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THE BULLETIN

OF THE SILESIAAN UNIVERSITY OF TECHNOLOGY

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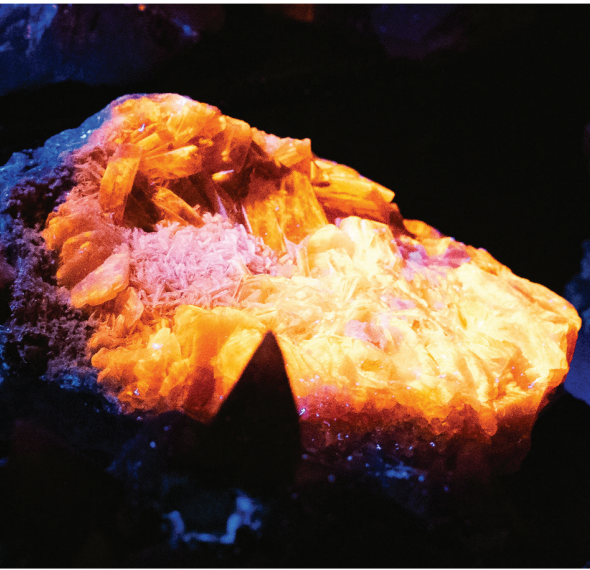
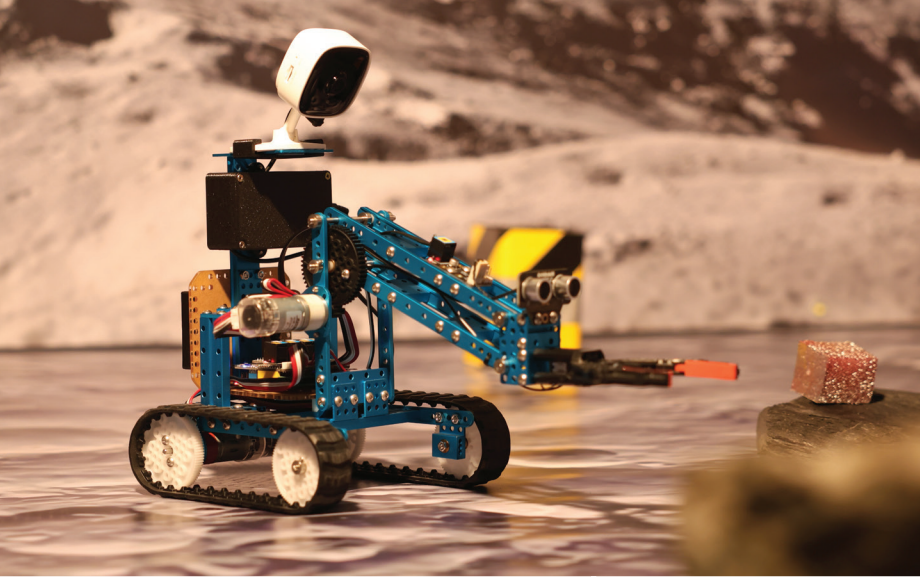
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**TREASURE WEEK
IN THE CITY OF SCIENCE**

Photos: Maciej Mutwil, Jan Szady, Tomasz Stokłosa, Przemysław Bratkowski

FROM THE EDITOR



The year 2024 will be a special year in which science will leave the university walls to fight for the effective transformation of the region. Without the involvement of researchers and scientific achievements, we will not change the quality and way of life in Upper Silesia. The potential of higher education is enormous. It will also be connected for the first time, and the synergy of scientific diversity will result in a transformation that meets the challenges of today. The Silesian University of Technology is one of the key creators of these changes. The first activities as part of the celebration of the European City of Science Katowice 2024 are already behind us. Under the significant slogan of Treasure Week, we opened the gate to the most valuable treasure - knowledge. In the City of Science, we will explore issues related to climate and environment, health and quality of life, industries of the future, social innovation, industrial and cultural heritage, and creation and criticism. And all this in 50 weeks, when learning will be really at hand. However, the expected development of Polish science will not occur without appropriate investments and funds for research. Does the newly established Ministry of Science and Higher Education have a patent for such a change? This was discussed in a conversation with the deputy minister, prof. Marek Gzik.

In addition, the first issue of the Silesian University of Technology Bulletin this year will talk about passions that lead to the ends of the world and allow you to cross your own borders, the University's contribution to nuclear energy and the unique educational offer for managers.

I wish you an interesting reading,
Iwona Flanczewska-Rogalska

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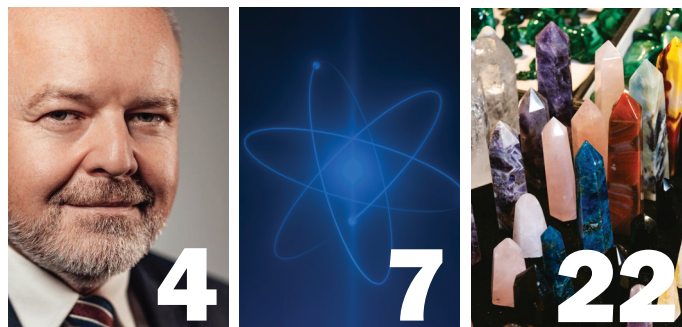


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WE DON'T HAVE TO HAVE HARVARD IN EVERY COUNTY

text: Iwona Flanczewska-Rogalska
photo: Silesian University of Technology

IN THE HIGHER EDUCATION SPACE, THERE ARE A LOT OF SKELETONS IN THE CUPBOARD. I DON'T WANT TO TALK ABOUT PERSONALITIES OR POINT TO SPECIFIC UNIVERSITIES. NOW WE NEED TO FOCUS ON THE MOST IMPORTANT CHALLENGES FACING POLISH SCIENCE. WE NEED TO STRENGTHEN ITS POTENTIAL AND RAISE ITS PROFILE - SAYS PROF. MAREK GZIK, DEPUTY MINISTER OF SCIENCE AND HIGHER EDUCATION.

The first month has passed since the position of director of EHTiC, one of the most modern science and research centres in Eastern Europe, was replaced by the position of deputy minister in the newly established Ministry of Science and Higher Education. First impressions?

I was surprised by the scale of distribution of public

funds at hoc. Especially in the area of subsidies for universities. Looking at practices in other fields, I assumed what it could be like - but it's a big surprise. I don't want to talk about personalities or point to specific universities, but I will say that in the field of higher education there are a lot of skeletons in the cupboard. Now we focus on the

most important challenges facing Polish science.

What tops this list?

Cooperation between science and business - an area that is particularly close to me, considering the experience I gained at the Silesian University of Technology. What needs to be quickly improved is the level of financ-

ing of science by business and cooperation in these areas. We are still at a low level here, especially in relation to highly developed countries. To make changes, we need to know why this is so. We need a good diagnosis, so I will appoint a special team that will try to define the reasons for this state of affairs. After the diagnosis, it will be time to compare the situation of our science in relation to business to the situation in other countries, and then we will develop recommendations and prepare a package of changes to introduce it to the legislative path. Of course, apart from changes in regulations, there should also be incentives to develop cooperation between science and business. We must act quickly and effectively, because the weakness of the Polish market eliminates us from large projects. I remember when I was looking for an investor for the Silesian Centre for Engineering Support in Medicine and Sports - due to the requirement for a 20% contribution from non-public funds in the project - we could not find such a business partner on our market. If it weren't for the global concern, perhaps the fate of this unique research centre in Europe - today EHTIC - would have been different.

Increasing the innovativeness of Polish science and encouraging business to use the achievements of our universities is one thing. What about other priorities for the coming months?

PROF. MAREK GZIK, DEPUTY MINISTER OF SCIENCE AND HIGHER EDUCATION

Prof. Marek Gzik appointed as Secretary of State at the Ministry of Science and Higher Education. He was appointed to this position on December 13, 2023.



Prof. Marek Gzik is a graduate of the Faculty of Mechanical Engineering of the Silesian University of Technology. Before his appointment, he was the director of EHTIC - European HealthTech Innovation Centre of the Silesian University of Technology. From 2012 to 2020, he was the dean of the Faculty of Biomedical Engineering, and in 2022–2023, the chairman of the Silesian Voivodeship Assembly. ■

photo: Silesian University of Technology

Additional investment in scientific staff in order to stop the outflow of science workers to business. The point is to make it profitable to work in science. Apart from satisfaction and pursuing passions, money is also necessary. We hope that budget spendings planned from January will improve salaries and, to some extent, stop the process of staff outflow. Science is an extremely important sector of the economy. Without its development, it is difficult to compete in the modern world. Therefore, all initiatives popularizing scientific research and the importance of its results must be promoted and supported. I am thinking here about a unique project that will be implemented throughout 2024 in Upper Silesia, specif-

ically in Katowice - European City of Science Katowice 2024. As an MP from Silesia and a representative of the academic community, I try to strongly support this unique initiative.

The fact that we, as a consortium of universities together with the city of Katowice, received this honourable title confirms the strong position of Silesian science on the map of Europe.

How important is the return to a separate ministry responsible for science and higher education for the success of plans for the development of domestic science?

Crucial. Science is no longer neglected. It is no longer an expensive addition to edu-

cation, treated like a private farm. In a word, science regained her subjectivity. I have already mentioned the scale of abuses of the predecessors

and the methods of their work and management of subsidies. Interestingly, the predecessors were not so generous to the employees of the former Ministry of Education and Science, who earned the least of all ministry officials.

In the ministry, I am responsible for the budget and finance department, investments and ministerial programs, and NCBR. We are working on amending the act to enable the return of one of the most important government agencies, responsible for the implementation of the state's strategic scientific policy, to our ministry.

Speaking of science financing, when will it reach the expected 2.5 percent of GDP?

I am afraid that we will have

to be patient, but we can already see an increase from PLN 31 billion up to 38 billion. The system of financing science will definitely change. It has already changed because the distribution of funds without substantive justification has ended. Applications will be positively assessed by an independent team and their implementation will bring tangible benefits to Polish science.

At the end of our conversation, a question about the system of science. Is there a plan to change the law and in what direction will it go?

We are in the process of discussions with various circles, in fact, we are just starting this process of dialogue, without which changes make no sense. We will certainly not make decisions without listening to voice of the all those involved. All of them, with no exceptions.

There are many topics we want to look at, from evaluation criteria, raising university categories to the now famous list of journals. Many of the decisions of our predecessors led to the corruption of science. It is not about having a Harvard in every county, but about strengthening the potential and importance of all Polish science.

Thank you very much for the interview. ■

FROM COAL TO ATOM

text: Anna Świdarska

photos: Maciej Mutwil, Przemysław Bratkowski

NUCLEAR ENERGY - THIS IS A NEW FIELD OF SECOND-CYCLE STUDIES AT THE SILESIA UNIVERSITY OF TECHNOLOGY. EDUCATION IN THE FIELD OF NUCLEAR ENGINEERING IS OUR UNIVERSITY'S RESPONSE TO THE NEED TO GRADUALLY REPLACE CONVENTIONAL ENERGY SOURCES WITH EMISSION-FREE SOURCES, AND, CONSEQUENTLY, TO THE HIGH MARKET DEMAND FOR QUALIFIED UNIVERSITY GRADUATES.

Nuclear energy is a master's degree program with a general academic profile, which will start in March and last 3 semesters. Engineers with basic knowledge in the field of energy are welcome, but graduates of other fields are not excluded if they meet the requirements specified on the recruitment website. The Faculty of Energy and Environmental Engineering, for those interested in the new field, organized Nuclear Energy Open Days, which were an opportunity for candidates to meet representatives of many institutions, companies and experts from the nuclear industry. The event was attended by, among others, prof. Wacław Gudowski from the National Centre for Nuclear Research, advisor to Orlen Synthos Green Energy, scientist associated with the Royal Stockholm University of Technology for many years, who encouraged people to study nuclear energy.

– Access to relatively cheap energy is the basis for the prosperity of today's society, and in addition, the production of this energy should be emission-free, i.e. not pollute the surrounding environment. Poland has no other option than to develop nuclear energy, said Professor Gudowski.

– Nuclear energy is associated with fear of radioactivity, which, like temperature, is not harmful if it is maintained at an appropriate level. We must always talk about nuclear energy in the context of profits and risks, he added.

According to the Polish Nuclear Energy Program, the construction of a nuclear power plant that does not emit CO₂ will allow Poland to achieve the European Union's climate goals and is a strategic investment for the sustainable development of the entire country. The first nuclear power plant in Poland is to be built in the Choczewo commune in Pomerania, where research

has been carried out since 2017, which resulted in Polskie Elekrownie Jądrowe obtaining an environmental decision. Now the investor must submit an application to the National Atomic Energy Agency for a permit to build a nuclear power plant. The nuclear regulator has 2 years to check the documentation and issue a decision. Construction should start in 2026 and operation in 2033. In addition to the nuclear power plant in Pomerania, a network of small modular reactors is also to be built in Poland, so the demand for specialists is already high.

– Nuclear energy staff is very much needed. We, as the nuclear regulatory authority, plan to employ over a hundred new employees, emphasized Marcin Dąbrowski, Director of the Department of Nuclear Safety of the National Atomic Energy Agency.

– Investors also need employees, many new jobs will be created in



connection with investments in small modular reactors and additional nuclear programs that are being developed in Poland, so the initiative to create such a field of study at the Silesian University of Technology is right and we strongly support it – added the director.

Support for the idea of creating a nuclear energy field is also evidenced by the numerous presence during the Open Day of representatives of such global brands as EDF and GE Hitachi, i.e. market tycoons in the field of nuclear investments; experts from Orlen Synthos Green Energy, a company planning to implement modern modular nuclear reactors, also in the southern part of Poland; representatives of Energopomiar, Energoprojekt-Katowice and the Radioactive Waste Disposal Plant.

– I have always been interested in nuclear energy – said Michał Purzyński, an energy student at the Silesian University of Technology, who came to the meeting. – I still have some time to choose a second-cycle field of study, but I have already decided to take advantage of the opportunity and learn more. – I am considering choosing this field – added Bartek Pietrzak, also

an energy student – that is why I came to see what the companies and institutions cooperating with the Silesian University of Technology have to offer.

– The nuclear energy field of study was created due to the need for specialists with knowledge of nuclear energy and broadly understood nuclear engineering – said dr hab. Eng. Małgorzata Hanuszkiewicz-Drapała, prof. SUT, coordinator of nuclear energy field of study at the Silesian University of Technology. – This trend in the Polish energy sector is associated with the need to decarbonize the Polish economy.

– This is an indispensable process – added dr hab. Eng. Łukasz Bartela, prof. SUT, from the Faculty of Energy and Environmental Engineering, manager of the DEsire project implemented at the Silesian University of Technology in cooperation with the Ministry of Climate and Environment, the aim of which is to develop a plan for the decarbonization of the national energy sector to constitute a road map for future investment processes in the field of Coal-to-Nuclear policy. – One of the most interesting ideas that we promote and develop at the Silesian University of Technology is the use of nucle-

ar sources to replace coal-fired energy. We need not only many nuclear power engineers and nuclear engineers, but also many specialists to fill the links in the long value chain for the organization of nuclear energy.

– We are entering a new chapter – concluded prof. Janusz Kotowicz, Vice-Rector for Cooperation with the Socio-Economic Environment of the Silesian University of Technology - we will educate not only in the field of classic coal or gas energy - we already educate in hydrogen technologies at MBA studies, the only ones in Poland in hydrogen technologies - but we are also returning to nuclear energy and this is the future, because we expect to build a large number of small reactors.

According to the announcements of Orlen Synthos Green Energy, which is responsible for the construction of modular SMR nuclear reactors, one of them will be located in Dąbrowa Górnicza. By 2040, over a hundred SMR reactors are expected to operate in Poland. More information about the new field of study - nuclear energy - can be found on the recruitment website of the Silesian University of Technology.



CAN NEURAL NETWORKS CHANGE RENEWABLE ENERGY PRODUCTION?

text: Anna Swiderska

photo: Przemysław Bratkowski

WHAT SCIENTIFIC RESEARCH DOES THE GRADUATE OF THE UNIVERSITY OF CATANIA, A SPECIALIST IN MICROELECTRONICS, CONDUCT AT THE DEPARTMENT OF MECHATRONICS OF THE FACULTY OF ELECTRICAL ENGINEERING AND WHAT IS THE COOPERATION WITH SCIENTISTS FROM THE SILESIAN UNIVERSITY OF TECHNOLOGY LIKE? WE INVITE YOU TO LISTEN TO THE FIRST PODCAST IN ENGLISH - OUR GUEST IS DR HAB. ENG. GRAZIA LO SCIUTO, EMPLOYED AT THE SILESIAN UNIVERSITY OF TECHNOLOGY AS AN OUTSTANDING YOUNG SCIENTIST UNDER THE EXCELLENCE INITIATIVE - RESEARCH UNIVERSITY (IDUB) PROGRAM.

The researcher talks about her path from work in industry to employment at the Silesian University of Technology. Dr hab. Eng. Grazia Lo Sciuto deals with, among others, electronic organic systems, innovative materials, renewable energy technologies and the wide application of neural networks.

– My research activities concern the production of organic OSC solar devices, their electrical characteristics and the identification of defects. I conduct a number of simulations to optimize their shape and electrical performance. This activity includes theoretical and practical research with the development of algorithms and numerical models, simulation of electromagnetic phenomena, in order to identify the relationships between macroscopic and microscopic quantities measurable in organic devices. Generally, I prefer teamwork, I prefer to conduct research in the laboratory with measuring devices and experiments. Organic solar cells are a type

of photovoltaic technology that uses materials such as polymers to convert sunlight into electricity. Such a cell consists of various layers, including an active layer placed between the anode and cathode. Recently, organic solar cells (OSCs) have emerged as an efficient and sustainable energy technology due to their light weight, low cost, flexibility, and ease of large-scale production. Generating electricity using photovoltaic cells is a promising source of renewable energy for

cars, rooftop installations and public infrastructure. ■

We invite you to listen to the entire conversation with Grazia Lo Sciuto.



DESIGN YOUR DREAM HOUSING ESTATE

text: Katarzyna Siwczyk

photos: Przemysław Bradecki, Tomasz Stokłosa

LEARNING BY PLAYING IS ALWAYS A GOOD IDEA, ARGUE ARCHITECTS FROM THE SILESIA UNIVERSITY OF TECHNOLOGY WHO CREATED THE HOUSING ESTATE GAME. IT'S A CARD GAME THAT AIMS TO BUILD AWARENESS OF PLANNING THE SPACE WE LIVE IN EVERY DAY. THE PROJECT WAS SUPERVISED BY DR HAB. ENG. ARCH. TOMASZ BRADECKI, PROF. SUT.



It started with the publication "Indicators, parameters and models in shaping intensive housing development", prepared by dr hab. Eng. Tomasz Bradecki, prof. SUT from the Faculty of Architecture. The topic, although it sounds complicated, actually turned out to be so interesting that the professor first interested students in it, and later also ordinary residents. Moreover, students from the URBANMODEL scientific club decided to support the initiative of prof. Bradecki and after a year of meetings, they presented the game during the Silesian Science Festival.

– This is not an ordinary card game. Its task is, on the one hand, to teach

students, i.e. help in teaching, but on the other hand it is also a tool that shows certain ideas, e.g. how to shape a housing estate to create a resident-friendly space - explains the originator of the game.

How can you design a dream housing estate in the game? Just use the right cards. Each card in the deck represents the area of one hectare. It is up to the player which card he chooses and how many apartments and buildings, as well as trees, green areas and other important infrastructure of the estate will be planned on a given plot (card).

– Our cards represent different attitudes and approaches to shaping space. We have an ecologist, developer, planner and resident. We do not judge whether one is good or bad, but just like in life, we - people, also have different ways of seeing, different preferences, and such



ideas should be discussed and come to some common solution. In this game, the solution may be different each time - explains prof. Bradecki.

The game can be played in several ways. Using one deck - in this case according to the rules of the popular war - you can even play with children, while older players

can use two decks and choose a more complex version.

The game was tested not only by students, but also by scientists from educational institutions around the world with which the Faculty of Architecture has been cooperating for years. The reviews are very positive.

The interest in the game is already so great that the originators are preparing its extension in the form of a board game. For now, the card game can already be purchased in the Silesian University of Technology store. ■



You can learn more about the game by listening to the podcast: "Let's talk about science."



HIGH FLYING ACADEMIC SECONDARY COMPREHENSIVE SCHOOLS

text: Jolanta Skwaradowska

photos: archive materials of Silesian University of Technology

ACADEMIC SECONDARY COMPREHENSIVE SCHOOLS OF THE SILESIAN UNIVERSITY OF TECHNOLOGY WITH A HIGH POSITION IN THE PERSPEKTYWY 2024 RANKING OF SECONDARY COMPREHENSIVE AND VOCATIONAL SCHOOLS. THE GLIWICE ALO (ACADEMIC SECONDARY COMPREHENSIVE SCHOOL) IS THE FIRST IN THE CITY AND 10TH IN THE VOIVODESHIP. IN TURN, ALO IN RYBNIK IS SECOND IN THE CITY AND 27TH IN SILESIA.

We know the best comprehensive and vocational secondary schools in Poland. In the Perspektywy 2024 ranking, the Academic Secondary Schools of the Silesian University of Technology were among the top secondary schools in the Silesian Voivodeship. ALO from Gliwice took the 10th, while ALO in Rybnik 27th place. In the national ranking, the Gliwice school took 117th (up from 407), while ALO from Rybnik took 287th place. In the ranking of academic secondary schools, ALO from Gliwice took 6th place, and the one from Rybnik 12th.

In Gliwice, ALO turned out to be the best school. – This high position in the ranking was influenced by the very good results of last year's final exams in our schools. Out of 14 secondary school leaving examinations, as many as 9 achieved the best results among schools in Gliwice. The most spectacular result concerned mathematics at basic and advanced levels, 94% in basic and 74% in ad-

vanced, respectively. Last year we had winners and finalists in Olympiads in mathematics, computer science, chemistry, mathematical linguistics and theology - said dr Małgorzata Borystawska, director of ALO in Gliwice. – The recipe for high results is a combination of several basic elements: a reliable teaching process, high qualifications of teachers, but also a friendly atmosphere at school – she added.

The high level of teaching at Academic Secondary Schools is ensured by close cooperation with the Silesian University of Technology, which is the founding body of both schools. – The close relationship between the school and the university is one of the greatest values and determines its uniqueness. Thanks to the Silesian University of Technology, we are able to offer a number of additional opportunities, including: "Spread Your Wings" mentoring program. It is aimed at the most talented students who, under the supervision of a mentor, pursue their

own development path. Young people can also participate in classes conducted for students of the Silesian University of Technology and in the work of student scientific clubs. Thanks to the activities undertaken at the school, we prepare students very well for higher education, and the process of transitioning from secondary school to academic studies is painless for our graduates - assured Krzysztof Lazaj, director of the Rybnik ALO.

The Academic Secondary Schools of the Silesian University of Technology offer two teaching profiles - architectural and polytechnic. The architecture class is the only one of its kind in our part of Silesia, while the polytechnic class is a combination of mathematics, chemistry or physics, with the addition of programming. This profile is attractive to young people who are thinking about technical studies in the future.

ALO also effectively develops international cooperation, enabling its students to travel

abroad. – Internationalization is an important element of our activities. We are currently implementing two Erasmus+ projects and one under the Visegrad Grants. We want to continue similar projects in the future. Deepening integration with the Silesian University of Technology is very important to us, emphasized Krzysztof Lazaj.

In turn, the secondary comprehensive school in Gliwice, in addition to implementing international projects for students, also organizes foreign training for teachers as part of its Erasmus+ Accreditation.

– We support the comprehensive development of students, especially their talents and passions. We try to motivate each other to take on new tasks and achieve set goals. The school's advantages are its original teaching programs and the offer of additional subjects within the profiles - architectural drawing, programming and specialist English. We create an

atmosphere that builds good relationships in the entire school community, added Headmaster Lazaj.

– However, the most important thing is the opinion about the school. Our students recommend the high school to their younger friends, emphasizing the fact that they have helpful and friendly teachers and that the school allows them to develop their interests. Our school operates a number of clubs in which young people can develop their passions, noted dr Małgorzata Boryśławska.

Academic Secondary Comprehensive Schools of the Silesian University of Technology were established in 2018. The founding body is the Silesian University of Technology. The secondary comprehensive schools are small, educating about

200 students - two classes in one age group. Thanks to this, the school is friendly and teachers know the needs of their students well. Young people can discover and develop their talents and research passions here. They can participate in selected classes at the University with the possibility of passing them before starting their studies at the Silesian University of Technology. Students successfully participate in the competition "For the golden index of the Silesian University of Technology" and "About science in a human way - ALO miniatures". The most talented are covered by the mentoring program of the Silesian University of Technology "Spread your wings". ■



THE FLYWHEEL OF YOUR SUCCESS

text: Martin Huć
photos: private archives

SCIENCE CLUBS ARE A GREAT ADVENTURE. IT IS GREAT EXPERIENCE AND OFTEN A SPRINGBOARD TO PROFESSIONAL SUCCESS. WE DECIDED TO TALK TO SEVERAL GRADUATES OF THE SILESIA UNIVERSITY OF TECHNOLOGY WHO BELONGED TO SCIENTIFIC CLUBS. THEIR EXPERIENCE SHOWS THAT THIS DECISION HAD GIVEN MOMENTUM TO THEIR PROFESSIONAL CAREERS.

PROFESSIONAL TRAMPOLINE

Graduates of the Silesian University of Technology point out that their participation in the scientific club has developed them in many aspects. It is not only additional knowledge and the opportunity to apply it in practice. It also means presence at fairs, conferences, participation in contests and competitions - including international ones. For many graduates, it turned out to be an excellent springboard for a professional career.

– I easily managed to find a job right after graduation, with little professional experience. Employers looked very favourably at people who had done a little more than just a university diploma - explains Piotr Papaj (he belonged to the Silesian Greenpower scientific club).



Damian Pietryja

– Currently, I work as a mechanical engineer in a large Polish company, in the department dealing with AGV autonomously controlled vehicles. In addition, I belong to the Scientific and Technical Association of Polish Mechanical Engineers and Technicians (SIMP), in which I am the vice-president of the Gliwice branch.

– I work in the automotive industry. I started as a designer, and currently I run projects and develop products - car seats that will ultimately be used in mass production - says Krystian Kluska (Silesia Automotive). – I was at Silesia Automotive for over four years. During this time, we completed the construction of the first car and designed and built the second car for the Formula Student competition.

– Currently, I work as an MES engineer at Autoliv Poland. It is one of the largest suppliers of passive safety systems to the automotive market in the world - says Bartłomiej Olech (SKN Biomechatronics "BI-OKREATYWNI"), who had the opportunity to serve as the president of the group. – I am responsible for preparing and analysing computational models of airbag deployments and simulations of full car collisions. I work for the largest automotive concerns, such as BMW, Daimler, Jaguar Land Rover and Volvo.

Scientific clubs can have such an extensive structure that they not only have their own board and president, but often also people responsible for marketing, ac-



Marcin Czogała

quiring sponsors or running social media. This brings them closer to the functioning of a real company.

– I was the leader of the electronics and electrical systems team in the scientific club, and in the last year of my studies I was its president – says Damian Pietryja (SKN PolSI Racing). – Both of these positions helped me gain experience and soft skills during conversations with representatives of state institutions, company directors and the authorities of the Silesian University of Technology. These compe-

tencies paid off during job interviews. After defending my master's thesis, thanks to my active participation in the scientific club and the experience gained there, I joined the Bles company from Gliwice, which designs and produces autonomous minibuses.

Our interlocutors also include people who have started their own business.

– I am professionally involved in the design and production of medical simulators that help in learning the safe use of various medical procedures, such as intravenous

injection or intubation – explains Maksymilian Śmiech (SKN Biomechatronics "BI-OKRETYWNI"). – After moving to Great Britain, I initially worked as a designer in the R&D department of Trucorp. After a few years, I decided to open my own business - Decent Simulators, where I focus on the production of simplified models, but at more affordable prices. Participation in a scientific club, like any additional activity outside of studies, certainly

helped me in my professional life - contacts, working in teams, various types of projects and new experiences - all this built a distinctive CV.

– While still a student, together with my colleagues from the scientific club, I founded a company designing and producing unmanned aerial vehicles – says Tomasz Siwy (High Flyers). – Currently, I am also the owner and president of PRODRON, a company that supplies and

implements industrial-class drones for universities, municipalities, rescue services and companies.

YOU CAN JOIN AT ANY TIME

There are currently nearly 190 scientific clubs registered at the Silesian University of Technology. You can sign up at any time during your studies, as soon as recruitment is announced. Many clubs actively maintain profiles on social media. This is where they inform, among other things, about recruitment dates.

Our interlocutors joined their research teams at various stages of their studies. It was always a good choice. Some did it right away in their first year, others only after a few semesters. Tomasz Siwy even had the opportunity to participate in the creation of a new group.

– We founded High Flyers as an inter-faculty scientific club in 2010 at the AEI faculty, when I was in the first year of Mechatronics studies at the MT (Mechanical Engineering) Faculty – explains Tomasz Siwy. – Fully committing to this idea was one of the best decisions of my life.

Independent work and its organization, the ability to acquire knowledge from available sources, creative thinking, learning how to obtain funds, quickly drawing conclusions from the obtained research results, plus experience and numerous contacts - these are some of the advantages most fre-



Pawel Polnik

quently mentioned by our interlocutors from belonging to a scientific club.

– Working in a scientific group helps you prove yourself in various roles: engineer, manager, team leader. This is an interesting experience that verifies whether, for example, someone likes speaking in public or prefers the privacy of the studio - says Przemysław Olszówka (SKN AI-METH), who is a software engineer and professionally deals with computer vision and machine learning on a daily basis.

– Activities in the science club taught me how to deal with many surprising situations, solve unsolvable problems, motivate others and myself to work, deal with time pressure, self-presentation in the spotlight, and manage a large group of people – says Ewa Kocyan (SKN PolSl. Racing), who works at DesignSurf. There, she designs visible car elements, including bodywork.

– Throughout my entire period of activity in the organization, I was a member of the aerodynamics team, of which I became the leader. Creating the entire shell of the Sw03 car without using a single thread or nail was an extremely developing experience.

In the context of potential employment, participation in a scientific club is not just an empty entry on your CV. It's often prestige. Companies point out that a given person focused on development through additional ac-



Maksymilian Śmiech

tivity and commitment during studies. Moreover, during numerous competitions, meetings and conferences, the exchange of valuable contacts is so great that it can already result in a great chance of finding employment.

– The participation of a graduate of the Silesian University of Technology in a scientific club presents a job candidate in a positive light - a hard-working person, interested in topics that coincide with the company's projects - says dr hab. Eng. Mirosław Szczepanik, prof. SUT, scientific supervisor of SKN PolSl Racing. – During ten years of operation, SKN PolSl Racing has developed a brand that is recognizable in the industry, and the students working

in the club can boast of this fact. In the case of SKN PolSl Racing, participation in the scientific team undoubtedly facilitates the career path related to the automotive industry - both in terms of taking up an interesting job and the necessary competencies. During the job interview, the graduate can boast about his own designs of car components. The acquired experience also makes it easier to start in other industries, because the projects we implement are interdisciplinary.

– Working in the scientific club opens the door to fascinating internships in renowned companies around the world – says Paweł Polnik (SKN AI-METH), who works at a mine as an engineer and technician, currently in the



Przemysław Olszówka

Telecommunications, Automation and Gasometry department. – This is proof that the experience gained there is not only valuable in the context of scientific research, but also valued by global institutions and enterprises.

– I work for a large, foreign company in the automotive industry – says Szymon Szczech (SKN PolSL Racing). – When I submitted my CV, I was probably the first person to apply from Poland. The recruitment process itself probably broke a record in terms of length, but it was worth it - I paved

the way for other people from the "racing family" whom I pass in the company's corridors today.

IT'S ALSO ABOUT ADVENTURES

Science clubs are also a break from science and an opportunity to explore extraordinary places around the world. This, in turn - as the interviewees emphasize - allows you to compare your skills with students from other countries.

– I had the honour of driving the car on the legendary As-

sen track in the Netherlands during the Acceleration competition, which took place on the starting straight – recalls Szymon Szczech. – Unfortunately, during the previous competition, I slipped and damaged the floor. Fortunately, the team repaired the vehicle quickly - in a style worthy of Formula 1. After my second ride, in which the stress - considering the previous events - was at an insane level, it turned out that it was the fastest ride in the category of combustion vehicles.

– I especially remember the nights we spent working and one competition we didn't make it to because our bus broke down. We camped for two days in a parking lot next to a highway in Germany, sleeping cramped in cars, says Marcin Czogała (Silesia Automotive), who has been working at Škoda Motorsport as a designer in the bodywork department for a month.

– It was a great moment when we started the car for the first time and drove it for a short distance in the corridor of the MT department – says Piotr Papaj. – My adventure with the science club began in my last year of studies. I have always wanted to "physically" build something and thanks to my activities at Silesian Greenpower, I had the best opportunity to do so. I was involved in the building process, testing and ultimately competing at the Goodwood Circuit in the UK.

– One of the most extraordinary experiences was the

invitation to the Military Aviation Academy in Dęblin – says Paweł Polnik. – There we had the opportunity to use aviation simulators and equipment from the group of special aviation gymnastic devices, such as Rhine rings, on which Polish military pilots train.

THE MOST IMPORTANT DECISION

Our interlocutors answer unanimously - if they had another opportunity to join the science club, they would do it again.

– I believe that this is a key element of my personal success – says Marek Sznura (SKN AI-METH), who works in an international company in the Automotive area, developing battery systems, electronics, electrical harnesses and interiors for premium cars. – The science club allows us to discover what we like without incurring any costs. In our professional lives, every decision we make costs time, money and stress.

– I consider it one of the best decisions in my life – sums up Damian Pietryja. – In addition to gaining skills and experience in the automotive field, I met a lot of interesting and outstanding people with whom I could exchange observations.

– I discovered my own possibilities and understood what I wanted to do in the future – adds Piotr Papaj.

– For me, studies would make no sense without

PolSl Racing – comments Szymon Szczech. – The science club allows us to touch everything in practice and face real problems that we will face at work.

– The science club helped me choose my current career path – says Przemysław Olszówka. – Today, when I meet my friends with whom we spent nights at CNT, we agree that many of our best memories from our studies are associated with people

we met thanks to the Student Science Club. These are people who wanted to get something more out of this period of life.

– I met many phenomenal people and I am convinced that I would not be where I am today if it were not for PolSl Racing – says Ewa Kocyan. – Was it a good decision? After further consideration, no – it was the best decision! ■



THE YEAR OF SCIENCE IS AHEAD OF US

text: Katarzyna Siwczyk
photos: Krzysztof Gronowicz

THE CELEBRATIONS OF THE EUROPEAN CITY OF SCIENCE KATOWICE 2024 ARE GETTING STARTED IN EARNEST. AFTER KATOPOLIS AND THE SILESIA SCIENCE FESTIVAL, IT WAS TIME FOR 50 WEEKS OF SCIENCE IN THE SILESIA VOIVODESHIP. THE SILESIA UNIVERSITY OF TECHNOLOGY IS PART OF THE CONSORTIUM ORGANIZING THIS EVENT.

The opening weekend of the EMN (European City of Science) Katowice 2024 celebrations was full of attractions. On December 9, an extraordinary spectacle called Katopolis took place at Spodek, which was a kind of praise for the region and its achievements. During the almost two-hour show, viewers saw how Katowice has developed over the years, who were the people who built and continue to build its history, but also how important a role culture and science play in this process.

We could also see that Silesia and Katowice are passionate about science during the Silesian Science Festival, which, as usual, attracted crowds of residents to the International Congress Centre.

- This is an excellent opportunity to present the potential of the Silesian University of Technology. A technical university like ours should make the average Silesian aware that not only can you study with us, but also that we support business, cooperate with the socio-economic environment and know how modern technologies

are developed - said dr hab. Eng. Tomasz Trawinski, prof. SUT – vice-rector for infrastructure and promotion of the Silesian University of Technology.

During the three-day science festival, our University presented as many as 55 activities, most of which were located in the Technology zone. We showed our potential in the Motorsport, Science, Nature, Medicine and Health zones. We were also present in the area of humanities, social sciences and art. The topics we wanted to interest festival guests included: robots, neural networks, artificial intelligence, drones, transport, construction, cybersecurity and technologies that reduce energy consumption. Scientists from the Silesian University of Technology prepared shows, conducted workshops, gave lectures, and participated in debates and meetings on the Hall of Fame Stage.

- We are a significant partner in the consortium organizing the European City of Science Katowice 2024. We are responsible for individual activities within this consortium. Promoting science

is our mission, so going a step further, we have submitted an application to the European Commission with a plan to organize the European Researchers' Night and I hope that this application will be positively considered - added Vice-Rector Trawiński.

The Science Popularization Centre at the Silesian University of Technology has been promoting science for years, also within the framework of the European City of Science, and this time it is actively involved in organizing many initiatives.

- This year's Researchers' Night, our largest popular science project, has been included in these activities and Science Popularization Centre is already preparing for this unique event - announced dr hab. Aleksandra Ziemińska-Buczyńska, prof. SUT – director of the Science Popularization Centre of the Silesian University of Technology. - To talk about science in human terms, we need appropriate tools, hence the latest Science Popularization Centre initiative is the Science Populariser Toolkit. This is a series of on-

line meetings with specialists in various fields of science communication and education, during which anyone who wants to join us can learn how to effectively communicate science. This is a "substantive fishing rod" that we make available to those who want to improve their science popularization skills, added the Director of Science Popularization Centre.

The "rod" can be used by everyone who will prepare their projects and activities within the European City of Science to popularize the activities of the Silesian University of Technology, and there will be many such opportunities.

Of the 50 thematic weeks, the Silesian University of Technology coordinates 11. In addition to Treasure Week, there will also be Flying Week, Future Transport Week, Architecture Week, Energy Week, Eco Week, Microworld Week, Witches Week, Industry 4.0 Week, Materials Week and Robots Week.

Although some of the events are planned only for spring and autumn, it is worth booking time now to participate in specially prepared workshops and lectures. Scientists from the Silesian University of Technol-

ogy are currently preparing to implement these projects, all in order to bring the topics of scientific activity closer to the inhabitants of the region. This will happen, among others: during Industry 4.0 Week in October.

– We usually associate industry with hard engineering competencies, and we often forget about soft skills. Together with scientists from the University of Silesia, the Academy of Fine Arts and other Silesian universities, we will invite you to visit the ultra-modern world of industry 4.0 technologies and their applications in everyday life and industry - announces dr hab. Eng. Damian Gąsiorek, prof. SUT – coordinator of Industry 4.0 Week. – We will show things that make us say that we live in the world of the fourth industrial revolution. We will show how technologies will change our everyday and professional lives in the near future. We will start everything by touching on IoT technology, i.e. the Internet of Things, and finally we will talk about its impact on modern medicine - adds prof. Gąsiorek.

Robot Week also promises to be full of attractions. – Participants of meetings and lectures will have the opportunity to listen to

interesting lectures, see interesting robots used in medicine, in the fire brigade, flying robots (drones) and underwater vehicles. There will also be an opportunity to take part in practical workshops. For primary and secondary schools, there will be a panel on interesting educational projects and a robotics tournament - announces dr Eng. Aldona Rosner – coordinator of this week.

All European City of Science events will be free for residents.

– During all events of the European City of Science, we will show the inhabitants of the province Silesia, not only our latest achievements in the field of science and teaching, but also boast of our skills in establishing cooperation with various units of the socio-economic environment, as well as universities, city authorities, public benefit organizations in order to effectively shape and transform the region so that it constantly it was an attractive place to live, work and relax - concluded Vice-Rector Trawiński.

You can read about all planned European City of Science Katowice 2024 events on the website of the Silesian University of Technology. ■



TREASURES OF THE CITY OF SCIENCE

Edited: Jolanta Skwaradowska
photos: Maciej Mutwil, Tomasz Stokłosa, Jan Szady

TREASURE WEEK IS BEHIND US, THE SECOND OF THE SCIENCE WEEKS ORGANIZED AS PART OF THE CELEBRATIONS OF THE EUROPEAN CITY OF SCIENCE KATOWICE 2024. ON THIS OCCASION, THE SILESIAN UNIVERSITY OF TECHNOLOGY HAS PREPARED A NUMBER OF ATTRACTIONS FOR EVERYONE, REGARDLESS OF AGE, FROM PRESCHOOLERS TO SENIORS. THERE WERE WORKSHOPS, SHOWS AND LECTURES. THE EVENT ENDED WITH THE EXCHANGE OF MINERALS, ROCKS AND FOSSILS.



Treasure Week took place from January 8 to 14 in Gliwice, Katowice and Sosnowiec. The curators of the event were: M.Sc. Eng. Ewa Głuszek and prof. Małgorzata Labus from the Silesian University of Technology. – People associated with the Faculty of Mining, Safety Engineering and Industrial Automation of the Silesian University of Technology were involved in the organization of the Treasure Week. When creating the program, we focused on the treasures of the Earth - fossils, precious stones, metal ores used in modern technologies, up to space



objects from which perhaps in the near future we will exploit the raw materials we need. We also wanted to show how indispensable the help of surveyors is, who, based on the latest technologies, are able to prepare maps that allow you to discover the treasures of the Earth and beyond - said M.Sc. Ewa Głuszek.

Scientists from the Faculty of Natural Sciences of the University of Silesia, the University of Economics and the Medical University of Silesia also joined the Treasure Week celebrations.

During the week, everyone, regardless of age, could find something for themselves. On the first day, pupils took part in a demonstration lesson at the Museum of Earth Sciences of the University of Silesia in Sosnowiec. The classes were conducted by geologist dr Zuzanna Wawrzyniak. - We

talked about what happened in the world during past geological eras, how to study the age of the earth, and finally we looked at the fossils that remained on Earth - said dr Wawrzyniak.

The remaining activities on the first day of Treasure Week took place in Katowice. In Kato Science Corner, dr Dawid Surmik from the Faculty of Natural Sciences of the University of Silesia talked about the work of a palaeontologist.

- Some people associate him with Ross from the TV series Friends, others with dinosaurs, and I would like to talk to the meeting participants about these associations. This is certainly a good opportunity to interest those who are somewhat interested in palaeontology, but do not know all the possible applications of this scientific discipline, said dr Surmik.

In addition to geological knowledge, Treasure Week participants could participate in workshops on future competences at Rawa Ink in Katowice on Monday. Dr hab. Małgorzata Dobrowolska, prof. SUT conducted leadership skills training, focusing on the presentation of the so-called soft skills of the future. During the training, there was a lot of discussion about the consequences of technological progress for humans and futuristic visions regarding the projected future of the labour market.

The second day of Treasure Week was focused on drones, geocaching, and at the end there was a lecture on how to store energy.

Drone control workshops were held at the Faculty of Mining, Safety Engineering and Industrial Automation. Participants could try their hand at con-

trolling a small educational drone that can be safely used indoors. Those interested could also test their skills by controlling a larger device on an unmanned aerial vehicle flight simulator. The workshop was organized and conducted by dr Eng. Aleksandra Mierzewska from the Department of Geoengineering and Resource Exploitation, Faculty of Mining, Safety Engineering and Industrial Automation,

Silesian University of Technology. – We are having some fun here, through which we are moving towards science, because we want to familiarize young people with some of the basic principles of flying, but also to make them realize that this technology has a number of applications in many fields of science – said the scientist. Outdoor game enthusiasts could listen to a lecture on

geocaching, EarthCaches and searching for earth's treasures during the lecture entitled "Geocaching - treasure hunting game...". It was led by Paweł Woźniak, an employee of the Upper Silesian Branch of the State Geological Institute in Sosnowiec.

The second day of the Treasure Week ended with a lecture by prof. Marcin Lutyński from the Faculty of Mining, Safety Engineering and Industrial Automation of the Silesian University of Technology, regarding energy storage.

On Wednesday, Treasure Week participants learned how to recognize minerals, how to distinguish a gemstone from a fake, how to take care of health - our greatest treasure, and how to invest in precious metals.

Workshops on identifying minerals and rocks entitled: "Treasures in your hand" were conducted by scientists from the Silesian University of Technology, dr hab. Joanna Komorek and dr Eng. Ewa Strzałkowska. – Such knowledge can be very useful because minerals accompany us in everyday life, such as the salt we have in a saltshaker. After all, it is a mineral - halite - said dr Eng. Ewa Strzałkowska. – Pupils and students took part in the workshops. Participants learned to recognize minerals based on their physical properties, such as: shine, hardness, cleavage, shape, and form of aggregation. We also used microscopes in the study, which allowed these studies to be more detailed, added dr Strzałkowska.

The next workshops as part of



the Treasure Week - "Treasures and fakes" - were held at the Institute of Earth Sciences, Faculty of Natural Sciences, University of Silesia. Here, participants had the opportunity to learn about methods of distinguishing natural gemstones from synthetic ones and their imitations.

People interested in investing could take part in workshops titled: "Alternative investments on the example of the precious metals market, analysis and methods of forecasting rates" organised by the University of Economics in Katowice. The series of Wednesday workshops ended with the lecture "Health as a treasure. How to take care of your health - your greatest treasure", which was delivered at the Social Ministry for Lone-

liness in Katowice by prof. dr med. Jan Duława, head of the Department of Internal Medicine at the Medical University of Silesia in Katowice and head of the Department of Internal and Metabolic Diseases of the Upper Silesian Medical Centre. prof. Leszek Giec, Medical University of Silesia in Katowice.

The fourth day of Treasure Week was marked by exploitation not only underground, but also in space.

– We divided the presentation into two parts. In the first one, in a specially prepared room, we showed the youth what mineral extraction will look like in the future... in space. Here we presented mining on the Moon. Participants could play the role of space miners, extracting treasures

of the Moon using remotely controlled robots - said dr hab. engineer Piotr Cheluszka, prof. SUT

In the second part of the show, visitors to the Faculty of Mining, Safety Engineering and Industrial Automation of the Silesian University of Technology could visit the only Mining Machinery Laboratory in Poland, where they could see how mining machines work.

Thursday's activities ended with a meteorite show. Participants learned how much one gram of a meteorite can cost and how old the oldest specimens are. Kazimierz Mazurek, one of the founders of the Polish Meteorite Society, talked about all this in his lecture on meteorites "Unearthly Treasures". Among the "otherworldly treasures" presented

by the expert was a specimen dating back to the formation of the Solar System, another - Allende - from over four billion years ago. Meteorites from Mars and the Moon were also to be seen.

On Friday, as part of Treasure Week, we invited participants to a lecture entitled: "How much gold is in your smartphone? - the most valuable and expensive metals" and a display of glowing minerals.

Dr hab. Eng. Magdalena Kokowska-Pawłowska and dr Eng. Jacek Nowak - employees of the Department of Applied Geology at the Faculty of Mining, Safety Engineering and Industrial Automation of the Silesian University of Technology presented the most valuable and expensive metals that are necessary to produce, for

example, smartphones. Meeting participants learned that more than half of all elements in a mobile device - including its screen, casing, microprocessor, cables, battery, speaker and microphone - could not be created if it were not for the mineral raw materials that are used to produce all these components.

An interesting collection of fluorescent minerals was prepared by students from the Geologists' Scientific Club "Silesian" of the Silesian University of Technology. - Fluorescence is a very interesting phenomenon, invisible to the naked eye, and under the influence of UV light an ordinary grey pebble can turn pink or green - explained Kinga Kwiecień from the "Silesian" group.

- Minerals themselves are interesting, and in my opinion

the most fascinating thing is that nature created such wonders - said prof. Małgorzata Labus, scientific supervisor of the club. - Minerals usually do not glow on their own, but some of them can be made to glow using various methods. Students have scientific plans and want to find out what is the factor causing the glow, added the professor.

The Treasure Week at the Silesian University of Technology ended with the Exchange of Minerals, Rocks and Fossils, which took place at the Faculty of Mining, Safety Engineering and Industrial Automation of the Silesian University of Technology.

- The exchange of minerals, rocks and fossils has become a permanent part of the tradition of our faculty. The first





such an event in Silesia was organized at the Silesian University of Technology in 1986. That's almost 40 years of tradition. This year we have over 30 exhibitors presenting all the gifts of the Earth in the form of fossils and minerals. We also have extraterrestrial rocks - meteorites and beautiful, handmade jewellery made of precious stones - said Ewa Głuszek - head of the Museum of Deposit Geology at the Silesian University of Technology. Every year, the minerals exchange attracts crowds of visitors of all ages, from preschoolers to seniors. – Just as we want to show that the European City of Science Katowice 2024 is for everyone, regardless of age, we also show that the exchange is addressed to everyone. Truly, everyone will

find something for themselves here, adds Ewa Głuszek.

During the weekend, the Silesian University of Technology also held lectures "Why the stars shine" and "All the stars in the universe", delivered by dr Andrzej Boczarowski from the University of Silesia. In his lectures, or rather popular science performances in the form of multimedia shows, the scientist explained in detail the evolution of stars and their classification. He also said that scientists can ensure that the world will not end in the next few billion years. In turn, the youngest (and not only) could take part in workshops titled: "Minecraft fascinating minerals and rocks in the real world."

The Treasure Week taking place at the Silesian University

of Technology was the second week of learning as part of the European City of Science Katowice 2024. Everyone could find something for themselves in the activities prepared by scientists. The participants emphasized that it was an opportunity to expand their knowledge, explore new areas, and for the youngest, an impulse to become interested in the fascinating world of science.

The text was prepared by Jolanta Skwaradowska. The events were reported by Anna Świdorska, Katarzyna Siwczyk, Martin Huć and Jolanta Skwaradowska. ■

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PROF. WOJCIECH SIMKA IS THE WINNER OF THE SILESIAN SCIENCE AWARD

text: Jolanta Skwaradowska

photo: Rafał Opalski (Silesian Science Festival)

PROFESSOR WOJCIECH SIMKA FROM THE FACULTY OF CHEMISTRY OF THE SILESIAN UNIVERSITY OF TECHNOLOGY IS THE WINNER OF THE SILESIAN SCIENCE AWARD 2023. IT IS AWARDED TO RESEARCHERS, SCIENTISTS AND CREATORS WHO SIGNIFICANTLY CONTRIBUTE TO THE DEVELOPMENT AND PROMOTION OF REGIONAL SCIENCE. THE INITIATIVE TAKES PLACE AS PART OF THE SILESIAN SCIENCE FESTIVAL KATOWICE.

The awards gala took place on December 10, 2023, at the International Congress Centre in Katowice. Prof. Wojciech Simka was awarded for his lifetime scientific achievements. The scientist's research topics are mainly related to the modification of the surface of implants made of titanium or its alloys. Another research area is the synthesis and characterization of new anode materials for fuel cells.

– The award is an expression of recognition for many years of work, not only by me, but also by my entire team (Electrochemistry Group), without whom publications, patents and projects would not have been created. This type of award is certainly an inspiration for

further, intensive work – said prof. Simka.

The research topic undertaken by the professor is important for several reasons. The first is to improve the quality of life of people and animals. In this case, research was undertaken to modify the surface of implants, which are made of a very durable metal such as titanium or its alloys. Titanium is used to produce the so-called long-term implants, i.e. implants that should remain in the human body for more than a dozen years.

– To improve the properties of such implants, special coatings are produced on their surface, causing faster and stronger fusion with the bone. For this purpose, an electrochemical process is used, which



allows for the incorporation of elements such as calcium and phosphorus, i.e. bone building components, into the mentioned coating. This procedure allows to "deceive" the tissue (bone) into recognizing the implant as its own, which accelerates integration with it, explains the scientist.

Coatings of this type are successfully used on dental implants, as well as on personalized (tailored to the patient) implants made in 3D printing. These, in turn, can replace parts of the facial skull after extensive injuries, e.g. as a result of war or accidents.

– Modified dental implants were implanted in approx-

imately two thousand patients from Ukraine. Currently, the process is used to process the surface of individual printed craniofacial implants for patients with war injuries in Ukraine - adds prof. Simka.

The use of developed coatings also allows for improving the properties of animal implants. In this case, implants covered with special coatings fuse with the animal's tissue, which eliminates the need to perform a second operation - removing the implants after healing, which significantly reduces stress in the animal. The second important research area covered by prof. Wojciech Simka, is to

improve the quality of the natural environment by developing modern electrocatalysts that can be used in fuel cells. In this case, catalysts are being developed based on nickel, cobalt and copper compounds, which have very good properties for the oxidation of urea, methanol and other alcohols as potential fuels.

The Silesian Science Award is known as part of the Silesian Science Festival KATOWICE. It is awarded to people who significantly contribute to the development of science and present outstanding artistic achievements, as well as promote Silesian science on the national and international arena. ■



ON THE TRAIL OF ST. JACOB

text: Jolanta Skwaradowska

photos: private archives

OVER 4,800 KM ON FOOT FROM POLAND TO PORTUGAL - THIS WAS THE DISTANCE COVERED ALONE BY DR HAB. ENG. WOJCIECH WIĘCŁAWEK, PROF. SUT FROM THE FACULTY OF BIOMEDICAL ENGINEERING OF THE SILESIA UNIVERSITY OF TECHNOLOGY. THE ROUTE LED FROM GLIWICE TO FATIMA AND THE PROFESSOR COMPLETED IT IN FOUR MONTHS. WANDERING ALONE WAS A SCIENTIST'S DREAM COME TRUE.

Dr hab. Eng. Wojciech Więclawek, prof. SUT started on May 1 from Gliwice and reached Fatima on September 2, 2023.

– The thought of traveling to Fatima has accompanied and matured in me for almost 7 years. I prepared for it physically and organizationally by walking around Poland. Over the course of 5 years, I walked a total of approximately 4,000 km. The distance approximately corresponded to the distance from Gliwice to Fatima - says the scientist.

During his expedition through Europe, Professor Więclawek covered 4,874 km, so on average he covered a distance of about 40 km a day. The route led through Poland, the Czech Republic, Ger-



many, Switzerland, France, Spain and up to Portugal.

– The route I followed was planned much earlier. Along the way, I wanted to visit a few other places, in particular La Salette, Lourdes, but also little-known places such as Libice nad Cidlinou (birthplace of Saint. Wojciech). Moreover, wherever possible, I tried to ensure that the route coincided with the road network of St. Jacob. These roads lead to Santiago de Compostela. When planning the route, I knew that I would have to cover over 4.5 thousand kilometres and pass across seven countries. I expected that, at best, I would arrive around mid-September - says professor Wojciech Więctawek.

Because the scientist did not know how many kilometres he would cover in a day and where he would reach on a given day, he did not plan accommodation in advance, he looked for it on the spot. – I had a tent with me, which gave me a sense of freedom. Initially, in Poland and the Czech Republic I managed to sleep under a roof. However, in Germany, Switzerland and half of France I used only a tent. It was only from Arles in France that it was easier to have a roof



LaSalette

over my head, because from this town I was constantly walking along one of the marked trails of St. Jacob – he says.

The professor arrived at Fatima earlier than expected, on Saturday, September 2.

– My journey lasted 4 months – 18 full weeks, exactly 125 days, including 116 days of walking and 9 days of rest. After returning, I calculated the distance travelled. In total, I walked 4,874 km, which is six and a half million steps. So, I covered an average of about 40 km a day, or 53,000. steps – says Professor Więctawek.

The professor's journey took place mainly during his free time from teaching at the university. – A few of my co-workers knew about my plans. I only informed my immediate family, a few friends, and the head of my department, prof. Ewa Piętka and one of my colleagues. However, the prolonged absence contributed to revealing her reasons, so much so that

when I returned everyone already knew. What's more, they were waiting for me with an exceptionally nice surprise: a beautiful cake in the shape of a suitcase with shoes on it - says professor Więctawek.

Dr hab. Eng. Wojciech Więctawek, prof. SUT is an employee of the Department of Medical Informatics and Artificial Intelligence at the Faculty of Biomedical Engineering of the Silesian University of Technology. – I professionally analyse and process medical images from various types of examinations (such as magnetic resonance imaging, computed tomography, optical coherence tomography, etc.). Together with other employees of the department, we are looking for various technical solutions to support doctors in the process of diagnosing and treating patients - explains the professor.

We congratulate the professor and wish him further successful expeditions. ■

TRAVELS TO THE LOST WORLDS

text: Jolanta Skwaradowska

photo: Przemysław Bratkowski

CAN TRUE LIFE'S PASSION TAKE US TO THE MOST DISTANT CORNERS OF THE WORLD? IS IT POSSIBLE TO COMBINE IT WITH WORK AND SCIENTIFIC RESEARCH, AND AT THE SAME TIME BECOME A MEMBER OF PRESTIGIOUS TRAVEL AND GEOGRAPHICAL ASSOCIATIONS? IT TURNS OUT THAT IT IS POSSIBLE, AS PROVEN BY MATEUSZ WRAZIDŁO, A PHD STUDENT AT OUR UNIVERSITY.



Mateusz Wrazidło is currently writing his PhD at the Faculty of Mechanical Engineering of the Silesian University of Technology. The promoter of his work on the development of a system for environmental measurements and the cultivation of endangered tropical plant species is prof. Wojciech Moczulski.

In addition to his scientific work, the doctoral student is engaged in breeding endemic plants from the Guiana Plateau region in South America. His passion began in childhood.

– As a nine-year-old boy, I first heard about carnivorous plants, which fascinated me. I started looking for information about them, where to get them and how to grow them. I established contacts with other breeders, and my collection grew every year - says Mateusz Wrazidło.

And so, a childhood hobby turned into a real passion and lifelong obsession. Currently, the researcher grows carnivorous plants in special cultivation chambers in his family home. The scientist is particularly interested in unique, endemic plants found in the Guiana Shield region. – This is an area in South America that stretches from Colombia to French Guiana. There are characteristic table mountains called tepui. They look like islands surrounded by clouds, isolated from the world by vertical walls. Due to the harsh climate and often very poor environment, lacking nutrients, there are a large number of plants found nowhere else in the world, often carnivorous. Some of the organisms

found there are relics from the times when South America and Africa were one continent, says Mateusz Wrazidło.

The scientist went to the Guiana Highlands several times in search of these plants. He described one of the 2019 expeditions to Mount Roraima in the prestigious National Geographic magazine. – This trip was one of many, but probably the most ambitious. Mount Roraima is a mountain that has been an object of obsession for researchers since the 19th century. However, getting on it was extremely difficult. If we type the name 'tepui' into the Internet, we will find out why. These are mountains that look like a table. To enter it, you have to overcome several hundred meters of vertical wall. Nineteenth-century explorers did not have access to helicopters or climbing experience - so they were unable to conquer Roraima for decades. Roraima served as an inspiration, among others. for the novel "The Lost World" by Arthur C. Doyle, hence the tepui are still called "Lost Worlds" - says the researcher.

Travels to the Guiana Plateau also resulted in the discovery of inaccuracies in the geographical names of South America. The noticed error was that the name of the Waukauyengtipu plateau was not on the maps or in the official register of geographical names of Guyana, while in the scientific literature it was referred to as a synonym for Cerro Venamo - a completely different plateau on the Venezuelan side, approximately 30 km away from Waukauyengtipu. – It is

like saying that Świnica and Rysy are the same mountain, because they are close to each other – explains the scientist.

The revealed errors were described in the magazine "Miscellanea Geographica". The authors of the publication are Mateusz Wrazidło, British geographer Stewart McPherson and H. David Clarke, leader of the Smithsonian Institution expedition to the Waukauyengtipu Plateau in 1997.

Our scientist's achievements have been recognized by prestigious associations: The Explorers Club and the Royal Geographical Society in London, which included him in their group. Mateusz Wrazidło also received the KOŁOS award. The jury of this travel award appreciated him "for his sensitivity and empathy towards the local community as well as his perseverance and reliability during the documentation of Tepui in Guyana, resulting in the publication of scientific research."

You can listen for more about Mateusz's passions, breeding unique plants, and fascinating expeditions to the most remote corners of the world in the podcast: "Let's talk about science". ■



You can also listen for more information in the podcast "Let's talk about science".



EVENTS

SILESIA UNIVERSITY OF TECHNOLOGY WITH THE HIGHEST SUPPORT IN THE "POLISH METROLOGY II" PROGRAM

The Ministry of Education and Science announced the results of the "Polish Metrology II" program. The Silesian University of Technology received the highest support in the amount of PLN 1 million for a project related to the development of a dosimeter for radiotherapy.

The aim of the "Polish Metrology II" program is to increase the level of research capabilities of metrological institutions and strengthen their intellectual capital. The initiative is intended to increase the competitiveness of the Polish economy in strategic areas for the country and contribute to the development of modern technologies and metrology - in particular in the areas of health, environment, energy and advanced measurement techniques. ■



Photo: Dawid Rudy

AIUT'S MODERN LABORATORY IS NOW OPEN

The Autonomous Mobile Robots Laboratory created in cooperation with AIUT was opened at the Silesian University of Technology.

It is a modern laboratory where practical classes with company representatives will be held.



photo Maciej Mutwil

- We have the latest technologies entering the industry here. Thanks to this laboratory, students will have access to them on-site, which will allow them to test different ways of using these technologies, their possible failures, and this, in turn, will allow them to gain practical experience needed in their future work - said dr hab. Eng. Anna Timofiejczuk, prof. SUT, the Dean of the Faculty of Mechanical Engineering.

The laboratory is equipped with two industrial autonomous vehicles and six stations for testing the software these vehicles are equipped with. The laboratory is located on the fifth floor in the building of the Centre of New Technologies of the Silesian University of Technology. ■

UKRAINIAN SCIENTISTS VISIT THE FACULTY OF ELECTRICAL ENGINEERING

The Faculty of Electrical Engineering of the Silesian University of Technology hosts two scientists from the Lviv University of Technology. This is the result of the growing cooperation be-

tween these two universities. The plans include co-creating research projects.

In November 2023, the Rector of the Silesian University of Technology, prof. dr hab. Eng. Arkadiusz Mężyk signed a cooperation agreement with representatives of the Lviv University of Technology. The bilateral activities are expected to result in the implementation of joint scientific and research projects, participation in conferences and study visits of scientists in both countries.



photo Tomasz Stokłosa

We didn't have to wait long for the effects of cooperation, because in mid-December, two scientists from a Ukrainian university visited the Faculty of Electrical Engineering of the Silesian University of Technology. The visiting scientists were Yuriy Shapovalov and dr Eng. Dariya Bachyk, representing the Faculty of Radioelectronic Devices and Systems of the Lviv National University of Technology. ■

A UNIQUE WEEKEND IN THE EUROPEAN CITY OF SCIENCE! ALREADY BEHIND US IS THE 7TH SILESIA SCIENCE FESTIVAL KATOWICE!

Another edition of the Silesian Science Festival KATOWICE is behind us. The festival was visited by

nearly 69,000 people, and almost 10 thousand followed the online broadcasts.

This year's ŚFN (Silesian Science Festival) under the slogan: "Science is our future" was part of the opening weekend of EMNK (European City of Science Katowice) 2024. The celebrations were inaugurated with a scientific and musical spectacle, KATOPOLIS. The very popular event gathered, gathered as many as 6,000 people in the "Spodek" Sports and Entertainment Hall.



photo Krzysztof Gronowicz

During the 7th Silesian Science Festival we presented 700 activities - lectures, workshops, shows, exhibitions, debates, meetings and many others, including events in English. To make the proposed activities reach an even wider audience, we also provided translations into sign language. ■

HYDROGEN AND SUSTAINABLE DEVELOPMENT ARE THE SUBJECT OF A NEW SCIENTIFIC PROJECT AT THE SILESIA UNIVERSITY OF TECHNOLOGY

At the Faculty of Materials Engineering of the Silesian University of Technology in Katowice, a hybrid meeting was held to inaugurate the project with the acronym TBC₄H₂, entitled "Coating thermal barriers for ecological heat-to-energy applications: understanding the limitations in hydrogen combustion conditions and a sustainability perspective", as part of the M-Era.NET 2022 initiative.

The inaugural meeting was attended by partners from 3 countries and 6 scientific units. Poland was represented by Łukasiewicz – GIT (as project coordinator), the Silesian University of Technology and Avio Aero. Scientists participating in the project are: dr hab. Eng. Radosław Swadźba, dr hab. Eng. Bogusław Mendala, prof. SUT, prof. dr hab. Eng. Lucjan Swadźba, M.Eng. Łukasz Pyclik, dr Vincent Maurel, dr hab. Vincent Guipont, Eliot Degouilles, dr Eng. Filofteia-Laura Toma, Eng. Stefan Scheitz, dr Eng. Ravisankar Naraparaju.

The aim of the project is to gain new knowledge about the behaviour at high temperatures of thermal barrier coatings (TBC) deposited using slurry plasma spraying (SPS) and physical vapor deposition (EB-PVD) methods, produced on a single-crystalline superalloy based on nickel with diffusion protective layers and interlayers intended for aircraft engine turbines. Their use in conditions of increased water vapor concentrations typical for the use of hydrogen fuels will allow for an increase in the operating temperature and, consequently, the efficiency of aircraft engine turbines, and at the same time will reduce fuel consumption of new generation aircraft and will directly contribute to reducing CO₂ emissions to the environment, thus meeting the world's needs for building climate neutrality. ■



photo Bogusław Mendala

5TH INTERNATIONAL CHRISTMAS EVE MEETING

Over 200 students from abroad took part in the 5th International Christmas Eve Meeting at the Mrowisko Student Culture Centre. As usual, the organizers prepared a lot of attractions and presented Polish Christmas traditions to foreign guests in an interesting and funny way. There was also a competition to prepare the Christmas Eve table and the longest Christmas tree chain.



photo mat. organizer

– I am very glad that such meetings are organized, it is extremely important, because we already have a very large group of foreigners, both students, PhD students and employees, who are part of our community – said prof. Marek Pawełczyk, Vice-Rector for Science and Development, who extended his best wishes to everyone.

Guests come from all over the world - China, Spain, Albania, Algeria, Pakistan, Bangladesh, India, Ethiopia, Nigeria, Ukraine, Kazakhstan, El Salvador, Rwanda, Mozambique, Cameroon, Jordan, Turkey, Kenya, Tanzania, Italy, France, Mexico, Iran, Iraq, Egypt, Palestine, Ghana, Gambia, Malaysia, Philippines and Zimbabwe. Everyone had the opportunity to taste traditional Polish Christmas Eve dishes. ■

SUCCESSSES

THE HEET II PROJECT AWARDED AT THE INTERNATIONAL COMPETITION OF INVENTIONS AND INNOVATIONS

The HEET II project implemented by the Silesian University of Technology with the KOMAG Institute of Mining Technology and SWE Sp. z o. o. was awarded a platinum medal at the International Competition of Inventions and Innovations PRIX EIFFEL.

The HEET II research project lasted over 3 years and was financed by the European Union under the Coal and Steel Research Fund. It concerns an innovative power supply system for machines and devices that increases the level of work safety in underground mine workings.

A team of eleven employees from the Department of Power Electronics, Electric Drives and Robotics of the Faculty of Electrical Engineering of the Silesian University of Technology is involved in the project and is responsible, among others, for the design and construction of power electronic converters of the power supply system. The project manager at the Silesian University of Technology is dr hab. Eng. Marcin Kasprzak, prof. SUT. ■

PRIME MINISTER'S AWARD FOR DR HAB. ENG. TOMASZ BRADECKI, PROF. SUT.

Dr hab. Eng. Tomasz Bradecki, prof. SUT received the award of the Prime Minister. The distinction was awarded for highly rated scientific achievements, which are the basis for awarding the degree a habilitated doctor.

– It is important to me for two reasons. The first is the fact that the Prime Minister's Award is not often awarded in the discipline of architecture and urban planning. The second is the fact that the proposed solution is based on my experience and scientific experiments, and also draws on experience from design practice, which makes me very happy as a professionally active architect and urban planner - concluded dr hab. Eng. Tomasz Bradecki, prof. SUT

In his work, the scientist proposed an original system for assessing the spatial values of multi-family housing complexes. The innovation of the presented concept lies in emphasizing the role of modelling in urban design. ■

POLISH QUALITY AWARD FOR PROF. RADOŚLAW WOLNIAK

Professor Radosław Wolniak, an employee of the Department of Economics and Informatics of the Faculty of Organization and Management at the Silesian University of Technology, received the Polish Quality Award 2023. This distinction was awarded in the Science category.



photo Radosław Paszkowski

Polish Individual Quality Award named after prof. Edward Kindlarski is awarded to people

whose work stands out in terms of quality, both in practical and theoretical dimensions.

RESULTS OF THE OPUS 25 AND PRELUDIUM 22 COMPETITIONS

More than PLN 338 million will be awarded to researchers for the implementation of 407 projects in Polish units as part of the OPUS 25 and PRELUDIUM 22 calls. These include projects implemented at the Silesian University of Technology.

The OPUS and PRELUDIUM competitions are well-known NCN competitions among scientists in Poland, enabling the implementation of basic research in Polish units. OPUS grants enable the implementation of complex projects lasting several years, building large scientific teams, using large international research equipment and cooperation with foreign partners, all regardless of the stage of the project manager's scientific career. ■

STUDENTS OF THE SILESIAN UNIVERSITY OF TECHNOLOGY AWARDED IN THE GOLD MEDAL OF CHEMISTRY COMPETITION

Łukasz Jakubski, a student of the Faculty of Chemistry of the Silesian University of Technology, received the Bronze Medal of Chemistry. The award in the Gold Medal of Chemistry competition was granted for the work titled "The use of a combination of magnetite and a molecular magnet as a filling of alginate membranes in the process of ethanol dehydration using the pervaporation technique."



photo: Silesian University of Technology

The competition also awarded distinctions to DuPont, which co-organized the competition. Recipients Łukasz Jakubski and Mateusz Zygadło, also from the Faculty of Chemistry of the Silesian University of Technology. Mateusz Zygadło received an award for his work titled: "Utilization of waste poly(ethylene terephthalate) by the production of plasticizers" written under the scientific supervised by dr hab. Eng. Gabriela Dudek, prof. SUT. The student developed a new, more efficient method of

recycling PET plastic. This material is one of the most commonly used polymers for the production of bottles and packaging, which generates huge amounts of waste. ■

STUDENTS OF THE SILESIAAN UNIVERSITY OF TECHNOLOGY AWARDED IN THE GLIWICE CITY HALL COMPETITION

The competition for the best diploma thesis regarding the city of Gliwice has been resolved. This year, works in the field of architecture by three graduates of the Silesian University of Technology were distinguished.

The board, which included representatives of the Mayor of Gliwice, the Gliwice City Council and the Silesian University of Technology, awarded three

equivalent distinctions in the amount of 3 thousand PLN each. The winners were Wiktoria Anczykowska, Adrianna Wechowska and Marta Sanigórska. All distinguished works largely met the established evaluation criteria and have a promotional value for the city, and the author of each work drew attention to a different aspect of our city. ■



photo Gliwice City Hall

PROJECTS

THE SILESIAAN UNIVERSITY OF TECHNOLOGY WILL EDUCATE AIR TRAFFIC CONTROLLERS

The Silesian University of Technology will educate air traffic services personnel. This is the result of cooperation in this area with the Polish Air Navigation Services Agency.

A letter of intent in this matter was signed in April 2023 by the Rector of the Silesian University of Technology, prof. Arkadiusz Mężyk and the president of the Polish Air Navigation Services Agency - Anita Oleksiak. On December 13, 2023, an agreement was signed specifying the de-

tails of cooperation in the area of educating candidates for air traffic controllers.



photo: SUT materials

– The Silesian University of Technology, with substantive support from PANSa, as part of its activities related to educating students at the Civil Aviation Personnel Education Centre, continues its efforts to launch a certified organization within the University's structures that

trains candidates for air traffic controllers. Due to the statutory role of PANSa as an institution established, among others, to provide air navigation services in Polish airspace, as part of the agreement, the Agency expressed its readiness to continue training on operational positions for students who obtain the S-ATCL (Student-Air Traffic Controller License) - said dr hab. Eng.pilot Jarosław Kozuba, prof. SUT. ■

7TH EDITION OF THE "SPREAD YOUR WINGS" MENTORING PROGRAM

For the seventh time, the "Spread your wings" mentoring pro-

gram was inaugurated at the Silesian University of Technology. It aims to develop the intellectual potential of the best secondary school pupils, while supporting their personal development and preparing them for their first employment. This year, nine pupils were mentored. They have a designated mentor, who is an employee of the University.

– Pupils included in this program are like diamonds that we want to polish. We want these young people to develop in the scientific field, then professionally, and perhaps stay at the University to pass on the acquired knowledge to the next generations - said prof. Wojciech Szkliniarz, Vice-Rector for Student Affairs and Education.



photo Maciej Mutwil

The "Spread your wings" program, in addition to mentoring, provides an individual study program for each participant, taking into account his or her interests and special talents. Participants can also count on: additional language classes, training in the development of soft skills and personal development, an individual career counselling program and scientific career coaching, participation in national and international expert lectures, conferences, discussion panels, participation in scientific research, paid research internships -development, trips abroad to the partner university of the Silesian University of Technology. Participants also receive a mentoring stipend. ■

"SCIENTIFIC DEBUT 2024" COMPETITION

You can submit works in the competition for an innovative scientific article entitled: "Scientific debut 2024 - Sustainable Development and the European Green Deal". This is the 15th edition of this project.

The project aims to facilitate a debut in a scientific publication, including a monograph or a scientific journal, and to present a speech at an international scientific conference. Works can be submitted until February 18, 2024. The decision will be made on March 6, 2024. More information on the project website: www.debiut.buzek.pl

The project is open and all first-, second- and third-cycle students, as well as graduates who do not have a PhD degree, can participate in it. Each participant can send their own article presenting their view, idea, point of view on any topic and profile, provided that it refers to the concept of "sustainable development and/or the European Green Deal". The article should be scientific in nature and contain an innovative trend/aspect. ■

COMPETITION FOR THE AWARD NAMED AFTER ARTUR ROJSZCZAK

The Club of Scholarship Holders of the Foundation for Polish Science announces a competition for the Artur Rojszczak award for the twelfth time. The award is intended for young scientists who stand out not only for their scientific achievements, but above all for their humanistic attitude and the ability to overcome the barriers of narrow specializations.

The competition winners receive an individual cash prize (PLN 5,000). It is awarded to

young doctors who have defended their doctoral thesis within the last five years from submitting the application.

Members of the Scholarship Club have the right to nominate candidates for the award based on their own information and information provided to them by the scientific community. The deadline for club members to submit applications is January 31, 2024. More information can be found at www.klub-fnp.pl. ■

REGISTER FOR PARTICIPATION IN THE "SCIENCE WITHOUT BORDERS" PROGRAM AND SUPPORT THE EDUCATION OF PEOPLE WITH DISABILITIES.

Recruitment for the "Science without Borders" program begins, which involves the creation of teaching aids and therapeutic devices for children and adolescents with disabilities.



photo archive Silesian University of Technology

The "Science without Borders" program is implemented in cooperation with the Special Educational Centre in Dąbrowa Górnicza. Scientists and students of the Silesian University of Technology together with the centre's teachers work on modern teaching aids and therapeutic devices based on design thinking. The solutions they prepare support therapy, among others: in the field of speech therapy, typhlopedagogy, surdopedagogy and sensory integration. Details on the website of the Silesian University of Technology. ■

POSITIONS, DEGREES AND ACADEMIC TITLES

DOCTORAL DEGREES AWARDED

Dr Rafał DZIWIŚ

Psychological and Pedagogical Counselling Centre in Częstochowa. Supervisor: dr hab. Eng Waldemar Kwaśny, prof. SUT. Thesis topic: "The use of experimental methods and computer simulations to determine selected mechanical properties of coatings obtained in the PVD process on sintered tool materials." Conferring the degree of Doctor of Engineering and Technical Sciences. Discipline - materials engineering. Resolution of the Materials Engineering Discipline Council of November 21, 2023.

Dr Eng. Jakub FRANEK

Silesian University of Technology – PhD student. Supervisor: prof. dr hab. Eng Jerzy Świder. Auxiliary supervisor - dr Eng. Piotr Michalski. Thesis topic: "Development of a new biocomposite injection method increasing production efficiency." Conferring the degree of Doctor of Engineering and Technical Sciences. Discipline - mechanical engineering. Resolution of the Mechanical Engineering Discipline Council of November 29, 2023.

Dr Eng. Katarzyna HYC-DADAK

Łukasiewicz Research Network – Upper Silesian Institute of Technology – Gliwice. Supervisor: dr hab. Eng Jacek Pawlicki, prof. SUT Thesis topic: "Evaluation of mechanical and structural properties of welded joints of vehicles under dynamic limit loads." Conferring the degree of Doctor of Engineering and Technical Sciences. Discipline - mechanical engineering. Resolution of the Mechanical Engineering Discipline Council of November 29, 2023.

Dr Eng. Michał JUZEK

The Silesian University of Technology, Faculty of Transport and Aviation Engineering – assistant. Supervisor: dr hab. Eng Grzegorz Wojnar, prof. SUT Auxiliary Supervisor: dr hab. Eng Tomasz Haniszewski, prof. SUT Thesis topic: "The influence of selected modifications applied in the meshing zone - gear body on the vibrations of the gear transmission." Conferring the degree of Doctor of Engineering and Technical Sciences with distinction. Discipline – civil engineering, surveying and transport. Resolution of the Civil Engineering, Geodesy and Transport Discipline Council of November 30, 2023.

Dr Eng. Mateusz KAŁUŻA

Silesian University of Technology – PhD student. Supervisor: prof. dr hab. Eng Joanna Bzówka. Auxiliary supervisor - dr Eng. Mirosław Kotasiński. Thesis topic: "Research and analysis of surfaces subjected to mining impacts." Conferring the degree of Doctor of Engineering and Technical Sciences. Discipline – civil engineering, geodesy and transport. Resolution of the Civil Engineering, Geodesy and Transport Discipline Council of November 30, 2023.

Dr Eng. Oliwia KRAUZE

Silesian University of Technology Faculty of Automatic Control, Electronics and Computer Science - assistant. Supervisor: prof. dr hab. Eng Marek Pawełczyk. Thesis topic: "Measurements, modelling and control of flow in grinding installation with electromagnetic mill". Conferring the degree of Doctor of Engineering and Technical Sciences with distinction. Discipline – automation, electronics, electrical engineering and space technologies. Resolution of the Discipline Council for Automation, Electronics, Electrical Engineering and Space Technologies of December 19, 2023.

Dr Eng. Adam KRĘPA

Silesian University of Technology – PhD student. Supervisor: dr hab. Eng Jarosław Piątkowski,

prof. SUT Thesis topic: "The use of selected Lean Manufacturing tools in improving the management of the cutting process of car piston castings." Conferring the degree of Doctor of Engineering and Technical Sciences. Discipline - mechanical engineering. Resolution of the Mechanical Engineering Discipline Council of November 29, 2023.

Dr Eng. Paweł ŁÓJ

Silesian University of Technology Faculty of Mechanical Engineering - assistant. Supervisor: prof. dr hab. Eng Wojciech Cholewa. Thesis topic: "Operational diagnostics of vacuum pumps". Conferring the degree of Doctor of Engineering and Technical Sciences. Discipline - mechanical engineering. Resolution of the Mechanical Engineering Discipline Council of November 29, 2023.

Dr Robert MADEJ

Municipal Transport Company in Częstochowa. Supervisor: prof. dr hab. Eng Stanisław Borkowski. Auxiliary supervisor - dr Eng. Magdalena Tutak. Thesis topic: "Development of a method for determining the efficiency of public transport companies providing public transport services." Conferring the degree of Doctor of Engineering and Technical Sciences. Discipline - mechanical engineering. Resolution of the Mechanical Engineering Discipline Council of November 29, 2023.

Dr Eng. Bartłomiej PUDEŁKO

Silesian University of Technology, Faculty of Civil Engineering – administrative employee. Supervisor: dr hab. Eng Artur Nowoświat, prof. SUT Auxiliary supervisor - dr Eng. Rafał Zuchowski. Thesis topic: "Shaping the level of traffic noise as a function of traffic intensity distribution on the existing and planned national road system." Conferring the degree of Doctor of Engineering and Technical Sciences. Discipline – civil engineering, geodesy and transport. Resolution of the Civil Engineering, Geodesy and Transport Discipline Council of November 30, 2023.

Dr Eng. Michał SIEGMUND

KOMAG Institute of Mining Technology. Supervisor: prof. dr hab. Eng Józef Jonak. Auxiliary supervisor – Krzysztof Tomiczek. Thesis topic: "Method of loosening rocks using anchors." Conferring the degree of Doctor of Engineering and Technical Sciences. Discipline - environmental engineering, mining and energy. Resolution of the Environmental Engineering, Mining and Energy Discipline Council of December 14, 2023.

Dr Eng. Paweł SŁOWIŃSKI

Silesian University of Technology, Faculty of Transport and Aviation Engineering – assistant. Supervisor: dr hab. Eng Rafał Burdzik, prof. SUT Auxiliary supervisor - dr Eng. Adam Mańka. Thesis topic: "Identification of a moving vehicle based on vibroacoustic signals." Conferring the degree of Doctor of Engineering and Technical Sciences. Discipline – civil engineering, geodesy and transport. Resolution of the Civil Engineering, Geodesy and Transport Discipline Council of November 30, 2023.

Dr Eng. Grzegorz SPYRA

Supervisor: dr hab. Eng. Witold Beluch, prof. SUT Thesis topic: "Computational intelligence methods in the design and optimization of selected structural elements of truck bodies." Conferring the degree of Doctor of Engineering and Technical Sciences. Discipline - mechanical engineering. Resolution of the Mechanical Engineering Discipline Council of November 29, 2023.

Dr Eng. Mikołaj STRYCYŹYŃSKI

Silesian University of Technology – PhD student. Supervisor: prof. dr hab. Eng. Ewa Majchrzak. Thesis topic: "Modelling of oncological hyperthermia

using equations with two delay times." Conferring the degree of Doctor of Engineering and Technical Sciences with distinction. Discipline - mechanical engineering. Resolution of the Mechanical Engineering Discipline Council of November 29, 2023.

Dr Eng. Magdalena TURKOWSKA

Łukasiewicz Research Network – Institute of New Chemical Syntheses. Supervisor: dr hab. Eng. Agata Jakóbk-Kolon, prof. SUT and dr hab. Eng Marek Smolik, prof. SUT Thesis topic: "Research on methods for separating niobium and tantalum and developing methods for determining tantalum in niobium compounds." Conferring the degree of Doctor of Exact and Natural Sciences. Discipline – chemical sciences. Resolution of the Chemical Sciences Discipline Council of December 13, 2023.

Dr Eng. Mariusz WALA

Supervisor: dr hab. Eng Piotr Nowakowski, prof. SUT Thesis topic: "Application of selected artificial intelligence algorithms to improve the efficiency of municipal waste transport and collection processes." Conferring the degree of Doctor of Engineering and Technical Sciences. Discipline – civil engineering, geodesy and transport. Resolution of the Civil Engineering, Geodesy and Transport Discipline Council of November 30, 2023.

Dr Eng. Natalia WIELGUS

Silesian University of Technology – PhD student. Supervisor: prof. dr hab. Eng Jan Kubica. Auxiliary supervisor - dr Eng. Marcin Gorski, prof. SUT Thesis topic: "Analysis of material properties of industrial waste-based geopolymers for assessment of their usability in construction." Conferring the degree of Doctor of Engineering and Technical Sciences. Discipline – civil engineering, geodesy and transport. Resolution of the Civil Engineering, Geodesy and Transport Discipline Council of November 30, 2023.

Dr Eng. Łukasz ZIÓŁKOWSKI

Silesian University of Technology, Faculty of Energy and Environmental Engineering – administrative employee. Supervisor: dr hab. Eng Grzegorz Przybyła, prof. SUT Auxiliary Supervisor: dr hab. Eng Adrian Nocoń. Thesis topic: "Energy analysis of a cogeneration system with a SI engine in terms of variable control parameters." Conferring the degree of Doctor of Engineering and Technical Sciences. Discipline - environmental engineering, mining and energy. Resolution of the Environmental Engineering, Mining and Energy Discipline Council of December 14, 2023.

AWARDING THE ACADEMIC TITLE OF PROFESSOR

Prof. dr hab. Eng Dorota BURCHART

A graduate of the Faculty of Organization and Management of the Silesian University of Technology. Dr – 21/09/2004 Dr hab. – January 23, 2014. Position of university professor from October 1, 2017. Employment at the Silesian University of Technology from October 1, 2017. Title of professor of engineering and technical sciences from December 13, 2023.

Prof. dr hab. Eng Monika KWOKA

Graduate of the Faculty of Mathematics and Physics of the Silesian University of Technology. Dr – 14/11/2007, Dr hab. – September 29, 2015. Position of university professor from October 1, 2017. Employment at the Silesian University of Technology from December 1, 2007. Title of professor of engineering and technical sciences from December 13, 2023. ■

FEBRUARY REPERTOIRE OF THE STUDENT CULTURE CENTER "MROWISKO"

07.02 at 19:00

A reflective romantic comedy "Cantata for Four Wings" performed by Teatr Nie z Tej Kulisy

16.02.

Good Evening with a Vinyl Record

17.02.

Concert: LEEPY / Punched Orange /
After: Rockoteka

18.02.

Gliwice Record Exchange

20.02.

Board games in Spirala Club

21.02.

Drum Workshops

24.02.

Shanty Party "It was February 24".

29.02.

Lipny Borszcz – Improvised performance

29.02 at 19:00

Mroffisko Theater: "ŁAWECZKA"
– a tragicomedy about a railway station
Don Juan



YOU WILL FIND THE BULLETIN OF THE SILESIAN UNIVERSITY OF TECHNOLOGY HERE:

1. Cechownia/Engineering Training Centre EMT Systems Sp. z o. o 44-100 Gliwice 35A, Bojkowska Street
2. Municipal Theatre 44-100 Gliwice, 55/57 Nowy Świat
3. Katowice International Airport in Pyrzowice, 42-625 Pyrzowice 90, Wolności Street, Departures terminal
4. Project Management Centre, 44-100 Gliwice 10, Banacha Street
5. NZOZ Academic Clinic, 44-100 Gliwice 5, Łużycka Street
6. Faculty of Automatic Control, Electronics and Computer Science ,44-100 Gliwice, 16, Akademicka Street
7. Faculty of Mechanical Engineering, 44-100 Gliwice 18A, Konarskiego Street
8. Institute of Physics - Centre for Science and Education, 44-100 Gliwice ,22B, Konarskiego Street
9. Faculty of Materials Engineering, 40-019 Katowice 8, Krasieńskiego Street
10. Faculty of Mining, Safety Engineering and Industrial Automation, 44-100 Gliwice, 2, Akademicka Street
11. Faculty of Organization and Management, 41-800 Zabrze 26-28, Roosevelta Street
12. Faculty of Biomedical Engineering, 41-800 Zabrze, 40, Roosevelta Street
13. Faculty of Transport and Aviation Engineering, 40-019 Katowice, 8, Krasieńskiego Street
14. Faculty of Civil Engineering, 44-100 Gliwice 5, Akademicka Street
15. International Centre for Interdisciplinary Research, 44-100 Gliwice 18B, Konarskiego Street, room 202
16. Zabrze City Hall - Customer Service Point, 41-800 Zabrze, 5 - 7, Powstańców Śląskich Street
17. Faculty of Applied Mathematics, 44-100 Gliwice 23, Kaszubska Street
18. Faculty of Energy and Environmental Engineering, 44-100 Gliwice, 18, Konarskiego Street
19. Faculty of Electrical Engineering 44-100 Gliwice, 2, Bolesława Krzywoustego Street

PUBLISHING NEWS

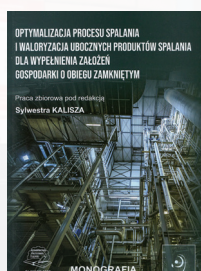


THE INFLUENCE OF SELECTED METALLURGICAL SLAGS ON IMPROVING THE PROPERTIES OF ENGINEERING MATERIALS AND PIGMENTS

JACEK SITKO

Ed. I, 2023, PLN 26.25, p. 185

The monograph presents the issues of generation, disposal and management of most metallurgical waste, which pose a threat to all elements of the natural environment. These threats occur already at the stages of production, transport, storage, as well as during waste disposal and processing.

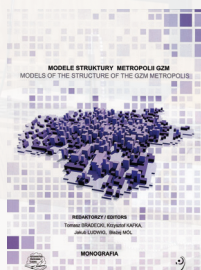


OPTIMIZATION OF THE COMBUSTION PROCESS AND VALORISATION OF BY-PRODUCTS OF COMBUSTION TO MEET THE ASSUMPTIONS OF A CIRCULAR ECONOMY

COLLECTIVE WORK EDITED BY SYLWESTER KALISZ

Ed. I, 2023, PLN 45.15, p. 314

The monograph presents the results of research aimed at modifying or developing processes in which By-Products of Combustion (UPS) are generated and refined in such a way that they can be reused in the economy, in accordance with the principles of circular economy. This approach forced interdisciplinary research to be conducted at the interface of several scientific disciplines related to energy production processes, materials engineering and chemical engineering.

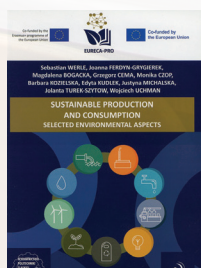


MODELS OF THE STRUCTURE OF THE GZM METROPOLIS

COLLECTIVE WORK EDITED BY TOMASZ BRADECKI, KRZYSZTOF KAFKA, JAKUB LUDWIG, BŁAŻEJ MOL

Ed. I, 2023, PLN 23.10, p. 118

The publication was prepared as part of design classes on urban design - city structure, carried out at the Faculty of Architecture of the Silesian University of Technology. The aim of the study was to present, analyse and synthesize data about the GZM using GIS software and augmented reality models.



SUSTAINABLE PRODUCTION AND CONSUMPTION. SELECTED ENVIRONMENTAL ASPECTS.

SEBASTIAN WERLE, JOANNA FERDYN-GRYGIEREK, MAGDALENA BOGACKA, GRZEGORZ CEMA, MONIKA CZOP, BARBARA KOZIELSKA, EDYTA KUDLEK, JUSTYNA MICHALSKA, JOLANTA TUREK-SZYTOW, WOJCIECH UCHMAN

Ed. I, 2023, PLN 30.45, p. 201

The monograph presents selected problems regarding sustainable production and consumption in the environmental aspect. Topics discussed include sustainable soil management, the growing problem of lack of water availability, modern technologies and processes related to municipal sewage treatment and the quality of atmospheric air. One of the chapters is also devoted to the issues of the internal environment and sustainable buildings.

Edited by Małgorzata Mizera

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