December 2021

PCC CHEM NEWS

Newsletter of the PCC Rokita Capital Group and affiliated companies

We wish you a Merry Christmas
and a New Year filled with peace,
good health and prosperity.

Wiesław Klimkowski

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Greetings from Husavik

On the north coast of Iceland, a silicon metal factory has been built in the picturesque town of Husavik, home to 2,400 inhabitants. It is the first factory of this type in the PCC group. The factory was launched in 2018, instantly becoming one of the most advanced and environmentally-friendly silicon metal plants. The source of energy for PCC Bakki is geothermal energy, which makes the plant 100% renewable-energy-operated and contributes to a significant reduction in emissions. Two 24 MW electric furnaces can produce 32,000 tonnes of silicon metal per year.

Husavik is a small town not far from the Arctic Circle. At the end of the world, one could say. Due to its location, in summer you can enjoy 24-hour daylight, while winter means mainly darkness, but coloured by the aurora here and there. The town is situated in the Skjálfandi bay, famous for being inhabited by whales, which can be admired from the decks of fishing vessels or from high-speed motor boats. It is the largest observation centre for these amazing marine mammals in Europe. There are many trekking routes from the city, including to such places as Lake Botnsvatn or Mount Húsavíkurfjall, or one along the bay. In Icelandic standards, Husavik is quite a big town. The main branch of the economy is fishing and fish processing (local fish, such as arctic char, cod or salmon are truly recommendable).

A few words about the process and products

Given that we're writing for PCC Chem News, the easiest way to describe our process is with a chemical reaction. To simplify it, it goes as follows: $SiO_2 + 2C$ $Si + CO_2$. Silicon oxide is also known as quartzite, the source of carbon are wood chips and black coal. Large amounts of electricity must be supplied for the process, the temperature in the furnace is close to 2,000°C. In Iceland, actually, all electricity comes from renewable sources, such as geothermal energy, or hydroelectric power plants, which reduces the carbon footprint of our silicon. Nevertheless, we're not going to stop there. There are plans to gradually replace black coal, which is a fossil fuel, with charcoal – a renewable resource. This will result in reducing our carbon footprint practically to zero.

Unfortunately, as it happens in chemistry, chemical reactions are more complex. Before silicon oxide (IV) is reduced to pure silicon, silicon oxide (II) is formed, which boils at 1,200°C, so it evaporates from the furnace and later oxidises with oxygen in the air, forming silicon oxide (IV) again – very small crystals that, due to their size, are called microsilica. Microsilica is used in the construction industry as a concrete additive and as a component of refractory materials. Metallic silicon, on the other hand, is used as an additive in aluminium alloys, electronics, and in chemical production.

Tohmasz Horyń
COO
PCC BakkiSilicon

Adam Płachta
Team-Leading Technical Specialist
PCC Rokita

A few fun facts!

1. Our steelworks employs about 150 people coming from almost all European and several non-European countries. So we have a really multicultural crew.

2. There's a mountain separating the steelworks from the town, thanks to which we don't disturb its residents too much. A special tunnel has been drilled through the mountain, through which we have direct access to the port – our gate to the world.

3. A housing estate – called by its residents "silicon hills" – was built especially for the employees of the steelworks.

4. Garðar Svavarsson, the second Viking to have come to Iceland (in 863 or 864), wintered in the bay where the city is today.

A short history of the Zakłady Chemiczne plant with Rokita in the background

This year's 75th anniversary of Zakłady Chemiczne in Brzeg Dolny (chemical plant) is a perfect occasion to recall the most important facts from its past. But this time, instead of focusing on another series of events from the calendar as usual, let's read a story told from the perspective of our corporate little devil.

Rokita the Devil has been with Zakłady Chemiczne from the very beginning, providing help and care.

Let's start with an event from around Easter 2002, immortalised by Stanisław Tomalak (today – a valued artist, formerly – a Dispatcher at our plant) on an Easter card. The card shows our little devil painting Easter eggs. He had his own way of doing that, making use of company colours and motifs. After all, what counted were the willingness, enthusiasm and an admirable (at least semi-technical) scale of production. Thoughts that came to him while working on the task strengthened his belief in how important it is for a chemical company to scale up technological processes, starting from the laboratory phase. Much later (in 2018), this was, in turn, the incentive to launch the Centre for Innovation and Process Scaling project, co-financed from EU funds. It is to result in the construction of an application laboratory with a scaling hall and a warehouse as well as the purchase of R&D infrastructure to conduct application, quarter- and semi-technical research.

It's always been known that "our little devil" is not a noble devil, like Boruta (translator's note: fictional character from Polish mythology), but a homely, peasant one, with all his merits and demerits. He was brought from Zgierz to Brzeg Dolny by engineer Roman Tworos in November 1946 to become part of the Zakłady Chemiczne's name already in January 1947. However, it was in vain to look for him in the old logo.

Rokita's first organic production, launched at the end of 1947, does have some devilish roots. It was an installation for acetic anhydride: an intermediate needed for the production of aspirin in Stargard Gdański. According to folk beliefs, Rokita the Devil willingly lived inside old willows. Hence, he knew the healing properties of the salicylates con-

1995

ROKITA SA
ZAKŁADY CHEMICZNE

1996

KOSMET
ROKITA

1996

KOLCHEM
ROKITA

tained in bark. Once, Rokita lent Bożebog (TN: the alleged god of auspicious fate worshiped by the Polabian Slavs) some willow trunk when he didn't know how to get rid of pus and worms from a wound on his forehead. The wound healed thanks to the willow decoction.

At this point, it should be clarified that, in chemical terms, aspirin is acetylsalicylic acid – a derivative of salicylic acid. The hellish atmosphere is complemented here by the necessarily used production technology that uses sulphur compounds.

Who knows, perhaps it was due to Rokita's folk origins that agents for protecting agricultural crops were included in the production programme from early years. Those agents are now a thing of the past: the Gamatox insecticide, Ditox – against the Colorado potato beetle, or Rotanox – useful against grain insects (as well as in protecting library collections). Thanks to Rokita, farmers know that CCC is an active ingredient. It's the name of an anti-deflector that prevents lodging. Users confirm the high quality and effectiveness of this agent. The most important one, however, was Pielik. Developed first on a small, experimental scale of 20-30 tons / year in 1952, and later on a large production installation launched in 1968, on which liquid Aminopielik preparations were also made. Having undergone many modifications to the equipment and technology, the manufactory works to this day, producing herbicides used for the protection of crops against dicotyledonous weeds – today, under a different brand name, not related to PCC.

When presenting the devil's virtues, let's not forget to show the other side of the coin. In folk legends, Rokita the Devil has extraordinary physical strength, but can be easily duped by a clever hag. Is that true, has he been led astray by an old hag? Well, yes... And more than once, but who of us is flawless?

For years, everyone knew who he was, but nobody had a clue what he looked like. It stayed this way until the end of the 1950s, when a competition for the new logo of Zakłady Chemiczne was announced. It was then that the figurative trade mark of the factory was created – a devil in flames, surrounded by a benzene ring, which proudly replaced the previous logo.
The new logo was officially announced in the Patent Office's bulletin in 1958, accompanied by a list of products manufactured by Zakłady Chemiczne and registered under the trademark. Its author was Zdzisław Torbus, an amateur graphic designer, and Rokita's employee at the time.

The scale of material damage was huge. The explosion destroyed warehouses, lighting up the chemicals stored there and setting off

1998

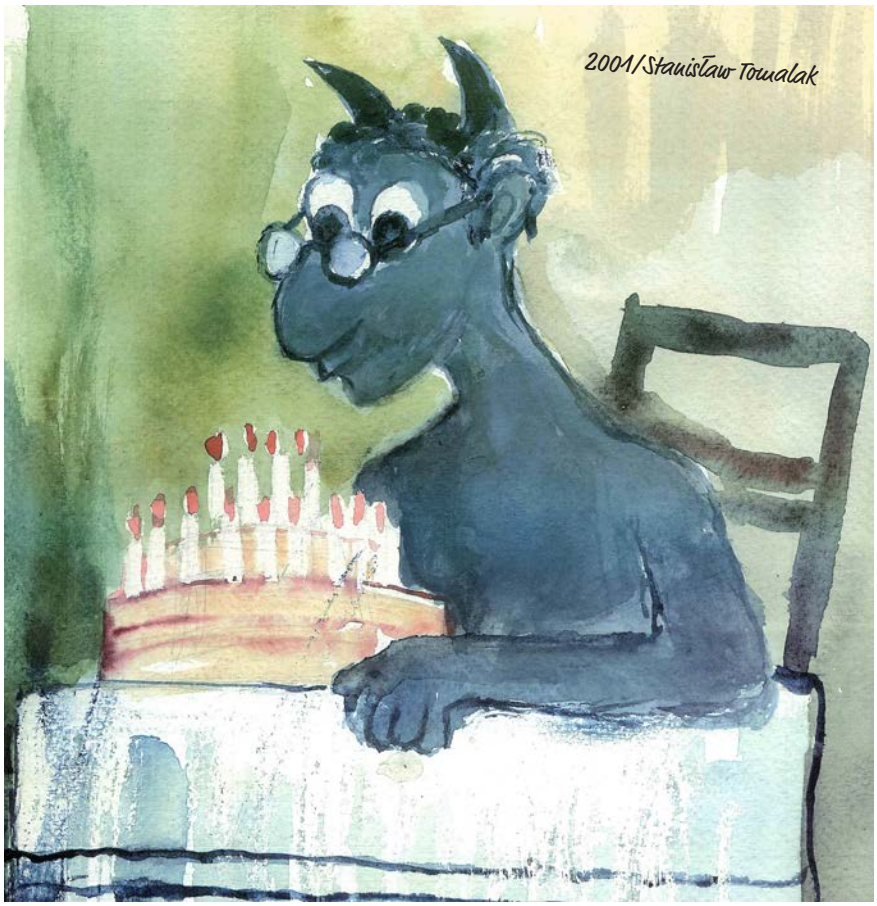
1993/2004

a huge fire. The bang of the explosion was heard even in Wrocław. Production at the plant was resumed the next day, but it took several years to repair all the damage. Taking this into consideration, it's remarkable there were no fatal victims – townspeople who remember that event often say that "Rokita's spirit" protected everyone from misfortune.

In 1947, Zakłady Chemiczne became Sztandarowa Fabryka Chemiczna Półfabrykatów Organicznych "Rokita" (the "Rokita" Leading Chemical Factory of Organic Semi-Finished Products). It was only a matter of time when the devil would find its way onto banners. One of them was the NSZZ "Solidarność" NZPO "Organika-Rokita" Banner (TN: NSZZ – Niezależny Samorządny Związek Zawodowy – the Independent and Self-Governing Trade Union; NZPO – Nadodrzańskie Zakłady Przemysłu Organicznego – the Odra River Region Organic Industry Plant) made in the first months of 1981 by the embroidery company of Mr Kludzik in Poznań. The banner was 120 x 95 cm, double-sided, and made of a double layer of silk. The reverse of the banner – a field of blue and the symbol of the Rokita plant in the centre: coloured, stylised as the first letter of the plant's name, Rokita the Devil in a benzene ring (the basic arrangement of carbon atoms in aromatic and related hydrocarbons). The ring bore the then full name of the chemical plant in Brzeg Dolny. It's worth mentioning here that much earlier Rokita found its place on the banner of the sports club. It's hard to say if it ever was on the banner of Zakłady Chemiczne as the banner was lost, and only hell knows where and when.

In 1991, at the beginning of the political transformation, the production of cleaning and washing agents as well as brake fluids and car cosmetics was launched. It was the first area of activity where products (in small packages) were targeted at individual, retail customers. The process of building brand recognition was supported by Rokita's little devil, who appeared in advertising materials and even on TV. The flagship products from this period were Romigo dishwashing liquids, Rodos bubble bath and Posejdon fabric conditioner.

2010



2000

1999

On 1st April 1992, a major change took place as the state-owned enterprise was transformed into a Spółka Akcyjna (a joint stock company) – Rokita S.A. Although subjected to a facelift, Rokita the Devil firmly remained in the plant's logo. The crossbeam was removed, and the angular version of the 1970s' trident was rounded. A new font was used, but the biggest change in the logo itself was that in the letter a, which was separated from the letter t.

The end of a rather loose approach to the look of the logo resulted from the implementation of a new uniform system of the company's visual identity. The system was designed by the renowned Codes company – the creator of similar systems for many other companies, e.g. Daewoo. The complete image of visual identity consists of many elements, such as the logotype, logo, company symbol, typography (futura fonts) and company colours (blue – rokita reflex blue, grey, white, black and silver).

In 1996, Rokita took special patronage over two of the companies spun off at the time from the plant's structures. He appeared in the original logo of Zakład Chemii Gospodarczej i Samochodowej "Kosmet-Rokita" Sp. z o.o. and Przedsiębiorstwo Transportowo-Spedycyjne Kolchem-Rokita Sp. z o.o. Kosmet has now a new logo, and Kolchem has become part of Zakłady Chemiczne again as a railway division.

July 1997 brought about the flood of the millennium, during which large areas of the country were flooded, including the Brzeg Dolny borough. As a result of logistic and technological limitations, the production at Zakłady Chemiczne "Rokita" came to a stop.

In August 1998, Zakłady Chemiczne launched a website with basic information about the company and the commercial offer of four production and commercial complexes in operation since November 1997. The authors of this professionally designed website, which took into account also environmental aspects, were justifiably proud of it. In the early years of the internet, not many people paid enough attention to such issues as page positioning in web browsers or the costs of reaching potential recipients (target groups) with the posted content. Fortunately, our company devil was a forerunner in this area, inviting everyone to the website from the very beginning.

In 1999, Rokita the Devil helped to implement the ISO 9001 quality man-

2020 - Mateusz Mrozek

2002 /S. Tomalak

agement system at Zakłady Chemiczne "Rokita" S.A., explaining the intricacies of this new, unknown management system to the staff – some of whom considered it to be an invention from hell. For this purpose, he appeared on the cover of a tutorial intended for employees. The author of the drawing was Stanisław Tomalak – at the time, an employee of the marketing department. In that period, he created many other works, often satirical, that depicted the little devil.

Rokita lent his image also in an advertising campaign of "Rokita-Agro" S.A. In 2004, the image of the devil as a positive, humorous character favouring Polish farmers was used in the company's advertising materials. At the beginning, there were some concerns regarding the deeply entrenched Catholicism of rural communities and the rather aggressive colours of the graphics. However, the risk of introducing the new adverts was taken, which turned out to be a bull's eye. Agro's devil took on perfectly, the more so that he was played by an employee of Rokita-Agro – manager of the sales representatives team, Mr Bogusław Miazga. Rokita the Devil stayed in Rokita-Agro for quite some time, tempting with his charm until the official farewell after the company changed owners.

On 1st May 2004, Poland joined the European Union. Neither the plants nor Rokita were hot and bothered by that since we were well prepared for it. Export of products to Western Europe has "always" constituted a significant share of sales. Moreover, on 4th September 1995, Rokita S.A. joined Eurochlor – an industry association of Western European chlorine producers. Eurochlor is the Cefic (European Chemical Industry Council) industry group, which, in turn, represents chemical companies across Europe.

In 2005, Zakłady Chemiczne changed its name to PCC Rokita S.A., under which the company operates to this day. Consequently, the little devil disappeared from the logo. It's remained in the name, though, which means there is no basis for an official farewell. He is still present and, as a respectable jubilarian, he can still celebrate subsequent anniversaries at the plant. Just like before, when Stanisław Tomalak drew a sketch of him with the 55th anniversary cake.
On 31st July 2008, PCC Rokita officially opened "Siarczanowane 2" – a new production plant. The company quadrupled the production capacity of anionic surfactants from 10 to 40 thousand tons per year.

In 2010 and the following years, Rokita gave special care to topics related to occupational health and safety, providing valuable advice on the factory premises and in the company newsletter. Rokita the Devil reminded us that the speed limit around plant premises is 30 km/h, or that it is strictly forbidden to bring, drink or be under the influence of alcohol. In this situation, it's hardly surprising that the four-day (19 to 22 July 2016) audit conducted at PCC Rokita (and PCC Exol) to certify the occupational health and safety management system is in compliance with the OHSAS 18001 standard was a success. The graphics showing the OHS-version of the devil were prepared by Rafał Cwenk.

As you can see in one of the drawings, the devil knows English, the basics of which he learned much earlier, during the staff's preparations for the Libyan contract in the 1980s. After launching modern mercury electrolysis in 1976, Rokita had an excess of trained professionals whose services could be offered. They came partly from an old mercury installation, which had been in operation since 1957, and which was being shut down since the new one did not require that many staff.

In 2016, PCC Rokita S.A. fully converted the electrolysis installation into a modern membrane one. This brought about ecological benefits related to

a much lower consumption of electricity (reduction of CO2 emissions) and the elimination of harmful substances specific to mercury technology. However, there was still a supply of liquid mercury from electrolysers without the possibility of using or reselling it. In 2018, it was processed on a mobile installation brought to Brzeg Dolny for this exact purpose. Thus, mercury sulphide – a stable chemical compound insoluble in water – was obtained, which poses no major threat to human health or the environment. Having been packed, it was transported to the final storage site in the underground salt mine workings.

It's hard not to notice here the helping hand of Rokita the Devil, this time in the field of ecology. After all, it was the power of hellish sulphur that neutralised mercury, which is a huge threat to people and the environment.

It is also no coincidence that a honeycomb cell resembles a benzene ring, which is not only present in many of Rokita's products, but was also once part of the logo of Zakłady Chemiczne.

The range of Rokita the Devil's activity is not limited to production or sales, as it also covers corporate social responsibility (CSR). He's assumed patronage of several local non-governmental organisations.

He helps save lives along with the "Rokita" Association of Honorary Blood Donors at the Vocational School Complex in Brzeg Dolny, which regularly and successfully organises group blood donation campaigns. These events usually take place at the School Complex and the Tadeusz Kościuszko Technical School No. 1 at the Continuing Professional Development Centre in Wołów, thus covering the district area. The Association was registered in 2009, but this was not when blood donation in Brzeg Dolny started, as the Polish Red Cross Blood Donors Club at Zakłady Chemiczne "Rokita" had been founded in April 1974 by an initiative group headed by Bolesław Kosmowski. The club had a tradition to organise off-site group blood donation events consisting in travelling by coach to the Provincial Blood Donation Station in Wrocław.

Since 1946, he's been taking care of the town's inhabitants' fitness condition together with the "Rokita" Municipal Sports Club in Brzeg Dolny, which comprises seven divisions: wrestling, table tennis, duplicate bridge, girls' volleyball, chess, swimming and sumo. It would be hard to elaborate on this topic here as it could take several books to cover it. So far, we've had a publication entitled: "W kręgu rokickiego sportu 1946-1992" (TN: On sports in Rokita 1946-1992), written by Dr Adam Sznajderski, a Polish teacher and tutor for many generations of students of the Chemical Technical School in Brzeg Dolny, who also enjoyed sports successes together with the table tennis division.

The devil spends active free time with the Polish Tourist and Sightseeing Society (PTTK) – the "Rokita" Municipal Branch, established in 1978. Organised tourism in Zakłady Chemiczne "Rokita" dates back to the beginning of the 1960s. It was then that the PTTK Company Circle was established, which was organisationally subordinate to the Municipal Branch in Wrocław. The branch is currently headed by President Elżbieta Węgrzynowska and has approximately 350 members – among them, present and former employees of PCC Rokita and related companies, who, while spending recreation time actively, remain close to the idea of "green chemistry", which is also in the heart of the PCC Group.

The collection of trophies is completed by the "Rokita" Hunting Circle in Brzeg Dolny, established in 1952. Although its logo has horns, they are definitely not those of a devil.

Looking from the perspective of those 75 years, you can see that while Rokita the Devil is becoming active in some areas, he's withdrawing from other. Some might suggest that it's high time for him to retire.

Let's ask a straightforward, blunt question: has the devil done his job and is it time for him to leave?

It's a fact that both PCC Rokita S.A. and its spin-off companies are developing and have been regularly achieving good results for many years. However, there are still new projects popping up along the development process, in the implementation of which unusual forms of help might come in handy.

How will Rokita the Devil help the plant in the future is yet to be seen. However, we can be sure that he will do it effectively but in his own way.

Marek Wielowski
Specialist
PCC Rokita

From a laboratory in Brzeg Dolny straight to one in Iceland

Tomasz Graczykowski is proof that our company is a global one, and that it enables development as well as poses interesting challenges for its employees. Izabela Dreja-Dulewska spoke to Tomasz about how it happened that he ended up in our factory in Iceland.

How did your adventure with PCC start?

I started working in the PCC Group in 2009 in the LabAnalityka company.

I worked on measurements of emissions to the atmosphere, pre-operation assessments and measurements of physical harmful factors at workplaces. I took an active part in the implementation of new methods in the area of waste gas emissions into the atmosphere.

What did your career path in LabAnalityka look like?

I started working there as a Specialist. In 2016 I was promoted to Senior Specialist, and in 2018 I became Manager of the Environmental Research Laboratory, which is part of LabAnalityka. At that time, together with the staff, we managed to implement the new PN-EN ISO/IEC 17025: 2018-02 standard.

Also, in 2019 I was able to qualify for the Polish Centre for Accreditation as a Technical Auditor in the field of waste gases. Unfortunately, the pandemic prevented me from undergoing mandatory assessments under the supervision of experienced auditors.

In 2020, the Environmental Research Laboratory was merged with the Central Archives. Supervision over the combined units was taken over by the Head of the Central Archives, while I became the Quality Manager.

What made you decide to apply for the Head of the Laboratory position?

Applying for the position of Quality Manager in Iceland was a big challenge for me, as well as an opportunity to expand my knowledge and skills. Plus, I'd always wanted to see Iceland. Before entering the recruitment process, I did some research on the websites related to the factory and its location. The place it's located in looked absolutely gorgeous in pictures, and it's even more impressive when you see it live.

What was the recruitment process like in the midst of a pandemic?

It went very well. The interviews were conducted via instant messaging, and the details were provided by either e-mail or phone.

What were your first days at PCC Bakki like?

Well, the first few days were quite intense. A new place, new technology and a new information flow system posed a real challenge for me. I had to get acquainted with the manuals and technical documentation for measuring devices. I also started implementing documentation and quality supervision in accordance with the knowledge I'd gained while working in Poland.

What are your main duties?

My main duty is to supervise the proper operation of the Laboratory, gathering samples, preparing certificates and presenting the results.

What skills and which of your previous competences turned out to be useful in the new position?

First of all, time management and Excel skills. Thanks to having worked in the Environmental Research Laboratory, where we have many different research methods, I was able to quickly familiarise myself with the analyses performed here on site. Of course, this required reading the standards and various kinds of scientific articles. Fortunately, I had already had an opportunity to implement standards in English back in Poland, so it wasn't a problem for me. In addition, I have experience in conducting audits, so I was able to verify the quality of the analyses performed.

What challenges await you in the near future?

First of all, I'd like to systematise the system documentation in the lab even more. My goal is continuous betterment, both mine and that of the employees performing the analyses. Due to the plant's continuous development, in the future we will have even more analyses that need to be done not only quickly, but also with appropriate quality assurance.

What have you already visited and what would you recommend for a first-time traveller to Iceland?

So far I haven't had an opportunity to do any proper sightseeing. Of course, I've been on a few trips in the local area, which allowed me to see many interesting places. I've also walked on an extinct volcano – a truly unique experience. But the truth is that you get to see stunning views every day on your way to work. Husavik is really impressive. The road from Reykjavik airport is also incredible. The landscape changes constantly... lakes, mountains, meadows, and my favourite... waterfalls.

First of all, I can recommend thermo-active clothing. I arrived in Iceland in June and was greeted by snowfall. In fact, you should be prepared for various weather conditions. Life in Iceland is calmer, and most of the necessary things are available in the town where I live. Winter is soon upon us, and I'm also curious what it will be like. The upside is that there is a ski slope right here. Plus another one only 80 km away.

Interview by
Izabela Dreja-Dulewska
HR Business Partner
PCC HR Department

PCC Group's Scholarship Programme behind the scenes

The 20th September 2021 saw 14 scholarship holders begin their adventure with the PCC Group. The group includes students of Wrocław University of Science and Technology and Silesian University of Technology, representing both chemical and technical faculties of the two universities. Let's see what theses they're working on with us and why they decided to take part in our programme.

In the interviews that I conducted with our scholarship holders they all emphasised that they wish to develop comprehensively and gain practical skills. When asked about the motivation and ideas for her future career, Bohdana Demianova, one of the scholarship holders (PCC Rokita, KR), said: "I would like to gain experience and knowledge from people from different countries and be able to enjoy my every day at work. I see myself as an employee of a company that will give me such opportunities as well as professional support. I sincerely hope it will be PCC Rokita."

For Kamil, in turn, who's working on his dissertation at LabMatic, it is important to take an active part in important (from the company's point of view) internal and, if possible, international projects. "I want to work in industry, someplace that is in line with my major. I would like to feel responsible for the actions taken, learn newer and newer things and constantly develop, bearing in mind that studies are only the beginning of my future professional career."

When asked why they chose our Scholarship Programme, they replied:

Krystian (PCC Rokita, KR): "It was very important for me to carry out research for my master's thesis on objects that are actually in operation, and not on some invented theoretical configuration."

For many it is important to work with experts that work in our company.

"I chose the PCC Group's Scholarship Programme because it offered me the possibility to develop in the field that interests me and cooperate with people who have been operating in the industry at a high level for many years," says Piotr Lizak from PCC Exol.

Karolina Tuligłowska, one of our scholarship holders, had the opportunity to do an internship with us before the Scholarship Programme, and this is how she answered the question about her participation in the Scholarship Programme: "I would like to continue working at PCC in the Process Optimisation and Analysis Team. Having done the internship and performed the tasks entrusted to me, I can say that this is definitely something that I would like to do on a permanent basis."

We are very pleased with such opinions. Skills development, new perspectives, and working with experts – these are the key phrases that kept popping up in conversations with all programme participants. And this is the exact idea behind the Scholarship Programme – developing students' competences through cooperation with our company mentors.

We're keeping our fingers crossed for our scholarship holders, hoping that, while an interesting adventure for you, it will be merely the beginning of your career in our company. Good luck!

Karolina Ławecka
HR Specialist
PCC Group

Name	Unit	Dissertation topic
Justyna Rychel	PCC Exol	Testing the Compatibility and Performance of Anti-Corrosion Agents in Cleaning Preparations Based on PCC Exol's Surface Active Products
Michał Kopański	PCC Exol	Examination of the Synergy of Various Ethoxylated Fatty Alcohol Systems and Their Influence on the Detergent Properties of Washing and Cleaning Formulations
Patryk Miszkurka	PCC Exol	Testing the Compatibility and Operation of Anti-Corrosion Agents in Cleaning Preparations Based on Surface-Active Products of PCC EXOL S.A.
Piotr Lizak	PCC Exol	Applying Membrane Processes to Reduce the Content of Inorganic Salts in PCC Exol's Betaine Group Products.
Krystian Słoń	PCC Rokita	Comparative Calculations of Reactors on a Laboratory and Semi-Technical Scale Using CFD Methods
Aleksandra Kania	PCC Rokita	Stability Testing of Polyurethane Formulations.
Karol Bus	PCC Rokita	Optimising the Method of Purifying Polyols.
Bohdana Demianova	PCC Rokita	The Impact of the Chemical Structure of Polyols on Selected Properties of Polyurethane Foams.
Ewelina Szewczyk	PCC Rokita	Verification of the Synergy Effect of ESBO and Aryl Phosphates with Thermal Stabilisers (Phosphites) on PVC Degradation.
Adrian Radoliński	PCC Rokita	Obtaining Trialkyl Phosphates Through Esterification of Phosphoric Acid with Alcohols.
Karolina Tuligłowska	PCC Rokita	The Use of Reaction Calorimetry to Analyse the Synthesis Process (Chemical Compound) in Order to Assess the Risk and Scale Up the Process
Jakub Smoliński	PCC Rokita	Electric Devices Installed in the Switching Station and Using Technologies in Line with the Industry 4.0 Idea on the Example of PCC Rokita SA.
Magdalena Madalińska	PCC MCAA	Optimisation of the Conditions for the Synthesis and Purification of 70% Glycolic Acid as a Derivative of Monochloroacetic Acid
Kamil Czekaj	LabMatic	Testing, Monitoring and Diagnostics of Electric Machines and Drives with the Use of Spectral Analysis of Current and Mechanical Vibrations and Artificial Intelligence Methods on the Example of PCC Rokita.

Awaiting Santa Claus' arrival

Was Santa Claus a real person, or is he just a fictional character of a bellied old man with a huge grey beard and a sack of gifts? As it turns out, he was an actual person!

Saint Nicholas was born around the year 270 in the city of Patara in Lycia (today it is part of Turkey). From an early age he was very helpful and sensitive to other people, never indifferent to those in need of help. He even shared the inheritance left to him after the death of his parents.

Hardly anyone knows that Saint Nicholas is also the patron saint of sailors and fishermen, which is thanks to the fact that his prayers saved some fishermen from death in a storm.

There are many stories of Saint Nicholas defending the needy. But one of these stories is special, as it is where the – popular in many countries – tradition of placing shoes or hanging stockings for gifts by the fireplace stems from. According to legend, there was once a man who fell into poverty and was forced to sell his three daughters to a brothel. When he found out about it, Saint Nicholas, who was also a bishop of Myra, decided to throw three pouches of money through the man's chimney under the cover of the night. The pouches landed in shoes and stockings that had been left to dry by the fireplace. The money, of course, saved the daughters, and this is how the tradition of placing shoes or stockings by the fireplace in anticipation for gifts from Santa Claus was born.

Of course, not everyone has a fireplace at home, but this doesn't mean that Santa Claus won't visit you, as those who don't have a fireplace at home will find their gifts from Santa under their pillow!

Saint Nicholas died on 6th December sometime between the year 345 and 352, but his goodness towards people remained in people's memory, and so, the tradition of doing good deeds is cultivated to this day.

Maciej Trubisz
Editorial Team

RECOMMENDATION ACTION

Refer friends for jobs at PCC and get up to PLN 3 000!*

REFERRAL BONUS AMOUNTS:

PLN 3 000 - managerial positions

PLN 2 000 - operatorss, specialist positions

PLN 1 000 - positions with no experience required

*the bonus will be paid out to you after the referred person has worked for full four months!
(except for the Operator position, in which case the payment is due after full six months of employment)

How to do it?

All you need to do is send the referral form, CV and the consent to the processing of personal data form to **rekomendacje@pcc.eu**

The documents are available on the "**Pracownik PCC**" portal and in the HR Department in **bldg G-1, room 6a**

Recommend an employee and get a reward!

PCC Group

A Christmas recipe from the Editorial Team

Christmas is soon to come, and so begin our searches for the best recipes for wonderful Christmas Eve dishes that will appear on our tables. In anticipation of that first star of Christmas Eve, we encourage you to try out our recipes.

POPPY SEED DUMPLINGS

Dough:
560 g wheat flour
2 tablespoons oil
1 egg
250 g warm water

Filling:
100 g ground almonds (without skin)
100 g raisins
2-3 tablespoons powdered sugar
150 g parboiled and ground poppy seeds
3-4 tablespoons honey
50 g butter
tablespoon fried orange peel

Sprinkle:
100 g almond flakes
1 tablespoon butter
some breadcrumbs

Execution:
Put all the ingredients in a dish following the order in the ingredient list and knead. Roll out the dough.

Next, melt the butter with honey. Pour in the poppy seeds and add powdered sugar, dried fruit and orange peel. Mix all together.

Cut out circles for dumplings and fill each of them with the filling.

Toss into boiling salted water. Cook for about 3 minutes after they rise to the surface of the water.

Roast the almond flakes in butter, add breadcrumbs, and then pour over the dumplings.

GINGERBREAD LOAF CAKE

1 bar butter
1 cup sugar
1 cup milk
4 eggs
2 teaspoons cocoa
2 tablespoons baking soda
1/2 kg flour
2 packs spices
Plum jam / marmalade

Execution:

Cream the butter and sugar with a pinch of salt until fluffy. Add one egg at a time while continuing to cream. Add flour, baking soda, cocoa and spices, and continue to cream. Then, add 1 cup of milk and cream the mixture.

Pour the dough into 2 medium-sized loaf pans lined with parchment paper.

Preheat the oven to 180 degrees Celsius and bake for about 45 minutes. After this time, check with a toothpick to see if the cake is thoroughly baked. If the dough sticks to the toothpick, extend the baking time.

Cut the cooled cake horizontally and layer it with jam.

Chocolate glaze

1 bar dark chocolate

A couple of spoons of milk

1 tablespoon peanut butter (optional, but recommended)

Melt the chocolate in a water bath, add milk and peanut butter and mix with a whisk. Decorate with chocolate glaze.

Run for health

It's been a tradition for several years now that, every autumn, the PCC Rokita team takes part in an obstacle race. Last year, unfortunately, due to event cancellations, we couldn't take part in any competitions, but this year we went to Białobrzegi, where our large team of over 30 people ran at the Recruit distance.

This year, I myself took part in the competition for the very first time, and I must honestly admit – I'll recommend it to everyone, as it's really great fun, and an even better form of integration. Mud, water and ice baths as well as numerous interesting obstacles (including fire) on the route make the several-kilometre run seem to end quickly.

Most importantly – we managed to win the team classification, and so you can say that the pandemic was not an obstacle for us, we still took good care of our physical condition!

We're happy to see our team get bigger a little every year. We will definitely be back in the spring with an even bigger and stronger representative team!

There's chemistry between us and sports!

Maciej Trubisz
Editorial Team


RUNMAGEDDON

The Christmas contest

The theme of this year's Christmas contest was: "Most beautiful Christmas tree ornament." The contest entry period lasted for three weeks, during which time we received over 480 entries!

Each single piece submitted to the contest was unique and exceptional. We also chose that one, unique work – made with a 3D pen by our colleague from PCC Autochem – and awarded it with the main prize, that is, PLN 500.

Congratulations to the winner, and to all other participants – thank you for entering the competition.

Maciej Trubisz
Editorial Team

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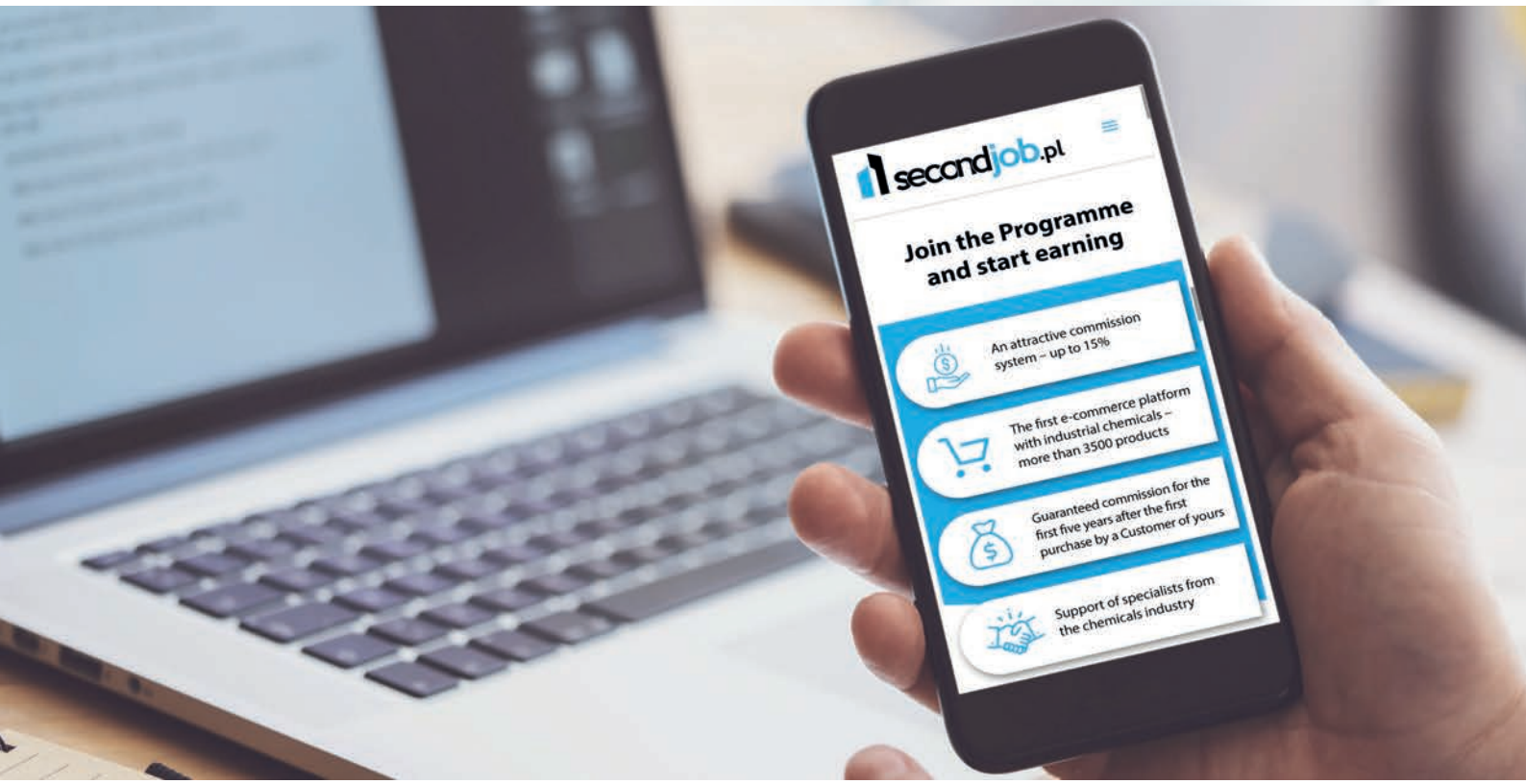

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