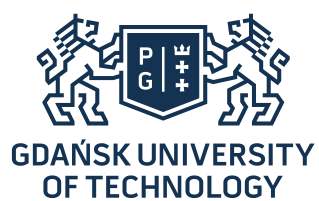




GDAŃSK UNIVERSITY OF TECHNOLOGY

RESEARCH UNIVERSITY



GDAŃSK UNIVERSITY OF TECHNOLOGY

THE BEST TECHNICAL RESEARCH UNIVERSITY IN POLAND

in the competition of the Ministry of Science
and Higher Education

Gdańsk University of Technology is among the 10 laureates of the program of the Ministry of Science and Higher Education 'Initiative of Excellence - Research University'. What's more, in this prestigious competition Gdańsk University of Technology was recognized as the best technical university in Poland!

Obtaining the status of a research university will allow the Polytechnic not only to improve the quality of research and education, but will also contribute to a significant increase in GUT's competitiveness in the country and abroad.

- The status of a research university is a huge prestige, but also a challenge - says Professor Krzysztof Wilde, rector of Gdańsk University of Technology.
- We are happy about this success, but we also remember that we have to work hard to implement the action plan presented in the competition.

The award for Gdańsk University of Technology also means additional financial resources that will be allocated to the development of teaching and research areas within the university. In the case of GUT, it will be over PLN 200 million over seven years, which the university will distribute among the newly established Research Centers:

- BioTechMed Center
- EkoTech Center
- Materials of the Future Center
- Digital Technology Center

The implementation of the ministerial program 'Initiative of Excellence - Research University' will start in 2020. During the seven-year edition of the program, Gdańsk University of Technology will be able to put even more emphasis on the development of the most promising research areas, as well as implement innovative, modern solutions in the field of health, safety, digital technologies, climate protection, energy acquisition and conversion, mobility, food and rational use of natural resources.



IDUB

'Initiative of Excellence - Research University' is one of the most important programs envisaged under the new Act on science and higher education, the so-called Act 2.0.

The aim of the competition of the Ministry of Science and Higher Education was to select and support the 10 best universities, which will first become research centers, and secondly will be able to successfully compete with the best universities in Europe and in the world.

All winners in the years 2020–2026 will receive a subsidy from the state budget increased by 10 percent. In the case of Gdańsk University of Technology, this means additional funds in the amount of over PLN 200 million, which, according to the assumptions of the program, will be allocated to further dynamic development of the university.



- The selection of the winners of the first competition 'Initiative of Excellence - Research University' is a breakthrough moment for the entire system of higher education and Polish science. I cordially congratulate His Magnificence, Rector Professor Krzysztof Wilde and all the employees of Gdańsk University of Technology.

GDAŃSK UNIVERSITY OF TECHNOLOGY

Gdańsk University of Technology is a leading technical university in Poland. For many years, it has been effectively cooperating with the economic environment, implementing grants and research services. It has extensive experience in the implementation of projects under national and international programs.

The university is consistently improving its position in key academic rankings. Every year, it is among the top national leaders in the ranking of universities of the Educational Foundation 'Perspektywy'. The University is also appreciated abroad. As one of only four Polish academic centers and as the only technical university in Poland, it was among the 1000 best universities in the world in the international Times Higher Education World University Rankings.

Since 2017, by decision of the European Commission, GUT also has the right to use the prestigious logo HR Excellence in Research, which means that it was recognized as an institution creating one of the best conditions for work and development for researchers in Europe.

This success is your merit, and at the same time great prestige and commitment. However, it does not mean you can be complacent and just enjoy your success. This is the beginning of a new stage. Years of increased work await all ten universities that have obtained the status of a research university and increased funding. However, I am convinced that all universities that are laureates of the competition will prove over the next few years that they have not received the status of a research university prematurely, and their achievements will take Polish science to an even higher level.

Jarosław Gowin

Vice President of the Council of Ministers,
Minister of Science and Higher Education



PROF. KRZYSZTOF WILDE,
RECTOR OF GDAŃSK UNIVERSITY OF
TECHNOLOGY:

WE WILL FOCUS ON QUALITY!

According to Professor Krzysztof Wilde, rector of Gdańsk University of Technology, obtaining the status of a research university is not only an honor and distinction, but also a chance to start a new era in the history of the University

Gdańsk University of Technology was recognized as the best technical university in Poland in the competition of the Ministry of Science and Higher Education. What will be the next steps of the University after obtaining this status?

– We will strive for Gdańsk University of Technology to become an elite scientific center not only in Poland but also abroad. We will focus on quality also in terms of employment models. The functioning of a research university does not have to be based solely on traditional faculties, interdisciplinary teams striving to achieve the best research results can also operate there.

This will also be the case for us, we have already set up four new Research Centers: BioTechMed Center, EkoTech Center, Digital Technology Center and Materials of the Future Center. They combine the skills and experience of scientists from various faculties.

What will the work of the new Research Centers involve?

– We want to make sure people with focused skills and high competences find their place at Gdańsk University of Technology. These Research Centers and the teams of scientists working within them will be significantly subsidized, which will be made possible through additional funds from the Ministry for obtaining the status of a research university. People who are part of the Research Centers will have extensive opportunities to train and acquire new skills, both in the country and abroad.



What else will change at the university?

– In the model of functioning of research universities around the world, the biggest emphasis is put on the effects of work and the prestige of implemented projects. Such model is known, among others, from universities in the United States, which we will gradually strive for. We are currently planning to strengthen existing research teams as well as to build new research structures within the new Centers.

In the competition of the Ministry of Science and Higher Education Gdańsk University of Technology took a very high, 2nd place, after the University of Warsaw. This means that it was also recognized as the best technical university in Poland.

– We owe such a high place in the Ministry's competition to a precise project that reflected our potential and capabilities. For example, many of the universities that took part in the

competition suggested 5-6 research areas in which they want to specialize. Meanwhile, we selected the best four, in which we already have excellent employees and great achievements.

The status of a research university also means increased funds from the state budget, we are even talking about over PLN 200 million that Gdańsk University of Technology will receive in the years 2020–2027. What are you going to spend this money on?

– The biggest part shall be spent on improving the qualifications and working conditions of our employees, but also on recruiting new researchers. We will be looking for people with the best skills and the highest competences that will bring new scientific quality to Gdansk. They will be outstanding specialists not only from Poland, but also from abroad.

What is more?

– We want to offer the best possible working conditions to talented MSc and PhD students who have so far often chosen to work in business instead of continuing their careers at Polish universities. In science, the winners are those who attract the best young employees and we will try hard to hire such people, and what's more, we will have arguments to convince them to work at the university.

Not only Gdańsk University of Technology, but also the city and the whole Pomerania region will benefit.

– Definitely yes. We want to direct our efforts to the needs and development of both Gdańsk and the whole of Pomerania. Already, Gdańsk University of Technology has one of the highest rates of raising funds from cooperation with business and industry. We want to develop even more intensively in this aspect.



BIOTECHMED CENTER

ACTIONS

The center deals with research and implementation of modern technologies in the field of biomedical engineering, molecular and pharmaceutical biotechnology as well as methods of searching for new drugs.

Researchers are working on new biomedical measurement methods (also using artificial intelligence methods), patient diagnosis and therapy, and dedicated device control systems that are widely used in medicine, including rehabilitation and exoskeletons.

The work will also aim at developing a strategy of nutritional prevention in chronic non-communicable diseases.

PARTICIPANTS

The new Center includes specialists in biomedical and genetic engineering, molecular biotechnology, chemistry and drug analysis, and food biotechnology. They have been cooperating with the medical community for years, developing new solutions for healthcare.

Scientists from Gdańsk University of Technology created, among others, CyberEye - a system that allows us to communicate with people in a vegetative state or awakened from a coma. The researchers have developed and implemented modern hearing, vision and speech screening methods that are currently used throughout the world.

Research groups of Gdańsk University of Technology have prepared new compounds that may find application in cancer chemotherapy and in the treatment of infections caused by fungal microorganisms.

Members of the Center also have significant successes in research on counteracting drug resistance of microorganisms and cancer cells, which is one of the biggest challenges of today's medicine.

EFFECTS

Researchers plan to develop new, innovative medical instruments and devices. They will prepare, among others, a new method of hearing testing and automatic detection of disease states. They will create CyberBed, which will help counteract digital exclusion of paralysed patients. They are also developing the world's first so-called biomarkers of human memory that will allow better understanding and optimization of methods for improving memory.

Researchers at Gdańsk University of Technology will also define new strategies to combat drug resistance of pathogenic

microorganisms, as well as develop new methods for diagnosis and therapy of patients.

The teams will also work on new solutions in the field of physicochemistry as well as chemo and radiotherapy, and will also develop technologies that will contribute to the development of the healthy food market.



The new Center includes specialists in biomedical and genetic engineering, molecular biotechnology, chemistry and food biotechnology

EKOTECH CENTER

ACTIONS

The center deals with shaping a harmonious, sustainable space for 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 counteract the negative effects of human activities. They are also looking for innovative pro-ecological solutions for intelligent urban and extra-urban areas.

In addition, they are developing new methods for monitoring the environment and infrastructure, as well as modern technologies for the production of electricity and heat, which reduce the carbon footprint and contribute to meeting emission requirements.

PARTICIPANTS

The Center includes research teams composed of representatives of all scientific disciplines of Gdańsk University of Technology, and specialists working on sustainable shaping of human environment play a significant role there.

Teams of researchers are developing and implementing new methods for monitoring the environment and infrastructure, as well as technologies for water and wastewater treatment (including management and reuse of rainwater) and to reduce the phenomenon of so-called 'light smog' (light pollution).

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).

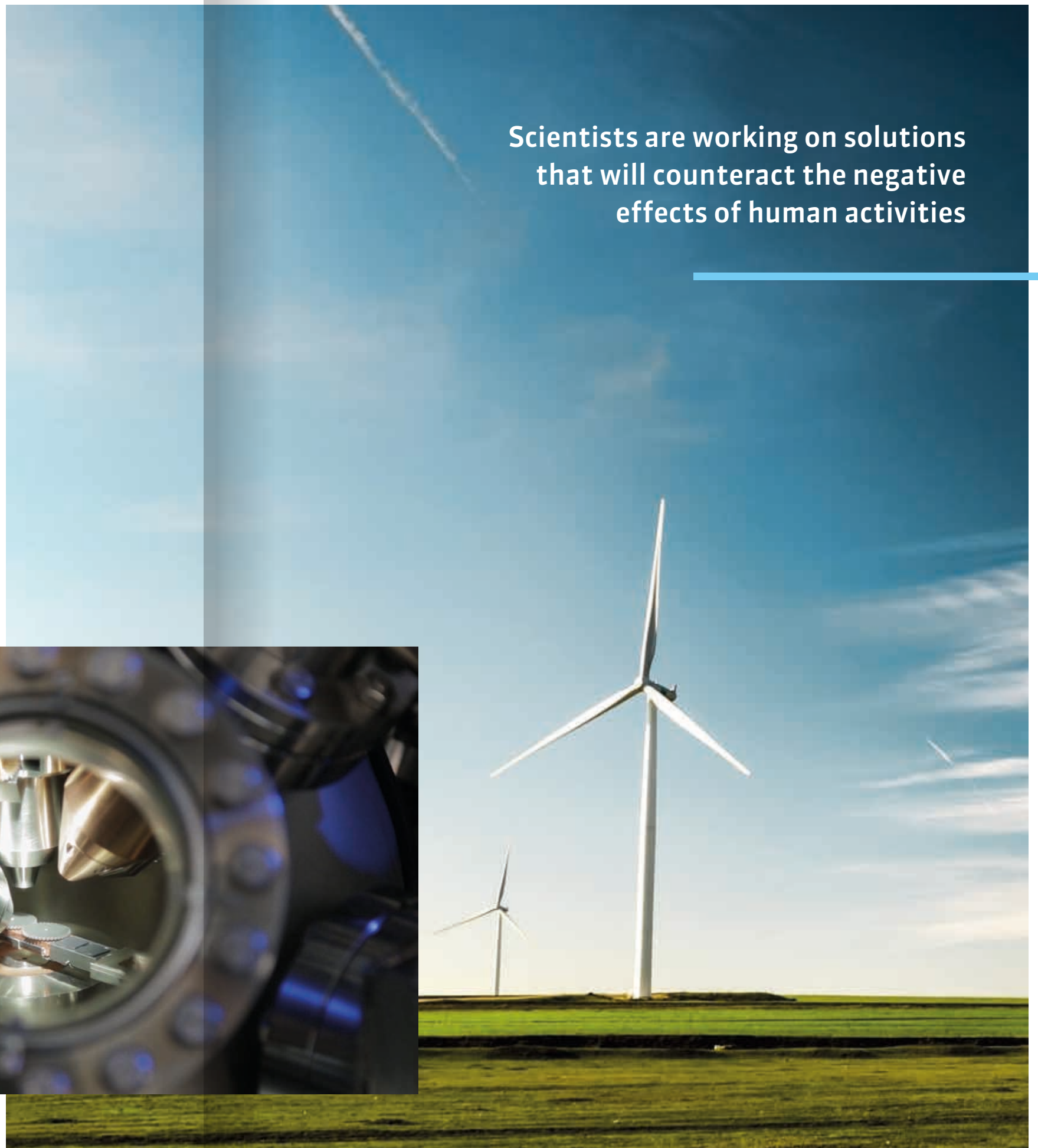
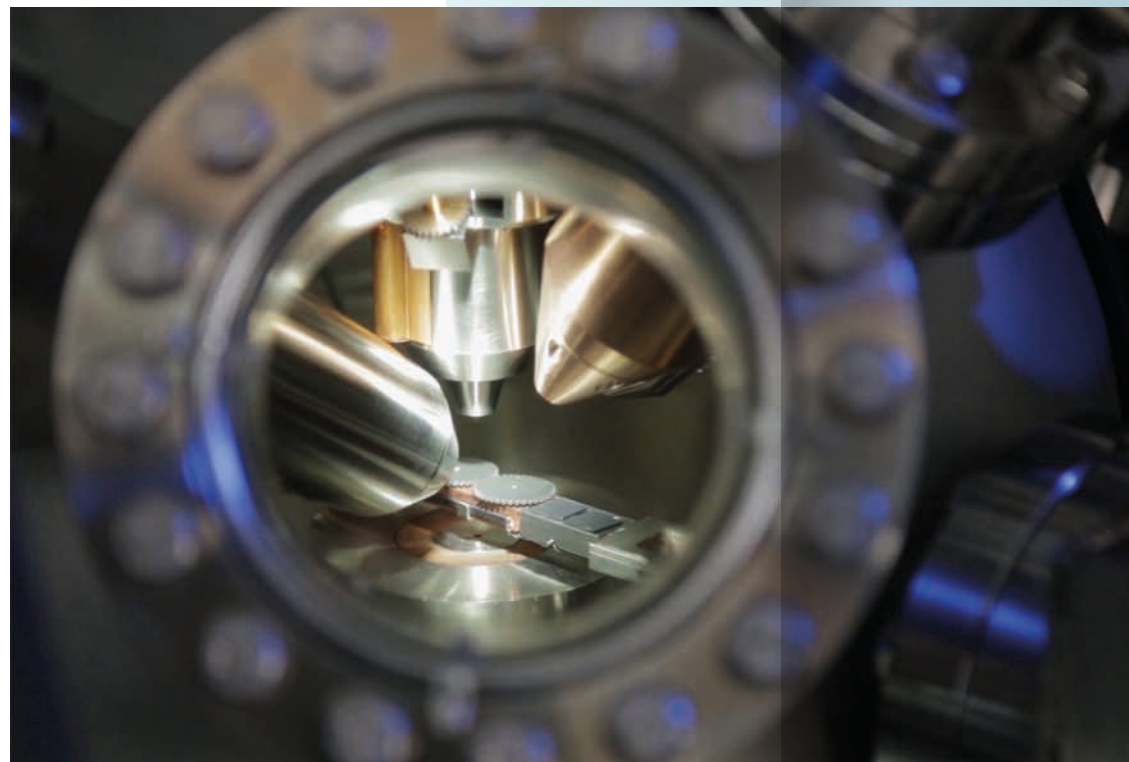
EFFECTS

The result of the activities of scientists of Gdańsk University of Technology within the new Center will be the development of a number of solutions to monitor the environment and infrastructure, and to counteract the so-called anthropopression, i.e. human influence on the natural environment.

Scientific analyzes and technologies and engineering solutions developed on their basis will meet the principles of sustainable development and the requirements of the circular economy.

An important element will also be to support the spatial planning of the future ecocities of 2050', i.e. cities resilient to climate change and ensuring high quality of life. These studies will be supplemented with analyzes of social acceptance of new technologies and building new business models for the solutions being developed.

Scientists are working on solutions
that will counteract the negative
effects of human activities



DIGITAL TECHNOLOGY CENTER

ACTIONS

The Center develops technologically advanced solutions in the field of electronics, IT, automation, robotics and mechatronics as well as telecommunications.

Researchers are working to improve the broadly understood safety and comfort of society. They will enable an increase in the efficiency of enterprises and institutions by preparing systems for more efficient management of their structure.

Research teams in the new Center are also working on projects in the field of robotization and automation. They will create innovative design techniques and production technologies that will allow the development of completely new sensors, devices and systems with innovative practical applications.

PARTICIPANTS

The Center includes specialists in the field of developing new techniques for designing systems and devices used in the ICT industry and innovative data processing algorithms, including using artificial intelligence algorithms.

Researchers have had significant successes and are authors of innovative solutions in the field of design techniques for miniature sensors on flexible substrates, human-machine communication, safe and reliable wireless radio links (including those for autonomous vehicles and infrastructure systems), as well as methods that allow creating high quality software.

EFFECTS

Scientists of Gdańsk University of Technology will contribute to the creation of intelligent ambience in the environment of human life: at home and

on the street, but also in the functioning of enterprises (including logistics centers). They will also develop technologies to increase the productivity of harbours and logistics areas, which is particularly important for the university located within the activities of large harbours.

The result of this work will include miniature electronic systems (placed inside objects and devices that surround people on a daily basis), which will allow automatic



adaptation of a specific space to human needs. They will also be used in vehicles and autonomous systems.

New wireless communication methods, which will be created thanks to the work of scientists of Gdańsk University of Technology, will allow the creation of harmoniously operating networks of devices and systems within intelligent environments - also using artificial intelligence and machine learning algorithms.

Scientists are working here to improve the broadly understood safety and comfort of society

MATERIALS OF THE FUTURE CENTER

ACTIONS

Research teams within the Materials of the Future Center focus on the production and characterization of innovative materials (including polymer and carbon, nanomaterials, superconductors and high-temperature conductive materials) with wide application in industry and medicine, but also aeronautics and oceanotechnics.

In addition, scientists at the new Center are dealing with issues related to the technology of manufacturing and obtaining innovative structures and instruments, material recycling and metrology.

PARTICIPANTS

Within the Center, there are scientists from the field of material engineering specializing in chemistry, physics and solid state electronics, electrochemistry, polymer chemistry, biomaterial engineering, surface engineering and physicochemistry of metal materials.

Research teams already have a number of successes in this area, e.g. research on atomic and electronic structures and chemical composition have allowed the discovery of new superconductors. Scientists have also developed photocatalysts that allow the oxidation of pharmaceuticals that are not susceptible to biodegradation.

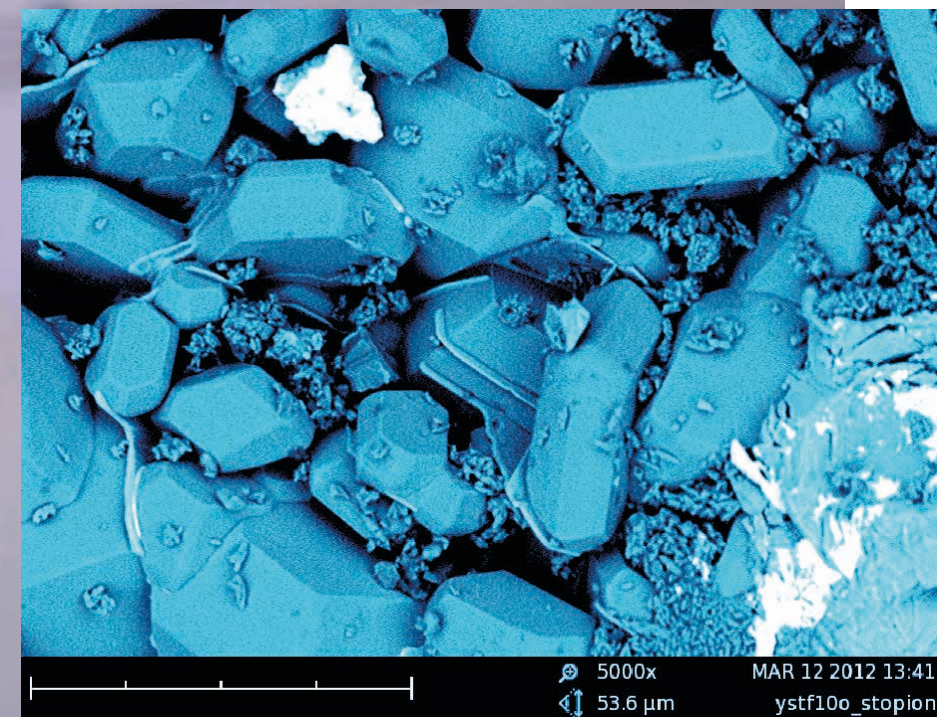
In turn, modification of road bitumens with polymers allowed for the development of a wide group of so-called polymer-asphalt binders (binders connecting loose materials into a homogeneous mass), characterized by better resistance to environmental factors and changing temperature conditions.

EFFECTS

The results of the Center's activity will be the development of materials for the storage of electricity from renewable energy sources (including wind farms, solar panels, etc.), which will meet the current trends in the energy market and the challenges of today's world.

Thanks to the work of Gdańsk University of Technology scientists, it will be possible to create new ways to store and convert excess energy in innovative batteries and supercapacitors, but also to use them at a later time using photovoltaic devices and electrolyzers.

Research will also be conducted here on carbonaceous materials (including diamond-like ones) that can be used in biosensor systems or for the utilization of impurities. Further research teams will work among others on materials for regenerative medicine, as well as on materials for generating strong magnetic fields.



The work of scientists within the Materials of the Future Center focuses on manufacturing innovative materials





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OF TECHNOLOGY



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