Inside ACAT Magazine

#33/2025

A STRONG PARTNER TO THE INTERNATIONAL PAPER INDUSTRY

SUSTAINABLE PET RECYCLING WITH CUSTOMISED SOLUTIONS

GRAPHENE: MORE POWER FOR PAINTS

A pioneer in the fight against PFAS

Innovative solutions are needed

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ACAT has decided to actively tackle the PFAS problem.

Interview with Nuri Kerman, CTO of the Paper Division.

Graphene:
Revolutionises
paints and coatings
for the long term.

Contents 33/2025

A pioneer in the fight against PFAS

04 Dangerous all-rounders and their consequences
PFAS pose major challenges to society, and ACAT is working on solutions.

08 Combating PFAS: A comparison of water treatment technologies

14 Reliability, speed and flexibility are what make the difference
Nuri Kerman provides insights into the success story of BondStar®.

20 The superpower for paints: Graphene for more protection and durability
ACAT has been distributing additives from the leading manufacturer GrapheneUP® since the beginning of 2025.

24 Styrene odours under control
Ecosorb® 706: a powerful and sustainable solution

26 Sustainable PET recycling, CIRPLEX trade fair presentation
30 ACAT helps: Together we can achieve a lot
31 ACAT embodies sustainability
32 Anniversaries
34 Customer survey

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Per O. Bjöörn
CEO Applied Chemicals International Group

Dear readers,

we are at the cutting edge, dealing with the issues of tomorrow. One of them is PFAS – four inconspicuous letters that have a massive impact on the environment and people. These “eternal chemicals” present us all with challenges that we want to meet with responsibility and foresight. Our goal is to develop tangible solutions. An important key to this is the close communication with our suppliers and our customers.

When it comes to water treatment, companies face complex issues and have a great need for information. This is where we come in. We would like to be at your side as a competent partner to help you find efficient solutions. Get in touch with us – because the best solutions are found together. So let’s work together to meet the challenges of tomorrow.

Finding the best solution together: This is also the motto of Nuri Kerman, CTO of our paper division. In the interview in this issue of the ACAT magazine, he explains how we are helping the global paper industry move into the future and achieve the best results in production. His credo: Reliability, speed and flexibility are what make the difference. This is what we stand for as a company and we will continue to do everything we can to embody these values and provide the best possible service to our customers.

Best regards,

Yours Per O. Bjöörn

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PFAS in everyday life:

Dangerous all-rounders and their consequences

Author: Per O. Bjöörn

PFAS – it sounds innocuous, but it is one of the biggest environmental and public health challenges of our time.

But what does PFAS actually stand for? Where are they used? What are the specific risks to humans and the environment? And why has ACAT decided to actively tackle the PFAS problem? We have summarised the most important information.

PFAS are per- and polyfluorinated alkyl substances, formerly known as PFCs (per- and polyfluorinated chemicals). With several thousand different substances, they are among the most versatile and, at the same time, most problematic chemicals in industrial history.

A chemical wonder with a dark side

PFAS were invented in the late 1930s and have been produced industrially since the 1950s. They are used in a wide range of everyday products because of their special properties – they are heat-resistant as well as water, oil and grease repellent. They are used in outdoor clothing and carpets as a dirt and water-repellent coating. In food packaging and Teflon coatings, they repel grease and water. Due to their high heat resistance, they are also used in flame retardants and fire extinguishers. PFAS are also used in the manufacture of many cosmetics, dental floss, contact lenses, medicines and ski waxes.

PFAS have one thing in common: They contain a particularly stable carbon-fluorine bond – one of the strongest organic compounds known. This makes them extremely durable and resistant to environmental degradation. This is why they are also known as the “eternal chemicals”.

PFAS: Invisible, yet everywhere – in dirt and water-repellent coatings, contact lenses, cosmetics and even medicines.

Many environmental and health risks

PFAS are not only durable but also bioaccumulative. This means that they accumulate in the environment and are found in ever higher concentrations. Food and drinking water are often contaminated – and thus they also enter the human body. Studies show that PFAS can be found in the blood of almost everyone in the world. Why is this problematic? Scientific studies have shown that some PFAS are toxic and potentially carcinogenic. They are suspected of causing a number of health problems, including liver disease, hormonal disorders and a weakened immune system.

In many communities around the world, people are struggling with contaminated drinking water. In particular, PFAS contamination in water bodies poses a serious threat to drinking water supplies. At the end of 2024, the European Environment Agency presented an overview of the pollution caused by eternal chemicals in Europe’s rivers, lakes, transitional and coastal waters. One of the results: Data from 2022 from around 1300 monitoring sites across Europe show that PFOS concentrations exceeded the environmental quality standard for this substance in 59 % of rivers, 35 % of lakes and 73 % of transitional and coastal waters. Background information: Perfluorooctanesulphonic acid (PFOS) is one of about 10,000 compounds in the PFAS group.

“We are the link between the world‘s most advanced technical solutions and the specific needs of our industrial and environmental customers.”

Per O. Bjöörn (ACAT CEO)

Unfair burden, lack of transparency

Rural and poorer regions that are home to industrial facilities or military bases that have used firefighting foams containing PFAS are often particularly affected. In addition, the dangers of PFAS have been downplayed or kept a secret by companies for decades. Many of those affected were unknowingly contaminated and are now struggling with the health consequences.

To make matters worse, medical care for people with PFAS-related illnesses is expensive, and the costs are often borne by society – while the polluters are rarely held accountable.

Economic and legal challenges

PFAS are indispensable in many products and are of great economic importance. However, their persistence and health risks have brought them to the attention of environmental and health authorities. While the chemical industry is trying to avoid strict regulations, environmentalists are calling for strict bans.

The removal of PFAS from water and soil is a particularly challenging, technically demanding and expensive. Many municipalities face financial challenges in dealing with the consequences of contamination. There are also numerous lawsuits against chemical companies. However, the burden of proof often lies with those affected, making it difficult to obtain fair compensation.

Innovative solutions are needed

“PFAS are a complex societal challenge. Comprehensive information and transparency are needed to inform the public and support the democratic decision-making process. Production and usage bans need to be weighed against each other – also in terms of economic interests,” says Per O. Bjöörn, CEO of Applied Chemicals International Group. “At the same time, the question remains: How do we deal with the contamination we already have? The development of innovative decontamination methods and the fair distribution of environmental clean-up costs will be crucial in meeting this challenge.”

For ACAT, actively working on innovative solutions is the order of the day, says Per O. Bjöörn: “We are the link between the world‘s most advanced technical solutions and the specific needs of our industrial and environmental customers.”

PFAS from food packaging and Teflon can find their way into our food unnoticed – with potential health risks.

“The development of innovative decontamination methods and the fair distribution of environmental clean-up costs will be crucial in meeting this challenge.”

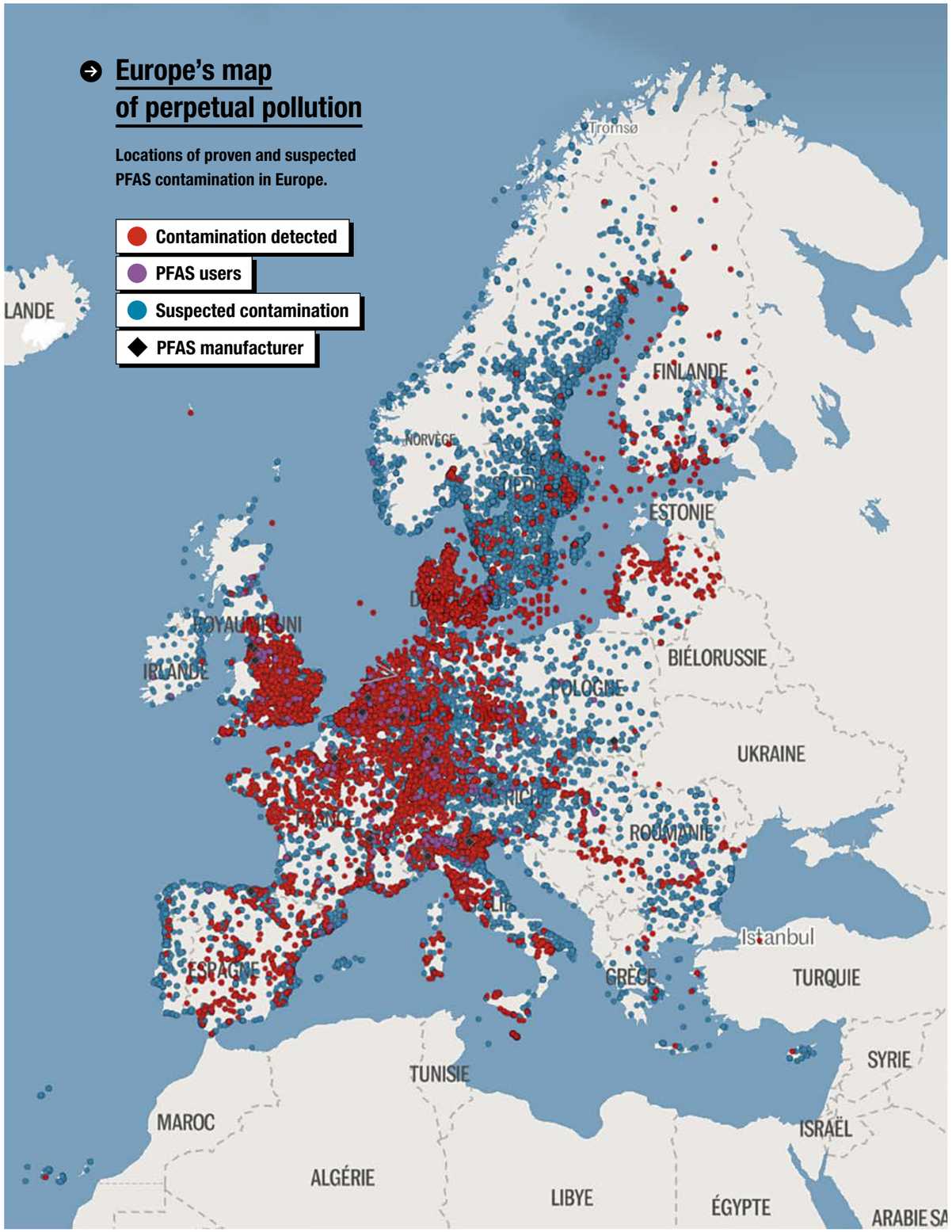
Per O. Bjöörn (ACAT CEO)

Combating PFAS:

A comparison of water treatment technologies

Author: Per O. Bjöörn

To prevent PFAS from entering the human body through food or drinking water, they must be removed from the water. ACAT has been working for decades with speciality chemicals for the optimisation and treatment of water and water cycles. The aim is also to provide solutions for eliminating PFAS from water in the future. An overview of the advantages and disadvantages of the different technologies.



Source: Forever Pollution Project, as of 6 November 2023, https://foreverpollution.eu/map/

Where in the system should PFAS be removed? Ideally, directly at the industrial site producing or using PFAS. The volume of water there is small, but the concentration is high, making treatment relatively cost-effective and efficient. As PFAS are already widespread in the environment, the public sector must also take action. In particular, solutions can be installed in systems for the treatment of drinking water and wastewater. There, the volumes of water are much larger and the concentrations of PFAS are already much lower due to dilution. Individuals can also protect themselves by purifying their drinking water at home with special filters. However, as these filters are expensive, this is unlikely to be done very often.

Multi-stage processes

The treatment of PFAS usually requires multi-stage processes. The aim is to separate the PFAS substances so that these more concentrated quantities can be eliminated in the next step. Separative pretreatment usually serves two purposes: On the one hand, the wastewater is cleaned so that it can either be returned to the production process after the PFAS have been removed, or safely discharged into the sewerage system or a body of water. On the other hand, the volume of the PFAS-contaminated phase is reduced so that the costs for the destructive post-treatment, which is usually energy intensive, can be minimised. Destructive processes break down PFAS substances into their individual components or other less problematic substances.

Some methods remove all substances present, while others only target PFAS. Costs can be reduced by targeting only PFAS. Existing facilities can continue to be used to treat other contaminants.

An overview of the separative processes

→ Membrane filtration

This includes reverse osmosis and nanofiltration. Water is filtered through a semi-permeable membrane with extremely fine pores. This is sometimes done under high pressure (4–7 bar). Between 90 and 99 percent of PFAS can be removed, including short-chain variants.

Advantages of membrane filtration

- ✅ **Very high retention rates for PFAS, especially through reverse osmosis**
- ✅ **Works reliably in the treatment of drinking water**
- ✅ **No chemical additives required**

Disadvantages & challenges

- ❌ **High costs for membranes and operation**
- ❌ **Clogging of membranes by organic matter or lime**
- ❌ **Wastewater problem: The retained PFAS concentrate must be safely disposed of or further treated.**

→ Activated carbon filtration

Highly porous activated carbon that adsorbs pollutants
In particular, long-chain PFAS (e.g. PFOA, PFOS, etc.) can be effectively removed, while short-chain variants are more difficult to retain.

Advantages of activated carbon filtration

- ✅ **Proven technology used worldwide**
- ✅ **Easy to install in water treatment plants and homes**
- ✅ **No chemicals required – purely physical process**

Disadvantages & challenges

- ❌ **Limited capacity: Activated carbon becomes saturated over time and must be regenerated or replaced.**
- ❌ **Less effective for short-chain PFAS, which are more difficult to adsorb.**
- ❌ **Disposal problem: Loaded activated carbon contains concentrated PFAS and must be safely disposed of or incinerated.**

→ Surface Activated Foam Fractionation (SAFF)

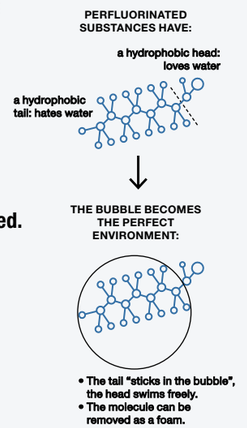
Surface Activated Foam Fractionation (SAFF) utilises the foam-forming properties of PFAS to selectively extract them from contaminated water. This makes the method extremely cost-efficient. Fine air bubbles are generated. PFAS molecules are hydrophobic and adhere to the gas bubbles. A stable foam with a high concentration of PFAS is formed on the surface. This technique is particularly effective for low concentrations of PFAS and is often used for cleansing groundwater and surface water.

Advantages of the SAFF technology

- ✅ **Highly effective for long-chain and short-chain PFAS**
- ✅ **Low energy consumption compared to reverse osmosis or activated carbon filtration**
- ✅ **No additional chemicals required**
- ✅ **Can be used to treat large volumes of water**

Disadvantages & challenges

- ❌ **The foam must be safely disposed of or further treated.**
- ❌ **Not suitable for extremely high concentrations of PFAS**
- ❌ **Dependent on water chemistry (e.g. pH value, temperature)**



An overview of the destructive processes

→ Thermal decomposition

The extremely stable carbon-fluorine bonds (C-F bonds) are broken by high temperatures above 1000°C. PFAS break down into harmless end products.

Advantages of thermal decomposition

- ✅ **Complete destruction of PFAS – no filter residue as with activated carbon or membrane filtration**
- ✅ **Available for existing high-temperature systems**
- ✅ **Suitable for PFAS-contaminated solids (e.g. soils, sludges, filter materials)**

Disadvantages & challenges

- ❌ **Very high temperatures required (≥ 1000°C), high energy consumption**
- ❌ **Formation of hydrogen fluoride (HF), which requires safe handling**
- ❌ **Not all incinerators are suitable for PFAS – too low temperatures can produce toxic by-products. Scientists are still debating the temperatures required to eliminate PFAS without leaving any residue.**

→ Ion exchanger

Special anionic resins are used because PFAS are negatively charged molecules. The resins contain positively charged groups that react with the PFAS. After saturation, the resins must be replaced.

Advantages of ion exchanger filtration

- ✅ **Very high PFAS removal efficiency (including short-chain PFAS, which are less readily adsorbed by activated carbon)**
- ✅ **Longer service life than activated carbon filters**
- ✅ **Regenerative – reduces long-term costs**

Disadvantages & challenges

- ❌ **High acquisition costs for selective resins**
- ❌ **Regeneration requires chemicals & generates waste**
- ❌ **Must often be combined with other processes (e.g. activated carbon)**

→ Electrochemical oxidation

Highly reactive radicals are generated using electrical voltage. These break down the C-F bonds of the PFAS molecules. The end products are mostly CO_2, fluoride ions and harmless organic substances.

Advantages of electrochemical oxidation

- ✅ **Completely destroys PFAS – no waste problems as with activated carbon or ion exchange**
- ✅ **No additional chemicals required**
- ✅ **Can break down both long-chain and short-chain PFAS**

Disadvantages & challenges

- ❌ **High energy consumption, especially for heavily contaminated water**
- ❌ **Material costs for special anodes (e.g. boron-doped diamond) are high.**
- ❌ **Possible formation of undesirable by-products (e.g. chlorine compounds)**

→ Supercritical Water Oxidation

Supercritical Water Oxidation (SCWO) uses the unique properties of supercritical water to efficiently break down PFAS into harmless components. Water is used above its critical temperature and critical pressure. PFAS are broken down into CO_2, water (H_2O) and fluoride ions (F-). No harmful by-products such as toxic exhaust fumes or incompletely degraded PFAS fragments are produced.

Advantages of the SCWO technology

- ✅ **Almost complete destruction of PFAS (> 99.99 % conversion rate)**
- ✅ **Effective for long-chain and short-chain PFAS**
- ✅ **No waste problem, as PFAS are not only removed but destroyed**
- ✅ **Fluoride ions (F-) can be reused or safely disposed of.**

Disadvantages & challenges

- ❌ **Very high energy demand, as very high temperatures and high pressure are required**
- ❌ **Corrosion and material wear, as supercritical water is highly reactive**
- ❌ **Expensive systems and high maintenance costs**

ACAT as a partner for pilot projects

ACAT is working very hard on the PFAS issue and is in constant contact with suppliers. Our aim is to stay at the forefront of technology and identify trends early. We also want to work side by side with our customers on tangible, forward-looking solutions. We are at your disposal for discussions and specific pilot projects.

Are you interested?
Then get in touch with us!

“Good feedback from our customers tells me that our high standards of service and quality are being put into practice”, says CTO Nuri Kerman, Head of papertech.

„Reliability, speed and flexibility are what make the difference“

Interview: ACAT

Nuri Kerman has been an integral part of the ACAT family for 15 years and is now CTO of the paper division. He played a leading role in the development of BondStar® dry strength agents, which today help paper manufacturers around the world to produce cost-effectively and efficiently. In this interview, he talks about the highlights of the past few years and the success factors for long-term customer relationships – now and in the future.

What are the current challenges in the paper industry? What are the issues that will drive the industry in the future?

NURI KERMAN: Today, the global paper industry faces a wide range of challenges. As in many other sectors, there is a shortage of staff. In addition, there is overcapacity and pressure on costs. This leads to cost-cutting measures, including for additives. Other issues include high energy costs and stricter environmental legislation in Europe. At ACAT, we want to help our customers to be successful in this challenging environment – for example, by being a reliable service partner who can respond quickly, or by helping to save energy with additives.

ACAT has been a strong partner to the international paper industry for many years. What do you think is the secret of this long-term success?

NURI KERMAN: Our success is based on several key factors: We offer innovative solutions that are precisely tailored to meet the customers' needs. Our focus is on service and technology. We respond quickly and flexibly to requirements and guarantee a reliable supply chain. Our customers appreciate the direct accessibility of our employees and the personal interaction with competent contact persons. Another success factor is our technical department, which enables us to offer one-stop solutions. This combination of speed, reliability and flexibility has made us a strong partner to the paper industry for many years.

You mentioned speed: What role does rapid adaptation to new requirements or market conditions play in ACAT's success?

NURI KERMAN: In my opinion, it is absolutely crucial. Thanks to the lean structures at ACAT, our decision-making processes are short. This benefits our customers.

How does the papertech division specifically contribute to supporting ACAT's customers in the paper industry?

NURI KERMAN: We offer a wide range of products for the paper, cardboard and pulp industry – from high performance chemicals and minerals to innovative processing and dosing systems and expert services in the field of paper technology. With our BondStar® dry strength agents, we have developed a highly effective product range for cost-effective and efficient papermaking. What is particularly important to me is that by using BondStar® dry strength agents, we not only reduce the amount of energy, surface starch or retention agents required. We also significantly increase production, as shown by many very specific examples from the field.

How has the papertech division developed in recent years? What were the key milestones?

NURI KERMAN: The launch of our BondStar® dry strength agents and performance additives in 2010 was an important milestone. It all started with an enquiry for co-operation from a major paper manufacturer in Germany. At that time, we included various additives in a test programme and worked with our in-house technical department to develop the necessary processing technology. In retrospect, I can say: This project has been a success from day one. Since then, we have continued to grow, first in Germany and then in the rest of Europe and in Asia. We have also been present in the North

BondStar®, enhancing strength and performance.

“We stay at the forefront by working closely with our customers and anticipating their needs at an early stage.”

Nuri Kerman
(ACAT, Head of papertech, CTO)

American market for eight years now. In addition to internationalisation, the quality and performance of our additives and technology, which we have continuously optimised, are very important to me. At the customer’s request, we can now monitor systems online and receive alarms directly. We had a major highlight in 2017: This was when we were granted the patent to manufacture Bondstar® on-site at the customers plant.

What customer feedback motivates you most in your work?

NURI KERMAN: I am delighted when our customers set production records with our help. It is also important to me that we work together to achieve paper specifications that can be sold in the market and that we succeed in introducing new paper grades with our additives. It fills us with pride when we can help our customers to save energy and significantly increase the efficiency of their paper machines. It also motivates me personally when customers praise our fast and professional order processing. Also, I love to receive feedback that confirms that our customers have received competent advice and feel that they are in good hands with us. Feedback like this tells me that we are doing a good job and that our high standards of service and quality are being put into practice.

What do customers appreciate most about working with ACAT?

NURI KERMAN: Reliability and speed are extremely important. We also have a very high level of expertise when it comes to paper additives and are always working on innovative solutions. Other advantages include our competent staff and our own technical department.

Is there a success story from working with customers that stands out in your mind?

NURI KERMAN: I was recently on site with a Turkish customer. He was unable to produce a product even though there was a market for it. Only with ACAT’s expertise and our BondStar® additives was it possible to produce this paper product and increase the utilised capacity of the paper machine by a further 30 percent – a great joint success.

How is the papertech division positioned regionally today? Where do you see future markets?

NURI KERMAN: Our base is Europe. This is where our development work takes place, this is where we have our roots. With its solid paper production, North America is an interesting market. Asia is a growth market for us, although it has stagnated over the past two years. Overall, we rely on a broad regional positioning to mitigate geopolitical uncertainties and respond flexibly to market changes.

As CTO of the paper division, you have a particular focus on innovation. What new technologies or products does ACAT have in the pipeline?

NURI KERMAN: We are currently developing new concepts in the area of sizing and retention agents. We are also focusing on expanding the portfolio of Bondstar® dry strength agents and optimising the design of our systems.

How does ACAT stay at the forefront of technology as a partner to the paper industry?

NURI KERMAN: We stay at the forefront by working closely with our customers and anticipating their needs at an early stage. We understand the needs of the industry through continuous communication and focused discussion. A particular advantage is that we carry out laboratory work directly on site at the customer‘s premises – with the best possible simulation of the paper machine. This ensures that our solutions are perfectly tailored to practical requirements.

What do you wish for the future of the papertech division and for your customers?

NURI KERMAN: I hope that many competent and committed specialists will continue to be part of the ACAT family in the future, bringing dynamism and visionary ideas. I want our customers to have the best possible conditions for economical production. And I hope that the skills shortage will ease for all of us.

You have been part of the ACAT family for 15 years and are now CTO of the paper division. What have been your personal highlights in these 15 years?

NURI KERMAN: The past 15 years have been full of highlights, but I would like to mention just three: the first customer in China in 2015, the patent for BondStar® in 2017, and papertech’s sales exceeding EUR 40 million for the first time in 2024.

How important are the employees for successful development?

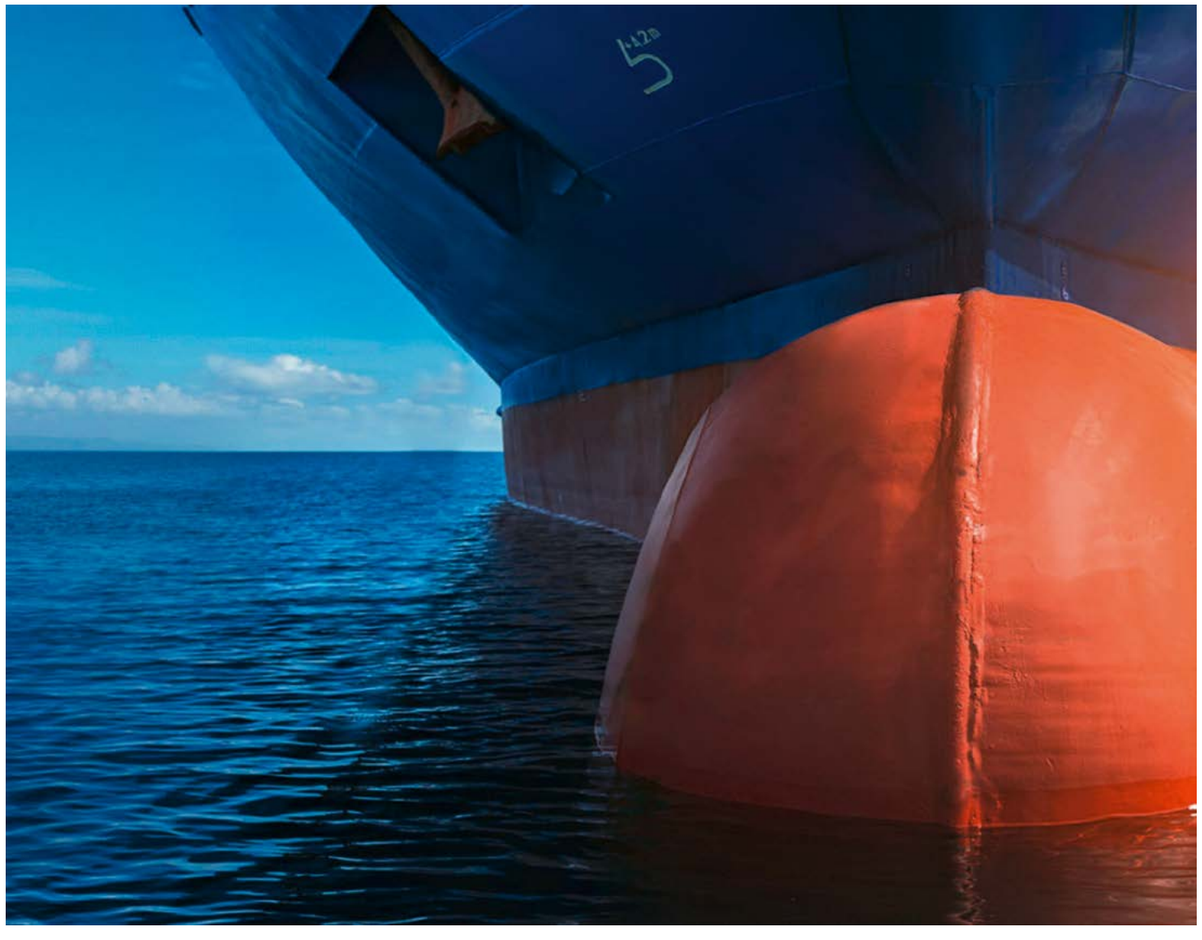
NURI KERMAN: Our employees are the key to our success. Their expertise, ability to work in a team and the targeted selection of the right specialists are key to our continued development and success in the market.

Thank you for your time! ●

The superpower for paints:

Graphene for more protection and durability

Authors: Ivano Aglietto and Alexander Frank



The paints and coatings industry faces many challenges, including improving durability, protecting against corrosion and reducing environmental impact. This is where graphene comes in: Its unique properties significantly improve the quality of paints and coatings. ACAT has been distributing additives from the leading manufacturer GrapheneUP® since the beginning of 2025 – high-performance and sustainable products that meet the highest demands.

Graphene is considered one of the most promising materials of the future. Its unique physical and chemical properties make it an interesting material for a wide range of industrial applications. “Especially in the paints and coatings industry, graphene offers huge benefits, from improved durability and excellent thermal dispersion to higher corrosion resistance,” explains Ivano Aglietto, CEO of GrapheneUP® SE.

But what exactly is graphene and why is it so revolutionary?

Graphene is a special form of carbon consisting of a single layer of carbon atoms. These atoms are arranged in a hexagonal (honeycomb) structure. Graphene has the potential to transform many industries because of its extraordinary properties – it is

The extraordinary properties of graphene

at a glance

Excellent mechanical strength
Graphene is 200 times stronger than steel of the same thickness and is the stiffest material in the world.

Extremely high electrical conductivity
Graphene conducts electricity better than silver.

High thermal conductivity
In terms of thermal conduction, graphene even surpasses diamond.

Great transparency
Graphene is almost transparent, absorbing only 2.3 % of light.

High flexibility
Despite its strength, graphene is extremely ductile and resistant to mechanical stress.

Strong corrosion resistance
Graphene forms an almost impenetrable barrier against gases and liquids, making it ideal for coatings.

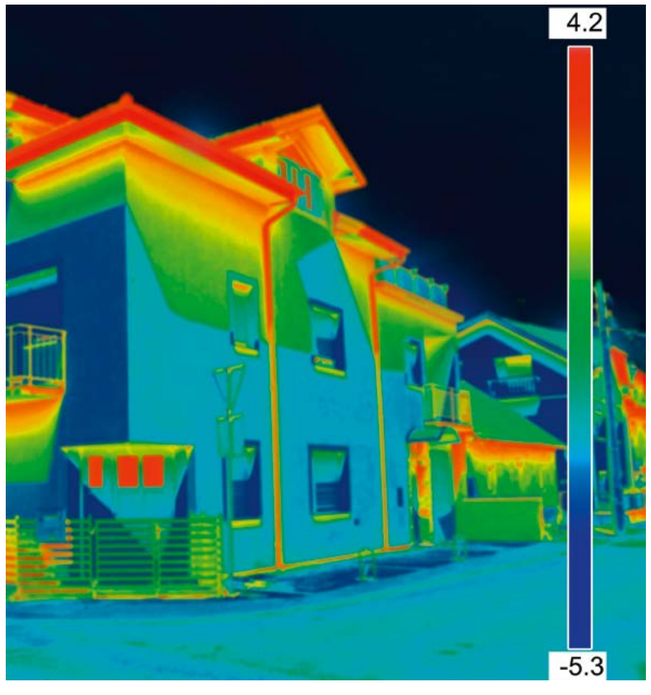
“Graphene improves the performance of paints and coatings by increasing their durability, thermal dispersion, corrosion resistance and adhesion properties.”

Ivano Aglietto (CEO GrapheneUP® SE)

extremely thin, yet 200 times stronger than steel and conducts heat and electricity better than silver. Graphene was first isolated at the University of Manchester by the physicists Andre Geim and Konstantin Novoselov. Their discovery and the associated research results earned them the Nobel Prize in Physics in 2010. Since then, scientists and companies around the world have been working on making graphene usable for industrial applications.

“All of these aspects are particularly relevant for the paints and coatings industry,” Alexander Frank, head of ACAT’s chemtech division, points out. “Graphene improves the performance of paints and coatings by increasing their durability, corrosion resistance and adhesion properties. Its excellent thermal and electrical conductivity enables energy-efficient thermal insulation coatings. In addition, the use of graphene reduces volatile organic compounds – this is an active contribution to environmental protection,” says Ivano Aglietto, CEO of GrapheneUP® SE. Another important aspect: Incorporating graphene into paints extends their service life, reduces the need for repainting and significantly minimises waste..

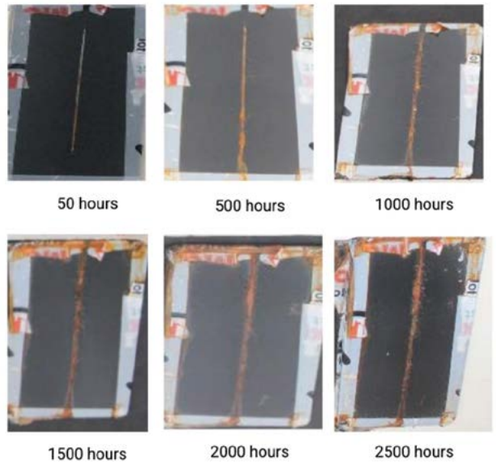
Graphene has very good conductivity, which is useful in coatings for thermal insulation, for example.



GrapheneUP® – Industrial use of Few-Layer Graphene

Many products on the market are mislabeled as graphene, when in fact they are often just fine graphite flakes. Lower quality graphene, including graphene oxide, results in less effective products. GrapheneUP® is completely different: The Czech company has set up the first and largest industrial production line for Few-Layer Graphene in Europe. This means that their graphene (GUP®) consists of two to five graphene layers and complies with the ISO standards ISO/TS 80004-13:2017 and ISO/TS 21356-1:2021.

With its special additives ADDIGUP® AW (for water-based paints) and ADDIGUP® AS (for solvent-based paints), GrapheneUP® offers high-quality, proven solutions for various applications. ADDIGUP® AW improves corrosion protection, thermal dispersion, abrasion resistance and energy efficiency. The main areas of application include facade and interior paints, aviation and aerospace, wind turbines, industrial metal coatings, industrial maintenance applications, specialty coatings, oil and gas pipelines and tanks. The company also offers ADDIGUP® AS, a high-performance graphene-based additive for solvent-based paints and coatings, which is used with great success in the steel industry, for example.



Weathering tests show how corrosion-resistant graphene coatings are.

ADDIGUP® AW is tailor-made for special industrial coatings, among other things.

“We are delighted to be able to offer these outstanding products to our industrial customers and to help them achieve the best results.”

Alexander Frank (ACAT Wien)

“Graphene has the potential to revolutionise the paints and coatings industry. Its unique mechanical, thermal and chemical properties can significantly improve the durability and performance of paints and coatings. With the industrial production of Few-Layer Graphene GUP®, GrapheneUP® has created a sustainable and high-performance alternative for many industries. We are delighted to be able to offer these outstanding products to our industrial customers and to help them achieve the best results,” says Alexander Frank, head of ACAT’s chemtech division. ●

Styrene odours under control

Author: Luca Faggionato

Ecosorb® 706 sets new standards in odour control and builds on the proven effectiveness of Ecosorb® 206. It specifically and efficiently neutralises styrene odours and is an environmentally friendly and non-toxic method of controlling harmful emissions.

Styrene is a colourless liquid at room temperature with a characteristic sweet odour. It is one of the most important basic chemicals for the chemical industry. Styrene is mainly used in the manufacture of various plastics, and the aromatic hydrocarbon is also used as a solvent and binder for synthetic resins and polyester paints.

Styrene emissions continue to be a major challenge for many industries. This is where Ecosorb® 706 comes in: Thanks to an optimised formula, it reduces styrene odours even more effectively and complies with the latest environmental regulations. “With the introduction of Ecosorb® 706, we have a very effective and sustainable answer to the current and future needs of the industry in our portfolio,” Luca Faggionato of ACAT Milan points out.

“Ecosorb® 706 is not just a further development. It represents our clear commitment to innovation.

Powerful & sustainable

Ecosorb® 706 is the result of extensive research and testing by experts in odour neutralisation and environmental science. The new product builds on the successful experience with Ecosorb® 206 and combines practical experience with the latest scientific knowledge. “Ecosorb® 706 is not just a further development. It represents our clear commitment to innovation. With optimised essential oil formulations and increased product efficacy, we offer our customers a powerful and sustainable solution to effectively combat styrene odours,” says Luca Faggionato.

This means we can offer our customers a powerful and sustainable solution to effectively combat styrene odours.”

Luca Faggionato (ACAT airtech)

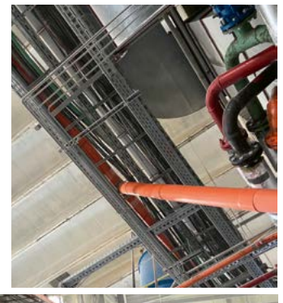
Good to know:

The advantages of Ecosorb® 706 at a glance

- **Greater efficiency: Thanks to the improved composition, Ecosorb® 706 achieves a higher reduction of styrene emissions with lower product quantities.**
- **Environmentally friendly: The product is non-toxic, biodegradable and complies with the strictest environmental regulations. This makes it a safe alternative to conventional chemical treatments.**
- **Economic efficiency: By reducing waste, increasing operational efficiency and reducing the use of conventional chemicals, Ecosorb® 706 helps to reduce operating costs.**

ACAT: The experts in odour control

ACAT has been working intensively on odour control for many years. The company offers a wide range of products tailored to the specific needs of different industries. Ecosorb® 706 is specifically designed to control styrene and VOC emissions in manufacturing and processing industries. The general Ecosorb® formulations score highly in the control of ammonia, hydrogen sulphide and sulphur dioxide emissions. Luca Faggionato: “We also work with very individual solutions. These are essential oil blends for specific odour problems, for example in wastewater treatment, food processing and the production of composite materials.”



Success in practice

Numerous best-practice examples show how ACAT’s customers are successfully combating styrene odours using Ecosorb® products. “For example, we were approached by a company in southern Europe that manufactures sewer pipes and was experiencing odour problems at one of its sites,” says Luca Faggionato. In the hall, the company produces synthetic resin, which is used as an internal coating for pipes. Offices are located above the hall, where employees also spend their breaks. Both in the hall and especially in the offices, the styrene levels were so high that some employees complained of headaches and nausea.

Luca Faggionato: “To tackle the problem, we installed our patented VPS dry fogging system close to the source of the odour. The system generates a dry mist of Ecosorb® which specifically attacks the styrene molecules and converts them into harmless by-products through a chemical reaction. With an initial styrene concentration of around 50 ppm and an air volume of around 25,000 m³ to be treated, the Ecosorb® system was able to reduce the styrene content to below 10 ppm – well below the permissible limit of 15 ppm.” ●

Customised solutions for sustainable PET recycling

Author: Roland Auer

ACAT is a strong partner for companies specialising in PET recycling. From recycling to wastewater treatment, the company provides economical and environmentally friendly solutions that are precisely tailored to the customers' needs. The result: The recycling cycle becomes more efficient and sustainable.

Europe has a problem with plastic waste. This can be seen by looking at various statistics. In 2021, each person in the EU generated an average of 36.1 kilograms of plastic packaging waste. Since 2010, the amount per capita has increased by 29 percent. The total amount of plastic waste generated in the EU in 2021 was 16.13 million tonnes, of which 6.56 million tonnes were recycled. For comparison: Around one million tonnes of plastic waste is produced in Austria every year. Almost a third of this is plastic packaging. However, only 26 percent of all plastic waste is recycled. Although Austria performs well in terms of overall recycling rates, it is below the EU average in terms of plastics recycling. According to the EU directive, this must increase to 50 percent by the end of 2025 and 55 percent by 2030. This means doubling the current recycling rate – a mammoth task indeed.

"We supply all the necessary operating resources and work closely with our customers to optimise consumption and overall costs."

Roland Auer (ACAT watertech)

The most common method of disposing of plastic waste in Europe is energy recovery. Plastic waste is converted into usable energy such as heat, electricity or fuel through incineration or other processes. Recycling is the second most common method of disposal. The low percentage of plastics recycling in the EU represents a major economic and environmental loss.
In 2019, around 22 million tonnes of plastic ended up in soils, rivers and oceans. Experts predict that this number will double by 2060. Three-quarters of the waste in the sea is plastic. Specifically, between 4.8 and 12.7 million tonnes of plastic enter the oceans every year, with dramatic consequences for the environment. In February 2025, reports that microplastics had been found in a number of Austrian glacial lakes, which then end up in drinking water, caused a stir.

“Our goal is always to enable our customers to operate economically in the market.”

Roland Auer (ACAT watertech)

Stricter regulations

To counteract all these negative trends, the European Commission proposed new regulations for packaging in November 2022. The European Parliament approved the regulations in April 2024. The new targets require EU member states to reduce per capita packaging waste by five percent by 2030, ten percent by 2035 and 15 percent by 2040 compared to 2018.

PET recycling as a sustainable solution

Increased use of recyclable plastics such as PET (polyethylene terephthalate) is an important step towards more sustainable use of plastics. These can be recycled into new products or raw materials through the PET recycling process, helping to reduce plastic waste. PET has the advantage that it does not contain any plasticisers and that bisphenol A is not used. There are several steps in the recycling process: First, PET is separated from other plastics such as PVC, HDPE bottles and foreign materials such as aluminium, paper or glass. The PET bottles and containers are then cut into small flakes called PET flakes. The labels and other impurities can now be removed in several further steps. The PET flakes are fed into the mixing screw where they are mixed with 50-percent caustic soda (sodium hydroxide). The mixture of flakes and caustic soda is heated in the oven to over 200 degrees. The caustic soda forms a bond with the surface of the PET flakes and dissolves it. This makes the flakes clean. The PET flakes are washed with drinking water and then dried. Finally, a laser sorter measures the structure of the flakes and removes any foreign particles (such as silicone). At the end of the process, the flakes are of such high quality that they can be brought back into contact with food.

One of the key challenges in PET recycling is wastewater treatment. In order to purify the resulting wastewater, the caustic soda must be neutralised. Dirt particles are separated in a froth flotation process, and various additional products are used in the cooling water and boiler water areas.

One-stop solutions

For many years, ACAT has been a strong and competent partner for recycling companies specialising in PET recycling. “We supply all the necessary operating resources and work closely with our customers to optimise consumption and overall costs,” explains ACAT expert Roland Auer. “We take into account the individual needs of each company and look at what alternative solutions are available. Our goal is always to enable our customers to operate economically in the market.”

The ACAT portfolio ranges from defoamers, caustic soda and polymers to acids and alkalis. “Thanks to our in-house technical department, we can also supply customised dosing systems and dissolving stations,“ says Roland Auer, emphasising: “A trusting customer relationship is the key to being able to respond to individual requirements – especially in a specialised industry such as PET recycling.” ●

PET bottles and containers are shredded into small PET flakes – the first step in sustainable recycling.

A strong presence at a new event:

ACAT at the CIRPLEX in Klagenfurt

From 13 to 15 May 2025, CIRPLEX will celebrate its premiere in Klagenfurt – and ACAT will be there. In Hall 4, the international family-owned company will be demonstrating how it actively contributes to a sustainable plastics industry on a daily basis.

As the new meeting place for the plastics industry, CIRPLEX brings together decision-makers and experts from Austria, the Alps-Adriatic region, southern Germany and central and southeastern Europe. For three days, everything at the Carinthian exhibition centre will revolve around sustainable and circular plastics solutions.

CIRPLEX combines two exciting formats: The convention programme includes interesting lectures on the latest scientific and practical findings, as well as exciting excursions. The first day of the trade fair will focus on how Europe can strengthen its competitiveness. On the second day of the trade fair, the focus will be on education, innovation & start-ups as the key to a successful future. Life Experience Tours take you to selected leading companies in Carinthia and provide you with practical insights.

Covering an area of 3200 m², the exhibition showcases the entire value chain of the plastics recycling industry. Visitors will gain insights into all relevant areas – from plastics production and trade to the packaging and chemical industries and innovative recycling solutions. The focus is on mechanical and chemical recycling as well as waste management. Mechanical engineering will also showcase the latest developments for a sustainable circular economy. ●

At the end of October, major flooding caused severe damage in Spain, particularly in the Valencia region. ACAT employee Sara Dominguez decided to help on site. A field report.

The images went around the world: At the end of October 2024, huge amounts of rain caused mudslides and flash floods in the regions of Valencia, Andalusia and Murcia. Many people were trapped in their homes or cars. “When the people of Valencia were hit by catastrophic flooding, with many losing their homes and some even their loved ones, I could not stand by and do nothing. I was deeply moved by the tragedy and wanted to do more than just help from afar. That’s why I spontaneously decided to fly to Valencia for a week to provide support directly on site,” says ACAT employee Sara Dominguez.

Generous donations from the ACAT team

“In the run-up to my trip, I launched a fundraising campaign to which many of my colleagues generously contributed. I used the money to buy vouchers for food and other essentials, which I personally handed out to those affected. This allowed people to get exactly what they needed most.” Sara Dominguez also supported a damaged animal shelter that was in desperate need of pet food and help to rebuild. She also actively helped with the clean-up work in several affected villages.

“I am incredibly grateful for the generous support I have received from ACAT and am delighted that together we have been able to make a small but significant contribution. This experience has shown me once again how much we can achieve together when we help others in need.”

Christmas donation

ACAT also took its social responsibility seriously with its Christmas donation and helped the flood victims in Europe – specifically with a generous donation to Caritas International. The company also supported the World Food Programme to bring hope and help to starving people around the world. With these targeted donations, ACAT sends a strong message of solidarity, showing that charity knows no borders. ●

caritas international

WFP
World Food Programme

ACAT embodies sustainability

Author: Per O. Bjöörn

Whether it is in the financial sector or in terms of environmental issues, sustainability has always been a top priority for the family-owned company ACAT. In the future, ACAT will report transparently on its own sustainability activities without losing sight of the essentials. The motto is responsible action rather than mere documentation.

Long-term action is one of the key pillars of ACAT’s corporate philosophy. “Family businesses like ACAT think in terms of generations, not quarters. This long-term perspective automatically promotes sustainable development – both financially and environmentally,” says CEO Per O. Bjöörn.

Certificates and reports are often seen as proof of sustainability, but their bureaucratic complexity often leads to a loss of efficiency. “For us, the focus is on what we actually do. At the same time, we recognise the legitimate interest of society and our customers in being informed about our sustainability activities. That is why we are looking for a balanced approach that creates transparency without losing focus on the essentials, which are the concrete actions we are taking,” says Per O. Bjöörn.

With this in mind, ACAT has decided to include sustainability in its annual reports from the financial year 2024 onwards. “We are taking a pragmatic approach and will create our own carbon footprint report from 2024, which will form the basis of our sustainability report.”

From photovoltaics to electric mobility

And there is much to tell: Wherever possible and appropriate, building heating systems have been converted to more environmentally friendly solutions. Another focus is on investing in photovoltaic systems on the company’s own roofs. “We can already produce more electricity at our technology centre in Scheibbs than we consume,” says Per O. Bjöörn. ACAT also keeps an eye on the environment and climate during transport: In 2024, more than 18,300 tonnes of products were transported by rail, representing around a third of the total volume. ACAT also promotes electric mobility. More than a quarter of all company cars are already electric vehicles, which are particularly effective when used for shorter journeys.

As always with ACAT, we are now looking to the future. “We have already achieved a lot, but there is still a lot of potential. We will continue to develop new measures based on our carbon footprint and bring sustainability to life.” ●

Our anniversaries

**THANK YOU for your commitment and achievements –
you've played a leading role in writing the ACAT success story!**

Alexander Frank
35 years ACAT Vienna

Alexander Frank started his career with ACAT in April 1990. He started out as an ambitious chemist in the industrial chemicals sector, which he successfully built up with great dedication. During the 1990s, he moved to the fast-growing paper sector, where he played a key role in its successful development. Today, he also heads the product safety department. He loves the mountains and outdoor sports and is involved in scouting. Dear Alex, we would like to thank you for more than three decades of loyalty. We wish you every success for the next decade of your work!

Giuseppe Forleo
25 years ACAT Basel

Giuseppe Forleo and ACAT crossed paths 25 years ago. Today we can look back together on a successful time, in which Giuseppe always showed an impressive willingness to help and was always one of the first to see where there was still something to be done. His responsibilities have grown accordingly and become more complex. Today, Giuseppe has reached his well-deserved retirement age. We are all the more pleased to continue to count you among the active members of the ACAT family. Giuseppe, thank you for your outstanding 25 years of service.

Nuri Kerman
15 years ACAT papertech

With Nuri Kerman, we have been a well-rehearsed team in the paper industry for 15 years. With BondStar®, Nuri has turned an idea into a globally established product and built an excellent team in the process. Milestones include the patenting of BondStar® and continued geographic expansion, which is driving our revenue growth. Our customers and the entire team benefit from his extensive experience and expertise. We would like to congratulate our paper division CTO on these tremendous achievements and thank him for his extraordinary commitment! We will continue to pursue the path we have chosen together with determination.

Our anniversaries

Karin Pruckmair
15 years ACAT Vienna

Karin Pruckmair has been with us for 15 years and is responsible for creating and maintaining safety data sheets and technical data sheets. She answers questions about chemicals legislation and manages official reports. She independently developed the complex software used to produce safety data sheets. Her work is characterised by meticulous research and a high degree of precision. As her field of work continues to expand, particularly in the area of environmental topics, she continues to learn and keep up to date. We would like to express our sincere thanks for her commitment and 15 years of excellent cooperation.

Gerhard Heigl
10 years ACAT Scheibbs

Due to the increasing demand for our odour neutralisers, production in Scheibbs was expanded – and Gerhard Heigl has turned out to be the ideal production manager. He has also taken over the management of the Ecosorb® production warehouse and is confidently managing all of the processes. As a farmer, he is our early bird and is the first to start the complex production processes each day. Despite his limited free time, he finds time for cycling and for his daughters. Thank you, Gerhard, for your commitment and your excellent and judicious management of the team. We are looking forward to the next 10 years!

Wesley Volek
10 years ACAT Durban

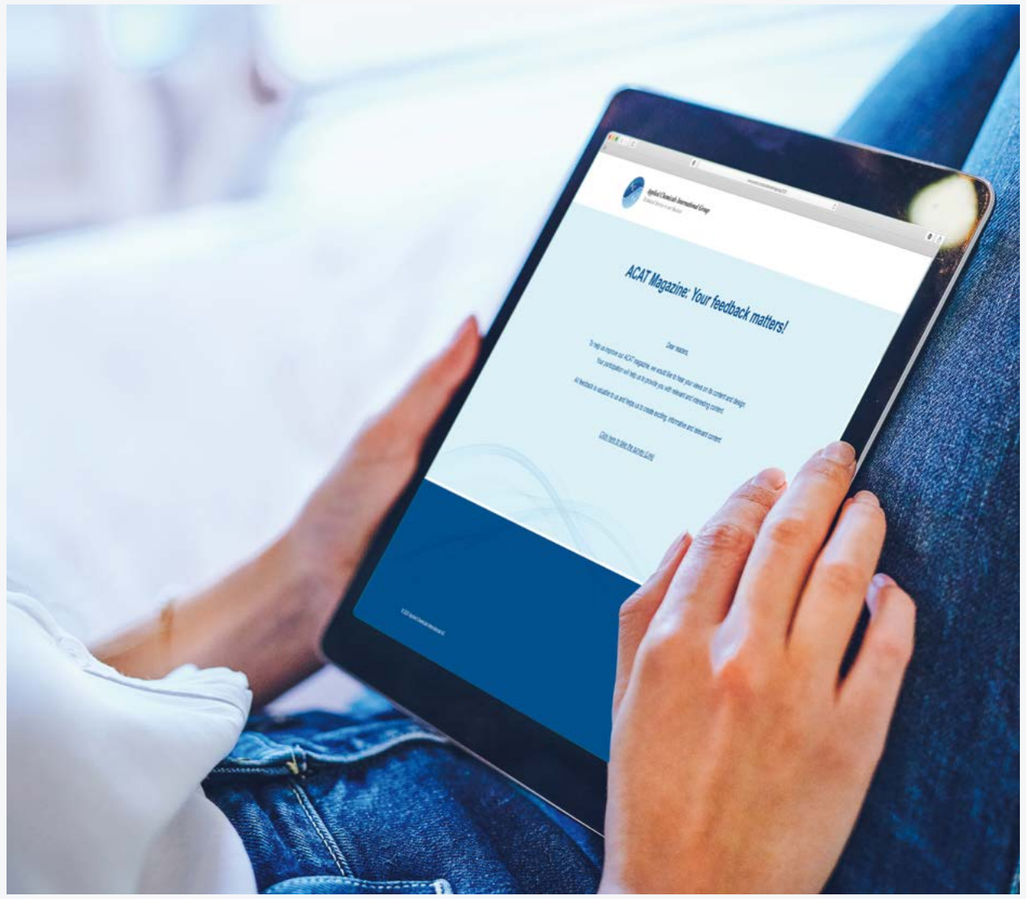
Wesley joined ACAT (ZA) in 2015. He is actively involved in the paper industry, particularly in our polymer business with various customers. He was also involved in our first trials with dry strength resin (GPam). Thanks to the success of these tests, we are now on the verge of installing our first automatic GPam unit. Wesley is the proud father of one daughter. When he finds time away from work and family commitments, he can usually be found on the golf course. Thank you, Wesley, for your cooperation and commitment. We look forward to working with you for many years to come!

"We would like to wish all of our colleagues all the best for the future".

ACAT Magazine: Your feedback matters!

Dear readers,
we would like to tailor the ACAT magazine even more closely to your interests and needs. By answering six short questions, you can give us valuable feedback on the content and design – so that we can continue to bring you exciting and relevant topics.

SIMPLY SCAN THE QR CODE TO TAKE PART. WE LOOK FORWARD TO YOUR PARTICIPATION!



Preview issue 34

In the next issue of the Inside ACAT magazine, you will also find interesting and exciting articles on wastewater treatment and air purification, as well as on paper production and speciality chemicals.

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