

# MY UPCE



MAGAZINE  
OF THE UNIVERSITY  
OF PARDUBICE  
2021/2022

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Jakub Ďoubal preserves the UNESCO cultural heritage and sculptural decoration of a theatre in Algeria.

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## **A shaman among Native Americans**

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## **Each element is like a separate entity**

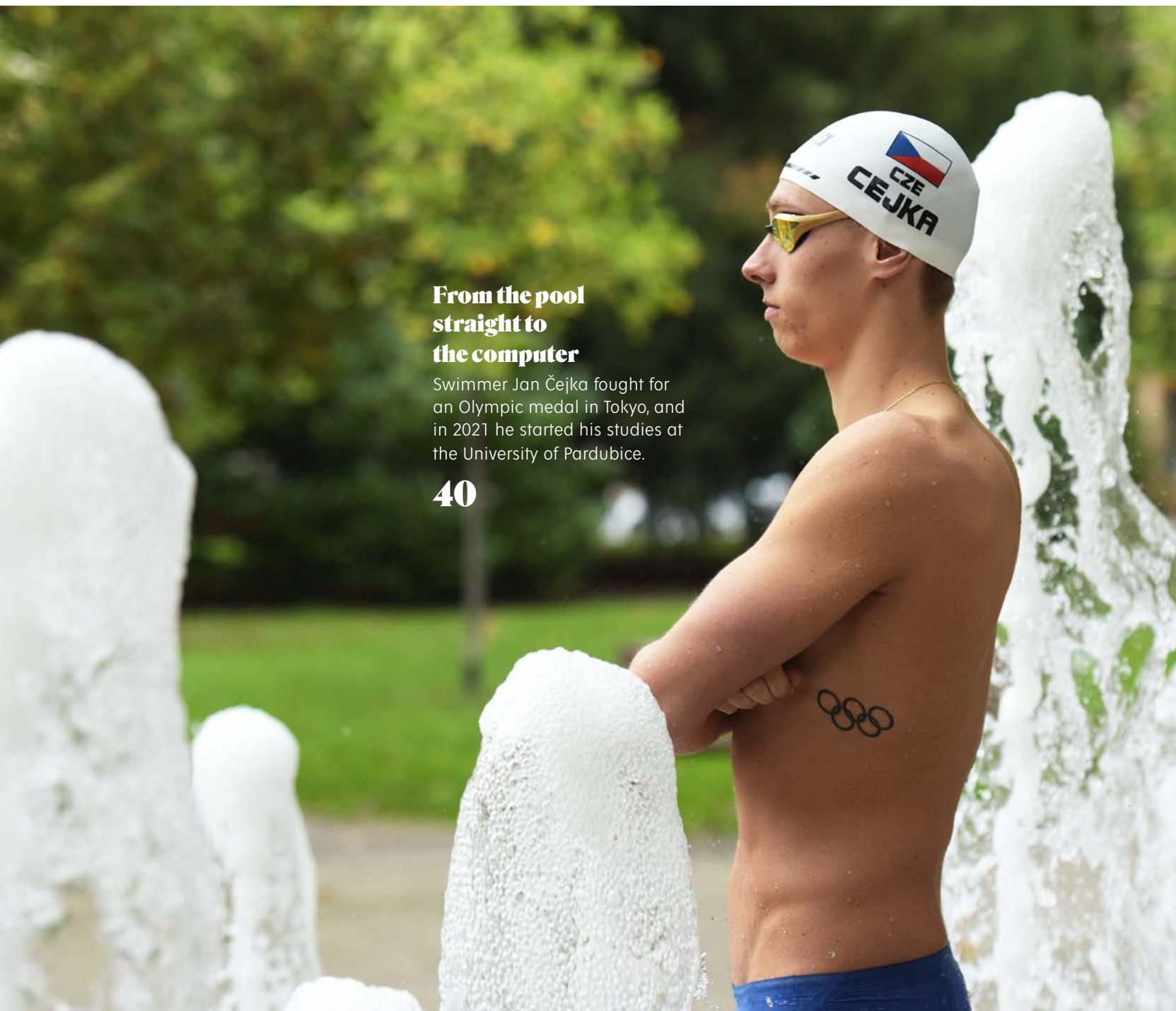
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# Our University

**I**t has been four years since I took over as the Rector of the University of Pardubice and endeavoured to give our university direction and dynamism to achieve further changes and higher quality.

Looking back, I see several key events and important moments.

More than anything else, education is at the centre of our focus. Its quality can be internally assessed, for example, by the satisfaction of our students or the professional success of our graduates. The granting of institutional accreditation is an expression of external recognition. To obtain it, a university must have functional and stable systems of quality control of the educational process which work with feedback from academics, students and experts. In September 2018, the University of Pardubice received this accreditation for six areas of education for ten years. It was the fourth university in the Czech Republic to have obtained it. Since then, the Internal Assessment Board has approved 86 new or upgraded study programmes.

Another important activity is, naturally, the cultivation of science and research. We carefully prepared for the first evaluation of universities in the Czech Republic, which was carried out by the evaluation panels of international experts in 2020. I am very pleased that we are one of the top ten Czech universities, according to the results of the evaluation. The results also reveal another great aspect of our university. We are able to continuously develop

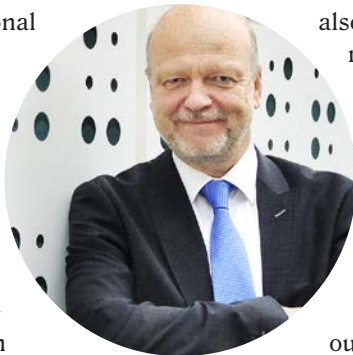
our creative potential and achieve quality results in science and research.

The HR Award we received from the European Commission earlier this year and what it says about the university is another thing that makes me proud. We are a university that cares about the staff and encourages their development. I am excited that the steps and measures introduced in connection with this certificate will increase the attractiveness of the university when searching for talented researchers at home as well as abroad, and will also help extend the cooperation of our research teams with Czech and foreign students. It is precisely for them that we have been able to create a range of study programmes in English and provide better services over the last few years. The development of internationalisation at the University of Pardubice was significantly boosted by the monitoring and audit of MICHE, out of which our action plan and strategy for this area emerged.

Four years is not a long time in the life of a university with seventy years of history. But even this period defines the future direction and provides the foundations for further successful development. The systematic development of the brand of the university is evident in all areas of our activities and I am rightfully proud of the University of Pardubice.

Thank you all for contributing to our success: academics, researchers, students, employees and graduates. We all make up our university, together.

**Jiří Málek, Rector**



## MY UPCE

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PHOTO Michal Král

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The event *Přítiv* represents the opening of the academic year at the University of Pardubice, and it provided a welcome to thousands of students from all seven faculties to the university campus. During the afternoon, the students had an opportunity to get to know university clubs, they got involved in sports or creative activities, and in the evening, they enjoyed the performances of well-known music bands.







# The one that heals cultural property

TEXT Věra Příbylová • PHOTO Adrián Zeiner, archive of the Faculty of Restoration

**His profession and mission is to preserve artefacts of cultural heritage. Right now, expert and educator Jakub Ďoubal of the Faculty of Restoration is working on how to preserve the sculptural decoration of a theatre in Algiers. He likes to surround himself with statues at work and at home.**

**❗ You have worked on important monuments. Which are the rarest in the Czech Republic and on a global scale?**

I have been working in Kutná Hora for a long time, a beautiful historical town with many important monuments. It was where I had the opportunity to work on a number of unique works. Years ago, my colleagues and I participated in the preparation of the reconstruction of the Tugendhat Villa in Brno, which is included on the UNESCO list. I also restored the sculptural group on Charles Bridge in Prague. But one of the most important buildings I worked on was the comprehensive restoration of the Gothic tombstone of Arnošt of Pardubice in Klodzko, Poland [editor's note: the first Archbishop of Prague].

**❗ You mentioned Kutná Hora, which is on the UNESCO World Heritage List. What monuments have you restored there?**

At the beginning of my restoration career, I had the opportunity to collaborate on the overall reconstruction of the Church of St. Barbara, who took almost ten years. Later, in cooperation with colleagues from the faculty, we restored, for example, the plague column and the Gothic stone fountain. Those are unique monuments in the Czech and European con-

text. I also restored some sculptures in front of the Jesuit College and a number of smaller sculptural monuments in the city centre and the surrounding area. In fact, there was so much work there that I decided to summarise my experience and knowledge in the book *Stone Monuments of Kutná Hora: Restoration and Care of Sculptures*.

**❗ What monument literally rose from the ashes under your hands?**

I remember a statue of St. Anne, fragments of which we dug out of the ground. We only had vague information from witnesses that a car had crashed into it in the 1950s and it fell. At that time, during the totalitarian regime, no one wanted to invest in the costly repair of the statue of St. Anne, they didn't care really. They buried it with an excavator in a ditch. Eventually, we managed to find the Baroque statue complete with the pedestal. The restoration and conservation were quite demanding, but today the statue stands in a nice place, constituting a natural landmark around which the life of the village revolves.

**❗ You also worked on Charles Bridge, which is repeatedly damaged by vandals and spray paint. How much does it cost to remove graffiti?**

Removing graffiti from a porous stone is quite dif-



difficult and risky. Much depends on the colour used and the extent of the damage, but it can cost tens to hundreds of thousands. It is often not even possible to remove the paint completely, so the damage is permanent. Unfortunately, there were vandal inscriptions even on the marble plaques of the statues I restored on Charles Bridge, and their sensitive removal was one of the more difficult tasks.

**❶ Which historical period do you like when it comes to monuments? And why?**

That's a difficult question. Each period has its own charm and it does not necessarily have to be works of famous artists. A lot depends on the environment and atmosphere of the place. We have a lot of Baroque works of art in the Czech Republic, which I encounter quite often as a conservator-restorer. That's why it's rare for me to lay my hands on a Gothic or Renaissance work of art. Baroque monuments are very spectacular, sometimes even theatrical, while Gothic sculptures seem to me more intimate, meditative.

**❷ What was the oldest artefact you have restored?**

Well, leaving aside some conservation interventions on ancient works from museum collections, it will definitely be the tombstone of Arnošt of Pardubice. It is a Gothic masterpiece dating back to the reign of Charles IV, i.e. the second half of the 14th century.

**❸ Under your supervision, students are involved in preserving the national heritage monument called**

**Braun's Bethlehem, which is a unique gallery of sculptures and reliefs carved into the rocks in the forest near Kuks. What stage are you at now?**

This year we performed a comprehensive cleaning and preventive treatment against biological growth. This should be followed by regular maintenance and conservation, as well as regular condition monitoring and possible partial restoration interventions. The aim is to set up a regular maintenance system, which is generally lacking in relation to monuments. In this case, it is probably the only way to ensure that the monument is preserved for future generations.

**❹ Can you estimate how many hours you have worked there?**

We had spent a total of 20 days there with fifteen students from our studio. But then we went back to do the documentation and chemical spraying in a smaller team.

**❺ Have you restored or conserved some of the monuments in Pardubice as well?**

Our faculty operates throughout Bohemia and Moravia. Since we are based in Litomyšl, Pardubice is one of the many destinations we commute to. We worked in Pardubice on the historical facade of the university building at Čs. Legií Square. We brought two statues to the school and worked with students to restore the ornamental elements directly on the facade. This year, my colleague Karol Bayer and I worked on future modifications to the Green Gate.





**When I travel, I am also interested in statues and stone monuments. However, I do not evaluate the current state of the work, but rather take pictures of various interesting types of damage or methods of repair for my lectures.**

❗ A passionate discussion broke out around the future appearance of the Green Gate, a prominent feature of the city of Pardubice. The citizens have decided in a referendum that it will remain unplastered, which was also your expert opinion. What will be the next step?

In the coming years, its stone envelope should be comprehensively restored. The main problem is improper pointing, done with too hard a mortar. Locally, there might be some problems with materials used, such as softer sandstones and bricks, which are prone to degradation. Also, the main building material, basalt, needs conserving at places.

❗ In which case does the conservator-restorer try to restore a monument to its original state and when does he/she only preserve part of the work?

It depends on the assignment and the concept of the repair. That often arises only during work in a discussion with the client or representatives of state monument care. Restoration survey plays a crucial role in assessing not only the condition of the monument, but also its value and history. Based on this information and discussion, it is then possible to determine whether the missing part of the monument needs to be supplemented, or whether it will be presented in the preserved, even if partial state. There is a big difference whether, for example, a statue is restored to a church where services are

held, or it is a museum exhibit. Each of these statues has a different function, which is taken into account during restoration.

❗ Do you have *déformation professionnelle*? For example, when you see a statue, do you think, “this one needs repairing”...

Of course. When I travel, I am also interested in statues and stone monuments. However, I do not evaluate the current state of the work, but rather take pictures of various interesting types of damage or methods of repair for my lectures. This may also be due to the fact that when it comes to stone sculptures outside, you rarely find an object that would not require any restoration or maintenance.

❗ You studied in Rome. What exactly did you study?

I took an ICCROM course under the auspices of UNESCO in 2011, a prestigious months-long course for restoration professionals that was offered only once every two years for 20 people selected from around the world. It was a great experience. The lecturers were really the elite in their field and at the same time it was very interesting to get to know different approaches from different countries. In fact, I draw on it in a way to this day. In addition to important contacts, I also got a lot of study materials and information that I use in my lectures. Since then, I have been very happy to return to Rome and the ICCROM library.



**❶ You are now preparing to work in Algeria. What will it be about?**

I will be restoring the sculptural decoration of the theatre in Oran. It is the second largest city in Algeria. We are going to salvage the heavily degraded 19th-century statues made of limestone. They do not have much experience with more complex restoration in Algeria. That's why they approached us. In addition, we should help set up a restoration programme at the National School for Conservation and Restoration in Algiers, where we will also give lectures and possibly deliver courses in the future.

**❷ You are now working in the country to educate future restorers. In what area do you educate them?**

At this point, we have had introductory online lectures on technology and the restoration of porous inorganic materials, and we will see how the collaboration develops when the conditions for travel become more appropriate. I think that the experience with restoration in Algeria will also be important, because there is no substitute for personal contact and practical experience with in-situ restoration.

**❸ At what stage is the official cooperation now and what do you plan for 2022?**

The pandemic and uncertainty have slowed down the preparations. We have submitted a report on the restoration survey, which we conducted on the spot, and we are now negotiating the conditions of the actual restoration of the monument. It is quite logistically demanding because we have to transport a lot of tools and materials to another continent. Our work schedule is also quite full, because we are also looking for suitable dates to coordinate it with other activities as well as with the weather in Algiers.

**❹ Will you invite your colleagues from Algeria to Litomyšl as well?**

We plan to work more closely with the school in Algeria, which could include student exchange programmes. The restoration programme has just start-

ed in Algeria and it would certainly be interesting for them to visit our fully-equipped facilities and laboratories. In the years since the school in Litomyšl was established, I think we have managed to build a very good workplace and a well-equipped faculty, which has a lot to offer in this regard.

**❺ You are a graduate of the Faculty of Restoration in Litomyšl, where you also teach today, specifically in the Stone Restoration Studio. Is stone the only material you work with?**

Our studio is dedicated to restoring stone and related materials, i.e. other porous inorganic materials used for sculptural purposes, such as plaster, stucco, ceramics and artificial stone. The issue of polychromy for these materials will be added to the Master's degree programme. But stone monuments are the main focus of my restoration activities.

**❻ The restorer must be well-versed in other fields too – in addition to history, they must also know chemistry. But also, be creative, be able to paint and create with their hands... Is that so?**

Restoration is often defined as an interdisciplinary field – that's not just an empty phrase. The restorer of works of art must undergo art and craft training and must have knowledge of chemistry and especially

chemical technology. In addition, they must be familiar with art history and related disciplines. They often communicate with other experts in these areas, so they must be able to understand them. Even from the point of view of education, it is difficult to prepare students in such a wide range of knowledge from various fields, which at first glance seem difficult to combine.

**❼ Are you surrounded with historical artefacts at home, too?**

I'm not a collector. But I do live in the centre of Kutná Hora in a historic house with a garden full of statues. And gradually the spaces on the shelves and walls are being filled with various artefacts, castings and the like. It's probably a bit of a by-product of my profession.

CV

**doc. Mgr. art. Jakub Ďoubal,  
Ph.D.**

(1979)

He works as the head of the Stone Restoration Studio at the Faculty of Restoration, University of Pardubice. He studied restoration at the Institute of Restoration and Conservation Techniques in Litomyšl and subsequently at the Academy of Fine Arts and Design in Bratislava. He then completed his doctoral studies at the Faculty of Civil Engineering at the Czech Technical University, and was conferred the title of associate professor at the Academy of Fine Arts in Prague. In addition to teaching, he is involved in the restoration of sculptures. He has participated in restoring important buildings, such as the Church of St. Barbora and the Gothic stone fountain in Kutná Hora, the Gothic tombstone of Arnošt of Pardubice in Kłodzko and the statue of St. Francis of Assisi on Charles Bridge. Jakub Ďoubal is the author of a number of articles in international and national periodicals, and book publications include *Stone Monuments of Kutná Hora: Restoration and Care of Sculptures* and *Plaster Casts: Restoring and Preserving Sculptural Art*. He is a co-founder of the Arte-fakt Association for Heritage Preservation, which popularises preservation or conservation of monuments. He is married and has three children.

JAN VODIČKA  
PHYSICIAN FROM THE FACULTY  
OF HEALTH STUDIES

# Smell training can work wonders

TEXT Věra Příbylová • PHOTO Milan Reinberk

**Smell is extremely important in social relations. In some cases, losing smell may well result in losing a job. As many as 20% of the population suffer from impaired smell. COVID-19 patients also lose their sense of smell for a limited period of time. How can one regain the sense of smell? In this interview, MUDr. Jan Vodička, Ph.D., leader of an excellent research team at the Faculty of Health Studies, introduces a unique project involving taste testing in the times of the pandemic, talks about smell therapy and training as well as the relation between the sense of smell and taste.**

**❗ How many people lose their sense of smell every year?**

Approximately 20% of the population suffer from impaired smell, and 5% even lose their sense of smell completely. Many patients do not even realise that they suffer from impaired smell. This is the case, among others, of patients with Parkinson's disease who usually suffer from impaired smell, but rarely undergo an examination.

**❗ How important is the sense of smell for us?**

Generally speaking, women are much more concerned about any smell impairment. If you work as a chef or wine taster, you may even lose your job if you lose the sense of smell. When we eat, the senses of smell and taste enable us to check the quality of what we eat.

Smell may also warn us of the presence of hazardous substances. And its role in social relations is also important. Patients who have lost their sense of smell have no concept of their own body odour, or cannot join a dinner-table discussion about food and drink.

**❗ Why is it that some COVID-19 patients lose their sense of smell and taste for a short time, while others suffer from the loss for much longer?**

A vast majority of patients regain their sense of smell within 4 weeks. Sometimes, it may take longer, most likely due to more extensive damage of the olfactory epithelium.

**❗ What should we do if we do not regain the sense of smell even after a month? Should we see a specialist?**



It is advisable to see a specialist if the loss lasts for 4 weeks and there are no signs of recovery. COVID-19 patients usually lose their sense of smell for several days, but sometimes it may take longer. It is not rare that a patient who has suffered from a viral infection takes several years to recover.

**➊ Interestingly, many people can smell unpleasant odours after COVID-19. Why is that?**

Around 18% of COVID-19 patients who suffer from impaired smell complain of altered olfactory perception. They often refer to bad smells, like the smell of a burning rubber. This is called parosmia. It is based on an assumption that some of the olfactory receptors do not work correctly and the perception is altered. Some studies argue that it may be a case of smell regeneration.

**➋ What is the therapy that you offer to patients who have lost smell or taste after COVID-19?**

First, they undergo basic examination and their smell is tested using standard methods. We use the “Sniffin’ Sticks” identification test and Odourised Markers Test. In addition, we use taste strips to test the sense of taste. In cases of unknown aetiology, we also perform an MRI and antibody tests for SARS-CoV-2. The therapy is proposed on the basis of all of these tests.

**➌ Is it always the case that if you lose the sense smell, you also lose the sense of taste?**

The senses of smell and taste interact very closely. In general, patients with impaired smell usually suffer from mild taste impairment. When people complain of taste impairment, they often say that the food tastes different, which is an important signal for us. In fact, it is often a case of impaired retronasal olfaction.

When you swallow food, the olfactory perception goes from the nasopharynx to the nose. That is why smell plays an important role in how we smell and taste food. What we often find is a situation when patients suffer from a complete loss of smell, but have not lost the taste. That is why we ask patients who complain of altered taste, whether they can smell salty, sweet, bitter and sour tastes.

**➍ Is it possible to lose only the sense of taste?**

Taste impairments not involving loss of smell are extremely rare.

**➎ Your current project is called “Telemedicine used for taste testing during the COVID outbreak”. You have received funding for the project. Can you tell us more about it?**

The aim of the project is to design a self-test for taste testing, which will include testing strips and an app for phones and tablets with an in-built video camera.






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**At the moment, it is the only procedure that has been proven to improve our olfactory functions. Twice a day, patients smell four different scents – rose, eucalyptus, cloves and lemon – for several minutes. You must do the training for a minimum of six months.**

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The app, or rather the software to be more precise, will be used as an interactive manual for self-testing. It will also check whether the self-test has been done correctly and will serve as a tool for collecting data from the patient and determining the result of the self-test. It could also voluntarily be sent to your physician in an electronic form.

**❗ What is the principle behind test strips?**

Test strips are used to test for basic flavours – salty, sweet, bitter and sour. Each strip, made either of a filter paper or film, has a layer of the flavour. The patient puts the strip on the tongue and must say what flavour they taste.

**❗ What is your relation to the Centre for Technology and Knowledge Transfer?**

We cooperate with the Centre and they help us with the commercialisation of our work.

**❗ Can you describe the cooperation?**

It is a case of interdisciplinary cooperation involving

the Faculty of Health Studies, the Faculty of Electrical Engineering and Informatics, and the Faculty of Chemical Technology. Pardubice Hospital is also involved. In the future, we plan to engage in cooperation with the Interdisciplinary Centre “Smell & Taste” in Dresden and the ENT Department in Geneva. The taste strip tests were developed in Germany and have been used for many years. Our ambition is to make it possible for the patients to self-test and make the whole test more attractive for the patients.

**❗ Can the strips reveal that a person is positive for COVID-19?**

At the moment, it is no more than a complementary test that COVID-19 patients may undergo. It has no ambition to replace antigen or PCR testing. What it enables us to do, however, is to determine the functionality of our taste buds. Taste impairments are encountered not only in COVID-19 patients, but also in patients with neurological or metabolic diseases.



⚙️ **You recommend that patients who have lost their sense of smell due to COVID-19 undergo smell training. What exactly is that?**

At the moment, it is the only procedure that has been proven to improve our olfactory functions. Twice a day, patients smell four different scents – rose, eucalyptus, cloves and lemon – for several minutes. You must do the training for a minimum of six months.

⚙️ **Can smell training work wonders?**

The existing studies suggest that it indeed can. My experience shows that it very much depends on the patient's attitude. Many patients give up after a few days. An active approach is needed for smell training to be effective. It is necessary not to give up.

⚙️ **If the smell training fails, is there any medication that may help?**

Oral or intravenous administration of corticosteroids is effective in sinonasal disorders. The good news is that biological therapy also works. No other drugs have been proven to be effective, and that is why we do not recommend them. We have investigated the effects of vitamins, alpha-lipoic acid, minerals (such as zinc) and others.

⚙️ **Can surgery help to regain the sense of smell?**

Surgical treatment only works for patients who suffer from chronic nasal cavity and paranasal sinus pathologies. Endoscopy treatment with a camera is used to treat paranasal sinus.

⚙️ **Patients who have suffered a loss of smell often report that they can remember the taste of certain foods mentally. Is it possible?**

Absolutely. Smell is closely connected with the memory systems in the brain. Even many years later, a smell can provoke memories of a past experience or bring you back to your childhood.

⚙️ **You are the leader of an excellent research team at our university. What is the focus of your research?**

Smell-wise, our research deals with how we determine which smells we perceive to be good and which to be bad, as well as respiration in smell stimulation, so-called respiration olfactometry. Taste-wise, we aim to find an ideal method for detecting taste impairments. Last but not least, we also deal with hearing and early detection of hearing impairments.

## Most common causes of impaired smell

### Viral infections

occur after viral upper respiratory infections, caused by respiratory viruses (respiratory syncytial viruses, influenza viruses), and today mostly by the SARS-CoV-2 virus leading to the development of COVID-19.

It may affect the olfactory epithelium that is targeted directly by the virus (e.g. COVID-19), olfactory nerves or centres (herpetic viruses).

### Sinonasal infections

occur in the oral cavity and paranasal sinus infections, and most often involve a chronic inflammation with the presence of nasal polyps partially caused by a nose blockage where the olfactory molecules are prevented from getting into contact with the olfactory epithelium, and partially caused by olfactory epithelium inflammation.

### Injuries

occur after head injuries, e.g. falls involving the nape caused by tearing the nerves in the base of the skull or as a result of contusion (laceration) involving the olfactory systems in the brain.

LIBOR ČAPEK

# Being proud of the university



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TEXT Martina Macková • PHOTO Adrián Zeiner

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UPCE graduate, an excellent scientist and a lover of hiking.  
This is the future Rector of the University of Pardubice.  
Prof. Libor Čapek will lead the university from February 2022.

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**❶ What comes to mind and how do you feel when you hear “the University of Pardubice”?**

Something very close to my heart. I feel grateful that this is my alma mater and proud to work here. I see students who will become successful in their careers as well as their personal lives. I see the University of Pardubice as a multidisciplinary university.

**❷ You are a great scientist, leader of an excellent research team and an educator. Now you are going to be Rector, which is a completely different position. How are you going to balance all those roles?**

Nowadays, it's not enough to be a scientist or an educator. Anyone who is a project leader must also be a good manager and know how to deal with people. In this respect, I believe that as the Rector of the University of Pardubice I can apply my many years of experience in managing projects carried out in cooperation with several universities or industry partners.

It is, of course, practically impossible to combine the position of rector with my current research and educational activities. Scientific research is not just about me but about the whole team. It's natural that my younger colleagues with whom I've been working for some time will take over a number of those activities. I firmly believe that my advice and feedback will still be valuable for the team. On the other hand, I'm still planning to keep lecturing, although to a lesser extent.

The position of the Rector of the University of Pardubice is a great challenge and a great commitment for me. Being the Rector of this university will definitely be a priority. When my term of office ends, I would like the results of my and my team's work to be clearly visible. Results that the academic community will evaluate positively.

**❸ What do you want to focus on primarily as Rector?**

The University of Pardubice must be based on a clearly defined and sustainable mix of educational, research and creative activities. I would like to promote synergy between our seven faculties.

In the first phase, I will focus on a discussion that will lead to an increased attractiveness of the study programmes we offer and will address the potential for the creation of new study

programmes. In the following period, there will be time for the preparation of profession-oriented study programmes. I also see a great potential in the preparation of multidisciplinary study programmes that involve the cooperation of several faculties.

In the field of science and research, I would like to put emphasis on building larger teams that would be competitive not only in the Czech Republic but also internationally. The turbulent times we're living in have increased the need for digitalisation and automation of services and processes. I would like to focus

on using this opportunity to reduce the administrative load the university staff have to handle. I would also like for the university campus and our modern facilities to continue providing space for student and university events, so that the public, students and schoolchildren could regularly come to our university for science popularisation events.

**❹ Do you see opportunities for further progress of the University of Pardubice over the next few years?**

Yes. I see opportunities for continuous improvement. After all, I couldn't be Rector if I didn't. Just as graduates of the university need to keep learning about their fields, the university must continue evolving too, it must modernise and introduce new trends in order to be attractive for students and staff.

**❺ What do you think the University of Pardubice should look like in the future?**

The University of Pardubice should permanently be one of the ten most important universities in the Czech Republic. I envision the University of Pardubice as a modern institution that creates a quality environment and provides facilities that make students proud to study here and employees proud to work at this university.

**❻ What is your favourite place in Pardubice and why?**

My favourite place in the vicinity of Pardubice is Kunětická hora. It's an interesting place and above all it's the closest hill to Pardubice. The reason is that I like mountains and hiking and my family and I take trips to more distant places, even if just for a day. Recently, we've grown to like the Krkonoše Mountains, especially the area of Špindlerův Mlýn and Harrachov.

CV

## Prof. Ing. Libor Čapek, Ph.D.

(1975)

Vice-Rector for Research and Development and Head of Department of Physical Chemistry at the Faculty of Chemical Technology, he received his engineering degree in 1998 in physical chemistry at the Faculty of Chemical Technology, University of Pardubice. He worked on his doctoral thesis at the Jaroslav Heyrovský Institute of Physical Chemistry, Czech Academy of Sciences. In 2004 he defended it at the University of Pardubice in the field of Physical Chemistry with the title "Structure of Co centres in beta zeolites. Selective catalytic reduction of NO by propane on Co-zeolites in the presence of water vapour". He received the Award of the Minister of Education, Youth and Sports for his outstanding academic achievements in the doctoral study programme. He considers the decisive point to be his doctoral studies in dr. Blanka Wichterlová's research group, where he had the opportunity to participate in research on catalysts for transport vehicles. In 2009 he became an associate professor and in 2017 a professor of Physical Chemistry at the University of Pardubice. His long term interest is research in the field of heterogeneous catalysis and photocatalysis. Since 2007, he has participated in major projects, held the position of the Chair of the Academic Senate of the Faculty of Chemical Technology, served on the scientific boards of the National Accreditation Bureau as well as various universities. He served as Vice-Dean for Research from 2019 to 2020 and became Vice-Rector for Research and Development in 2020. In November 2021, he was elected as the incoming Rector of the University Pardubice.

# „Hello and privyet,“ I am Alona from Ukraine

TEXT Věra Příbylová • PHOTO Adrián Zeiner

**She had still not come of age when she came to study at the University of Pardubice six years ago. Although she did not find herself on the other side of the world, she certainly did find herself in a different culture. Language was the biggest barrier for her. The first months were difficult, but eventually Alona Podzega from Ukraine learned to live in another country and made friends. “I no longer feel like a stranger here, although I still have a Ukrainian accent. I even go to see a speech therapist. But my friends tell me not to worry about it. That it’s a sort of part of my furniture.”**

It was Alona’s father who decided that she would study in Pardubice. She was in her last year of secondary school then. “We found an agency in the capital, Kiev, that arranges study abroad. I started taking Czech courses and at the end of secondary school I went into the unknown,” says Alona describing her life decision. Everyone now calls her Alena, the Czech equivalent of her name.

## She could only greet

However, the visa process took a long time and Alona arrived at the University of Pardubice three weeks after the beginning of the semester. She missed the introductory lectures at the Faculty of Economics and Administration.

Although she took Czech language courses, it was the Czech language she had the biggest problem with in the end. “I studied Czech for a year, but the Ukrainian teacher did not give me as much as a native speaker would explain to me. I admit that at that time I also underestimated the study of the Czech

language a bit. Only here did I find out what a mistake it was that I didn’t take a foreign language more seriously,” says the 23-year-old student.

“All I could say was: Hello, my name is Alona. I am 17 years old and my family is not big. The next word I learned was ‘here’, as everyone around me said. And

**All I could say was: “Hello, my name is Alona. I am 17 years old and my family is not big.”**

I did understand the phrase “Thank you for your attention, see you.” It was similar with her Czech roommate at the dormitories. They couldn’t reply to each other. At school, the teachers were forthcoming. And to help her, they tried to speak Russian to her.

## I will go back home

And so came the situations where Alona thought she would have to return

to Ukraine. She had a problem making herself understood with the authorities and the doctor. Her parents did not force her to stay; on the contrary, they told her that she did not have to be somewhere where she did not feel well. “It was hard at first, I didn’t have a family and I was sad. But I often talked to my mom on the phone. After the weekend, my classmates came back with full bowls of food from their parents, and I could only make eggs, which I wasn’t good at anyway,” she says with a slight exaggeration. Today, she can make her favourite food – steak with mashed potatoes.

After half a year, spring began and a change had occurred with Alona. She managed to pass all the exams on the first try, and she only had a rewrite in microeconomics. And she decided to stay. For four years she studied in the bachelor’s branch of study in Regional and Information Management while studying accounting as a part-time student at a Ukrainian university. Just to be on the safe side. She overcame the language





barrier, made friends and decided to continue her studies in Pardubice. This year she will complete a master's degree in Economics and Business Management.

Coincidence and the opportunity to work directly at the university also contributed to her decision to stay. In the second year, Alona received practical training at the Centre for Information Technology and Services (CITS). "Most of my classmates went to their parents' and acquaintances' companies. I didn't know where to go. Mrs. Máchová, a senior lecturer at the Department of Systems Engineering and Informatics, Faculty of Economics and Administration, saved me and arranged an internship at the university," says Alona.

After her final bachelor's state examination, she went to thank her colleagues from the internship. "I mentioned that I would be looking for a part-time job, and they even offered me a job after the internship," says Alona, who is now in

charge of systems and network management at CITS, thanking them for a great job opportunity.

### **Cultural differences between nations**

In her opinion, people in the Czech Republic are much more relaxed than Ukrainians. This is probably because they are not afraid of "what will happen tomorrow." And she also sees them as far more active. "They ride bikes and skates, ski in winter, spend summer on the water. You have fun all the time, you have dance balls and festivals. Every day is a holiday here. In Ukraine, they can plan something nice, but not far into the future. They prefer being sure that they will save money and sit at home," says Alona, describing Ukrainians' approach to life.

Czechs are not afraid of the future, but they are a little afraid to communicate with foreigners. She did not face prejudices with her classmates, but they did

not know how to get into conversation. "I also waited a little for them to come to me. I never felt that I was being treated as a foreigner, being pushed away, and the moment I asked for help, they came to my aid at once," she says. But it's different with the authorities. "Maybe it's because older people still have prejudices, they think I'm from Russia. The common history is still rooted here."

She has not been back home in Ukraine for almost two years. She had to cancel her tickets twice because of the coronavirus. But this summer she got lucky and went to see her family. She is not planning a permanent return to Ukraine yet, and not only because of her Czech boyfriend. "I have a partner and a lot of friends here. Should I ever decide, I'll pack up and leave in one day. At the moment I feel good in Pardubice. And I thank my parents for this opportunity."



# A shaman among Native Americans

TEXT Věra Příbylová • PHOTO Adrián Zeiner, Unsplash

**He speaks Nahuatl, the language of the Aztec people, and he has even become their shaman. Historian, ethnologist and expert in Ibero-American studies Oldřich Kašpar from the Faculty of Arts and Philosophy talks about Mexico as his second home.**

**❶ If you were to count all the days you have spent among Mexicans and Spanish people, how many years would that amount to?**

I have spent almost seven years in Mexico. Five years in Spain, plus my stays in Italy, Tunisia and the USA would add up to more years.

**❷ But you yourself come from a little village at the foothills of the Jeseníky Mountains. Your ancestor used to own a Spanish musket. Is this where you get the desire to travel from?**

Sometimes I say that it is in my DNA. All my ancestors were blacksmiths, apart from my grandpa. And one of my distant ancestors was not only in posses-

sion of a Spanish musket, but he also owned two books.

**❸ What books?**

I am afraid it is not clear. We can't even determine in which language they were written. I presume they were some sort of cosmographies, geographical and historical works, which people used to read a lot in the 17th century.

**❹ Did you research your family history?**

My brother, who is an archivist, and I concerned ourselves with the family tree. We are planning on publishing our grandfather's diary from WWI together.

**❺ But you have dedicated your professional life**



to Native Americans. You have done a lot of field research and searched for evidence in the Mexican archives. Why did you choose Mexico?

It is a little ironic, because when I was a school boy I used to love the ancient times. *History Written by Rome* by Vojtěch Zamarovský was my Bible. For my sixteenth birthday my uncle gave me a book by Carlo Coccioli *The Heir of Montezuma* and I read it in one night. It is a psychological novel about the last unhappy Aztec ruler who thinks back on his whole life the night before his execution. At that time I decided it would be the Aztecs, Mexico and nothing else.

➊ You had to get closer to the indigenous people, learn their language...Was that difficult?

I didn't get to visit Mexico until 1987. Before that it had not really been possible due to the political situation of the time. At first I was studying the Aztec language náhuatl (navatl) from grammar books of the 17th century missionaries. But when I came to the native people, I found out how much the language had changed. I taught myself by communicating with them.

➋ You even had a special learning method.

Yes, it isn't just a method of learning the Aztec language, it is also a method of how to get to the isolated indigenous communities. You can't simply appear there and tell them you are going to study them.

No one and nothing would talk to me if I did that. I wander around the village for about three days and sleep under a tree. After three days, children come to

me although it is strictly forbidden. They watch me, observe...I take out my notepad and start drawing animals, their homes,...When the children recognise what I have just drawn, they shout out in joy and I write it down at once. If I manage to succeed with them, their grandparents come the next day and with them I start a serious conversation. When they acknowledge that I am someone they can accept, they welcome me officially. Then there's a little turmoil – they always fight over who is going to accommodate me. They respect their guests very much. As one of my detective heroes said once, it is a jewel on the cushion of hospitality.

➌ Are the Native Americans of today different than they were thirty years ago?

Absolutely. Even they are affected by globalisation. The young ones have mobile phones and the old ones complain in the same way as our generation do – that the youngsters do not know or respect any values. In their case it is, nonetheless, more important because their traditions go as far back as the pre-Columbian era, before the Spanish came.

➍ You have many artefacts from your travels at home. Can you tell us about them?

One of the things I have brought home is a calavera, a skull which is typically used during the Day of the Dead, that is a sort of Mexican All Souls Day. The way it is celebrated is that there is a sacrificial altar in every household and on top of that are pictures of





River flows and flows, never stops  
 Wind blows and blows, never stops  
 Life passes by, never comes back.

(anonymous Indian poet, 15th century)

those who have died. On this night people lay gifts in front of them. These can even be bottles of rum, tequilla, cigarette cartons – basically anything the dead might have liked. For children there are big calaveras made from colourful paper, which are filled with sweets. I also have a little vessel from the 15th century, which is perfectly symmetrical although the American Indians did not know a potter's wheel. I found it in one rock trough, where it was protected by a stable environment. It looked like it had been waiting for me there. I have even got a little statue of the main Native-American gods from obsidian, volcano glass – it dates back to the 14th century.

**8 You don't spend time just with Native Americans, but you also do research in the Mexican archives. What exactly were you looking for there?**

I came across very interesting records from the 16th century related to the Spanish inquisition. For example, a priest writes how a Native American woman was healing people and putting her unclean hands on them. She was charged with witchcraft. The inquisition in New Spain, aka Mexico, was much more lenient than in Spain. Witches weren't burned at the stake; usually, they were only somewhat publically shamed.

**8 In the archives you also found many references to the Jesuits, who you write about.**

Czech-Mexican relationships have been my long-term specialisation, I have written several monographs on this topic. The Jesuit missionaries from Bohemia, Moravia and Silesia were active in the Mexican region from the 17th century until the end of the first half of the 18th century. There were 32 of them. Some of them died there and we can still find their graves there. That is the most notable trace left after them in Mexico. I even learned from letters to Prague Clementinum that when a visitador came to check once a year whether the priest was successful in his mission, the Czech brothers played violin on this occasion. And in Clementinum I found requests of some missionaries to be sent the violin.

**8 There is no doubt the Mexicans are familiar with our Olympic gold medalist Věra Čáslavská, is that right?**

Her name has been passed from one generation to the next. From the older personalities of our history they recognise President Masaryk. There is even an Avenida Presidente Masaryk [*editor's note: President Masaryk Avenue*] in the capital Ciudad de México. There is also a bust of him, three memorial plaques and a statue, which was unveiled in 2000.

**8 Czech history has also influenced names of districts. One of them is called Lidice...**

It is not commonly known that Mexico was the first



country to have protested against the Munich Treaty, not the Soviet Union as it was instilled into the minds of my generation. The cultural public watched closely what was happening in the Protectorate. When the Nazis burnt down Lidice, one of the districts, a village in the suburbs of the capital at the time, was renamed to San Gerónimo de Lidice. For quite some time the name Lidice was used as a girl's first name.

➊ **Apart from the Mexican culture, do you also promote Mexican cuisine?**

Again, this goes both ways. When I come to Mexico, I cook Czech meals for my friends there. I have a friend who can make wonderful cabbage soup, only the taste is completely different as he uses completely different ingredients. In Czechia I cook something Mexican for my friends. I love beans. You can't get beans like in Mexico around here. Once I tried to grow them but slugs had eaten them before they could grow up. I guess the slugs liked them too.

➋ **In 2018 you were awarded the Order of the Aztec Eagle, the highest Mexican state honour for foreigners, for promoting the Mexican culture. How did you feel about that?**

This order out of 24 karat gold was first awarded to the Czechoslovakian president Edvard Beneš. Also Professor Polišenský, the unforgettable teacher from my doctoral studies, has it. I like to reminisce about him. I was thinking of him when I received this award. All of a sudden I was on the other side with him.

➌ **You have written 32 books, translated 10 and you are the author of 800 Czech and foreign studies. What do you write about all the time?**

There are several topics in the academic literature. I study Czech-Spanish relationships, Czech-Mexican relationships, and pre-Columbian America. In literature I started translating Aztec and Inca Quechua poetry, then switched over to the Indian myths of Mexico, many of which I collected around the campfire. I have published tales for adults as well as children. A few years ago my book *Ancient Mexican Myths*

and *Legends* was published in Mexico. There was an official christening of the book at the time. And the inevitable happened. A man came and said vigorously: "How is it that a person from a country I have never heard of has published our national tales!"

One of my friends stood up and took him down a peg by replying: "When you don't do it, foreigners must do it for you. So please keep quiet!"

➍ **The titles of your works often include words such as death, magic, devil – for example in the book *Death Shrine, Mystery of Devil's Eyes*. Are you inclined toward magic?**

I also have a book called *Gold in the Robe of Death...* Perhaps it is a subconscious effort to show how uncertain the world is. Since the dawn of times there have been two forces working against each other. In Christianity they are personified by the Devil and God. A whole range of phenomena we are surrounded with are shrouded in mystery. My first booklet, which used to be published as part of the Caravan series, was about the *Secret of Wolf's Gorge*: three historical tales from my native village Jestřebí – from the times of the middle ages, thirty years war and the 18th century. *Mystery of the Devil's Eyes* is a combination of a book of travels, a popular science text and a cook book. In my travel books I try to teach readers a lesson in an unobtrusive way, so they don't even realise it.

➎ **Is there any book which is completely different from the others?**

Not yet, but there will be. It will be a commemorative journey through my life. Stories of my research, travels and other tales. I will be telling the story through interesting people who I have met. There will be two storylines – one based on my experience, one based on theirs. Simply how I was enriched by scientists, writers, poets in Spain and Mexico, but also by the indigenous peoples. I have borrowed the main quote from Maxim Gorky, who writes in one poem: "People as bees kept flying in my mind, enriching it as they could".

CV

## doc. PhDr. Oldřich Kašpar, CSc.

(1952)

- A graduate of the Pedagogical and Philosophical Faculty of Palacký University in Olomouc, he obtained the title PhDr. in the field of History. He defended his dissertation at the Faculty of Arts of Charles University (CSc.), where he also achieved the title Assoc. Prof.

- He is the author of 30 academic publications in Czech, French, German and Spanish, and several hundreds of professional studies and reviews.

- He collects Mexican legends and verbal art. He has translated myths and legends into Spanish and Czech and with his students he has performed several plays taking the audience back to the ancient civilizations of Latin America.

- He has been writing Aztec poems and he recites them.

- In 2018 he was appointed *profesor honorario y visitante*, an honourable and guest professor at the Autonomous University of the State of Hidalgo (UAEH) in Pachuca, and he was awarded the highest Mexican order for foreigners 'the Order of the Aztec Eagle'.

- Next year, on the day of the Three Kings, Oldřich Kašpar will celebrate his life jubilee.



# PROF. TOMÁŠ WÁGNER: Each element is like a separate entity

TEXT Věra Příbylová • PHOTO Adrián Zeiner

He has devoted his entire life to materials research and is particularly familiar with the chalcogen group elements. He is a chemist, but his research is beneficial in the field of electrical engineering and optics, and it can also have an overlap in medicine, environmental protection and safety. “Each element has some constitution, its electronic structure. If I were to translate it to the human world, each element is a separate being. It has its important properties that can be combined.” says one of our excellent scientists, Professor Tomáš Wágner of the Faculty of Chemical Technology, who obtained a unique and prestigious American patent for his memory recording of information.

## ❶ Have you achieved the long-desired goal?

It wasn't like I was chasing a US patent, but the situation made it happen a bit quicker. I had an exceptional opportunity, and I took it.

## ❷ What opportunity?

Let me start with a story. At an international conference on chalcogenides in 2010, I met 80-year-old Professor Ovshinsky, an American inventor and scientist, visionary and very rare man. He founded several companies himself. He presented me his scientific credo on a single coin. One side of it had “Information” written on it, with the head of a man with a high-lighted brain on it. On the other side of

the coin with the symbol of the sun was the inscription “Energy”. And that is exactly the driving force behind materials research. It is also where we are with our smart materials.

## ❸ Energy stores information?

Thanks to their properties, chalcogenide materials can be used even where data and information need to be processed and stored. These characteristics drive the human population forward. The field of materials research is still evolving, because our population generates hundreds of exabytes every year *[Editor's note: an exabyte is a unit expressing the amount of digital data.]* And this information and data, be it photographs or documents,

must be stored and processed in the virtual world.

## ❹ And data storage is what your patent is related to?

Our research concerns the field of thin films of chalcogenides, where in addition to selenium, other elements such as silver, germanium, antimony are present. We prepare amorphous alloys and apply thin films of these alloys at the nanometre level.

## ❺ Can your materials better store information in the virtual world?

You could say that. But it is a very dynamic area, where many research groups work. We took the opportunity to get closer to the application in this area. We

study thin films and individual memory cells, where we can test binary notation. It turns out that with the help of these materials we can create either a conductive connection under DC voltage, or in general change the electrical resistance of the material. The conductive phase is induced in such a way that, when the voltage is applied, a conductive contact is formed in the material, simply a nanowire, which connects the two electrodes. When the polarity of the voltage is reversed, this wire becomes disconnected and the material does not conduct current. But we can go much further into multilevel record operations and smaller dimensions. We tested memory cells at the micrometre level. And that is the subject of the invention. That is a thousand less than one millimetre. The production level to which the research is directed is even three orders of magnitude lower. In our conditions, however, it is no longer possible to research, because we would have to have, among other things, very clean rooms and special laboratories without dust particles. In an environment of very clean operations, where semiconductors are processed, even the chemist himself is a polluting element. For example, they need a special dust-free protective suit.

**➊ To put it simply: you need to get the information generated by our society squeezed into the smallest possible area. And there they should be processed effectively.**

Yes. Our task was to prove that our material works reliably. This is a different way of storing data than the one commonly used in storage media currently. This technology promises up to a thousand times faster operation, and up to a thousand times longer life, up to ten times higher density of recorded data. It was necessary to show that it is a material with proven properties and that the bulk glass and the thin film work as they should. In the methodology, we have provided proof that the memory cell switches on and the recording is stable. To make it all work, we had to create our own software. We were confident and aware that we were working on something new and unique. Therefore, we began to believe that our research could lead to a patent.

**➋ At this point, you have patented the invention.**

It was accepted by the United States Patent Office on 29 December 2020. The American patent is a very complicated procedure, and we fought for it for three years. The Technology and Knowledge

Transfer Centre of the University of Pardubice provided us with support during the patent process, because there is a lot of work and administration associated with it.

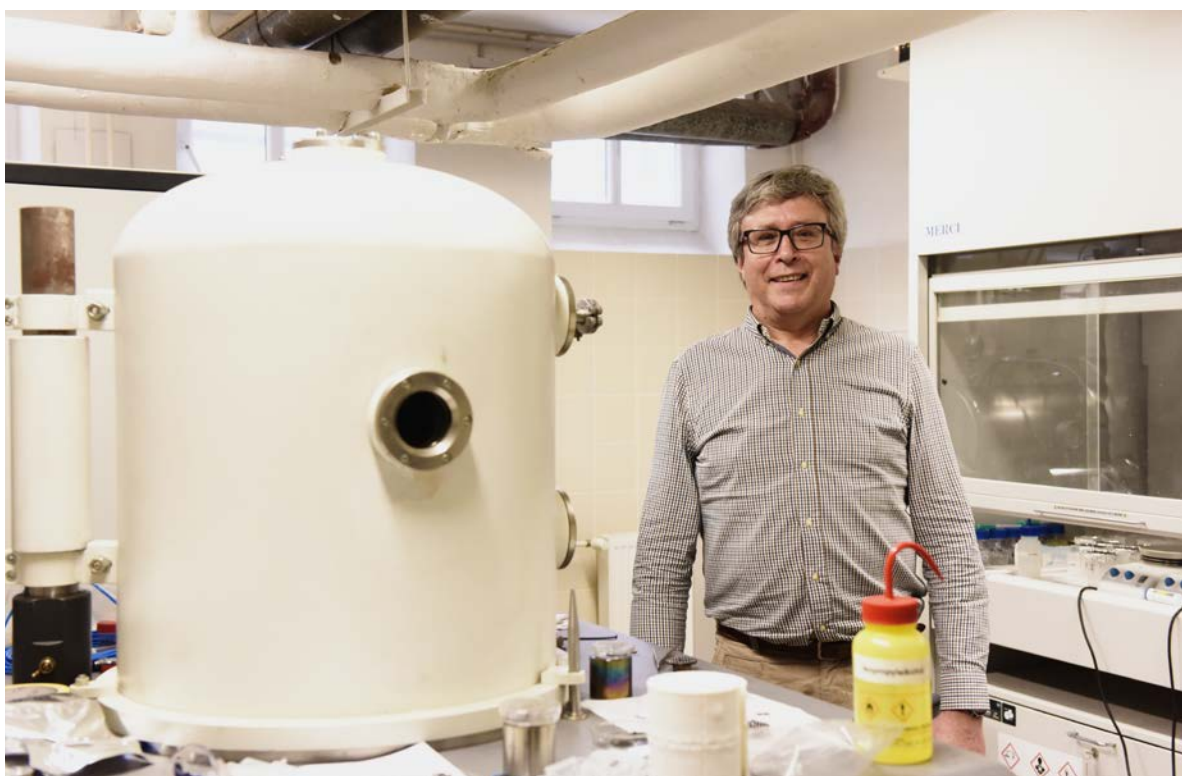
**➌ But it was worth it.**

Obtaining such a patent is not like buying a bun in a shop. It is my only American patent and I consider it a very pleasant reward as part of my scientific journey.

**➍ What does the patenting system involve?**

Patent proceedings have several stages. A Czech patent is prepared and submitted to the patent office. It examines what you are patenting, reviews the literature, and checks whether your research has been published in other patents. And if you pass, you may want to aspire to a higher-level patent because of research, which is a European or American patent. They ask you various questions that you need to explain. It's actually a discovery verification. And if your discovery passes, you need to apply for validation in that country.

As part of validation, you go through an examination where the research is broken down into "components". If all goes well, the patent office will recognise that the subject matter can be patented.





### ❶ And what will happen now?

The patent is now freely available. We hope that someone will notice it and find some other use. In this respect, it is good to know that every top company has its own research departments. This idea may interest one of the technologists and they can use our knowledge. We have already contacted a multinational company that produces monocrystalline silicon, silicon wafers and integrated circuits. So, they may find our technology interesting. They have branches all over the world, even in America.

### ❷ How will your research translate into everyday life?

In the increased amount of data that the computer, for example, will be able to process, store and learn. We all use a mobile phone and a computer every day, and today even a vacuum cleaner is “smart”. Thanks to chips and electronic components, the smart device has a built-in memory that helps control logical operations. As for our memory recording method, it is important to know that this is a non-volatile memory.

### ❸ What does it mean?

We write the information. If we remove the external energy of the voltage, the information remains written. This is another added value of our memory materials. While with current memories, which operate on the principle of transistor and CMOS (Complementary Metal Oxide Semiconductor) technology, it is necessary to keep the voltage, otherwise the record will be erased.

### ❹ Where besides electronics can your materials work?

Memory cells can be combined into memory, neural networks and lead to imitating the functions of the human brain. The brain is made up of neurons and synapses (conductive connections). Memory cells have plasticity, and they can be charged to different voltage levels. The signal that runs through it is processed in a certain way. One day, artificial neural networks could replace the activity of the human brain or part of the nervous system. And that brings my research back to medicine, which is what I once wanted to study.

### ❺ How would networks replace the brain?

For example, after an injury, parts of the missing nervous system in the human body could be replaced. And the body would then continue to function. One could begin to walk or see again.

### ❻ Now that's quite a challenge...

I'm excited about it. But it is more of a challenge for my successors.

### ❼ Speaking of your research, what chemical elements can be found in your materials?

We deal primarily with semiconducting materials, which include a number of alloys and chalcogenide compounds. These are alloys or compounds with many elements, but they must always contain oxygen, sulfur, selenium or tellurium plus some other elements. These materials can be prepared in various forms. Either as bulk material, or fibres or powders or

thin films can be prepared from them. We research mainly chalcogenides of sulfur, selenium and tellurium. Recently, compounds with oxygen have been entering our research. They can be prepared as amorphous or crystalline. We are more interested in amorphous [*Editor's note: when the structure of materials is not firmly arranged*] and nanocrystalline structure.

### ❽ Why this structure?

Any shape can be formed relatively well from an amorphous material, in the volume of the lens or fibre that conduct the light beam, or powders (tablets) that can be compressed. Thin films are interesting in their relation to the nano-level associated with nanotechnology. We are interested in the structure and their photonic properties. Photonic materials are suitable for conducting and processing an optical signal or for signal generation, such as lasers or amplifiers. Electrical properties are related to materials that may be suitable for memory recording.

### ❾ If you were to describe materials research in more detail to a layperson, what would you tell them?

It is research into glasses, semiconductors, ionic conductors, dopants that can be transition metals, and rare-earth elements. Nowadays, a lot of communications are routed through optical waveguides, optical fibres, which speeds up communication. This is where the other side of Professor Ovshinsky's coin – Energy – its generation, transport and storage, comes into play. At the time of Covid, the



temperature of the people to be tested was measured using a non-contact method. There are also chalcogenide glasses in these devices. But these materials can also be used in facial recognition systems, for example, to detect terrorists. Thanks to infrared optics, laser knives are used in medicine to cut your tissue, but it does not bleed, because the wavelength coagulates the tissue and prevents bleeding.

**❸ What made you choose chemistry to be your specialisation?**

My dad was a general practitioner and I wanted to follow in his footsteps. Although the idyllic image of a village doctor sitting in his office in the morning and visiting patients in the afternoon has long since perished. I wasn't admitted to study medicine and life sent me to chemistry. I don't regret it at all. In the autumn of 1977, I joined the Institute of Chemical Technology in Pardubice. It was a huge information shock for me, the main emphasis in the humanities-based grammar school was on biology. But I graduated from chemistry as well. In the Institute, I met Professor Frumar. With his passion for science and materials research, he was my lifelong role model and guru. Later, we became inseparable work colleagues and friends. He was an enthusiastic scientist who could captivate a person and he dealt with things that attracted me a lot. Semiconductors! I returned to my boyish

enthusiasm for electrical engineering, radios and tape recorders. I'd always wondered how all those devices work. And it was there with Professor Frumar that I got to the heart of the matter. I continued in his group and in the fifth year I wrote a thesis on the topic of "chalcogenides". And I still enjoy researching them, as you can see.

**❹ Why are you so fascinated by inorganic chemistry?**

Each element has some constitution, its electronic structure. If I were to translate it to the human world, each element is a separate being. It has its important properties that can be combined.

**❺ You probably can't imagine doing anything else in life, can you?**

I've always been interested in the nature of things and how they work. But yes, I would enjoy medicine, biology, where I could try to understand why mechanisms work the way they do. I am fascinated by nature, where everything is perfectly organised, and we are struggling to get even close. It is also why beekeeping, for example, is one of my big hobbies.

**❻ Is there anything you have failed to accomplish in your life?**

For example, I failed to push through the construction of a large materials research centre in Pardubice, which was to be built on campus in the meadow area behind the Faculty of Chemical Technology. Five

years of work, preparation of a scientific and construction project, assembling a scientific team, working with designers and architects, everything came to naught. But it was great life experience!

**❼ We started our conversation with a coin and so shall we end it. What do you have in common with the book *Late 10th Century Denarii Hoard Discovered in Chýst?***

I did an elemental analysis of those denarii found. When archaeologists discovered denarii near the village of Chýst in the Pardubice Region, the Pardubice Museum included them in its collection. Historian Ladislav Nekvapil asked me if I could find out what material the coins were made of. I confirmed that they were minted from an alloy of gold, silver and copper. These coins are 11 centuries older than Professor Ovshinski's coins. Even after so many centuries, you can feel enormous energy emitted from them and they contain a lot of historical information.

**❽ Are you interested in history?**

I have been interested in history, Czech history and the history of Pardubice since grammar school. Working on the denarii was a detour from my main focus, but I really enjoyed it. I don't have plans for twenty years ahead, but I'm trying to exploit a moment that makes sense. And I exploited this one too.

CV

## prof. Ing. Tomáš Wágner, DrSc.

(1958)

He graduated from the Institute of Chemical Technology in Pardubice. He works at the Department of General and Inorganic Chemistry, Faculty of Chemical Technology. In 1990 he received the title of CSc. (Candidate of Sciences) and in 2005 became Professor of Inorganic Chemistry. He received the scientific degree of Doctor of Chemical Sciences (DrSc.) in 2016. After the 1989 revolution, he completed a two-year internship abroad in Edinburgh, Scotland, and spent two and a half years researching in Canada. He has lectured at scientific conferences and universities in Japan, China, South Korea, America, Russia, Great Britain, France, Greece and Italy. He has also organised a number of international scientific events in Pardubice. In 2014, he created a team to research advanced non-crystalline materials. He has educated a number of successful students who continue their research and have done well at home and abroad. He currently participates scientifically in the Centre of Materials and Nanotechnologies (CEMNAT). So far, he has published more than 230 scientific articles and his h-index is 31. At the end of 2020, he obtained a US patent entitled "Method of forming a metallic conductive filament and Random-Access Memory device for carrying out the method".



# When humour triumphs over Covid

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TEXT Věra Příbylová • PHOTO UPCE Archive

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A seemingly odd couple. Two women, one East Bohemian and one South African, who met in Pardubice as colleagues at the university. They were united by a sense of humour and a desire to communicate in the time of Covid. During the pandemic, they made a series of videos called “Let’s Communicate” with the ambition to teach and have fun. Irena Podlášková and Zaan Bester from the Language Centre have won an award for achievement in the time of Covid for this idea and plan to go on with their activities.

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**“At the beginning, the videos reacted a lot to the lockdown, later we expanded our scope to places and events connected with the university. All we usually need to create a short scenario is a dose of caffeine in the university cafeteria.”**

**8 How did the idea to shoot short educational videos come about?**

**Irena (on the left):** When we all found ourselves in government-ordered isolation at the university in March 2020, I thought it was important to stay in touch and communicate in any way. Simply not be afraid, stay on top of things, use common sense and keep a sense of humour. The basic concept of a video in English with two to three expressions and an open question was there from the beginning. We filmed the pilot episode ourselves from a lavatory so that we could both fit into the shot! The university's promotion department helped us significantly with the professional elaboration of the idea.

**Zaan (on the right):** We started with simple and new concepts at the time of the coronavirus: “social distance” and “face mask”.

**8 You look very natural in front of the camera, have you ever performed on stage?**

**Irena:** The teacher is also a bit of an actor. So, we both have a lot of acting experience (*laughter*).

**Zaan:** The last time I performed was as a child in school performances. I love theatre, but as a spectator. I wouldn't be able to memorise all the lines that actors have to say. Sometimes it's hard for me to learn even our short dialogues.

**8 Which one of you has the bigger jokes?**

**Irena:** Maybe me? I have a rather compelling need to take things with humour. Zaan has a great sense of humour. But in our team, she is the one that is more responsible, systematic and conscientious.

**Zaan:** I have to say it's Irena. I'm probably more serious and conservative, and she balances it with her wild and crazy ideas.

**8 How do your ideas come into existence?**

**Irena:** Their “births” are still rather easy. There's always something going on. Within our social bubbles and globally. At the beginning, the videos reacted a lot to the lockdown, later we expanded our scope to places and events connected with the university. All we usually need to create a short scenario is a dose of caffeine in the university cafeteria.

**Zaan:** Part of the episodes are related to the university and something interesting that we want to show, or just fun, when we had the episode about puppies, for example. Then we decide what expressions and phrases related to the topic would be useful for those who follow us.

**8 Have you ever had an argument?**

**Irena:** I wouldn't call it an argument. We do not share the same opinion all the time, but mostly the exchange of opinions is inspiring and does not jeopardise our intention to create and complete things.

**Zaan:** (*laughter*) Not yet! We are lucky that there are no major disagreements between us. Sometimes we have different ideas about the dialogue, the script or how to shoot it. But we both understand what is possible, what works, what is not so funny, what can be a little risky, and then we accept it and change our approach if necessary.

**8 How do you complement each other?**

**Irena:** I make things up and drink coffee, and Zaan does all the other work. I think it's pretty balanced (*laughter*).

**Zaan:** Irena definitely has a more creative mind and amazing ideas that I would never come up with. I think I provide some balance to the creative side, so we complement each other well.

**8 Has anyone recognised you on the street?**

**Irena:** Last time a student asked me when taking a nose swab for an antigen test in the university assembly hall: “You're the lady from the video that's played here all day, aren't you?”

**Zaan:** Yes, most often on campus. But the funniest reaction I have experienced was off campus. A university employee saw me in a group of people and shouted loudly: “Let's communicate!” I felt a little embarrassed, but I appreciate the recognition and the fact that people are watching our videos.

**8 Do you also use ideas from your personal life?**

**Irena:** Definitely. For example, an episode about what can be experienced during distance learning is based on them. In our videos, I also fulfil some of my dreams, such as riding around the campus on horseback.

**Zaan:** We certainly do project personal experiences into them as well. At the beginning, I really thought that the Jan Perner Faculty of Transport Engineering was referring to a famous woman. In fact, I was impressed by all the famous women who are named after the streets in the city: Karla IV, Jozefa Gabčíka, Jana Kašpara (*laughter*). And we used that in the episode about Jan Perner.

**8 Who writes the scripts?**

**Irena:** We create them together. I'm always looking forward to the brainstorming process. We laugh, we delete, we plan. Some





details then change spontaneously on the spot, but the story skeleton remains.

**8 Who has already appeared with you in a video?**

**Irena:** Colleagues from the Language Centre and other faculties, Czech and foreign students, city police officers on horseback, my dog Artur. Some were even willing to jump into the Elbe River, climb trees, climb the university memorial stone, and run in frosty weather around campus.

**Zaan:** And of course, there was the Rector. The most frequent guest is Artur, however (Irena's dog).

**8 Which episode is your favourite?**

**Irena:** The one where we presented the faculties of the university and the horseback riding accompanied by the Pardubice Municipal Police. Also, the impromptu battle with students of the Faculty of Electrical Engineering and Informatics in the spirit of Counter-Strike while shooting an episode about E-sports.

**Zaan:** Several episodes were unforgettable. Shooting the *Rozběhejme univerzitu* episode outside when it was freezing and snowing, Pardubice City Police horses on campus, or having fun when shooting the Christmas episode with our amazing colleagues.

**8 And which video has had the greatest response?**

**Irena:** So far, the video with our student Richard Hynek, the world champion in the Trifecta Spartan Race 2019, has the highest number of views. We wanted to catch at least one student we happened to meet on the empty campus. But he was damn fast.

**Zaan:** When Irena and I were running around campus at the time, three different cameras, including a drone, were used for shooting, and editor Radek added great music in the "Mission Impossible" style. It was fun and the result was better than we imagined. It was great to see that the audience liked it too.

**8 Who are you filming with?**

**Irena and Zaan:** Our colleagues Petr Špaček and Radek Plžík from the University Conference Centre are in charge of the cam-

era and editing. Lenka Čermáková from the Department of Promotion and External Relations provides promotional materials, negotiates with faculties and sets much-needed limits. And Ondřej Srb, also from the Department of Promotion and External Relations, is always ready to come up with a new idea, a helping hand and support.

**Zaan:** We have an amazing "Dream Team" that helps make our crazy ideas happen. Cameraman Petr has a great sense of humour. If we make him laugh, we know it will be funny. Radek then selects the best shots and uses his magic to put it all together.

**8 Who are your videos for?**

**Irena:** Originally, the videos were intended for our students or colleagues in language courses for employees. But we also use them to spam our families, friends and acquaintances. You can run, but you cannot hide (*laughter*).

**Zaan:** We hope that the audience has grown and that other people also find them interesting, useful or just funny.

**8 Are you planning a new project?**

**Irena:** Rather, we would like to further expand cooperation with our colleagues and students and continue.

**Zaan:** We have enough themes for episodes until the summer of 2022, so we'll shoot videos as long as people enjoy watching them.

**8 This year, your videos were awarded by the Czech and Slovak Association of Language Centres. What does the award for achievement in the time of Covid mean to you?**

**Irena:** I take it as a present. It is always very nice if someone notices or appreciates your work and effort.

**Zaan:** The pandemic made us think differently about how to be creative in finding solutions. This award gives me hope that we have succeeded at least a little. But I have more hope that although this project started during the Covid-crisis, it is something that will outlast it. That we remain innovative and creative in our work.



## Mgr. Irena Podlášková (1968)

She graduated with a degree in German and physical education at the Faculty of Physical Education and Sport, Charles University in Prague. She teaches professional English at the Language Centre, University of Pardubice. She also coordinates language courses for university staff within the ESPRO project. She enjoys exploring the possibilities of e-learning, and focuses on presentation skills and intercultural communication. She loves horse riding, swimming, and she sings in the band RichMek.

A recently discovered passion of hers is paddleboarding.

## MPhil. Zaan Bester (1978)

She graduated with a degree in English and linguistics. For two decades, she worked at Stellenbosch University near Cape Town, South Africa, where she taught academic writing AND English for specific purposes. In 2018, she decided to take on a new professional challenge and since then she has been working at the UPCE Language Centre and the Department of Promotion and External Affairs. Her academic interests include intercultural communication, blended learning, publishing in English and creating courses for teaching. She likes going for trips and hiking, discovering new places, and watching interesting documentaries.

# EGNOS Soon to Monitor Rail Traffic

TEXT Věra Příbylová • PHOTO Milan Reinberk, Unsplash

**The rail traffic management in Europe will become more modern and safer thanks to the EGNOS satellite navigation system that has been used in civil aviation up to now. Aleš Filip, Associate Professor at the Faculty of Electrical Engineering and Informatics, won the prestigious Galileo Masters 2020 Award for proposing this solution.**

**❶ Your research into the use of the EGNOS navigation system took 10 years. What is its result?**

Originally, EGNOS was designed for civil aviation safety management. What we did was propose a way for adopting and approving something that was not originally designed in compliance with rail traffic standards to be used for rail traffic management as part of the European Railway Traffic Management System (ERTMS). We have made the way forward clear, and stressed the need for cooperation of all stakeholders on the European level.

**❷ How will the EGNOS system contribute to safer rail traffic?**

What we propose is preparing a European safety manual for the use of EGNOS in rail traffic. The manual should provide a detailed description of how EGNOS can be safely integrated into the ERTMS. In fact, it will be a new European railway standard.

**❸ After a long time of searching, is this the solution?**

Absolutely. It will show the system designers and people responsible for the industrial integration what steps need to be taken in order to design a product that will be safe and reliable enough to use EGNOS for safe train positioning. The manual will also help the authorities that will be responsible for the certification and approval of the train locator based on the EGNOS SoL

(Safety of Life). The competent authorities include the European Union Agency for Railways (ERA), the European GNSS Agency (GSA) based in Prague, European Space Agency (ESA) and the European Commission.

Rail traffic safety is based on the knowledge of the train location and speed at a point in time. These variables may be determined with great precision using EGNOS. And this must also work in very challenging environments where the landscape or the buildings along the rail track are responsible for suboptimal conditions for signal transmission from the satellites to the train. Other factors that may compromise the safety include industrial or intentional interference with the signal along the tracks, solar flares affecting the transmission of the signal in the ionosphere, etc. The designers and manufacturers of the system must bear all such factors in mind.

EGNOS, which includes a series of monitoring stations and other devices located virtually all around Europe, evaluates the quality of the GPS (or soon Galileo) signal and uses the geostationary satellite to inform the users of any issues that may occur. Safety measures preventing accidents must be adopted. That is how it works both in aviation and rail traffic.

**❹ What methods were used to monitor rail traffic safety up to now?**







Very costly trackside devices were necessary for train positioning. Safety systems are often obsolete, or even non-existent, on many local rail tracks. Satellite-based positioning systems are expected to reduce the costs of operation and rail maintenance, and make it possible to implement the safety systems in locations where it was not possible up to now due to financial constraints, and where the rail traffic safety could be influenced by human error.

#### ❶ How does it work?

The ERTMS uses balises located in the tracks, whose location is defined, for train positioning. Their shape often resembles that of a paving stone or a big box of chocolates. They are mostly yellow. There are often groups of two or more balises at one location. The distance between the balises is 100 metres on average, but it may much less or, on the other hand, as much as 2.5 kilometres depending on the situation.

The train engine is equipped with a balises reader which makes it possible to determine the precise location of the train. If EGNOS is used for train positioning, the safe location of the train will be determined on the basis of the EGNOS signal receiver and other on-board sensors. In this case, the location of the virtual balises is stored in the on-board computer. If the location of the train is consistent, with some margin, with the location of the virtual balise, the balise has been detected.

#### ❷ Where is the system being tested?

As a GSA (European Global Navigation Satellite Systems Agency) expert, I attended ERTMS testing involving virtual balises detected at the GNSS base in Sardinia, Italy. The track from

Cagliari to Decimomannu was used for final testing in 2017. Another case of commercial use in passenger transport is being prepared by RFI, an Italian railway company, on the track from Novara to Rho, near Milan. That will be the first case where satellite navigation is used for passenger railway safety and management. This project in northern Italy is to be showcased as the use of new technologies in Europe. It is supported by the Italian Space Agency (ASI), European GNSS Agency (GSA), and the European Space Agency (ESA).

#### ❸ Where would you take the research further?

Currently, we are trying to transfer our long-term experience with the GNSS safety application in rail traffic to self-driving cars. We want to build on the synergy. In rail traffic, we have long-term experience with designing safety and control systems that are used. Self-driving cars are expected to meet at least the safety standards that we see in air travel and rail traffic. Only then will our customers have trust in self-driving and autonomous cars, buy them and use their safety features to their full potential.

#### ❹ What does the Galileo Masters Award mean to you?

It means recognition of the work of our faculty over the past years. It shows that the faculty provides us with very good conditions for research and that the young faculty management do their best to enable us to engage in interesting and meaningful projects also in the future. When the Galileo Masters 2020 prize was given to me, I thanked the organisers and told them that I would give the prize to the faculty.

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**"Thanks to using satellites for train positioning, it will be possible to have safety systems in places where it was not possible due to financial constraints, and the rail traffic safety could be influenced by human error."**

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# Safely by train

TEXT Šárka Rusnáková, Věra Příbylová • PHOTO Adrián Zeiner, Unsplash, Pixabay

**He has been to Siberia, Mongolia and also to China.  
He has travelled both in comfort and in coal-heated carriages.  
Petr Vnenk has linked his hobby to his study and research  
at the Faculty of Transport Engineering.**

**🔗 You are a big railway fan. Is railway transport safe?**

I strongly believe that it is safe. Undoubtedly, the accidents that occasionally occur are disasters. However, railway transport is still safer in comparison with the road transport. If an accident occurs, we need to make an effort so that it will not happen again.

**🔗 You deal with issues of railway safety. What exactly do you focus on?**

We deal with railway infrastructure, especially with the issue of stress in a continuous welded rail, which may cause a track buckle or a rail breakage. These two types of failures are based on the properties of a continuous welded rail. In the past, passengers when travelling used to hear a specific noise...

**🔗 A type of jangling noise...**

Exactly. This noise was produced when a wheel set was going over rail joints where one rail ended and another one started. In our country, the work on removing these joints and creating a continuous welded rail began in the 1930s. It was found that it is possible to weld rails into rail strings with an unlimited length, and thus to remove the noise. That's why the train movement today is smooth and quiet.

**🔗 Did the joints have any particular function?**

Yes, they did. They enabled the steel rail dilatation, which means its thermal expansion and shrinking. Once the joints are welded, it is not possible any more. In spite of that, the rail tries to expand when

heated but it is not allowed to do so. Therefore, its internal axial mechanical stress is growing. It is similar to a situation when water gets into a rock and then it freezes. The volume of ice is bigger and therefore, the rock cracks.

**🔗 It may happen to a rail as well...**

Yes, what may happen is that the railway track is not able to hold the rail any longer, and it is torn apart. We call it a rail breakage. On the other hand, in summer, it tries to expand but there is no space for it, and therefore, the stress exceeds a critical limit and the track buckles, which means that it creates an S-shape and it expands sideways or upwards.

**🔗 If the train runs onto such a track, it might derail. However, you have a project that may prevent these accidents from happening. What do you do with the rails?**

We try to find the internal rail stress at the particular moment because there is currently no reliable method of its measurement. There is a whole range of destructive methods where we can cut a rail apart and then observe how much it shortens. It enables us to calculate the internal stress the rail previously had before we cut it apart.

**🔗 But this requires a railway traffic closure...**

Exactly. It is expensive and demanding, you have to close the line and this is why it is usually not done. Therefore, we would like to find a non-destructive method. Until now, none of the methods tested, espe-

cially by experts in the USA, have been successfully implemented. We use sensors called strain gauges, which sense deformations. By using them, we want to find out how the continuous welded rail becomes deformed over time.

**❶ How does it work?**

We weld rails at a neutral temperature when there is zero stress in the material. By using strain gauges, which are installed before welding, we find out how the rail deforms over time. In a dense forest, it may shrink even more and on the other hand, it can expand on a sunny plain. Thanks to the sensors, we can record the change. If the method proves itself in practice, the Railway Administration may use it for monitoring its railway network, and for example, it can decrease the train speed in places where there is the potential danger of rail defect.

**❷ Another project you are involved in is Erasmus +. What is it?**

It is an international project that deals with education in the area of railways. On this project, we collaborate with universities and private companies from various countries, such as Turkey, Austria and Great Britain. The aim is to unify the system of professional education in the area of railways and to obtain qualifications for various activities in this field. In Europe, we have a partially unified railway network, which is interoperable. In practice, it means that a Czech train can go for example to Portugal. Each particular railway administration may have its own norms regarding how to build the railway line

**"Personally, I like the way railway traffic works in Japan. In Japan, they also have a high modal split, which is the percentage of journeys made by train."**

but despite that, it has to enable the Czech train to pass safely.

**❸ Is it possible to ride a train all the way to Portugal?**

Yes, it is, but from the perspective of interoperability, numerous obstacles still exist. For example, there may be different voltage systems. Other problems are different railway signals, train control systems, and so on. But there are also European train control systems, such as for example ETCS. When this one becomes widely used, there really won't be any problem for the train to start its journey in Prague and finish for example in Lisbon.

**❹ In terms of railways, which country would be a model country for us?**

Personally, I like the way railway traffic works in Japan. In Japan, they also have a high modal split, which is the percentage of journeys made by train. In Europe, it is the Swiss railway.

**❺ When travelling in Europe, do you go by car or by train?**

I like travelling by train not only in Europe. Thanks to dense and high-quality railway systems, travelling by train in Europe is an excellent choice. However, for example in Iceland, there is currently no railway, which means that a car is sometimes needed, and in this particular case, its use makes perfect sense.

**❻ Did you have any adventures during your trips?**

During my first foreign stay in Bulgaria in 2010, I set off by train from Sofia to Varna. As the journey took about nine hours, I chose a night train. When





**“When we were travelling in a sleeping car from Irkutsk to Ulaanbaatar across the border between Russia and Mongolia, a guide came to tell us that two hours before the arrival at the border station, they will lock the toilet and will unlock it again half an hour after the departure from the station.”**

I came to the platform in the evening, I caught the smell of coal. I found out that we were going to travel by train with the carriages heated by solid fuels. The train was really overheated and although we took off most of our clothes we were really hot. But the stoker probably took a nap during the journey as the temperature during our journey was decreasing, and on our arrival to Varna, we were all sitting in our compartment completely frozen and we were able to see our breath in the cold. After we had left the train, we immediately went to the station buffet to get some hot soup.

**🕒 Your interest in railway topics makes you travel a lot. Which places have you visited so far?**

For example, on the 50th anniversary of the Shinkansen train, I was at the railway congress in Japan. I have also been to various railway fairs, for example in Birmingham in Great Britain, in France, and in Germany at the INNOTRANS fair. I also took part in a summer university, organised by ASEFEdu. It was

held in China, Russia and Mongolia, and during one month, we visited several universities and made a round trip of eight thousand kilometres.

**🕒 What does it feel like to travel by rail in Mongolia?**

Excellent, as there is a very simple railway network. One railway line runs across the whole country and there are only a few junctions. In the east, there is a line for rail freight transport. On the main railway line, there are international trains between Russia and China, which provide very comfortable travel as some of these trains contain sleeping cars with beds for each passenger.

**🕒 You also dealt with the issue of making deliveries to nomadic Mongolian shepherds...**

During the summer university, we were fulfilling various tasks. For one particular supply company, our team was supposed to solve a problem of making deliveries to nomadic Mongolian shepherds, who don't have a permanent residence. They live in a yurt,





and after some time they fold it up and migrate. They spend several weeks in a pasture and when the sheep eat up all grass, they move on.

**❷ What kind of solutions did you propose?**

We were working on this project in a train to Siberia, which was without the Internet, and therefore, we had only limited possibilities to research the topic. In order to simplify the identification of locations, we proposed a 3-word address system which allows to set an address at any place only by means of three terms. We also proposed a complementary system which would allow the shepherds to load their own goods, for example sheep's wool, on a vehicle which previously brought a delivery to them, so that the vehicle would not go back empty. However, I don't know what finally happened to this project.

**❸ When travelling in Europe, we often do not notice that the border has been crossed. But your experience from the border between Russia and Mongolia is different...**

Travelling by train in Europe is very smooth but in Asia, the borders between individual countries still exist and they cause considerable delays. When we were travelling in a sleeping car from Irkutsk to Ulaanbaatar across the border between Russia and Mongolia, a guide came to tell us that two hours before the arrival at the border station, they will lock the toilet and will unlock it again half an hour after the departure from the station.

**❹ That's a long time...**

Let's work it out. The toilet is closed two hours before coming to the station in Russia, the train is then stopped for some time at the border, after that it passes to the first station in Mongolia, which is also a border station, and therefore, it is stopped for some time there again. And if it is opened no sooner than half an hour after the departure, the result of this calculation is several hours. It can even be up to six hours.

**❺ Is there a place where you would like to travel by train?**

There are many such places. For example, there is a railway line in Ecuador which goes down to the coastline from 4,500 metres of altitude. A couple of years ago, it was possible to travel there on roofs of carriages, which is something I would quite like to try.

**❻ Why would you recommend studying at the Faculty of Transport Engineering?**

These days, there is a lack of technically-oriented professionals, especially in the area of railways. If you graduate in a technical railway-focused branch of study, you can make your own choices about where to work and what you want to focus on. Currently, a high-speed railway line is being prepared in Czechia, which will require even more professionals in the future. Besides, the Railway Administration has a lack of people at every department. If you are interested in transport and railways, come and study with us.

## A STUDENT FROM YEMEN

# I feel a bond, as if I belong here

TEXT Zaan Bester, Věra Příbylová • PHOTO Adrián Zeiner, Depositphoto

**Ahmed Ahmed Ahmed Salem left his home to change his life – achieve education and gain experience. He completed his secondary school education in the USA and at the moment he is studying at the University of Pardubice.**

**🗨 Ahmed, what brought you to the Czech Republic?**

Education. I study in the field of Medical Laboratory Technician at the Faculty of Chemical-Technology. I have been living here for six years and I am very fond of this place. I come from a small family. I used to live in Aden, a little coastal town in Yemen, with my mother, two sisters, and two nieces.

**🗨 Your name sounds quite unusual for someone coming from a different culture. The three Ahmeds in your name: did your parents like the name Ahmed so much?**

When people ask me about this, I tend to joke about it. I say that they have simply run out of names in Yemen, so I was left with this one. But the truth is, repeated names are usually taken after someone from the family – I actually got mine after my father and grandfather.

**🗨 If you had a son, could you name him Ahmed Ahmed Ahmed Ahmed?**

I absolutely intend to (*laughter*).

**🗨 But joking aside...The current situation in Yemen is not easy at all. In 2014 a civil war broke out and it has continued since. What was it like growing up under such conditions?**

War is very complicated. It does not necessarily have to affect the economic or social situation, but it al-

ways has a significant psychological impact on most of the population. Life in a war zone means facing constant air raids, danger, striving to save one's life, fleeing, or running from one place to another. It is very dangerous.

**🗨 Most of us cannot even imagine...**

Experiencing war in real life and seeing it on TV is absolutely incomparable. It is truly horrifying. Every day you feel a constant fear for your life. Then at the same time it gives your life purpose because you have managed to survive as opposed to the others who haven't been so lucky.

**🗨 Do you ever feel guilty or do you take it as a new chance and opportunity to change something in the world?**

At the beginning I did feel guilty, but I could always rely on my family. They support me in my travels so I can repay them when I come back. They help me so I can stay here, finish my studies, achieve something, go back and make myself useful to others.

**🗨 So you intend to work on yourself, complete your education and head back home...**

That's right. I could not dream of achieving higher education at home. You gain experience abroad, learn something from different cultures, different nations, then you can return and prove yourself.







**❶ You haven't been home for a long time due to Covid. Are you in touch with your relatives?**

I have not been home for four years. Yemen is a war zone, so communication with my family is really difficult. Whenever they get access to the Internet, I try to reach them through social media, but sometimes I don't hear from them for weeks.

**❷ Does that normally happen?**

That's the thing, it doesn't. I hope they are ok. The longest time I don't normally hear from them is about a week. I like to make sure they are safe.

**❸ Before arriving to the Czech Republic you studied in America for a year. Where does your desire to travel come from?**

My father loved to travel and he was also very smart, that's why I have always felt attracted by faraway places too. I used to dream of living and studying abroad for a long time. In 2011 I won a grant to study at an American grammar school. I started looking up what it means to live abroad, how I should work on myself and realised I should be searching for new opportunities and doing something for the society which I am part of.

**❹ You didn't move to New York or Los Angeles, but to a small country town in the USA and you arrived there during Ramadan (the fasting period). How did the family you were staying with feel about it?**

I was staying with a very nice family who had previ-

ously provided Muslim students with accommodation. After my arrival I was ready to stop fasting, but they told me I didn't have to. I am still in touch with them. I would fast from 5 am until 9 pm, but in the USA it was very tiring and long. However, it was a good experience and an opportunity to get to know myself better and improve my self-discipline.

**❺ After having arrived here you lived in Mariánské Lázně. What were your beginnings in the Czech Republic like?**

Right on my first day I got lost. I couldn't speak any Czech, but despite that I tried to communicate with people, so I could get closer to them. That's just me. I love people, I love life and I love to laugh. And when one laughs, then the others can't help but laugh too, they laugh with you and they accept you.

**❻ For quite a long time you did volunteer work, not just in Yemen, but also in the Czech Republic. What was your motivation?**

I started volunteering in 2008 thanks to one American institute where I studied English. Every weekend they let us do volunteer work as part of practical training. At that time I realised that this is where I belong – to people, to the community which I am part of. Since then I have been totally excited about the thought of volunteering. I am going to visit nursing homes every weekend – here in the Czech Republic, and then in Yemen.





**“I like to use Yemeni spices or herbs, but there are always alternatives. A good cook knows how to manage with what is available.”**

**❶ Did you use to visit retirement homes already in Mariánské Lázně?**

Yes, I spoke broken Czech and I went into one home to ask them for volunteer work. The manager at that place was shocked to see a foreigner wanting to volunteer there. I would visit old people every Saturday and Sunday. I was like a member of the family.

**❷ Did it help you to create a sort of substitute family here?**

That's a good point! It is true that when I work as a volunteer I don't miss my home as much. It is a good way to suppress the feeling of missing my family so much.

**❸ What else do you miss here?**

Food. Yemeni cuisine is very rich in spices and tasty ingredients. Here it is different. Sometimes you have to add more salt, pepper or different flavours. I miss my family and friends. Home is home regardless how difficult life can be there or how disastrous the situation there is at the moment. A certain part of yourself remains there – your feelings, emotions, memories, childhood. And that bond never breaks, even when you travel all around the world.

**❹ Spices evoke emotions and memories...**

That's why I always have spices with me. Whenever I get homesick, I cook myself something tasty.

**❺ Are you able to cook traditional meals from Yemen with the ingredients you find here?**

Sometimes it is difficult, but not impossible. I like to use Yemeni spices or herbs, but there are always alternatives. A good cook knows how to manage with what is available.

**❻ What is your experience of the Czech Republic? Are you dealing with some issues or did you find it quite easy to integrate into the local life?**

Joining a new culture and not knowing its language wasn't easy for me at all. 'You'll get by with English', they said! I soon realised Czechs love their mother tongue and I should 'do as the Romans do', so I started working on my Czech. Thanks to that, I got an opportunity to meet new people. That is also the reason why my experience here is getting better.

**❼ Is it important for you to be able to speak Czech?**

The language is always a priority, not just here. It is simply a key to the heart of people. As soon as I overcame the fear of speaking Czech and making

mistakes, I started meeting many people, getting to know them better, and I got to learn more about the local culture. When I talk to people in their language, it connects us on a somewhat deeper level and opens new doors for me.

**❽ When you look around, how are Czechia and Yemen different?**

I come from a coastal town, so I really miss the sea and seafood. On the other hand, there is beautiful nature here, much greener than where I come from. It is great to go for a walk and get to know different places, walk for hours, stroll through the parks, breathe fresh air in the morning, listen to the birds singing. Also, the changing of the four seasons, that is something I like.

**❾ What places have captivated you the most?**

I love Mariánské Lázně, the local colonnade is very ancient. I love Pardubice as well, there are many parks where I like to walk. Prague is different, and so is Karlovy Vary. There are wonderful areas here from the north of the country to the south including the Bohemian Forest. Czechia is also unique for its architecture. When you get me started talking about places in the Czech Republic, there is a chance you won't be able to stop me. I feel somehow attached to this place, as if I belong here. It is really something very exceptional.

**❿ So you have not regretted your decision to come here, not even once?**

Never. You can do many things here, get a lot of experience, although it is necessary to know how to ask for all that. I always want to learn a bit more, always want to experience a bit more, and always ask for a friendship. It is the only way how you can get to know the place you live in. Ask the world to open up to you, get to know new people, and learn new things.

**⓫ Would you recommend the Czech Republic or Pardubice to students from your region?**

Without a doubt. I participate in the programme of Media Ambassadors, which is run by the Czech National Agency for International Education and Research in Prague. We promote student life in the Czech Republic and also in Pardubice, as the University of Pardubice is very forthcoming. I have already been contacted by another five or seven students, some of them study here in the Czech language.



# From the pool straight to the computer

TEXT Lada Součková • PHOTO Adrián Zeiner, Martin Sidorják and the archive of Jan Čejka

**Two years ago, swimmer Jan Čejka graduated from high school and in 2021 he fought for an Olympic medal in Tokyo. In September, he started his studies at the University of Pardubice and while studying Information Technology, he will try to get into top form for the Olympic Games in Paris in 2024.**

**❗ Do you remember what happened on Friday 21 May 2021?**

I do, I was competing at the European Championship in Budapest and I managed to attain the Olympic qualifying time.

**❗ That's every athlete's dream. What emotions did it stir up in you?**

It was absolutely unbelievable. I didn't really think about it on the Friday because I swam the qualifying time in the heats, so I still had the semi-finals to go, which I needed to focus on. So I couldn't celebrate right away, but it sank in over Saturday and Sunday and strong emotions started to come.

**❗ You missed out on qualifying for the Olympics by one hundredth of a second in 2019. In everyday life, one hundredth of a second doesn't mean a thing but in swimming it is a lot. Did you analyse where to make improvements?**

One hundredth of a second is basically nothing, but in swimming it can be decisive and make such a big difference. My coach and I studied it a lot on video,

we analysed the race and found out that the one hundredth can be made up for almost anywhere – for example a faster start, a faster flip turn, a better exit phase. Thanks to that race we realised that we were missing a lot of details.

**❗ The Olympics were within your reach. The European Championship, where you could get that ticket, was postponed by a year because of the coronavirus. Was it annoying or did it give you more time to prepare?**

I was annoyed because apart from the Championship, other events got cancelled as well. It was hard for me to find the motivation to train because for a long time I had no place to test my progress, whether I was improving or not. Yes, I had more time to train, but at a rather strange time when all the pools were closed.

**❗ You couldn't go to the pool for several months. How did you train?**

I had to stay out of the water for almost three months. I had just come back from a two-month training camp in Africa and two days after I arrived,

everything got shut down. I was in a very good shape at that time and then a long lay-off came. I tried to train as much as I could at least at home, where I set up a gym, used my AirBike on the balcony and went running.

**❶ Is it possible to simulate swimming and practise strokes on dry land?**

There's virtually no substitute for swimming. I missed the feeling of being in the water and without that I couldn't practise a proper stroke or avoiding slipping. You can imitate it a bit with special rubber bands which I used to try making strokes. The muscles trained but water was still missing.

**❷ How long did it take you to get back into shape?**

A very, very long time. My swimming was very bad afterwards. It's quite difficult for me to start after such a long time out of the pool, because if I don't feel the water, it's as if I don't belong in it. It takes weeks to regain the feeling that I'm swimming well.

**❸ Despite all the complications you managed to secure a place at the Olympics. What were your expectations?**

Naturally, I wanted to give my best performance and break my personal best. I didn't expect to make it to the finals or place in the top ten, I certainly didn't, but I wanted to show that I was in good form. I didn't

succeed in the end and didn't reach my goal. I was more than a second behind my personal best, which was very disappointing at the time because I ended up on the doorstep of the semi-finals. I had a slow start and then couldn't catch up.

**❹ What was competing without spectators like?**

It was not so strange for me, because not many people go to swimming events in the Czech Republic. Moreover, swimming teams are quite big, so there were swimmers sitting in the audience who were not competing at the moment, which made a decent backdrop. But I felt sorry for other sports I watched on TV, for example tennis or basketball, where the halls were completely empty. I also noticed it during the opening ceremony: we were at a stadium for 70,000 people, but we were facing empty stands. That was quite strange and sad.

**❺ You had a fingernail painted during the Olympics. What did it mean?**

It was just a spontaneous idea of Simona Kubová, the swimmer. She asked me if I wanted to have the Czech flag painted on my fingernail. So I went for it. She painted it on both my ring fingers and it lasted through the whole Olympics. When I was warming up, the other swimmers were curious to see what I had there.






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**"I'll have to do without the parties and college life. Swimming is the priority, but education is also important to me."**

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**📍 You got a tattoo of the Olympic rings as a memento of Tokyo.**

Yeah, at first I thought it was a bit of a cliché because a lot of athletes have that tattoo. On the other hand, I've been promising myself ever since I was little that if I'd ever make it to the Olympics, I'd get it done. Now I think it's a nice memento of being there. It's also motivation for Paris. Every day when I look at myself in the mirror, I see the Olympic rings and I tell myself that I'm not done with swimming yet and that I want to show something in Paris.

**📍 You can't bathe for a while with a fresh tattoo. Did you respect the recovery time?**

I did, I stayed out of the water for a few days to let it heal. My coach wasn't too happy about it (*laughs*), but at least I got some rest.

**📍 What does your daily routine look like?**

Almost every day starts with training. Swimming from six in the morning, gym from eight to nine. Then I have to run to school and I'm usually there until 2 pm. Then it's back to training from 4 to 6 pm and I finish off in the gym or I stretch.

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➊ **That means several hours of training a day. Where is the time for studying?**

It's five hours a day on average so it's difficult to find some time for studying. I try to squeeze it in wherever I can. Before school, after training in the evening, whenever possible. But I often come home and go right to bed.

➋ **How important do you rank sport and swimming, on a scale from one to ten?**

Definitely ten.

➌ **And education?**

Since you can't make a living from swimming, education is also very important to me. Swimming takes priority, but education is right behind it. I'd say eight (*laughs*).

➍ **So what's number nine?**

Number nine would be time with my loved ones.

➎ **How did you choose the university to study?**

Swimming played a role in this decision too. Pardubice was the obvious choice because the best pool in the country is here. Plus, I have a great coach here so I didn't feel like going anywhere else. I was interested in information technology, which is taught at the Faculty of Electrical Engineering and Informatics so I gave it a try.

➏ **A top athlete and IT. That's not a very common combination.**

No, it's not (*laughs*), but I hope I'll be able to combine the two and find a way.

➐ **Did you go to the welcome party or do you not have time for such things?**

No, I didn't, because it would mean a missed training session and that's unacceptable. My coach would give me a hard time (*laughs*). Truth is, I don't have much time left for that kind of thing. I just have training, school and training again. At weekends, I either go to swimming competitions or I'm happy that I can just stay at home and rest. But I have a lot of friends in the swimming community so I don't lack socialising. I'll definitely have to do without the parties and college life though. Just the other day my friends texted me asking if I was going to the Příliv event, so I had to reply that I had a 6 am practice and I wouldn't be able to make it.

➑ **There's one thing that caught my eye on your Instagram account. What's the deal with the toilet plunger?**

I have to admit, no one has ever asked me about it (*laughs*). When I went to training camps with the guys from the junior national team, we'd come up with all kinds of things to have some fun. One day, we found a rubber toilet plunger in a household goods shop. We were about 14, so we thought it was very funny. We took it with us to training camps and competitions, took pictures with it, we created an Instagram account for it and we even started taking pictures of the plunger with famous swimmers. For example, we have pictures of the plunger with Katinka Hosszú, László Cseh and so on. They all looked at us strangely at first, but eventually they let us take a picture.

CV

## Jan Čejka

(2001)

Born in Pardubice, Jan has always had a close relationship with swimming. His mother is a swimming instructor and his father was a breaststroke swimmer. Jan graduated from the Dašická Gymnasium and enrolled at the Faculty of Electrical Engineering and Informatics of the University of Pardubice in September 2021. In July 2019, he won gold at the European Junior Championships in the 200m race and two months later he swam to gold in the 50m race at the World Junior Championships. He is the first Czech ever to become a Junior World Swimming Champion. Last year at the European Championships he qualified for the Olympics and broke the Czech record in the adult category with a time of 1:56.66 minutes. He competed at the Tokyo Olympic Games in July 2021, where he ultimately failed to reach the semi-finals. However, he broke two more Czech records in October – backstroke 50m with a time of 23.68 and then he improved his own Czech 200m backstroke record with 01:51.20 to achieve the qualifying time for the World Championships in Abu Dhabi in December.



# ABOUT THE PARDUBICE ZÁMEČEK

With Faculty of Arts and Philosophy graduates  
Blanka Zubáková and Vojtěch Kyncl

TEXT Jan Pražák, Věra Příbylová • PHOTO František Záruba, Památník Zámeček and UPCE archive

**Q** The Pardubice Zámeček is a place which changed from an idyllic deer park into a Nazi execution site. What is its history?

**Vojtěch Kyncl (VK):** At the end of the 19th century, count Larsich Mönich built a hunting lodge on the outskirts of Pardubice. This beautiful place was intended to welcome guests from all over Europe, on the occasion of par force hunts. The villa lost its purpose after the First World War when it became the property of the Czechoslovak Army, after being previously sold several times.

**Blanka Zubáková (BZ):** New housing units, horse stables and riding grounds were built in close proximity to the building. When the Protectorate of Bohemia and Moravia was established, the barracks were seized by the Nazi Order Police. The main task of this police unit was the “protection” of local industrial companies against sabotage, strikes, etc.

**VK:** After the assassination of Reinhard Heydrich, this police unit together with the Gestapo participated in searches in villages and the countryside of the whole Pardubice region. In June 1942, the Order Police together with the Gestapo established an execution site here. From June 3rd to July 9th, the Nazis executed 194 people here, whose bodies were then cremated in the crematorium.

**BZ:** Five years ago, the City of Pardubice agreed to our proposal of a memorial exhibition. It is unique in the Czech Republic that not only a new exhibition was created here, but above all, also a custom-built new modern building.

**Q** Did the atmosphere of this place play a role during the process of creating a new exhibition space?

**BZ:** Since the beginning, the atmosphere of this place has been absolutely essential. The condition in which we found the villa several years ago was desolate. People used to visit this place only on the occasion of memorial events. Thanks to the University and foreign studies, we obtained new sources and the possibilities of their interconnection with the scientific knowledge about the Holocaust, victimology or the prosecution of war criminals.

Both the local archives as well as the foreign institutions, whose documents we were able to present in a digital form, were a great support to us. Due to the multimedia format, the exhibition might be gradually complemented and modified.

**VK:** The central theme of the exposition comes from the dissertation thesis that I defended at the University of Pardubice in 2011. We present more than 700 photographs and written documents, which are related to planning and carrying out mass killing and de-



struction of human lives, the Czechoslovak national resistance, the issue of collaborators or the post-war settlement with an unprecedented level of violence.

The documents come from archives in the Czech Republic, Germany, the Russian Federation, Great Britain and Israel. Unique records from the Protectorate radio, BBC radio broadcasts or the films from 1930s from Pardubice, and about the post-war prosecution of war criminals in Nuremberg and Prague, are more than an hour long.

One of the advantages of the exhibition is its multi-layered character. You can see the exhibition in 30 minutes or you can get deeper into the text and spend even several hours there. Our big thanks also go to the East Bohemia Museum in Pardubice, the owner of the displayed objects, and to the Memory of Nations ("Paměť národa"), who provided us with the video-recordings of former residents from the Pardubice region who lost their loved ones at the execution site or who directly experienced Auschwitz.

#### **Which activities are you planning next?**

**BZ:** The team of educators and guides led by director Viktor Janák is currently preparing educational activities for primary and secondary schools but also interviews with guests. In addition, scholars from universities and the Czech Academy of Sciences will give lectures on this topic. Especially in late spring, we want to focus these meetings on informal cultural experiences, which will represent a peaceful way of spending free time not only for students but also for their parents or for young families.

**VK:** We will try to create a closer connection with the Larisch villa, and hopefully, we will manage to overcome the generation gaps. The Memorial will follow a path which intends to point out the consequences of hatred, aggression and promote the prevention of the spread of pernicious ideas and ideologies. We mustn't forget that life in a free country cannot be taken for granted.





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# Pardubice

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and University  
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