.

PUBLIC ENGAGEMENT AND PARTNERSHIP

EDUCATIONAL VOLUNTEERING

The Gdańsk Tech Volunteering Center was established in December 2020 to disseminate the idea of social work in the academic community of Gdańsk University of Technology. The center cooperates with the Regional Volunteer Center in Gdańsk, as well as Gdańsk secondary schools.
The Volunteer Center promotes the belief that by sharing knowledge and skills, helping others, we can contribute to lasting social changes and consolidate attitudes of openness and tolerance. We initiate and support various forms of voluntary activities in the academic community of Gdańsk Tech, we cooperate with organizations and institutions that provide help to those in need, in particular as part of educational volunteering.

EDUCATION AND STUDENT ACTIVITY

BUILDING A SCHOOL IN INDONESIA

A student of our university from Indonesia, Lisa Aditya, donated a special prize funded by the rector of Gdańsk Tech, which she won in the Red Rose competition in 2018, for the construction of a primary school in her home country. The president of the international humanitarian organization ACT, which raised funds for this purpose, sent special thanks to Gdańsk University of Technology.

INTERNAL ACTIONS OF THE UNIVERSITY

SCHOLARSHIPS FOR STUDENTS

Students can apply for various types of benefits paid from the Scholarship Fund, such as a social scholarship, scholarship for the disabled, rector's scholarship and allowances. Benefits are awarded by the Scholarship Committee.

2 ZERO HUNGER

Research in numbers:
2768
1% of all Poland publications

End hunger, achieve food security and improved nutrition and promote sustainable agriculture

RESEARCH

GENTLE FOOD PROCESSING

Research by scientists from the Faculty of Chemistry on gentle food processing evaluate the benefits and limitations of using high pressures (up to 200 MPa) at temperatures below 0° C as a preservation and food processing method, learning about the changes that take place in these conditions in selected components of the muscle tissue of fish and warm-blooded animals; studies on the survival of microorganisms in model conditions and in the food environment depending on the parameters of the process, properties of microorganisms or the composition of the environment.

SMARTPHONES

Scientists from the Faculty of Chemistry reviewed the current trends[3] in the use of smartphones to assess food quality and their impact on the availability of food analytical methods and their sustainability. Conclusions from the analysis show that smartphones will play an increasingly important role in this area.

Źródło: https://www.sciencedirect.com/science/article/pii/S092422442100176X?via%3Dihub

MONOGRAPHY "TESTING THE QUALITY OF SELECTED PRODUCTS"

In the monograph Research on the quality of selected products,[4] scientists from the Faculty of Management and Economics characterized seven groups of food products and two groups of non-food products, and described the research that allows to assess their quality. The book is intended for students of social studies in the field of quality sciences. The study should also be useful to students or lecturers from other universities who deal with the broadly understood quality of various products offered to consumers in commerce.

PUBLIC ENGAGEMENT AND PARTNERSHIP

FOOD IN THE GREEN DEAL STRATEGY

In July 2021, Gdańsk Tech, in cooperation with the Polish Academy of Sciences, conducted XLV Scientific Session of the Committee for Food Sciences and Nutrition - Food in the Green Deal Strategy.
Scientific sessions of the Committee of Food Sciences and Nutrition of the Polish Academy of Sciences are held cyclically every two years in various national academic centers related to food and nutrition science. During these meetings, representatives of scientific institutions and the food industry have the opportunity to present the latest scientific and technological achievements. The turn of the years 2020 and 2021 is a special time for food sciences and nutrition also due to the COVID-19 pandemic, which forced the whole world to reflect on the threats in production, distribution and ensuring the availability of food.

EDUCATION AND STUDENT ACTIVITY

FOOD IN EDUCATIONAL PROGRAMS

As part of the study program at the Faculty of Chemistry students deal with the following subjects: General Biotechnology, Food Chemistry, Functional and bioactive food ingredients, Food Microbiology, Nutrition Science, Food Toxicology or New and Rapid Analytical Techniques in Food Quality Analysis.

ENSURING HEALTHY FOOD SAFETY

The Faculty of Chemistry offers training entitled “the Internal Auditor of the HACCP system” (Hazard Analysis and Critical Control Points System). It is a food safety-oriented system that identifies, assesses and controls hazards relevant to food safety. The training is addressed to Gdańsk Tech employees and students as well as participants from outside the University who would like to gain knowledge in the presented scope of the training.

3 GOOD HEALTH AND WELL-BEING

Research in numbers:
35 272
1% of all Poland publications

Ensure healthy lives and promote well-being for all at all ages

RESEARCH

BIOTECHMED CENTER

Scientists from the Biotechmed Center existing at Gdańsk Tech deal with the research and implementation of modern technologies in the field of biomedical engineering, molecular and pharmaceutical biotechnology, and methods of searching for new drugs. Scientists are working on new methods of biomedical measurements (also with the use of artificial intelligence methods), diagnosis and therapy of patients and dedicated control systems for devices with a wide range of applications in medicine, for example in rehabilitation and exoskeletons. The aim of the work will also be to develop a nutritional prevention strategy in chronic non-communicable diseases.

DAMAGE TO THE CERVICAL VERTEBRAE

Scientists from the Faculty of Civil and Environmental Engineering are working on proposing a numerical model of a car accident involving people[5] on road safety barriers. The aim is to obtain a mathematical description of the behavior of the spine's soft tissues, with particular emphasis on the cervical part during non-linear dynamic events, such as collisions with cable, steel or concrete barriers. Motivation for research is derived from research by the General Directorate for National Roads and Motorways to develop design recommendations and the use of barriers installed on Polish highways and expressways. The project is implemented in cooperation with consultants from GUMED (Gdańsk Medical University).

MEMORY MECHANISM

As part of the project "Neurophysiological mapping and stimulation of the human brain to improve memory"[6], scientists from the Faculty of Electronics, Telecommunications and Informatics are investigating the mechanisms of memory and the possibilities of electrical stimulation of its disorders. The team is looking for answers to the questions: what is memory, where is it located in the brain and how it can be effectively treated in Alzheimer's, Parkinson's and other diseases in the course of memory disorders. The project is implemented in cooperation with the Mayo Clinic in the United States, the Medical University of Gdańsk and the Marceli Nencki's Institute of Experimental Biology in Warsaw.

RECOGNIZING EMOTIONS

The project, led by scientists from the Faculty of Electronics, Telecommunications and Informatics, aims to create a proof-of-concept for the introduction of emotional recognition mechanisms in the treatment of children with autism spectrum[7] disorders, using social robots. The project involves universities from Poland, Great Britain, Germany and Turkey, as well as the Macedonian Association of Applied Psychology.

TITAN

Scientists and students from the Faculty of Applied Physics and Mathematics have developed the innovative TITAN (Technology In Tumor ANalysis) system, which uses machine learning technology and artificial intelligence algorithms to determine the probability of a kidney tumor malignancy based on a computed tomography image of the abdominal cavity. Due to this it will be possible to make a more accurate diagnosis, as well as reduce the number of unnecessary surgeries that jeopardize the health and life of patients.

POLICY EVALUATION NETWORK

The Faculty of Civil and Environmental Engineering conducts a European project PEN - Policy Evaluation Network[8], which aims to evaluate policies supporting and promoting a healthy diet and physical activity in society. PEN's vision is to provide Europe with tools to identify, evaluate and compare policies that directly or indirectly contribute to solving problems and diseases of civilization, such as: lack of physical activity, unhealthy diet and a sedentary lifestyle. Scientists from 28 institutes in 7 European countries and New Zealand combine their knowledge to create a multidisciplinary research network, also including representatives from the World Health Organization, to work with politicians and recognized experts to develop, implement and evaluate policies supporting health and quality life. The research group from the Faculty of Civil and Environmental Engineering is responsible in this project for the development of issues related to active transport and mobility and the effectiveness of policies in this area to increase the physical activity of the society.

PUBLIC ENGAGEMENT AND PARTNERSHIP

FRIENDLY APPS

"Friendly Applications" is a project in which educational applications are created. Their goal is to support the treatment of children with autism spectrum disorders based on the principles of applied behavior analysis. The project is carried out by scientists from the Faculty of Electronics, Telecommunications and Informatics in partnership with the Institute for Child Development Support Foundation. During the seven years of working on the project, a group of applications was created:

- Friendly Plan and Friendly Plan Manager that enable therapists and teachers creating individual educational paths,
- Friendly Lines and Friendly Letters - an educational game supporting the development of graphomotor skills in a child,
- Friendly Words and Friendly Words Manager - a game supporting the development of speech understanding,
- Friendly Emotions - an application that develops the emotional intelligence of a child.

The applications are available for free on the Google Play store (the Friendly Emotions application will be available soon).

ENTHROPY IN CARDIOLOGICAL TESTING

One of the basic diagnostic tools in cardiology is an ECG - a non-invasive test that shows the bioelectric activity of the heart. It is the ECG records that provide valuable data for scientists from the Faculty of Applied Physics and Mathematics who want to use sophisticated mathematics to assist cardiologists in even more effective diagnostics. Calculating the entropy for an ECG recording is a quick and simple method. The group working on this subject also includes doctors from the Medical University of Gdańsk and physicists from the University of Gdańsk.

LOCAL SPORT SPONSORS

Gdańsk University of Technology and the Education and Upbringing Team in Stężyca have signed a cooperation agreement to improve the quality of high school education and prepare pupils for studies at the Gdańsk university. Participants of teams from the Sports Championship School, which operates as part of the Education and Upbringing Team in Stężyca, taking up education at Gdańsk University of Technology, will continue to train in the teams and prepare for performances at the Polish Academic Championships in women's volleyball, beach volleyball and football.

EDUCATION AND STUDENT ACTIVITY

ACADEMIC SPORTS CENTER

At the Academic Sports Center, classes for students are carried out as part of the study program. Standard classes for students are held in a sports hall, rowing hall, aerobics hall, gym, playground or swimming pool. During the first organizational classes, the trainers conduct an interview, on the basis of which they assess the participants' skills and qualify them to the appropriate group. If a student has health problems, and general gymnastics may be an issue, corrective exercises are developed according to the needs.

Eager and exceptionally athletic students can enroll in one of the 28 sports sections that represent our university in the Polish Academic Championships in over 40 disciplines.
In 2020 and 2021, Gdańsk Tech ranked first in the PAC, advancing from the traditionally held third positions in previous years.
Sports activities will be promoted in the future within the D. Fahrenheit Union of Universities.

INTERNAL ACTIONS OF THE UNIVERSITY

SPORTS CARD

Gdańsk Tech employees who like to actively spend their free time after work can use the MultiSport card, which allows free entry to many sports facilities throughout Poland, and purchase a ticket to the Gdańsk Tech swimming pool.

PSYCHOLOGICAL HELP CENTER

Every student and doctoral student at e Gdańsk University of Technology can use the help of a psychologist and psychotherapist as part of the Psychological Aid Center services free of charge. This type of support was particularly important during the isolation resulting from the coronavirus pandemic.

COVID-19

The university runs a dedicated website with current information on the principles of the university's operation during the pandemic, organization of the academic year, vaccination options and safety rules.

Gdańsk Tech also participated in the organization of group vaccinations against COVID-19 for its employees.

4 QUALITY EDUCATION

Research in numbers:
1723
3% of all Poland publications

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

PUBLIC ENGAGEMENT AND PARTNERSHIP

MULTIGENERATIONAL UNIVERSITY OF TECHNOLOGY

Multigenerational University of Technology is a project which provides free classes dedicated to parents with children and grandparents with grandchildren. School groups and people with disabilities also benefit from the class offer. Participants can take part in workshops and lectures in science, socio-economic sciences, new technologies, ecology or foreign languages, as well as in sports activities.

CHILDREN'S ECONOMIC UNIVERSITY

CEU classes have been conducted by the Faculty of Management and Economics of Gdańsk Tech for three years. The aim of the meetings is to popularize knowledge and build economic awareness among children from an early age. The program also includes a series of meetings for parents in the field of upbringing and shaping attitudes in children.

Źródło: https://zie.pg.edu.pl/wydarzenia-wzie/ekonomiczny-uniwersytet-dzieciecy

ABOUT FINANCES WITH NBP

In 2020 Gdańsk Tech Faculty of Management and Economics implemented a project aimed at 7th and 8th grade students of primary schools and secondary school students, the aim of which was to increase the awareness of students in the field of household finance management, use of financial services and risk reduction in making financial decisions.

THE TALENTED OF POMERANIA

The project "Talented of Pomerania – Gdańsk University of Technology" is carried out by the Self-Government of the Pomorskie Voivodeship in partnership with Gdańsk University of Technology.
The aim of the project is to support gifted students from grades 7 and 8 of primary schools and post-primary schools of the Pomeranian Voivodeship in the fields of: physics, computer science and mathematics, as well as biology and chemistry.

EDUCATION AND STUDENT ACTIVITY

UNIVERSITY SYSTEM FOR ASSURING AND IMPROVING THE QUALITY OF EDUCATION

USZiDJK is co-created by representatives of the University Authorities, faculties, teaching centers and university administration units, as well as academic teachers, doctoral students, students and representatives of the economic environment. Detailed objectives of the USZiDJK activity were formulated in the Resolution of the Senate of Gdańsk University of Technology (No. 57/2017 / XXIV of 15 March 2017) and focus mainly on building a quality culture, ensuring coherence of education and of the conducted scientific research, improving the quality of scientific, teaching and administrative staff as well as increasing the attractiveness and competitiveness of Gdańsk University of Technology.
Each person directly and indirectly involved in the education process has the opportunity to report the need for a change in the field of education. Applications can be made in electronic form.

ACCREDITATIONS

The following accreditations confirm the high quality of education:

- Polish Accreditation Committee (PKA);
- Accreditation Committee of Universities of Technology (KAUT);
- the European University Association (EUA);
- Association of Masters In Business Administration (AMBA);
- European Chemistry Thematic Network (ECTN);
- CEEMAN International Quality Accreditation.

The institutional accreditation of the ACEEU is in currently being assessed.

POSTGRADUATE STUDIES

The university also offers postgraduate studies in various areas of knowledge. Participation
in this form of education is an excellent opportunity to supplement knowledge and meet practitioners in a given field. There are 53 active postgraduate fields of study at Gdańsk Tech (as of 09/24/2021).

IDUB

As part of the IDUB Program "Excellence Initiative - Research University", programs aimed at students are implemented, including the most gifted ones, and supporting the activities of student research clubs. Thanks to the program of cooperation between universities and secondary schools, mainly from outside the Tri-City, the most talented graduates are selected as future students of Gdańsk University of Technology, in particular in fields related to the research topics of Priority Research Area Centers.

GABRIEL DANIEL FAHRENHEIT SCHOLARSHIPS

In the future financial perspective for the province Pomeranian Voivodeship, there will be scholarships for the most promising candidates for studies, the so-called Fahrenheit scholarships.

INTERNAL ACTIONS OF THE UNIVERSITY

CENTER FOR INNOVATIVE EDUCATION

The Center for Innovative Education was established at Gdańsk Tech to meet the expectations of modern communication with students. One of the first activities carried out by CNE are Didactic Fridays - a series of weekly methodological webinars for Gdańsk Tech academic teachers. In the academic year 2020/2021, a total of 34 topics were covered, including teamwork, neurobiology of learning, interactive lecture, gamification, storytelling, puzzle rooms, working with a multicultural group or the well-being of the lecturer.

MASTERS OF TEACHING

Masters of Teaching[9] is a project during which the academic staff of Gdańsk Tech learn about didactic solutions that will contribute to the development of social competences, which are a complementary element to polytechnic education. So far, the project has created a knowledge base for teachers participating in the project on tutoring to support the process of designing and conducting classes. A study on the perception of tutoring among students and academic Staff was designed, and the survey is scheduled to be conducted in October-November 2021.
All the teachers participating in the project took part in the international conference "Improving the teaching competences of academic teachers" on 21-22 June 2021. In the next stages, the academic teachers will take part in a training organized by a foreign partner (a tutoring specialist) in order to introduce the results achieved at our university in the next semester.

5 GENDER EQUALITY

Research in numbers:
1050
0,4% of all Poland publications

Achieve gender equality and empower all women and girls

RESEARCH

WOMEN'S COMMITMENT TO ECONOMIC ACTIVITY

Researchers from the Faculty of Management and Economics conducted research[10] aimed at examining the links between the introduction of information and communication technologies (ICT) into the economy, the participation of women in the labor market and economic growth in the countries of Central and Eastern Europe in the years 1990–2017. The conducted research allowed to identify significant relationships between ICT and economic activity of women.

PUBLIC ENGAGEMENT AND PARTNERSHIP

THE FEMALE DIMENSION OF TECHNOLOGY

The well-known question in empirical economics: "Why so Few? Why so Slow? Why so Low?"[11] in the conducted research referred to the persistence of a small number of women engaged in innovative activities, the slow change in inequality between women and men, and the constantly lower position of women in business and academic positions.
In recent years, the growing percentage of women participating in the labor market has attracted the attention of many researchers. This positive shift towards mobilizing previously untapped human resources is seen as one of the positive external effects, enhanced by the seemingly unrestricted flow of information and communication technologies.

GDAŃSK UNIVERSITY OF TECHNOLOGY HAS ITS REPRESENTATIVE IN THE COUNCIL OF YOUNG RESEARCHERS

Justyna Płotka-Wasylka, PhD, DSc, Eng. from the Department of Analytical Chemistry at the Faculty of Chemistry was appointed to the Council of Young Scientists (CYS), an advisory team of the Minister of Science and Higher Education. The representative of our university in CYS wants to promote solutions supporting young mothers in the world of science. The postulates proposed by the University's representative include for example introducing the possibility of applying for a reduction of the teaching load for a period of 12-18 months for young mothers in a scientific and didactic position after returning from maternity leave, which would allow for a free return to scientific work, which is necessary for habilitation, as well as increasing the financial base for the expansion of university nurseries and kindergartens that will make it easier for young parents to return to scientific and didactic work.

GIRLS AT THE UNIVERSITY OF TECHNOLOGY

Gdańsk University of Technology has been a partner of a nationwide campaign since 2008 (i.e. from the beginning of the campaign) organized by the Perspektywy educational foundation Girls at the University of Technology. For two years (2020 and 2021), the partner on behalf of Gdańsk Tech has been the Faculty of Electronics, Telecommunications and Informatics. The aim of the action is to encourage high school female students to undertake engineering studies, in particular in the field of computer science.

NEW TECHNOLOGIES FOR GIRLS

Gdańsk University of Technology participates in the New Technologies for Girls scholarship program, coordinated by Perspektywy.
New Technologies for Girls is a scholarship program for young women associating their future with the technology industry. The initiative aims to encourage girls to be interested in new technologies and the education related to their creation. It is to help talented female high school graduates
and students in planning and building a professional career in the technology industry and science.

IT FOR SHE

Gdańsk University of Technology supports the IT for She program, which is also coordinated by the Perspektywy educational foundation. The University of Technology provides information about the program among students. IT for SHE is a program aimed at increasing the participation of women in the technology industry by helping talented female IT students enter the labor market.
The main elements of the program are:

- the largest thematic camp for girls in Europe,
- Mentoring Program,
- Volunteering Program, under which female students go to small towns, villages and cities to teach children the basics of programming.

WOMEN IN TECH SUMMIT

In 2018 and 2019, Gdańsk University of Technology was a partner of the Women in Tech Summit event, organized by Perspektywy. The largest conference of this type in Europe gathers representatives of the academic community and industry, IT specialists, experts in the field of STEM, representatives of the innovation sector and the world of politics, and students who share their knowledge about innovation processes in the field of IT and new technologies, suggest how to plan a career and gain new contacts.

6 CLEAN WATER AND SANITATION

Research in numbers:
5223
6% of all Poland publications

Ensure availability and sustainable management of water and sanitation for all

RESEARCH

PollAct

As part of the PollAct project, scientists from the Faculty of Civil and Environmental Engineering and the Faculty of Chemistry took part in a summer research expedition to the North-East Research Station of the Russian Academy of Sciences (NESS RAN) in Kolyma, where permafrost occurs as massive layers of ice. Research carried out in the Russian Arctic includes the analysis of the release of various classes of pollutants, in particular persistent organic pollutants, from melting permafrost, and determining the impact of climate change on their presence in rivers and lakes. The researchers emphasize that even distant areas of the Earth are strongly interconnected and Arctic research is important for the entire globe.

i-CLARE

As part of the i-CLARE[12] project, currently conducted at the Faculty of Electronics, Telecommunications and Informatics, an intelligent system is to be created to remove harmful pollutants in water, such as drugs, antibiotics, hormones or dioxins, which are present in rainwater and domestic sewage. It will be a small installation using porous diamond electrodes, which will allow the disposal of problematic organic compounds. Scientists at ETI are collaborating in this project with scientists from the Institute of Biotechnology and Molecular Medicine in Gdańsk and the Norwegian Institute for Air Research. The industrial partner is SensDX.

PUBLIC ENGAGEMENT AND PARTNERSHIP

NICE

Scientists from the Faculty of Civil and Environmental Engineering are working on a project concerning innovative and modern solutions for the sustainable use of rainwater in the city based on natural processes. NICE[13] solutions will help to reuse rainwater for a variety of purposes, thereby reducing pollution and surface runoff. Gdańsk University of Technology will be the leader of one of the tasks of the project under which it will design and build a natural facility for rainwater management in Gdańsk.

EDUCATION AND STUDENT ACTIVITY

Students at the Faculty of Civil and Environmental Engineering, as part of classes conducted by the employees of the Department of Water and Waste Water Technology, learn about the issues of water and wastewater treatment, sludge management and waste management. The Department is also involved in conducting one of the specializations at the inter-faculty field of Power Engineering under the name Environmental Protection Technology in Power Engineering, where the problem of water contamination is among the most important ones.

In the field of Green Technologies and Monitoring students of the Faculty of Chemistry complete the subject of Wastewater Treatment and management of sewage sludge, where they gain knowledge in the field of soil, air and water protection against pollution and supervision of environmentally friendly technologies.

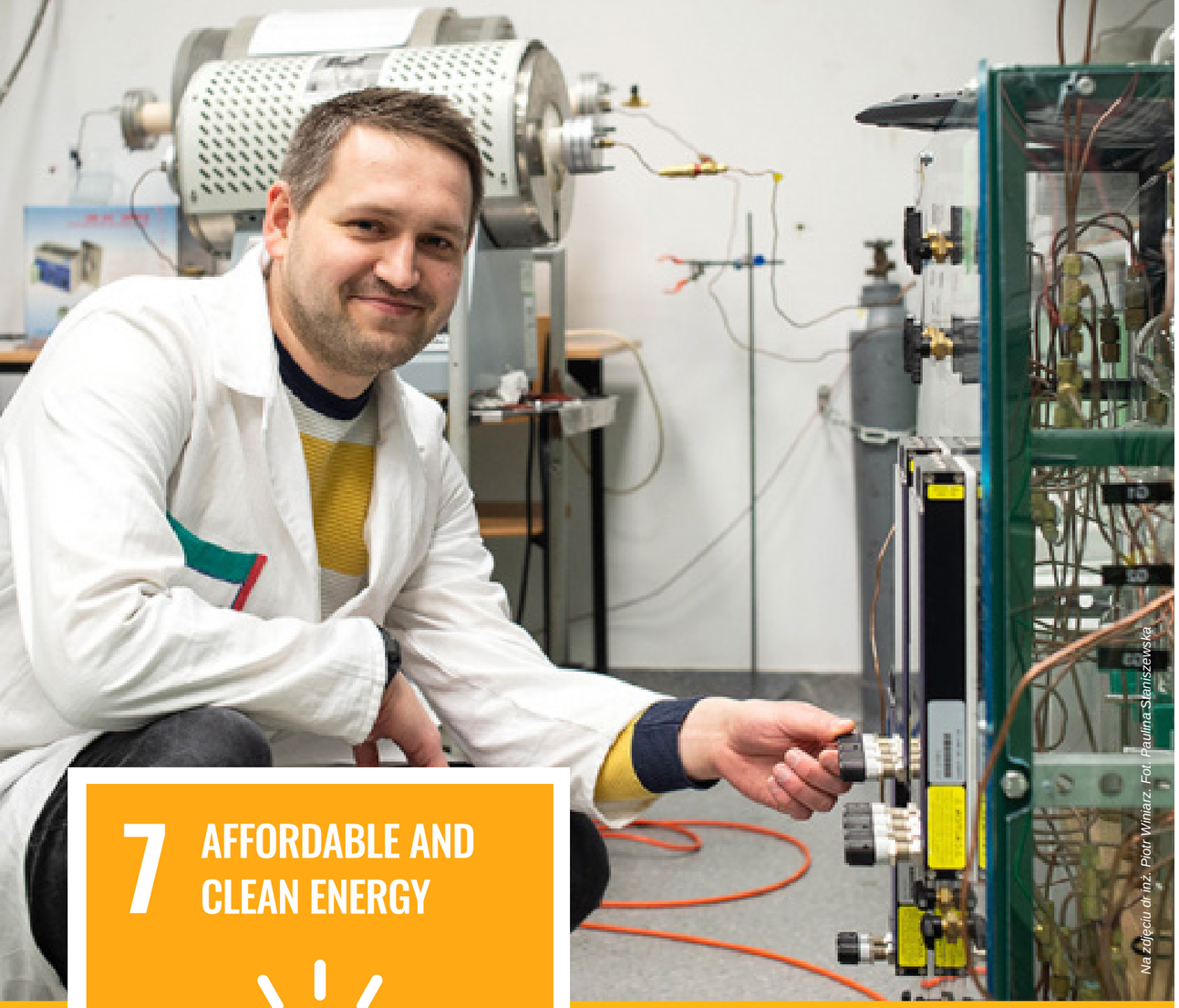
SCIENCE CIRCLES

The Inter-Faculty Student Research Group of Gdańsk University of Technology - Microbiology is involved in various research projects. Recently they have been working on a model for disinfection of wastewater using the UV method installed in a wastewater treatment plant in Jastrzębia Góra.

INTERNAL ACTIONS OF THE UNIVERSITY

ACCESS TO DRINKING WATER

At Gdańsk University of Technology, everyone has access to running, fresh water.
In Gdańsk, water can be drunk directly from the tap, because its quality is constantly tested and the results are made public. In many buildings on the Gdańsk Tech campus, taps with drinking water connected directly to the water supply system are installed. The Regulation of the Minister of Health of 7 December 2017 on the quality of water intended for human consumption specifies the conditions to be met by water. The water in Gdańsk meets the microbiological requirements, i.e. it does not contain pathogenic bacteria and meets the strict requirements of physicochemical parameters.



Na zdjęciu dr inż. Piotr Winiarz. Fot. Paulina Staniszewska

7 AFFORDABLE AND CLEAN ENERGY

Research in numbers:
9978
5% of all Poland publications

Ensure access to affordable, reliable, sustainable and modern energy for all

RESEARCH

THIS IS MY LAB

An article about Piotr Winiarz, PhD, Eng. from the Faculty of Applied Physics and Mathematics of Gdańsk Tech and his research work appeared in the "IEEE Photonics Society Newsletter" in the "This is my lab"[14] section. The scientist is interested in proton conductivity. Currently, his research work focuses on the influence of thermal deformation in perovskite thin films on proton conductivity. The aim of the research is to find optimal materials that can be used in fuel cells, i.e. devices generating clean electricity, in order to increase their efficiency and performance.

GAS POWER PLANT WITH NEGATIVE CO2 EMISSIONS

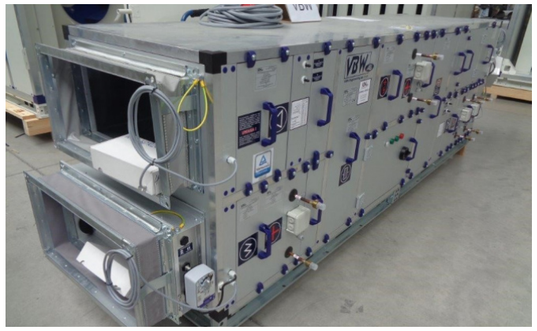
The concept of a modern power plant[15] that allows the use of sewage sludge to produce electricity with a positive impact on the natural environment focuses on a new type of CCS / CCU system (Carbon Capture & Storage / Carbon Capture & Utilization) developed by a team from the Institute of Energy, Faculty of Mechanical Engineering and Ship Technology (FMEST)) of Gdańsk University of Technology, the project leader, concerns the installation of gasification of sewage sludge and its disposal in a gas power plant together with carbon dioxide capture. Synergy between CCS / CCU installation and the proposed use of sewage sludge (considered a renewable energy source) allows the installation to achieve an overall negative CO2 emissions. An additional advantage of vitrification of sewage sludge, due to the appropriately high process temperatures, is the possibility of transforming this problematic waste into a market product.

BIOGASS FROM BIOMASS

An article prepared by a team of scientists from Gdańsk Tech entitled "Biomass in biogas production: pretreatment and codigestion"[16], published in the journal Renewable and Sustainable Energy Reviews, addresses the issues of energy recovery through the integrated processing of waste biomass in the anaerobic digestion process. The article was written as part of the projects: "Development of a technology for the preparation of substrates used in methane co-fermentation with disintegration methods"[17] and "Eco-innovative technology of low-temperature disintegration increasing the technological and energy efficiency of the sewage sludge treatment process"[18].

The main goal is to intensify energy recovery in the methane fermentation process in sewage treatment plants.

INNOECOTRIBLOCK



A device for hygrothermal treatment. Photo Gdańsk Tech materials

InnThe innovative trigeneration device[19] for the production of electricity and cooling for distributed energy with reduced environmental emissions is the result of the project implementation by scientists from the Faculty of Mechanical Engineering and Ship Technology in cooperation with VBW Engineering Ltd. It is an innovative concept that has no counterpart on the domestic market.

PUBLIC ENGAGEMENT AND PARTNERSHIP

The authorities of Gdańsk University of Technology have signed a cooperation agreement with the Danish University of Technology, the Institute of Fluid-Flow Machinery of the Polish Academy of Sciences and PGE Polska Grupa Energetyczna. Thanks to the memorandum, Gdańsk Tech students and scientists will have yet another opportunity to exchange knowledge, joint research and professional development in the field of offshore wind energy. Mutual cooperation is an opportunity for dynamic development of renewable energy sources in Poland.

EDUCATION AND STUDENT ACTIVITY

MODERN ENERGY FOR THE ENVIRONMENT

In order to meet the requirements of the Green Deal and climate goals, both European and national ones, expressed in the Polish Energy Policy until 2040 (PEP2040), students of the inter-faculty major in Power Engineering run by the Faculty of Mechanical Engineering and Ship Technology, Electrical and Control Engineering, and Civil and Environmental Engineering receive education in the area of pro-ecological energy systems, energy markets and power systems as well as environmental protection technologies in power engineering.

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ECOENERGY

During the Ecoenergy course the students of Energy Engineering and Energy Carriers Technologies at the Faculty of Chemistry will learn about the issues of energy production in relation to environmental protection.

INTERNAL ACTIONS OF THE UNIVERSITY

LINTE^2

The main task of the LINTE ^ 2 Laboratory is to conduct research and development works in the field of electrical power systems and devices, digital power protection automation systems and distributed control systems in power stations and dispatch centers:

1.smart power grids (Smart Grids),
2.smart energy islands with their own production resources,
3.new network services (electricity demand management, local energy generation, etc.),
4.charging and using electric vehicles and integrating electric vehicles with the power system,
5. and many other topical issues of modern power engineering.

OWE CENTER

Gdańsk University of Technology brings together many outstanding specialists in all major areas of knowledge related to offshore wind energy. The Offshore Wind Energy Center at Gdańsk Tech offers scientific support in the field of design, production technology and operation of offshore wind farms. It conducts numerical and experimental research, advises on how to solve technical problems, and trains management and engineering staff.

8 DECENT WORK AND ECONOMIC GROWTH

Research in numbers:
4204
2% of all Poland publications

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

RESEARCH

EMPLOYEES ON THE LABOR MARKET

Scientists from the Faculty of Management and Economics implement projects related to the functioning of employees on the labor market. One of the projects concerns professional burnout.[20] Its aim is to expand the concept of burnout to show its complex nature as fully as possible. The project includes verification of the new concept of professional burnout in the context of the JD-R theory, checking the differences between occupational groups, assessment of the well-being profile. This means we will be able to see what the relationships between professional burnout and commitment and job satisfaction are. The research will contribute to broadening the knowledge in the field of organizational psychology and occupational health psychology.

The second project[21] deals with the impact of global production networks on employment, wages and resource allocation and focuses on the analysis of the effects of global production networks (GPN) on the functioning of companies and employees. The main goal of the project is to assess the microeconomic consequences of GPN in terms of changes in employment, wages and resource allocation. The results of the project will have a significant impact on the development of the scientific discipline, primarily through: contribution to the theories of economics, expanding the state of knowledge about the effects of GPN on labor markets, original contribution to research on production integration processes, expanding the state of knowledge about the effects of the progressive market integration in relation to different groups of employees.

Gdańsk Tech scientists also write about the expected competences of future participants of the labor market. In the article "Competencies of graduates as future labor market participants - preliminary study"[22], the authors described the results of the conducted research, which indicate a competency gap in the field of practical skills of future employees. However, as the surveyed employers indicate, the deficits in terms of competences sought by employers are likely to decrease as young employees gain practical experience.

INTERNAL ACTIONS OF THE UNIVERSITY

SAFE WORK ENVIRONMENT

Employees of the Occupational Health and Safety and Fire Safety Inspectorate at Gdańsk Tech inspect working and teaching conditions and compliance with the rules and regulations on safety, health at work and fire protection, advise on the application of regulations and principles of occupational health and safety and fire protection, cooperate with the authorities of the State Sanitary Inspection, the National Labor Inspectorate and the State Fire Service in terms of improving working and learning conditions and fire protection.

HR EXCELLENCE IN RESEARCH AWARD

Gdańsk University of Technology joined the group of distinguished units on 18 July 2017. Two years later, on 21 November 2019, the European Commission issued a decision to uphold the HR award for Gdańsk Tech for the next three years. Gdańsk University of Technology was thus recognized as an institution that creates one of the best working and development conditions for researchers in Europe.

INTEGRATED DEVELOPMENT PROGRAM OF GDAŃSK UNIVERSITY OF TECHNOLOGY

As part of the Integrated Development Program of Gdańsk University of Technology, Gdańsk Tech employees have the opportunity to participate in training courses that contribute to improve the competences of Gdańsk Tech employees, including better working conditions.

GDAŃSK TECH AS EMPLOYER

Gdańsk Tech offers its employees the opportunity to take advantage of recreation in the Czarlina Holiday Center, located in Kashubia, a picturesque region of Poland. Holidays are co-financed by Gdańsk Tech. On the premises of the center, it is possible to rent bicycles and water sports equipment (kayaks, pedalos, sailing boats), there is a playground for children, sports fields and a guarded swimming pool.

Gdańsk Tech also offers its employees co-financing for summer and winter camps organized by Gdańsk University of Technology or purchased individually from other organizers. As part of the cultural activities of the Company Social Benefits Fund, a carnival party and New Year's gifts for children are organized.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

Research in numbers:
7585
4% of all Poland publications

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

RESEARCH

IS IT POSSIBLE TO ANTICIPATE A FAILURE?

Failure of one tram can paralyze traffic in the city for a long time, and it may require expensive renovation and immobilization of the vehicle for up to several weeks. Scientists from the Faculty of Mechanical Engineering and Ship Technology are working on the implementation of a tram diagnostic system that will avoid breakdowns. The aim of the work is to connect to the system, to observe selected parameters of the tram's operation in order to notice disturbing changes in their values and to warn against an impending failure. The project is carried out in cooperation with the company Gdańskie Autobusy i Tramwaje.

INTERNAL ACTIONS OF THE UNIVERSITY

STOS COMPETENCE CENTER (SMART AND TRANSDISCIPLINARY KNOWLEDGE SERVICES)

Gdańsk Tech is completing the construction of the STOS IT center, which will be one
of the most modern IT centers in this part of Europe and will possess one of the fastest supercomputers in Poland. The construction of the center is a response to the market needs in the field of R&D services, which require calculations, transfer, processing and archiving of huge data sets. The investment will not only allow the university to cooperate more widely with industry and business, but will also strengthen Gdańsk's position as a strong academic center.
As part of the investment, the vicinity of the facility will also be more beautiful, including new park. New trees, shrubs, lawns and a flower meadow will appear on the hill. There will be plenty of benches, bicycle stands and litter bins, and the relaxation area will be supplemented with an atmospheric lighting fixtures.

MODERN GDAŃSK TECH LABORATORIES

Gdańsk University of Technology, in addition to its core business, also provides commercial research services and invites companies that intend to introduce new, innovative products or services to the market.

The University has modern laboratories that provide commercial services, including: Center for Advanced Technologies offering research in the field of material strength, MOLANOTE Laboratories providing research services related to energy-saving construction and renewable energy sources, or LINTE ^ 2 Laboratory conducting research and implementation works on smart grids power engineering (Smart Grids).

IMMERSIVE 3D VISUALISATION LABORATORY

It is one of the few such laboratories in the world and the only one in Poland. The laboratory has a wide application framework. At any time, the I3DVL can become, for example, a virtual battlefield - used by soldiers of special units for military exercises - and after a while it can turn into a virtual operating room. Next it can be a place of a virtual trip into the past around medieval Gdańsk, a simulation of a building on fire (for the use of firefighters and emergency services), or a faithfully rendered "copy" of the designed building, into which the architect can invite the investor. I3DVL can also be used in the treatment of patients, e.g. by supporting the therapy of phobias. For this purpose, the laboratory cooperates, for example, with psychologists and their patients, and the effect of this cooperation is an application supporting the treatment of the fear of heights.

GDAŃSK TECH IS A RESEARCH UNIVERSITY

In 2019, Gdańsk University of Technology was ranked the highest among technical universities in the competition "Excellence Initiative - Research University" and took second place in the country.

The aim of the competition organized by the Ministry of Science and Higher Education was to select and support 10 best universities that will become research centers and will be able to successfully compete with the best universities in Europe and in the world.
Increasing the impact of the scientific activity of Gdańsk Tech on the development of world science will be achieved by increasing the scientific potential of the University staff - acquiring international staff with the highest qualifications and potential at various career levels (doctoral students, postdocs, recognized professors), building international research teams, increasing the number of prestigious grants with the participation of the University.

10 REDUCED INEQUALITIES

Research in numbers:
1763
1% of all Poland publications

Reduce inequality within and among countries

RESEARCH

Scientists from the Faculty of Management and Economics dealt with the topic of defining new financial regulations and economic activities supporting the development of entrepreneurship in Ukraine and involving the unemployed in entrepreneurial activities.[23]

PUBLIC ENGAGEMENT AND PARTNERSHIP

ACCESSIBLE SCHOOL

As part of the Accessible School[24] project, led by scientists from the Faculty of Architecture, it is planned to develop a solution for creating a friendly educational space, taking into account the needs of pupils and the environment.
As part of the project, it was planned to develop an Accessible School model and individual accessibility improvement plans for approximately 100 schools. Accessibility in the project is understood as access to teaching forms and tools compliant with the needs of students with disabilities and special educational needs, as well as access to specialist knowledge, competences and skills of teachers and specialists raising qualifications in the field of special educational needs. It is also accessibility to school in terms of transport, architecture, adaptation of the school space for people (students, parents and teachers) with various types of disabilities and students with special educational needs. The experience gained may make Gdańsk Tech an expert institution in the field of accessible architecture and digital space.

EDUCATION AND STUDENT ACTIVITY

STUDENTS WITH DISABILITIES

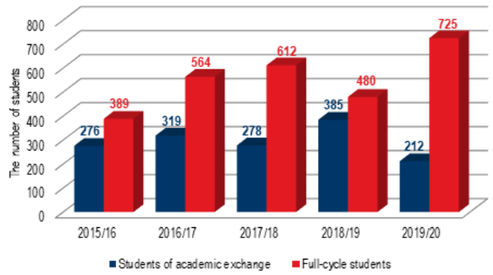
Any Gdańsk Tech student with a disability may take advantage of an individual procedure for completing classes and taking exams, receive a dedicated scholarship or use the support of other people in the form of an assistant. The task of an assistant to a person with disabilities is to help a student or doctoral student in activities related to the education process and functioning at the University, in particular:

- assistance in moving around the premises of Gdańsk University of Technology, in buildings, where classes are held and between the University's buildings;
- taking notes on classes and internships;
- assistance in completing formalities related to the education process in the dean's office, doctoral study office and other organizational units of the University;
- assistance in carrying out activities related to the use of the University's library resources.

Most of the buildings at Gdańsk University of Technology are adapted to the needs of students with physical disabilities. The amenities include the use of ramps, stair platforms and lifts. Each building has a toilet adapted for the disabled. Dormitories have rooms adapted to the needs of people with disabilities and public toilets for people with disabilities. The Gdańsk Tech library (including departmental branches) has devices that magnify the text (magnifying glasses, electronic magnifiers) and a computer adapted to be operated by the visually impaired or people in a wheelchair. The university also provides support in the form of adaptation of teaching materials to the digital version.

FOREIGN STUDENTS AT GDAŃSK TECH

The total number of foreign students studying in the 2019/2020 academic year was almost 1,000 people from over 70 countries. In this group, 77% were full-cycle students, while the remaining 23% were students participating in international exchange programs.



Total number of foreign students at Gdańsk Tech in 2015–2020

MULTICULTURAL VOLUNTEERING

As part of multicultural volunteering, integration workshops for Polish and foreign Gdańsk Tech students are organized periodically. Our students help their foreign university colleagues to get to know the city, Gdańsk University of Technology and feel at home. The student can also become a mentor and, as part of multicultural mentoring, help other foreign volunteers learn about Gdańsk, Polish customs and culture. There is also the possibility of going abroad and helping with volunteering abroad.

SOCIOLOGY

During the course of Sociology, students of selected fields of study gain knowledge of functioning in society, elements and the process of building social bonds, especially in the economic dimension. They will also learn the concepts of cultural or social diversity as well as the functions and genesis of inequality.

INTERNAL ACTIONS OF THE UNIVERSITY EQUAL TREATMENT AT GDANSK UNIVERSITY OF TECHNOLOGY

Equal treatment should be understood in accordance with Art. 32 of the Polish Constitution and Art. 18 of the Labor Code, which are reflected in the internal regulations of our Alma Mater (Gdańsk Tech Satute, Work Regulations). Gdańsk University of Technology appreciates
and respects equality and diversity in all aspects of the life of the University community. It is the ethical foundation of the University's activity in terms of education, as well as research and development. Gdańsk University of Technology fully takes into account all forms of diversity, promoting and ensuring equal opportunities to all members of the University community - employees, volunteers, doctoral students and students, postgraduate students and course participants, as well as people applying for a job at the University or applying for admission to higher education. Gdańsk University of Technology counteracts all forms of discrimination due to gender, age, worldview, sexual orientation, material status, functional diversity, race, nationality, religion, origin and ethnic and political affiliation, marital status, parental status, in accordance with the applicable international and national standards.

Gdańsk University of Technology promotes equal opportunities, diversity and inclusion in educational and research processes also in the broad academic outside of Gdańsk Tech by encouraging entities collaborating with the University: natural persons, local government, scientific and educational institutions as well as enterprises to comply with these rules.
It should be emphasized that according to § 4 of the Statute of Gdańsk Tech, educating students to feel responsible for the Polish state and national traditions, for strengthening the principles of democracy and respecting human rights as well as respect for multiculturalism and diversity is the basic task of our University.

UNIVERSITY REPRESENTATIVES

University representatives directly involved in observing equal treatment at Gdańsk Tech include Ombudsman for academic rights and values at Gdańsk Tech, Gdańsk Tech Rector's Representative for equal treatment or Rector's Representative for people with disabilities.

GDAŃSK TECH RECTOR'S REPRESENTATIVE FOR EQUAL TREATMENT

The tasks of the Gdańsk Tech Rector's Representative for equal treatment include monitoring the compliance with the principles of equal treatment and preparing proposals for solutions and activities for the benefit of equal treatment for the entire academic community in order to improve compliance with the principles of equal treatment at Gdańsk Tech, including the preparation of proposals for actions for people and groups exposed to or experiencing discrimination.

In 2017 and 2020, two university-wide surveys were conducted on the assessment of working conditions, safety and compliance with the principles of equal treatment at Gdańsk Tech. The results were used to prepare and implement a Gender Equality Plan at Gdańsk Tech. Through the Gdańsk Tech rector's representative for Equal Treatment the university cooperates with other organizations and institutions on a national and European scale, so that activities in this area are coordinated and comply with the highest standards (e.g. participation in the European ACT project).

11 SUSTAINABLE CITIES AND COMMUNITIES

Research in numbers:
7397
6% of all Poland publications

Make cities and human settlements inclusive, safe, resilient and sustainable

RESEARCH

CAP4CITY

Researchers from the Faculty of Management and Economics are currently working on a project on sustainable, smart cities: Strengthening Governance Capacity for Smart Sustainable Cities (SSC).[25] The purpose of the project is to develop and implement new SSC training programs. Gdańsk Tech as part of cooperation on the CAP4CITY project, organized a free cycle of courses "Open and Smart Government". The courses were aimed at a wide range of interested parties, students, graduates, practitioners, public administration employees, and were intended to shape competences related to Smart Sustainable Cities.

ILLUME

Gdańsk Tech as the first research unit in Poland joined the international network measuring the brightness of the Globe at Night - Sky Brightness Monitoring Network (GaN-MN). The success lies in the involvement of the ILLUME research group operating within the EkoTech Center. The SQM-LE sensor was placed on the roof of Building B. It allows for measuring the brightness of the sky on the premises of Gdańsk University of Technology campus in a continuous mode. Connecting to the network enables access to data from all sensors in the GaN-MN network and thus increasing the quality of research on artificial light pollution at night. It also allows paying attention to the phenomenon of artificial light pollution and its negative impact on human health and the functioning of the natural environment.

PUBLIC ENGAGEMENT AND PARTNERSHIP

AVAILABILITY STANDARDS

Gdańsk University of Technology and the Kartuzy commune have concluded a license agreement for the implementation of Accessibility Standards.

Accessibility Standards are a set of design guidelines and development of public space in accordance with the principles of universal design. The solutions included in the Accessibility Standards provide people with special needs (i.e. the disabled, seniors, parents with children in accordance with the principles of universal design. The solutions included in the Accessibility Standards provide people with special needs (i.e. the disabled, seniors, parents with children in prams or pregnant women) the possibility of exercising their rights and activities in the local community. They will be able to freely and independently use public places such as: pedestrian routes, parks, stops, squares, a street or a boulevard. Solutions in line with the principles of universal design allow for greater integration of all residents and create cities where the quality of life will increase.

So far, a license agreement for Accessibility Standards has been concluded with Gdańsk University of Technology in cities such as Gdańsk, Sopot, Gdynia, Starogard Gdański, Konin, Poznań and Środa Wielkopolska.

GREEN CURRENCY FOR GDANSK

Greencoin is an alternative currency that will be a kind of reward for the attitude and pro-environmental activities of the inhabitants of Gdańsk.

The Greencoin project[26], led by scientists from the Faculty of Architecture, is to contribute to changing the habits of Gdańsk residents and reduce social inequalities by rewarding system users based on their behavior and attitude, regardless of the economic situation.

The project is carried out in an international consortium consisting of: Inicjatywa Miasto Association, Warsaw School of Economics, Maria Grzegorzewska University and Norwegian partners, Stavanger University and Oslo Metropolitan University.

CRUNCH

The urban landscape is intensively transformed, and precipitation systems, hydrological cycles, the productivity of the ecosystem, energy balance and local climate are all disrupted and modified. The urban Food-Water-Energy Nexus generally describes an approach to complex urban systems that focus on the intersections, hidden efficiencies and potential synergies between sectors and fields that are commonly viewed separately. The research project[27] "CRUNCH: Climate Resilient Urban Nexus Choices: operationalising the Food-Water-Energy Nexus" is funded as part of the joint call 'Sustainable Urbanisation Global Initiative (SUGI), organised by Urban Europe JPI and the Belmont Forum, with support from the European Commission. The CRUNCH project, thanks to its systemic approach, enables the definition of the concept and methodology of the city close-loop system (Circular Economy based) and provides also a unique collaboration framework for technical and social scientists, small and large businesses, cities, non-governmental organisations and local stakeholders to tackle the current urban challenges

and inefficiencies of the food, water and energy sectors. The experimental tasks of the CRUNCH project in Poland are undertaken at the Urban Initiative Laboratory based on the cooperation agreement between the City of Gdansk and Gdansk University of Technology. They are preceded by the basic research eg: examining, structuring and synthesising the existing knowledge, elaborating comparative analysis model, data modelling, case studies analysis held mainly at the Gdansk University of Technology and focused on the classification of Urban Living Labs and the scalability of the Food Water-Energy Nexus ie: the FWE NEXUS Neighbourhood Model and FWE Nexus Square. The conceptual designs of proposed transferable and replicable urban solutions are finalized in the Non-Invasive Measurement System and Comodal Local Node.

Therefore, although the CRUNCH project represents mainly a theoretical approach and it does not have a direct implementation possibility, the results were presented during the CRUNCH TIME exhibition at Biennale di Venezia in Sept 2021. The CRUNCH TIME exhibition was organized by the Gdansk University of Technology in the Italian Pavillion dedicated to urban resilience.

GAMBIT

For over 25 years, scientists from the Faculty of Civil and Environmental Engineering, cooperating with the best research centers in this field in Europe and in the world, develop and implement strategies and tools supporting the improvement of road safety. When commencing these works, Poland was far behind the highly developed countries of the European Union, advanced in terms of security. Over the past 20 years, the annual number of road fatalities in Poland has decreased threefold. Undoubtedly, this improvement was largely due to the project under the broadly understood slogan GAMBIT, systematically developed by the Faculty employees in the form of developing subsequent national and local government programs and strategies, road infrastructure design guidelines, training, conferences and research programs (e.g. Road Innovation Development) financed by NCBiR and GDDKiA).

EDUCATION AND STUDENT ACTIVITY

URBAN DESIGN AT GDAŃSK TECH

The curriculum at the Faculty of Architecture at Gdańsk Tech strives to create conditions for students to understand the values and cultural, social and environmental conditions, and to motivate them to create a sustainable environment. Graduates of the Department of Architecture and Spatial Management at the Faculty of Architecture have knowledge in the field of urban planning and spatial planning, economic, natural and social sciences, allowing for active participation in the subsequent stages of planning and implementation of urban
and municipalities development processes with particular emphasis on spatial development and the location of new investments.

INTERNAL ACTIONS OF THE UNIVERSITY

EARTH DAY AT GDAŃSK TECH

On the occasion of the Earth Day, in 2021, Gdańsk Tech students and employees organized a cleaning campaign in the vicinity of Gdańsk Tech student dormitories. At the end of the action, they planted a tree on the Gdańsk Tech campus to commemorate the joint effort.

LET'S CLEAN THE MOTŁAWA TOGETHER

As part of the 28th Clean Up the World Action on 18 September 2021 Gdańsk Tech employees, while kayaking, collected garbage floating on the Motława surface in Gdańsk and handed it over to the accompanying auxiliary motor units.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Research in numbers:
4871
4% of all Poland publications

Ensure sustainable consumption and production patterns

RESEARCH

HOUSEHOLD SAVINGS AND LIABILITIES

Researchers from the Faculty of Management and Economics analyzed the financial situation of Polish households.[28] The survey was conducted to collect information on the level of current income, expenses, savings, financial situation and methods of managing financial resources. The data analysis made it possible to evaluate the researched households in terms of the methods of using the available funds. Details are described in the publication "Issues currently discussed by young scientists of the site", entitled "Savings and liabilities of households and their life cycle phases in the light of own research".

BIOECONOMICS IN THE SOUTH BALTIC AREA

The aim of the BioBIGG project[29] (Innovations based on the use of biomass and green areas development), implemented by scientists from the Faculty of Mechanical Engineering and Ship Technology is to include previously unused and new biomass resources, in particular waste from the food processing chain, such as the production of cereals (straw), sugar, vegetables, wood and the processing industry. These products can be processed into a range of food or non-food products, improving the use of biomass that would be irretrievably lost.

INTERNAL ACTIONS OF THE UNIVERSITY

WASTE SEGREGATION

At Gdańsk University of Technology, we strive to maximize the degree of waste segregation in order to comply with the law, ecology and economy and the latest trends. Currently, in the corridors of Gdańsk Tech buildings, there are special containers into which segregated rubbish is thrown: PAPER - GLASS - BIODEGRADABLE - METAL AND PLASTIC - RESIDUAL. Moreover, in some places, inks and toners, batteries and caps are collected for charity. Gdańsk Tech Rector's Plenipotentiary for Waste and Reagents was also appointed.

HANDLING OF HAZARDOUS SUBSTANCES, PREPARATIONS AND HAZARDOUS WASTE

Due to the specificity of research and teaching activities using chemical reagents, the Faculty of Chemistry has additional regulations in the field of waste and hazardous substances.

TEAM FOR DESIGNING AND AUTOMATION OF TECHNOLOGICAL PROCESSES

The Design and Automation of Technological Processes team at Gdańsk Tech deals with computer-aided design of technological processes and of production systems. One of the leaders in the country is the research in the field of basics and technology of chipless finishing by burnishing and of abrasive processing by lapping, micro-grinding and honing of metal and ceramic elements. The interests of the team's employees also relate to the principles of operation and repair of machines and business solutions for new investment projects in the aspect of greater productivity and the use of Lean Production techniques.

13 CLIMATE ACTION

Research in numbers:
3487
2% of all Poland publications

Take urgent action to combat climate change and its impacts

RESEARCH

S.O.S. CLIMATE WATERFRONT

The project "SOS Climate Waterfront"[30], led by scientists from the Faculty of Architecture, combines research and innovation in the study of waterside areas in the context of climate change. Thanks to interdisciplinary methodology, S.O.S. Climate Waterfront will fill the gap in understanding how different scales of urban planning and landscape, architecture and technology are connected to water-related strategies and how they influence each other in the definition of prevention plans and actions and in enhancing informed solutions for community information, human well-being and socio-economic activity in sensitive waterside territories.

ENVIRONMENTAL CHEMICAL ENGINEERING SOLUTIONS

Scientists from the Faculty of Chemistry conduct research on new solutions that fit into the idea of the so-called green chemistry[31] - reducing the environmental impact of chemical processes. The team conducts extensive research on the application of the cavitation phenomenon. The usability of the cavitation process in refining fuels, for example gasoline, aviation fuels and diesel oil, is tested. Chemical changes caused by the phenomenon of cavitation can improve the quality of fuels - they will be both more efficient and less harmful to the environment.

PUBLIC ENGAGEMENT AND PARTNERSHIP

ENVIRONMENTALLY-FRIENDLY CAMPUS

Gdańsk University of Technology has concluded a cooperation agreement with the city of Gdańsk within the framework of the Gdańsk Water Policy project. The main area of cooperation will be research on the possibilities of architectural and urban creation of spaces located along the Potok Królewski (Royal Stream), especially the area of the Gdańsk Tech campus as the "Laboratory of innovative ecological, technological and landscape solutions - Eko-Tech Campus PG". In a broader time horizon Gdańsk Tech campus is to be opened to the city. Our idea is to make it a green, modern "place of breath" for Wrzeszcz. The aspects related to water will be an important element of solutions that will allow us to create an environmentally friendly campus - announced Prof. Krzysztof Wilde, rector of Gdańsk University of Technology.

EDUCATION AND STUDENT ACTIVITY

Students of the Faculty of Civil and Environmental Engineering will learn the principles of air monitoring, emission control and air protection management during the Air Monitoring and Protection course. However, the aim of the subject Selected issues of environmental protection in industry at the Faculty of Chemistry is to teach about environmental protection technologies in relation to industry, monitoring of pollutant emissions and issues related to environmental impact assessment.

The inter-faculty field of study Power Engineering also offers the subject Environmental Protection in Power Industry. It presents the main threats, and ways to prevent them, resulting from the activities of professional, distributed and prosumer power engineering. The course is run jointly by the Faculty of Mechanical Engineering and Ship Technology, the Faculty of Electrical and Control Engineering and the Faculty of Civil and Environmental Engineering.

INTERNAL ACTIONS OF THE UNIVERSITY

EKOTECH CENTER

The EkoTech Center gathers research teams composed of representatives of all scientific disciplines of Gdańsk University of Technology, and a significant role is played by specialists working on the sustainable development of the human environment. The center deals with shaping a harmonious, sustainable space of human life in the face of current environmental challenges, climate change as well as social and demographic changes.
Scientists are working on solutions that will help counteract the negative effects of human activity. They are also looking for innovative pro-ecological solutions for intelligent urban and extra-urban areas. In addition, they develop new methods of environmental and infrastructure monitoring as well as modern technologies for the production of electricity and heat, reducing the carbon footprint and contributing to meeting the emission requirements.
Scientific teams develop and implement new methods of environmental monitoring and infrastructure, as well as water and wastewater treatment technologies (including the management and reuse of rainwater) and the reduction of the so-called "Light smog". Experts deal with innovative solutions in the field of eco-energy, green technologies, low-emission transport, waste management, clean industrial production, energy-neutral construction and renewable energy sources (and their integration with the power system).

The activities of scientists from Gdańsk University of Technology within the new Center will result in the development of a number of solutions for environmental and infrastructure monitoring and counteracting the so-called anthropopression, i.e. human influence on the natural environment. Scientific analyzes, technologies and engineering solutions developed on their basis will meet the assumptions of sustainable development and the requirements of the circular economy. An important element will also be supporting spatial planning for the "eco-city of the future 2050", i.e. cities resistant to climate change and ensuring a high quality of life.

ECO-INNOVATION CENTER

Gdańsk Tech has started the construction of the Eco-innovation Center, which will be one of the most important scientific units in Poland dealing with the development of pro-ecological solutions and environmental technologies. The construction of EIC will enable implementing innovative solutions in line with the idea of building eco-cities and ecological spaces.

GDAŃSK TECH GREEN, FLOWERING, ECO LIBRARY

Green, flourishing, eco - such was the Gdańsk Tech Library during the Library Week in 2021. At that time, we opened the door wide for Mother Nature, we left the library walls to meet on the green campus of Gdańsk Tech. The Library Week is a nationwide campaign to promote reading, organized since 2004 by the Association of Polish Librarians. In this special May week, everyone using the library's collection received a packet of seeds: night-scented stock, catnip, touch-me-not, hyssop - everyone could choose what they liked or what they did not know yet. Renewable energy sources, green chemistry, climate change, ecology, gardening - the collection of the Gdańsk Tech Library is enormous! Collections of "green books" specially prepared by librarians could be viewed and borrowed at the Gdańsk Tech Library and selected branches at the faculties.

CYCLE FOR GDAŃSK

Every year, students and employees of Gdańsk University of Technology join the cycling fun and sports competition "Cycle for Gdańsk". Its aim is to popularize cycling as a healthy, ecological means of everyday communication. A record number of people took part in the 2020 edition. 352 companies, 26 secondary schools, 9 universities and 33 districts joined the campaign, which gave a total of 4,614 active participants who traveled over two million kilometers! If this distance were covered with the help of cars, about 500 tons of CO_2 would be emitted into the atmosphere.

14 LIFE BELOW WATER

Research in numbers:
2009
5% of all Poland publications

Conserve and sustainably use the oceans, seas and marine resources for sustainable development

RESEARCH

TREATED WASTE

Is treated wastewater an important source of pharmaceuticals in the aquatic environment? Scientists from the Faculty of Civil and Environmental Engineering carried out a study[32] on a model area for the disposal of pharmaceuticals in the southern Baltic Sea. There is a need to refine the methods of removing micropollutants in order to improve the quality of waters receiving treated wastewater. The long-term effect of implementing advanced wastewater treatment methods will improve the quality of life of the residents and create ecological foundations for the sustainable development of nearby environments.

WISA

The main goal of the WISA project,[33] led by scientists from the Faculty of Civil and Environmental Engineering, is to develop and implement green technologies to remove biogenic compounds and other pollutants from runoff waters in the coastal waters of the Baltic Sea. An important task of the WISA project is to collect data on the quality of rainwater in selected ports in the Baltic Sea and to determine how to manage them on a daily basis.

PUBLIC ENGAGEMENT AND PARTNERSHIP

BSR WATER

Scientists from Gdańsk University of Technology representing various scientific disciplines that fit into the scope of research carried out by the EkoTech center have for many years been implementing scientific projects aimed at improving the quality of the Baltic waters and sustainable development in the Baltic Sea region. Gdańsk University of Technology is a partner of the international BSR WATER platform, through which cooperation is established between the public, private and academic sectors in the field of various projects related to the Baltic Sea. Thanks to this it was possible to develop recommendations for the sustainable management of rainwater.

PLATFORM BSR WATER

NOAH

Gdańsk University of Technology is among the seven academic and research institutions from six countries around the Baltic Sea that are working on developing tools for city planners in the field of flood planning.

The NOAH project[34] aims to help cities better prevent flood risks and, as a result, reduce the risk of pollution in the Baltic Sea. Scientists from the Faculty of Civil and Environmental Engineering are studying the impact of precipitation of varying intensity, range and duration on the existing sewage system in Słupsk. Data analysis and the results obtained will enable the development of technical solutions that will have an impact on reducing the amount of pollutants in sewage and rainwater discharged into the Słupia River and, consequently, into the Baltic Sea.

EDUCATION AND STUDENT ACTIVITY

INTEGRATED COASTAL MANAGEMENT

Students of the Integrated Coastal Zone Management specialization at the Faculty of Architecture learn the principles of spatial planning and development in areas where land and sea meet. They acquire interdisciplinary knowledge in the field of urban and spatial planning, as well as managing port areas and port and industrial structures related to the maritime economy and the natural basis of planning, with particular emphasis on the principles of protection of ecosystems at the interface between land and sea. The curriculum also includes methods of solving functional and spatial conflicts in operation and the use of the coastal zone and cooperation with representatives of many sectors of the economy.

MARINE AND OFFSHORE ENGINEERING

Marine and Coastal Engineering is an interdepartmental course run jointly by the Faculty of Civil and Environmental Engineering and the Faculty of Mechanical Engineering and Ship Technology. Graduates of the second-cycle studies gain advanced knowledge in the design and implementation of marine, coastal and river hydrotechnical facilities, they also learn the requirements for the implementation of the sustainable development policy.

15 LIFE ON LAND

Research in numbers:
3969
0,5% of all Poland publications

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

RESEARCH

CASE STUDY

The article Visual Capacity Assessment of the Open Landscape in Terms of Protection and Shaping: Case Study of a Village in Poland[35] was published in the Sustainability journal. The author of the study from the Faculty of Architecture used the methods of the Krakow School of Landscape Architecture to assess landscapes and referred to the assumptions of the British Landscape Character Assessment (LCA). The result of the study is the classification of open landscapes in terms of the assessment of visual changes resulting from potential housing development. The obtained results confirm that the applied method can effectively support local spatial planning.

ORGANIC CUTLERY

The invention developed by scientists from the Faculty of Chemistry will enable the production of ecological disposable products. An innovative polymer composition has been developed for the production of ecological disposable cutlery, subject to organic recycling. The composition includes, among others thermoplastic starch obtained from potato flour and additives of natural origin and polylactide biopolymer (PLA).

EDUCATION AND STUDENT ACTIVITY

ENVIRONMENTAL DESIGN

At the Faculty of Architecture at the Department of Environmental Design, scientists conduct research into the shaping of landscapes and architecture from an environmental perspective. The research is conducted in cooperation with the self-governments of rural and urban communes and is prepared for associations and cultural institutions, such as the National Museum, the Museum of the History of the City of Gdańsk or the Ethnographic Museum of regional identity in Wdzydze. The results of research work are projects of energy-efficient houses and ecological housing estates, restoration of historical parks and modifications of public spaces.

LANDSCAPE ARCHITECTURE

During the obligatory course Landscape Architecture, students of the Faculty of Architecture gain knowledge about the types of landscapes and their forms. They learn how to study the composition of the landscape and how the rules of composing public green areas have changed over time.

GEOLOGY AND HYDROLOGY

Students of the Faculty of Chemistry in the field of Green Technologies participate in Geology and Hydrology classes, during which they learn about the impact of natural geological processes and human activity on the state of the environment. The aim of this course is to learn about the basic geological and hydrological processes that shape the Earth's environment.

BIOECONOMY AND CIRCULAR ECONOMY

For the first time, this subject appears in a systematic way in the Power Engineering 1st cycle program. Students participate in classes such as Sustainable Development and Bioeconomy or Circular Economy in power engineering. The principles of the circular economy contribute to better use of owned resources, such as fossil fuels, water or other natural resources, contributing to their more moderate use.
The assumptions of the bioeconomy go further. They consist in the use of waste from one process in order to use it in the production of another assortment. This applies mainly to forest and agricultural biomass.

STUDENT COMPETITION

Students of the Faculty of Architecture received the First Prize of the Dean of the Faculty of Architecture and the First Prize of the Mayor of Pasłęk in the student architectural and landscape competition for the preparation of a concept for the development of green areas near the city defensive walls of Pasłęk. The aim of the competition was to investigate the possibilities of shaping a sustainable system of green areas in the city.

IMPACT PROJECT

Students of the thirteenth edition of the International MBA program started the "Impact Project" - gamification, the aim of which is the personal development of MBA students and at the same time helping the orangutans from the Gdańsk Zoo.
- We want to get involved locally and globally, acting pro-ecologically. By adopting an endangered species such as orangutans, we want to build awareness of the dangers of the devastation of the natural habitats of orangutans and of obtaining land for palm forest plantations (#olejolej). - says the director of the International MBA program.

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

Research in numbers:
1886
2% of all Poland publications

Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

RESEARCH

CREATING DIGITAL TRANSPARENCY IN GOVERNMENT

Under the pressure to fight corruption and build citizens' confidence, many governments strive for greater transparency. They publish data on their internal operations, externalize decision-making processes, create digital hotlines etc. Despite the presence of many digital tools to increase transparency, combining such tools remains a challenge. Design rules are missing in this area. Researchers from the Faculty of Management and Economics undertook to identify a set of barriers to digital transparency in government institutions. The team defined 16 design principles to overcome barriers and assessed these principles based on case studies from three different countries. To achieve digital transparency, government organizations should build a technological and institutional foundation before implementing digital solutions. The design principles proposed in this article[36] can help in the development and application of such foundations.

PUBLIC ENGAGEMENT AND PARTNERSHIP

COOPERATION OF GDAŃSK TECH AND MND

The contract for the delivery of four helicopters was signed in April 2019 by the Minister of National Defense. The purchased helicopters will be intended for anti-submarine combat and search and rescue operations in combat conditions. The main offset recipient is Wojskowe Zakłady Lotnicze Nr 1 SA and the Center for Maritime Military Technologies of Gdańsk University of Technology (CMMT Gdańsk Tech).

Source: https://www.gov.pl/

The value of the technology transfer amounts to PLN 395,882,751 and includes 9 offset liabilities.
Currently, CMMT Gdańsk Tech scientists are fulfilling their obligations under the contract with the Ministry of National Defense regarding the implementation of the offset for the purchase of specialized helicopters for the Polish Armed Forces.

Źródło: https://www.pg.edu.pl

EDUCATION AND STUDENT ACTIVITY

Students of various faculties, as part of their study programs, learn selected subjects related to the applicable law and ethics, dedicated to their future professional life. These include subjects such as jurisprudence, economic law, environmental protection law, water law, engineer ethics, business ethics, bioethics.

STUDENT ORGANIZATIONS

There are many student organizations at Gdańsk Tech where students can develop their passions and interests. The University authorities closely cooperate with these organizations, providing substantive and financial support. Cooperation is also important, ensuring the possibility of co-creating together with students (also through the Student Government) rules, strategies, etc. essential for the functioning of the university.

INTERNAL ACTIONS OF THE UNIVERSITY

OPEN DATA - DATA BRIDGE

Open access to transparent data on sustainable development is increasingly important for governments and appears to be essential to a well-functioning democracy. As part of the MOST Danych project, a platform was created that enables high-quality research data to be made available to both universities belonging to the Consortium of Gdańsk Tech, UG, MUG and other interested Polish universities. The Center for Open Science Competence was also established, whose training and popularization tasks include activities on an international scale.

VALUES AT Gdańsk Tech

According to the Strategy of Gdańsk University of Technology 2020-2030, the basic values that guide the University are:

- universal humanistic values: individual dignity and freedom, social equality, solidarity between people, tolerance and affirmation of diversity and social inclusion;
- principles expressed in the European Convention on Human Rights;
- concern for the conditions and quality of life of present and future generations; The university actively participates in the implementation of the UN Sustainable Development Goals and the European Commission Green Deal;
- institutional autonomy of universities, freedom of research as well as honesty and reliability in conducting research and its presentation.

The University of Technology is a signatory to the University's Declaration of Social Responsibility and an active subject in activities aimed at shaping social attitudes conducive to the wide implementation of the declaration's postulates.

The university applies the principles expressed in the following international and especially Community positions: Magna Charta Universitatum, European Code of Conduct for Research Integrity, European Charter for Researchers, Code of Conduct for the Recruitment of Researchers, Utrecht Declaration on Academic Freedom and the Lima Declaration on Academic Freedom and the autonomy of higher education institutions.

17 PARTNERSHIPS FOR THE GOALS

Strengthen the means of implementation and revitalize the global partnership for sustainable development

FAHRENHEIT UNION OF UNIVERSITIES IN GDAŃSK

In December 2020 Gdańsk University of Technology, the Medical University of Gdańsk and the University of Gdańsk created the Daniel Fahrenheit Union of Universities in Gdańsk (FarU) and intend to jointly build the position of Gdańsk as a strong academic center in Poland and abroad. This is one of the most important events in the academic history of Gdańsk, opening the way to the future federalization of the region's strongest universities.

For many years, these universities have been implementing joint initiatives in the areas of: science, education and organization. Thanks to the establishment of the Union of Universities it is possible to deepen the existing cooperation and create in Pomerania One of the strongest academic centers in Poland.

GDAŃSK TECH JOINS THE FIGHT AGAINST COVID-19

In 2020 Gdańsk University of Technology became the coordinator monitoring the epidemic situation at universities in the Pomeranian Voivodeship. Conference of Rectors of Academic Institutions in Poland (CRAIP) together with the Ministry of Science and Higher Education appointed 16 voivodeship coordinators whose task will be to monitor the epidemic situation at universities in individual regions. The person appointed as coordinator by the Ministry of Science and Higher Education is prof. Krzysztof Wilde, corresponding member of the PAS, rector of Gdańsk University of Technology. Gdańsk University of Technology carries out work for the academic community of the Pomeranian Voivodeship on the basis of an IT service specially created for this purpose at Gdańsk Tech.

Source: https://www.pg.edu.pl

Employees of the Faculty of Mechanical Engineering (currently WMEST) were actively involved in supporting medical services in the fight against the coronavirus pandemic and joined the nationwide #maskadlamedyka campaign. The "Mask for a medic" initiative was to adapt a commonly available snorkeling mask to medical needs. Thanks to the adapters, the masks have been transformed into highly effective protective masks for medical personnel, but also into a ventilator device supporting breathing of patients.

Another form of help from the academic community of Gdańsk Tech for hospitals was the production by employees of the Faculty of Mechanical Engineering (currently WMEST) of helmets for the staff of the University Center for Maritime and Tropical Medicine in Gdynia. At the main entrance to the University Clinical Center in Gdańsk, there is a specialist station for remote and collective temperature measurement of all people entering the building. Thanks to the use of thermovision and algorithms developed by Gdańsk Tech scientists, medics can more easily detect those with increased temperature, and therefore potentially infected with the coronavirus, from the crowd of people.

Gdańsk University of Technology also sent a bus with gifts for the UCC employees. It contained for example 10 thousand pairs of disposable gloves, disinfectants, laboratory solvents, pipettes, syringes, disposable towels and numerous office supplies that may prove useful in the daily work of medics and hospital administration during the prevailing pandemic.

Students of Gdańsk University of Technology also came out with the initiative to help. They launched a fundraising campaign on the zrzutka.pl portal. "# DrugiePluca - Respirators to fight COVID-19", the aim of which was to purchase respirators necessary in the fight against COVID-19 disease. The funds collected during the fundraising were transferred to the St. Adalbert Hospital in Gdańsk.

GDAŃSK-GDYNIA-SOPOT METROPOLITAN AREA

The Daniela Fahrenheit Union of Universities in Gdańsk has become a new supporting member for the Gdańsk-Gdynia-Sopot Metropolitan Area (GGSMA). Thus it joined the group of a dozen or so institutions, foundations and universities that had previously declared cooperation with the metropolitan area (GGSMA). The Gdańsk-Gdynia-Sopot Metropolitan Area is an association of 59 communes, cities and counties of the Pomeranian Voivodeship. The main goal of the institution is to take actions for the economic development of the region of about 1.6 million people, which translates into the quality and comfort of life of the inhabitants.

ECONOMIC CONVENTION BY THE RECTOR OF GDAŃSK TECH

Meetings of the Economic Convention by the Rector of Gdańsk Tech are held at Gdańsk University of Technology. Business and science representatives meet to talk about joint ventures and economic and scientific initiatives.

The Economic Convention by the Rector of Gdańsk Tech serves as a platform for the exchange of information, consultations and expressing opinions and attitudes between the scientific community of Gdańsk Tech and the economic environment in all matters affecting the economic development of the country and the region, including prospective needs of employers and the labor market, cooperation of universities with state and local authorities as well as other entities.

- One of our basic activities as a university is cooperation with the socio-economic environment - said prof. Krzysztof Wilde, rector of Gdańsk Tech, opening the Convention - This business-science relationship, where the scientific thought arising at our university and then turns into a specific product needs our joint actions.

ACADEMIN HIGH SCHOOL

Gdańsk University of Technology supports the development of the Academic High School of Paweł Adamowicz in Gdańsk and wishes to participate in its teaching and social projects. On 22 July 2021 the authorities of Gdańsk University of Technology, the Medical University of Gdańsk, the University of Gdańsk, the City of Gdańsk and the Positive Initiatives Foundation signed a patronage declaration over the AHS. The guarantee of the development of Gdańsk education is education based on modern methods and the experience of scientific staff. In the case of the AHS, young people will benefit from the scientific potential of three universities.

E-HEALTH MODEL

As a result of the cooperation of experts from Gdańsk University of Technology, the Medical University of Gdańsk and Gemini Polska an interdisciplinary team was created. The purpose of the tripartite agreement is to conduct joint research and development projects, which - thanks to the use of modern technologies - will contribute to the improvement of the health of Poles. The joint activities assume, first of all, the creation of research and development teams for the prevention and promotion of health with the use of modern technologies in e-health, as well as providing employees, students and doctoral students with tools and knowledge useful in the creation and implementation of innovative technological solutions in the field of pharmaceutical care.

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