



EUROPEAN

# COATINGS SHOW 2025

daily 1

The Show and Conference daily 1 – [www.european-coatings-show.com](http://www.european-coatings-show.com) – 25 March 2025

## A LIGHT ON KNOWLEDGE

ECS 2025 kicks off with over 1,200 international exhibitors



With an impressive light and sound performance, the ECS Conference kicked off yesterday.

**Finally: The eagerly-awaited European Coatings Show (ECS) 2025 officially opens its doors today, welcoming industry professionals from around the world. Running through Thursday, the event features over 1,200 exhibitors, showcasing their latest innovations. Meanwhile, the ECS Conference is already in full swing.**

**D**espite ongoing economic challenges in the coatings industry, Matthias Janz, Director Trade Shows

Coatings at Vincentz Network, and Alexander Mattausch, Executive Director Exhibitions at NürnbergMesse, are celebrating a record-breaking and highly international event.

ECS 2025 boasts more than 1,200 exhibitors from over 60 countries, with international companies making up more than 70% of participants. The top five exhibitor countries this year are Germany, China, Italy, the Netherlands, and India.

“Shaping tomorrow’s innovation” – that’s the theme of this year’s ECS Conference, which

kicked off yesterday with an engaging plenary session, featuring two keynote speeches by Dr Frank Brouwer (Stahl) and Prof. Katja Loos (University of Groningen).

With 24 thematic sessions and over 140 presentations, the conference offers a comprehensive programme covering the latest research and developments in the coatings industry.

Another highlight of the opening session was the presentation of the ECS Conference Award. Gaoyuan Zhang from Niederrhein University of Applied

Sciences was handed the award by Damir Gagro, Director Content at European Coatings (see our interview with the award winner on page 5). An online survey asked participants to answer questions currently occupying the industry. Some of the results are shown on page 4.

The ECS 2025 is set to be a landmark event, bringing together global leaders, innovators, and experts to shape the future of coatings technology!

Learn more about the event at [www.european-coatings-show.com](http://www.european-coatings-show.com)



**WILHELM NIEMANN**  
MASCHINENFABRIK  
[www.niemann.de](http://www.niemann.de)

Booth 4A-309  
DISPERSING · MIXING · FINE GRINDING

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FOR A SUSTAINABLE  
WORLD

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**Accelerating carbon footprint reduction across the value chain**



**Booth #308, Hall 3A**  
**Tuesday March 25, 2025 at 4:00pm**

# SUCCESSFUL FIRST CONFERENCE DAY

Plenty of highlights at the first day of the ECS Conference

The first six sessions of the ECS Conference followed an engaging start with the Pre-Conference Tutorials and two inspiring keynote speeches as well as the presentation of the ECS Award.

The session on research insights introduced sustainable epoxy resin formulations, novel co-curing agents for enhanced epoxy coatings, and heatable coatings designed for ice protection in aircraft. Additionally, advancements in biopolymer films for food packaging and bio-based UV-curable coatings showcased the drive towards more sustainable and functional solutions in the industry. A focus on waterborne paints demonstrated how architectural bio-based polyurethane coatings are evolving to meet environmental and performance demands. In the domain of functional coatings, speakers presented innovations in hydrophobic

and self-cleaning coatings, anti-graffiti solutions, and surface modifications using controlled nanoparticle structures to enhance durability and application performance. Further discussions centred on synergistic UV protection for extended coating longevity, PFAS-free nanocomposites as replacements for PTFE powders, and antimicrobial sol-gel coatings that open new possibilities for hygiene-sensitive applications.

### ADVANCES IN RADIATION CURING

Radiation curing technologies were explored in depth, with insights into novel acylphosphine oxides for superior photoinitiation, advancements in LED-curing scratch-resistant coatings, and bio-based photoinitiators for UV-curing resins. The potential of cotton seed oil as a green alternative for coatings and sugar alcohol-based UV oligomers was also highlighted, along with the

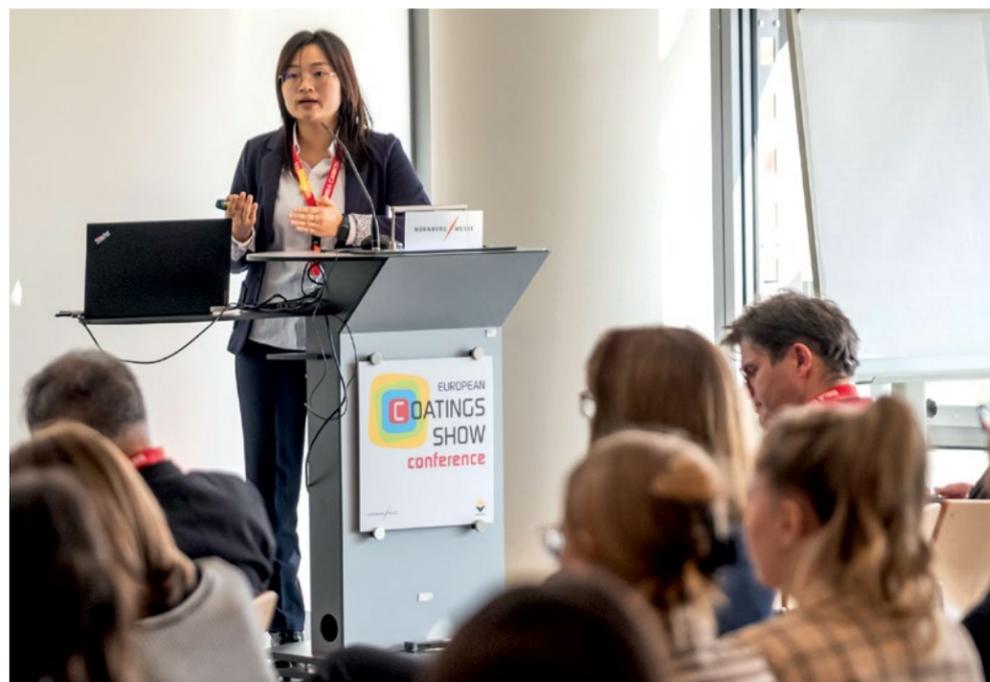
development of neodecanoate esters as key components for radiation-curable diluents.

### FOCUS ON WATER-BASED TECHNOLOGIES

Water-based coatings were another focal point, featuring discussions on low-temperature curing emulsion polymers, the use of fibrillated cellulose for improved physical and rheological properties in elastomeric coatings, and optimised emulsifiers aimed at more sustainable waterborne alkyd formulations. Intrinsically flame-retardant acrylic and vinylic polymers, along with advanced aqueous acrylic coalescing agents, also stood out as key advancements.

### AUTOMOTIVE AND POLYURETHANE COATINGS

The automotive coatings sessions explored AI-driven batch optimisation, high-performance ingredients for industrial coat-



Source: Thomas Geiger

There are two more days at the ECS Conference with plenty of highlights.

ings, and the latest in ultra-thin effect pigment technology. A novel method for correlating contact angles with adhesion performance was introduced, alongside discussions on regulatory obligations under ESPR and CSRD. Research on two-component acrylic clear coats provided further insights into optimising performance. Polyurethane coatings also saw notable advancements, with presentations on hybrid

iron oxide-zinc oxide pigments for enhanced stability and UV resistance, high-performance acrylic polyol dispersions, and sustainable polyurethane floor coatings. Further discussions covered CNSL-based polyols for low VOC formulations, tannic acid-modified waterborne polyurethane resins, and comparative analyses of itaconic-based versus conventional acrylic resins. With such a wealth of technical discussions and presentations,

the conference set the stage for knowledge exchange and industry progress. The insights gained from these sessions highlighted key trends driving the coatings industry towards sustainability, regulatory compliance, and high-performance solutions for diverse applications.

### HAVE A LOOK AT THE COMPLETE PROGRAMME

<https://digital.european-coatings-show.com/program>

THINKING OF TOMORROW

## Omya's Formulation Intelligence: the Flexshuttle

The first fully automated formulation laboratory in the mineral industry, now pioneering AI



**HALL 3C, BOOTH 114**

## AT A GLANCE: WHAT, WHEN, WHERE

**Today's show and conference highlights**  
**European Coatings Show**

**Product Presentations**  
 Hall 3, Stand 3-742, 9:50 - 16:50 h  
 Hall 5, Stand 5-243, 9:50 - 16:50 h

**European Coatings Show Conference**  
 Conference Centre NCC Ost

**Morning Sessions 9:00 - 12:30 h**  
 Digitalisation · Functional Coatings II · Wood Coatings · Water-based Coatings II · Printing Inks · Construction Chemicals I

**Afternoon Sessions 13:30 - 17:00 h**  
 Bio-based Coatings I · Protective Coatings · Architectural Coatings I · Industrial Coatings I · PFAS Alternatives · Construction Chemicals II

## GETTING DIGITAL

Everything you need

The official ECS website and the app offer all the information you need for your visit of the European Coatings Show and the ECS Conference.



You will find the exhibitor directory, the full conference programme and many other facts at the ECS website. A new feature is the "My ECS" area. There you will find all the exhibitors, all the products, the full programme from the halls and the conference. You can also see who is attending and make appointments. Another helpful tool is the official European Coatings Show app. This app is free of charge and available for download on iPhones, iPads, and Android devices. MyECS and the app are 100% synchronised, so you have everything with you in the app. The app provides a full list of exhibitors and a digital map of the show floor. It includes an advanced search that allows

you to browse by exhibitor and product. Search results can be filtered not only alphabetically but also by country, category, and hall. The app could also be useful if you're attending the European Coatings Show Conference, as it includes a digital timetable. It allows you to create your own personal conference agenda and to browse abstracts. The app features a "My ECS" area as well as the website. You can also take advantage of the app's badge scanning feature to digitally capture contact information, removing the need for physical business cards. Additionally you can always have a look at our ECS page on LinkedIn, where you get information during and after the event.

## "BIO-BASED INGREDIENTS DO NOT NECESSARILY HAVE A BETTER PCF"

There is still a lot of scope to replace fossil-based components



Dr Toine Biemans  
Worlée Chemie  
Stand 3-619

**Dr Toine Biemans, Manager Sustainability and Scientific academic partnerships at Worlée Chemie, discusses how consumer preferences impact bio-based coating development and how resin sustainability can be enhanced.**

### How do consumer preferences for eco-friendly coatings impact bio-based coating R&D?

Until recently, eco-friendly coatings were more or less synonymous with using bio-based ingredients. But now some customers are additionally asking for carbon footprint data. And as it turns out, bio-based raw materials do not necessarily have a better carbon footprint: At least in a cradle to gate approach and not considering biogenic storage of CO<sub>2</sub>. So this potentially leads to a divergence of eco-friendly coating resin development: bio-based as well as low-PCF coating resins.

**What are the main challenges for R&D in this area?** The challenge is to satisfy all customers without exponentially expanding our product portfolio. We achieve this by incorporating PCF considerations in our product R&D and by working closely with our suppli-



ers to try and find raw materials that are bio-based and contribute to a low PCF.

**Where do you see the biggest need and opportunity for future development work?** Alkyd resins have a high bio-based content as they are based on vegetable oils. We saw an opportunity some time ago to replace these oils with more sustainably grown oils,

which reduces the PCF. Sustainable resin development can benefit from more such opportunities. One of the biggest needs is to replace fossil-based aromatic components such as phthalic anhydride with more sustainable, bio-based substances. Fortunately, we have soon-to-be commercialised collaborations to address this need.

DÖRKEN

Find us in  
Nuremberg at the  
**ECS 2025**  
25. - 27.03.25  
Hall 3C  
Booth 3C-126

## COLORANTS & COMPONENTS

### OUR NEW MISSION BIOCIDE-FREE PIONEER

2

Areas that are perfectly tailored to your requirements.

DÖRKEN is your reliable partner when it comes to pigment pastes and customised solutions for tinting systems. The new name describes our expertise even better in future. By 'colorants' we mean our various pigment pastes for a wide range of applications. In addition, with our 'components' we create the basis for biocide-free, water-based pastes, dispersions, paints, plasters and other coatings. We also offer microbiological services as well as support and know-how transfer in formulation development. Do you have any questions? Just get in touch with us.

Contact us!

COLORANTS & COMPONENTS

# TOGETHER FOR A COMMON GOAL

Prof. Katja Loos, University of Groningen, and Dr Frank Brouwer, Stahl, about ways to achieve a sustainable coatings industry

This year's ECS Conference was opened by two keynote speakers – a first in its history. Prof. Katja Loos, University of Groningen, and Dr Frank Brouwer, Renewable Chemistry Specialist at Stahl, spoke in the Plenary Session about how the coatings industry can manage the transition to a more sustainable future.



Prof. Katja Loos and Dr Frank Brouwer emphasised collaboration to achieve the transition towards a sustainable coatings industry.

Coming from two different directions, both speakers highlighted the importance of collaboration of academia and industry.

### You research dynamic polymers. How can they help make the coatings industry more sustainable?

**Katja Loos:** Dynamic polymers are a class of materials that contain reversible chemical bonds, allowing them to respond to external triggers like heat, light, or mechanical stress. These bonds can break and reform, making the material adaptable, self-healing, or recyclable. This unique ability positions dynamic polymers as a key enabler in making the coatings industry more sustainable.

In traditional coatings, once applied and cured, materials are often difficult to remove or recycle, contributing to waste and environmental impact. Dynamic polymers, however, offer coatings that can be reshaped, removed on demand, or reprocessed without losing functionality. This supports a circular economy by enabling more efficient material use, easier maintenance, and end-of-life disassembly. Furthermore, they can reduce dependence on harmful additives and volatile organic compounds, lowering

the environmental footprint during production and application. Dynamic polymers also offer significant advantages in 3D printing. Their adaptable chemistry allows precise, layer-by-layer deposition and reprocessing, making them ideal for high-performance applications that demand durability, repairability, and minimal waste. Their use in additive manufacturing promotes design flexibility and recyclability – materials can be reshaped or reused rather than discarded.

### Where do you see the greatest potential?

**Katja Loos:** The greatest potential lies in developing advanced coatings that combine performance with sustainability – such as recyclable thermoset resins, water-borne systems etc. These innovations can significantly lower the carbon footprint of the coatings industry.

### In which application area do you see the greatest opportunities?

**Katja Loos:** We see the biggest opportunities in application areas that combine high durability with increasing sustainability demands – like construction, automotive, and industrial printing. These sectors are pushing for solutions that are both functional and eco-friendly. Dynamic polymers provide exactly that, offering the flexibility, performance, and sustainability needed to shape the next generation of coatings and materials.

### You have been campaigning for a sustainable paint and coatings industry for several years. What are the key levers for this transformation?

**Frank Brouwer:** Sustainability in the coatings industry is not just about meeting regulations – it's about redefining the industry itself. Therefore, the European Green Deal from the European Commission isn't a compliance hurdle; it's our chance to redefine an industry through passion, partnerships, adventurous spirit, and innovation. We believe real transformation

happens when we move beyond purely technical solutions and embrace a broader approach that includes ESG principles, long-term vision, and customer engagement. Setting clear goals and ensuring that stakeholders are well-informed are key to scaling these efforts. Just as "The Impossible Project" reimagined analog photography for a sustainable digital age, we're modernising coatings chemistry by preserving core expertise while embracing renewable carbon – a balance critical for EU industries navigating their own transitions. Innovation is a major driver in this transition, particularly in clean-tech and renewable-based solutions. The recently signed Clean Industrial Deal aligns closely with our strategy, focusing on renewable materials, circular processes, and supporting research on next-generation raw materials to accelerate sustainable development. For example, through the EU-funded Champion project, we pioneered aza-Michael addition

chemistry to create high-performance bio-based polymers that are circular by design.

### How important are renewable carbon and digitalisation?

**Frank Brouwer:** Renewable carbon is a crucial element in reducing the industry's reliance on fossil resources. The Clean Industrial Deal actively supports the shift to bio-based and recycled raw materials, fostering innovation to create sustainable alternatives to fossil-derived polymers. Stahl is already advancing in this direction, with innovations, which replaces petroleum-based chemicals with renewable alternatives. Digitalisation is equally important. AI and machine learning accelerate high-throughput screening of bio-based raw materials and enable advanced design-of-experiments (DoE), reducing trial-and-error cycles. Besides, we are working with digital solutions that support the integration of various tools and capabilities to streamline and accelerate the research

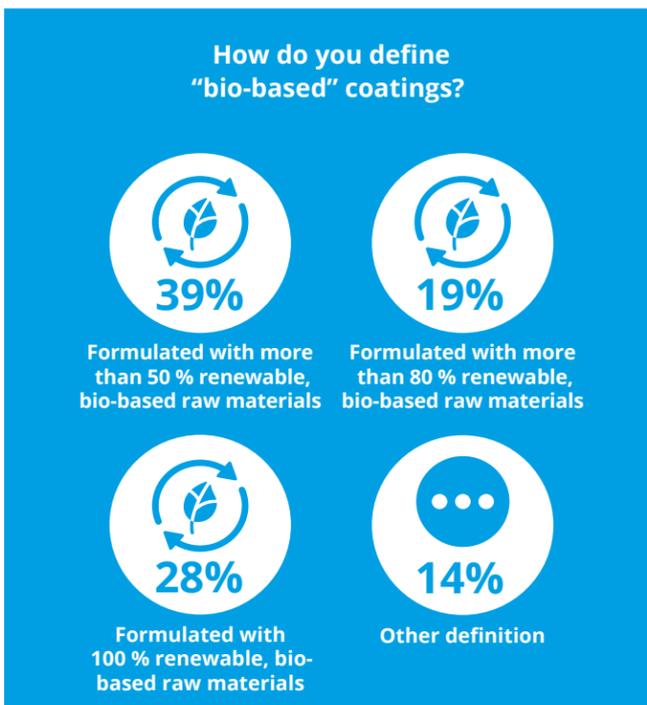
and development process and manages product carbon footprints (PCF), all AI-powered.

### You see collective efforts as very important to achieve the goal. Can you give an example from your environment?

**Frank Brouwer:** Partnerships are fundamental to scaling sustainable initiatives. The Clean Industrial Deal highlights the importance of cross-sector collaboration to de-risk innovation, pool resources for scarce materials, and establish regional recycling networks. We actively engage in such initiatives, working closely with partners to accelerate the transition to a circular economy.

One example is our role as a founding member of the Renewable Carbon Initiative (RCI), which supports the shift from fossil carbon to renewable carbon in all organic chemicals and materials. Additionally, we recently announced our membership in CEFLEX, a collaborative European initiative working to make all flexible packaging fully circular and in line with PPWR. These collective efforts are essential to drive meaningful change across the industry. Systemic challenges require industry-wide coordination, which we address through collaboration, open innovation, and new chemistry partnerships. For instance, our collaboration with Barriertec leverages their expertise in advanced barrier technologies to ensure 100% repulpability & recyclability of fiber based packaging – a synergy identified through our open innovation model, which actively screens companies outside our core to identify breakthrough solutions.

## RESULTS FROM THE ONLINE SURVEY AT THE PLENARY SESSION



\*Multiple answers were possible

# “AI WILL CONTINUE TO PLAY A MAJOR ROLE IN PAINTS AND COATINGS”

ECS Conference Award winner Gaoyuan Zhang talks about his paper based on machine learning

With a colour change predicting process based on machine learning, Gaoyuan Zhang, research student at the Niederrhein University of Applied Sciences, has won the ECS Conference Award 2025 for the most outstanding conference paper. He and his team at the Institute for Coatings and Surface Chemistry show the transformative potential of integrating deep learning in colour prediction, providing substantial benefits in efficiency and sustainability for the coatings industry.

**How did you feel when you found out you had won the ECS Conference Award?** I was surprised, not only that I won the award, but also that the topic of AI won the award. We know that AI is a very advanced topic, but so far, breakthroughs in chemistry have always won the award. This means that AI will probably continue to play a major role in paints and coatings in the future and the industry will become more open to it.

**What is the process that you and your team have developed about?** The colour-matching process involves two main steps that demand significant resources and can introduce errors. First, the paint is mixed and then applied – a complex procedure that can lead to inconsistencies in further measurements. Second, the paint must be dried, either slowly at room temperature, which slows down the entire workflow, or in an oven, which consumes a great deal of energy – an increasing-ly pressing concern today. That's why I developed this method, because it allows us to avoid the two steps of application and drying. This way, we can firstly reduce errors and secondly save energy.



Gaoyuan Zhang, Niederrhein University of Applied Sciences, received the ECS Conference Award from Damir Gagro, Director Content at European Coatings. The award is sponsored by the European Coatings Journal.

**What specific results have you achieved with this new approach?** We found a correlation between the wet colour spectrum and the dry colour spectrum using an AI model, a deep learning model. This allows us to predict the wet colour spectrum based on the dry colour spectrum and vice versa. Depending on the application, we have various possible application options for this. We can accurately predict dry colour spectra from wet-state measurements (and vice versa). This significantly reduces the need for repetitive lab work and energy-intensive drying processes, making colour development faster and more cost-effective.

**Why don't you use Lab or LCh values, i.e. colour coordinates?** We have already tested it, but there is the problem of metamerism. Under different lighting conditions (e.g. sunlight or lamp-light), the colour changes when working with colour coordinates. With the colour spectrum, we avoid the phenomenon of metamerism and always have the right colour.

**Which team worked on the project under your leadership?** I had the idea for the AI model. We divided the work very well in a small team of 3 to 5 people. We not only did the innovative part,

the programming, but also the application, sample production and data collection in the laboratory. We trained the model with the data obtained. There is a lot of work behind it.

**What happens next?** We are now publishing the results of our project i2DACH funded by the German Federal Ministry of Education and Research (BMBF). I hope that this will convince more companies of the method and that we will be able to further develop it. 

# GREAT OPPORTUNITY

Voices from the ECS Conference



“What I expect from the ECS Conference is to be inspired by new approaches to sustainable materials, such as bio-based and biodegradable materials.”

Dr Jan Sütterlin, Covestro



“I expect the conference to cover exciting topics that tie in with what is being taught at the Esslingen University of Applied Sciences, as well as many other interesting topics.”

Ole Persson,  
Esslingen University of Applied Sciences

## THINGS TO DO AND SEE

- Attend the presentation of the ECS Award-winning paper on Tuesday, 9:00 h, Session: Digitalisation.
- Check out the photo box and social media stands at both entrances to the show!
- Find out about the latest novelties! The Product Presentations are located in halls 3 and 5.
- Get connected! Visit the Start-up Area in hall 2.

Quelle: Chatbot: Valerii - stock.adobe.com



## MEET THE EC 360° AI CHATBOT!

Ask any question on coatings and formulation technology – and the AI chatbot will answer it! At the European Coatings stand, you can check out a beta version of the new EC 360° AI chatbot!

All answers from the AI chatbot are based on the wide EC 360° knowledge base including all issues of the European Coatings Journal as well as all books available in the EC Library. Let us know your feedback on EC 360° powered by AI@ECS 2025!

European Coatings  
Stand 3-454

# » DIVE DEEPER

Take a plunge into the EC Library and explore the vast collection of expert knowledge on coatings technology!

## The EC Library covers it all!

- » key coatings raw materials
- » cutting-edge formulation expertise
- » major fields of application
- » insights in testing and measuring
- » basics for industry newcomers

Stop by and see more at the EC SHOW 2025 in Hall 3, Stand 3-454!



Check out the latest additions to the EC Library:

Delfel Gysau  
LAB AUTOMATION AND DIGITALIZATION IN COATINGS

NEW!

Martin Winkler + Ulrich Poth  
FORMULATING HIGH-PERFORMANCE COATINGS

NEW!

FORMULATING HIGH-PERFORMANCE COATINGS



LAB AUTOMATION AND DIGITALIZATION IN COATINGS



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## WHAT'S NEW IN NUREMBERG?

Plenty of novelties to be launched at the ECS

### RAPID HARDNESS WITHOUT GHS LABEL

EPI-REZ resin 7723-W-53 is an advanced water-borne solid epoxy resin dispersion designed to meet the increasing demand for coatings with ultra-low or zero VOC emissions. This product eliminates the need for cosolvents, offering self-coalescence, excellent film formation, shorter drying times, and rapid hardness development

without requiring a GHS label. In protective metal coatings, the new resin, when used with the Epikure 6870-W-53 curing agent, can be formulated into cosolvent-free primers that provide superior corrosion protection. For concrete applications, this resin can be combined with various curing agents to achieve significantly

faster hardness development and comparable adhesion to conventional water-borne liquid epoxy resin systems.

**WESTLAKE EPOXY**  
Stand 5-349  
NL - Portpark  
[www.westlakeepoxy.com](http://www.westlakeepoxy.com)

### COST-SAVING PLASMA COATING TECHNOLOGY

Delta Engineering will showcase its digital printing and plasma coating solutions tailored for the paints and coatings industry at the European Coatings Show 2025. The digital printing technology for plastic pails and containers delivers near in-mould labelling (IML) quality with unmatched design flexibility, minimal waste, and no need

for extensive label inventories. Print exactly what you need, when you need it, with rapid changeovers and easy operation, maximising OEE. Plasma coating technology enables the replacement of expensive metal pails with plasma-coated plastic pails for solvent-based paints and inks, offering significant packaging cost savings.

Further benefits include durability with no rusting or denting during transport or handling, and anti-skinning properties.

**DELTA ENGINEERING**  
Stand 4-610  
BE - Ophasselt  
[www.delta-engineering.be](http://www.delta-engineering.be)

### TAILORED IBC SYSTEMS BEYOND DELIVERY

As the solution provider for IBC systems, Ucon supports its customers throughout the entire value chain of hazardous goods handling. The tailored solutions are based on engineering excellence and effective project management. In-house manu-

facturing capabilities ensure the highest quality standards and a flexible response to individual needs. The company's expertise lies in handling liquids, bulk, and gaseous hazardous goods but the service goes beyond delivery to make sure

IBC systems consistently meet expectations.

**UCON CONTAINER SYSTEM**  
Stand 4A-308  
DE - Hausach  
[www.uconcs.com](http://www.uconcs.com)

### LIQUID ACRYLATE MONOMER FOR GREATER IMPACT RESISTANCE

Photomer 4357 is a new and improved liquid version of Theicta. IGM Resins presents this high-performance acrylate monomer with a unique structure. Key benefits include a liquid form for easier handling, no recrystallisation for better storage stability, and higher elongation for flexibility and impact resistance. It is suitable for applications including:

- > 3D printing for durable, high-precision components.
- > Industrial coatings as protection for wood, metal, and plastics.
- > Adhesives for strong, lasting bonds.
- > Graphic arts for high reactivity and clarity.

**IGM RESINS**  
Stand 3A-607  
NL - Waalwijk  
[www.igmresins.com](http://www.igmresins.com)



Source: IGM Resins.

### THE FIVE FACES OF SUSTAINABILITY WITH FORMULATION INTELLIGENCE

Omya will present an immersive lab that demonstrates how to reformulate products with its AI formulation intelligence. This approach takes into account the key sustainability factors of comfort, de-hazardisation, circularity, decarbonisation and cost/performance optimisation

to support customers in achieving their multi-faceted sustainability goals. This formulation support helps customers meet ESPR & LEED certifications, the United Nations Global Goals as well as any future market requirements.

**OMYA**  
Stand 3C-114  
DE - Cologne  
[www.omya.com/en/industries/paint-and-coatings](http://www.omya.com/en/industries/paint-and-coatings)

### LOWER CARBON WAXES TO REDUCE PRODUCT CARBON FOOTPRINT

Sasol, known for its gas-to-liquid Fischer-Tropsch wax technologies, launches new micronised wax products. Through process improvements the product carbon footprint (PCF) could be reduced by 32% compared to the conventional production process. Sasolwax LC Spray 30 G and Sasolwax LC Spray 30 G-EF offer superior

performance across a variety of inks, paints, and coatings applications, enabling manufacturers to produce high-quality end products based on raw materials with significantly reduced PCF. As they are based on natural gas, they are MOSH/MOAH-free and do not contain any PFAS. The company's underlying calculation for PCF has

undergone critical third-party review, ensuring transparency and reliability in quantifying emissions and conforms with ISO 14040, ISO 14044, and ISO 14067.

**SASOL CHEMICALS**  
Stand 3-156  
DE - Hamburg  
[www.sasol.com](http://www.sasol.com)

### HIGH THROUGHPUT IN ULTRA-FINE GRINDING

The latest addition to the product family is the Dyno-Mill UBM 250. The mill series offers efficient dispersion and ultra-fine grinding and covers the full spectrum - from lab-scale testing to large-scale production - with scalable grinding chamber volumes from 0.5 to 250 l. Engineered for high throughput, the mill supports the newly launched Dyno-Beads and features a wide range of materials for optimal performance. Loading and unloading the mill be-

comes easier, faster and safer with the new bead filling cart. The series of mills sets new standards in efficiency, reliability, and cost-effectiveness.

**WILLY A. BACHOFEN**  
Stand 4-347  
CH - Mulfenz  
[www.wab-group.com](http://www.wab-group.com)



Source: Willy A. Bachofen.

### GREEN ALTERNATIVES TO CONVENTIONAL ADDITIVES

With a bio-based content of 96%, the defoamer Dispelair CF 54 from Blackburn Chemicals offers a green alternative to conventional mineral oil defoamers and is already being used successfully in a wide range of applications. The coalescing agent Casolv V14 from CAS is an alternative to butyl glycol that enables excellent hydrolytically

stable films with high abrasion resistance at wide temperature ranges. There is no odour formation during the evaporation process and no labelling is required. The company also offer lightweight fillers, such as pressure-stable hollow microspheres, which can be used to improve a product's shielding, insulating properties, and the

look and feel. AGXX is an antimicrobial technology for use as a pot preservative. It features legal compliance, low dosage, long-lasting effect and has a wide range of use.

**ALFRED KOCHEN**  
Stand 5-229  
DE - Hamburg  
[www.alfredkochen.de](http://www.alfredkochen.de)

### BIO-BASED POLYMERS FOR LONGER-LASTING COATINGS

Alberdingk Boley will present its latest innovations for longer-lasting architectural coatings with superior colour retention and efflorescence resistance as well as new binders for construction materials. The company produces bio-based polymers for nearly all kinds of applications as well as the

possibility of ISCC+ certified 'biomass balance' variants of well-established products. Products for barrier coatings will help manufacturers move from plastic to paper packing materials. An innovative, self-emulsifying polyol for the preparation of 3-component urethane-concrete will help to

save transportation costs and improve sustainability. And a new line of PUD adhesives provide long-lasting bonds.

**ALBERDINGK BOLEY**  
Stand 1-548  
DE - Krefeld  
[www.alberdingk-boley.com](http://www.alberdingk-boley.com)

# Let's change the status quo!

Go from status quo to #StatusNext at ECS 2025

Meet your inventive partner for hands-on coatings & adhesives solutions! Visit our booth in **Hall 4A, booth 438** and discover what **#StatusNext** means for you.

# KNOWLEDGE TRANSFER AT ITS BEST

Pre-conference tutorials and Plenary Session kick off the ECS Conference

**The first day of the European Coatings Show Conference was full of highlights.**

Yesterday, the event kicked off with a series of six insightful pre-conference tutorials, offering in-depth knowledge on various aspects of the coatings industry. Industry experts and researchers shared their expertise, providing valuable insights to attendees. In a relaxed atmosphere, the participants were able to ask questions and enter into dialogue with the experts.

Dr Toine Biemans of Worlée-Chemie led a tutorial on bio-based coatings, exploring sustainable alternatives and their practical applications. Participants gained a deeper understanding of environmentally friendly coating solutions.

Kerstin Breckner from Fraunhofer IFAM presented on functional coatings, highlighting advanced functionalities and their potential applications across different industries.

For newcomers to the field, Dr Ray Fernando from the California Polytechnic State University conducted a tutorial, titled "Coatings 101", on coatings formulation, covering fundamental principles.

Another tutorial focused on dispersing pigments and fillers – from theory to practice, led by Mike Praw from Indorama Ventures – Indovinya. Attendees explored effective dispersion strategies and practical implementation.

Prof. Christian Schmitz from the University of Applied Sciences Niederrhein provided insights into the fundamentals of water-borne coatings, discussing both the chemical principles and application techniques crucial for formulators.



NürnbergMesse/Frank Bowler (3)



Coatings experts shared their knowledge in the tutorials.



Dr Ulrich Freudenberg, consultant, introduced participants to polyurethane coatings, shedding light on their properties and wide-ranging applications.

### PLENARY AND CONFERENCE SESSIONS

These tutorials set the stage for the main conference, equipping attendees with essential knowledge and fostering valuable discussions with industry experts. Afterwards, the Plenary

Session with two keynotes took place. Dr Frank Brouwer of Stahl gave a talk titled "The impossible project: A journey of transformation" and Prof. Katja Loos from the University of Groningen spoke about "Designing renewable dynamic polymers for circular and advanced applications". Both keynotes centered around the hot topic of sustainability. Following the Plenary Session, six conference sessions took place, covering topics as research insights, water-borne

formulations, functional coatings, automotive coatings, polyurethane coatings and radiation curing technologies. Key advancements included novel epoxy resin formulations, self-cleaning and antimicrobial coatings, PFAS-free nanocomposites, and AI-driven optimisation in automotive coatings. The sessions underscored industry trends towards sustainability, regulatory compliance, and innovative material solutions for various applications.

# TOTALLY WORTH IT

Attendees about their experiences of the pre-conference tutorials



"I attended the tutorial on water-borne coatings, because it is a very interesting topic considering the future going away from organic solvents. It is a complete new world compared to organic solvents and you can play around with a lot of additives and components. You have to do a lot of testing to obtain the best formulation."

Lisa Tilze, Industrie De Nora



"The lecture was well prepared and gave a very good overview of sustainability in resin production, especially in paint production. Although I was hoping to get more information about epoxy resins, I really liked the tutorial on bio-based coatings. It was very informative and gave a good overview of the existing state-of-the-art research."

Johannes Groß, Kanzler Verfahrenstechnik



"I work in technical sales and advise customers. Despite my PhD this tutorial on formulating was perfect for me to help them incorporate our products into their systems."

Yasemin Ilhan, Reaksiyon kimya



"I have just attended the bio-based tutorial and really enjoyed the clear explanations. I got a great insight into the new bio-based chemicals and the latest technical information on bio-based coatings."

Heidi Perez, PLP Coatings



"I chose this tutorial because I am interested in polyurethanes since my company is involved in this field. I am looking for more information for what kind of applications our additives can be used in polyurethanes. It is not easy to formulate polyurethanes, you have to take into account the different aspects that you would like to achieve in your final formulation, so I think its good that experts can give you advice."

Ganna Bastien, MLPC, Arkema

# EXPLORING INNOVATIONS AT THE ECS CONFERENCE

Today's highlights include PFAS alternatives, digitalisation, bio-based and functional solutions

Day two of the ECS Conference brings a diverse programme featuring cutting-edge topics like digitalisation, functional and bio-based coatings, as well as printing inks and construction chemicals.

Source: Thomas Geiger



After each presentation, attendees will have the opportunity to pose their questions.

With six sessions in both the morning and afternoon, today's discussions promise to offer valuable insights for industry professionals. Below is an in-depth outlook on some of the anticipated highlights.

## PFAS ALTERNATIVES

Dr Jonas Friebel from Fraunhofer IFAM will present a study on modifying PAEK polymers with silicone additives to improve their non-stick properties. This research compares these formulations with PTFE and other commercially available alternatives, focusing on essential material attributes such as scratch resistance, adhesion, and impact stability. The session will explore the potential of these advanced materials in applications such as cookware coatings while identifying areas for further research and development. The session also features a presentation by Dr Mireille Poelman from Materia Nova, focusing on the Bio-sushy project. This EU-funded initiative seeks to create safe and sustainable coatings for glass packaging without the use of PFAS. Using sol-gel hybrid technologies, the project targets applications like cosmetic glass

containers, emphasising mechanical durability and fluid repellency. Attendees can expect insights into how these coatings support EU goals for a toxic-free environment and waste reduction through reuse strategies.

## DIGITALISATION

Digitalisation takes center stage as Dr Partha Majumdar of Dow discusses machine learning (ML) in water-borne coatings formulation. Moving beyond traditional design of experiment (DOE) approaches, Dr Majumdar explores the use of adaptive ML techniques to identify optimal

formulations for properties like scuffing, marring, and burnishing. This session highlights the transformative potential of AI in reducing development time and achieving superior performance in coatings systems.

## CONSTRUCTION CHEMICALS

Rafael Pellicciotta from Braskem will explore renewable paint formulations based on sugarcane-derived feedstocks. The development of sustainable paints is gaining significant attention, with a key focus on their renewability. Renewable paints can be formulated using both segregat-

ed and non-segregated renewable feedstocks, often achieving or surpassing the performance of traditional, non-sustainable paints.

## PRINTING INKS

In the printing inks session, Dr Augusta Silva from CITEVE will introduce innovations in bio-based pigment inks for inkjet applications. Developed as part of the EU-funded Waste2Bio-Comp project, these inks aim to replace fossil-based pigments with sustainable alternatives derived from bacterial fermentation. The presentation will



Source: Thomas Geiger

As in 2023, the presentations will offer valuable insights into today's research.

emphasise the environmental benefits of transitioning to bio-based digital printing technologies and the versatility of these inks across applications such as textiles, leather, and paper. This work supports the EU's goal of climate neutrality by 2050 and demonstrates the potential for sustainable alternatives in digital textile printing.

## FUNCTIONAL COATINGS

Dr Andrea Deissenberger of Fraunhofer IFAM will present advancements in functional coatings for hydrogen storage. Her team's research focuses on developing barrier coatings that reduce hydrogen permeability, enabling the use of lightweight materials such as fiber-reinforced plastics in fuel tanks. These coatings, part of the CryoCoat and TransHyDE projects, are designed to meet the demands of hydrogen storage systems in both aerospace and energy applications. This

session will highlight how these innovative coatings can support the transition to hydrogen as a clean energy carrier.

## FURTHER TOPICS TODAY AND TOMORROW

Beyond the above-mentioned highlights, today's conference features sessions on water-based coatings, wood coatings, industrial and architectural coatings.

As the conference moves toward its final day, attendees can look forward to additional sessions on bio-based coatings, testing and measurement, architectural coatings, adhesives and sealants, and grinding and dispersion technologies.

FOR MORE DETAILS ON THE PROGRAMME AND ACCESS TO ABSTRACTS, PLEASE VISIT: [www.european-coatings-show.com/conference](http://www.european-coatings-show.com/conference)

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## INNOVATIONS IN A NUTSHELL

The programme of the Product Presentations today

### HALL 3, STAND 3-742

9:50 - 10:10

**Low viscous bio-based poly isocyanate for coating applications**

Erkan Durgut, Covestro Deutschland, DE

10:10 - 10:30

**Advanced thermal management with graphene hybrid powders**

Dr Tim Hupfeld, Evonik Industries, DE

10:30 - 10:50

**Solutions for architectural paints**

Dr Alex Kröger, Grace, DE

10:50 - 11:10

**Seamlessly transition to sustainable water-borne alkyd resins: a collaborative approach by Perstorp**

Amélie Mourton, Perstorp, SE

11:10 - 11:30

**Cargill's game-changing recycled based polyols for coatings and adhesives**

Karin van der Helm, Cargill, US

11:30 - 11:50

**Take your paint and coating applications to the next level with our biodegradable "Lattice NTC" biopolymer**

Dr Hui Shirley Yang, IFF Industrial Solutions, US

11:50 - 12:10

**Boosting sustainability in architectural paints – "Citrofol" as bio-based coalescent agent**

Christin Jäger, Jungbunzlauer International, CH

12:10 - 12:30

**"Albudur 3003 VP" – a novel, self-emulsifying polyol for urethane concrete**

Oliver Nohr-Vüllings, Alberdingk Boley, DE

13:10 - 13:30

**Pure acrylic for exterior coatings: formulation versatility, durability, and dirt pick-up resistance**

Thomas Bernhofer, Synthomer Deutschland, DE

13:30 - 13:50

**"Aquaflow Eco" – a solid solution for more sustainable rheology modification**

Arjan Schaeffer, Ashland Industries Europe, CH

13:50 - 14:10

**Lamberti comprehensive approach to addressing the food contact paper challenge**

Marco Ubbiali, Lamberti, IT

14:10 - 14:30

**Successful ERP implementation in the paint & coatings industry: Avoid pitfalls, maximise impact, ensure future viability**

Oliver Siepers, development, DE

14:30 - 14:50

**New Low labelled resin blends for epoxy flooring applications**

Patrick Deudon, Westlake Epoxy, NL

14:50 - 15:10

**Next generation multifunctional additives for water-borne paints and coatings**

Giuseppe Sterlicchio, Angus Chemie, FR

15:10 - 15:30

**"Sipomer MAC": Enhance adhesion and corrosion resistance with this innovative monomer**

Dr Diulia Caroline Quites Rodrigues, Syensqo, IT

15:30 - 15:50

**Abrasion resistance improvement : high-Performance additives for a sustainable world**

Maud Basset, Arkema, FR

15:50 - 15:55

**Start-Up Pitches: Introduction and welcome**

Johannes Wurm, BayStartUP, DE

15:55 - 16:03

**Start-up Pitches: Innovative exhaust air purification systems based on plasma and UV-C technology**

Dipl. Ing. Torsten Lühr, DE

16:03 - 16:11

**Start-up Pitches: Micro-dosing technology – miniaturised droplet generators for low-viscosity liquids and process monitoring**

Daniel Föste, droptical, DE

16:11 - 16:19

**Start-up Pitches: Liquid barrier coating solution for the paper industry as a substitute for fossil-based plastics**

Dennis Kleine-Tebbe, Wax Solutions, DE

16:19 - 16:27

**Start-up Pitches: Production planning software for industrial customers in the SaaS model**

Alexander Ebbrecht, Data Lighthouse, DE

16:27 - 16:35

**Start-up Pitches: Bio-based dyes and pigments**

Julie Lacondemine, Pili SAS, FR

16:35 - 16:43

**Start-up Pitches: Dustlight – Particulate matter monitoring and analysis software for occupational safety**

Alexander Ebbrecht, Data Lighthouse

16:19 - 16:27

**Start-up Pitches: Production planning software for industrial customers in the SaaS model**

Till Neumeier, Latai, DE

16:19 - 16:27

**Start-up Pitches: Summary and farewell**

Johannes Wurm, BayStartUP, DE

### HALL 5, STAND 5-243

9:50 - 10:10

**Omyamatt: Leading the way in hazard-free matting for water-based paints**

Akis Mavraganis, Omya, DE

10:10 - 10:30

**"Cab-o-Sil MT-6460" fumed silica: new matting agent for water-borne wood and leather coatings**

Dmitry Fomitchev, Cabot Corporation, US

10:30 - 10:50

**Sustainable and productive solutions for industrial metal**

Ap Heijen, Covestro Deutschland, DE

10:50 - 11:10

**New "Polyresyst S4010C" coating system, combining performance with circular content**

Stijn Roekaerts, Huntsman Belgium, BE

11:10 - 11:30

**Introduction of new polycarbonate diols "Duranol" – water-borne, bio-based, high solid –**

Yusuke Iwata, Asahi Kasei Corporation, JP

11:30 - 11:50

**Build a better formula**

Daan Dewulf, Shamrock Technologies, BE

11:50 - 12:10

**PMU – a Functional Alternative to PTFE**

Björn Tiede, Deuteron, DE

12:10 - 12:30

**Providing specialty raw materials that enhance product value and performance in a sustainable way – an overview**

Dr Shunsuke Chatani, Mitsubishi Chemical Europe, US

13:10 - 13:30

**High Performance additives for sustainable industrial coatings**

Christoph Söffing, Evonik Industries, DE

13:30 - 13:50

**"Necowel 790" – A new water-borne polyester polyol for 2K PU-coatings**

Dr Jan Klesing, ASK Chemicals, DE

13:50 - 14:10

**New coloristic test method for carbon blacks: striving for excellence in quality**

Silvia Witt, Orion Engineered Carbons, DE

14:10 - 14:30

**Evaluation of coatings by using modern testing and analysis methods such as rheology, tribology, particle and powder characterisation, gas adsorption, microscopy and robotics**

Andreas Lutz, Anton Paar Germany, DE

14:30 - 14:50

**Influence of selected rheology additives on viscoelastic properties of moisture-curing adhesives and sealants**

Dr Eva-Maria Kutschmann, Lehmann & Voss, DE

14:50 - 15:10

**Lamberti toolkit for creating WB matt coatings with unique haptics and optical properties**

Stefano Fumagalli, Lamberti, IT

15:10 - 15:30

**"Opti-matt 144": A new binder for premium low sheens and deep tone formulations**

Elke Piron, Brenntag Holding, DE

15:30 - 15:50

**TiO<sub>2</sub> grade for evolving regulatory requirements**

Dr Johan Rommens, Chemours, US

15:50 - 16:10

**Water-based acrylic PSAs for low temperature wash-off labels**

Dr Waldemar Schmidt, Synthomer Deutschland, DE

16:10 - 16:30

**"Spherilex" portfolio for architectural coatings**

Oliver Peters, Evonik Industries, DE

16:30 - 16:50

**PTFE-free texturing agents for powder coatings**

Dr Verena Meyer, Lubrizol Deutschland, DE

16:50 - 17:10

**Introducing "Coatino Notify": stay ahead with real-time regulatory updates**

Gritt Bettcher, Evonik Industries, DE



You can also view the programme of the Product Presentations on the ECS website:

[www.european-coatings-show.com/product-presentations/](http://www.european-coatings-show.com/product-presentations/)



# CHALLENGES AHEAD

An update of the European decorative paint market. By Douglas Bohn, Orr & Boss Consulting

**The decorative paint market in Europe remains challenging. But there are some positive signs that perhaps improvement in the economic environment will begin. The construction industry does remain challenged, and the DIY consumer is more price sensitive than before the pandemic. In 2025, we think the European decorative paint market will be flat.**

We estimate the European paint market to be 4.5 billion litres and EUR 21.1 billion in 2023. Germany, France, Italy, UK, and Spain are the major countries. The downturn in the European decorative paint markets since early 2022 have resulted in shifts in the country positions. Germany is still the largest decorative paint market in Europe, but it is not as strong as previously since the construction market in Germany has declined faster than in other countries. Italy and Spain have had stronger construction markets and thus are grown as percentage of the total European market. Nonetheless, the top five countries of Germany, France, Italy, the UK, and Spain have remained the largest decorative coatings markets in Europe and are above 50 % of the market. The sub-segment split of the market depends upon the country. Overall, we estimate the DIY is 35 % of the European decorative paint market with it being a bit higher in Germany and France and a bit lower in Poland and other Eastern European countries as well as other countries like Portugal.

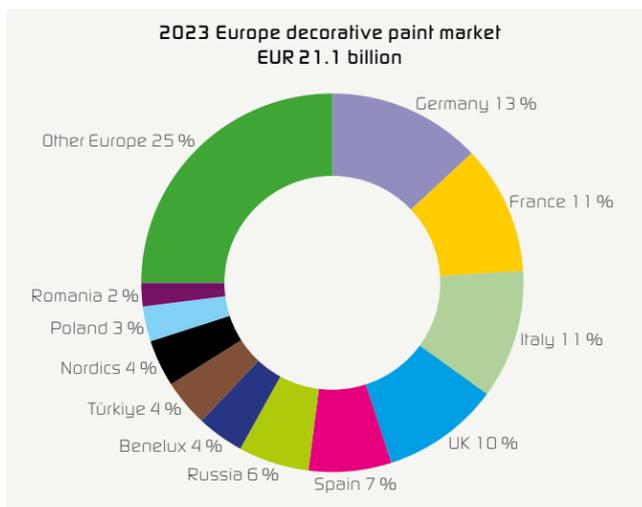
As mentioned above the market has been challenging for the last two and a half years. Starting in early 2022, the market started to decline. Since the peak in 2021, the market is down 15 % in volume terms.

### CONSTRUCTION MARKET

The market decline has been uneven with Germany declining the most while countries like Italy, Spain, Portugal, and other have a done better. The overall market decline has been driven by declining construction activity in Europe. The below two graphs show this. The first graph gives an index of the overall construction market in the EU. As can be seen, the EU construction market has declined nearly every month since February 2022. Recently the market has stabilised but it is still far below where it was in early 2022.

### COUNTRY BY COUNTRY

On a by-country level, the construction market has declined the most in Germany, France, and Poland. Whereas in some of the Southern European countries like Spain, Portugal, and Italy the construction market has shown some slight growth. Of course, new construction and building is not the only factor impacting the decorative paint markets. The DIY as well as the contractor repaint market is by consumer sentiment. Due to the inflationary pressures and relatively high interest rates in the economy now, consumers have been looking for ways to



The European decorative paint market by countries.

decrease their expenses which has resulted in their reducing expenditures on paints. This has resulted in pressuring the decorative paint market in some countries.

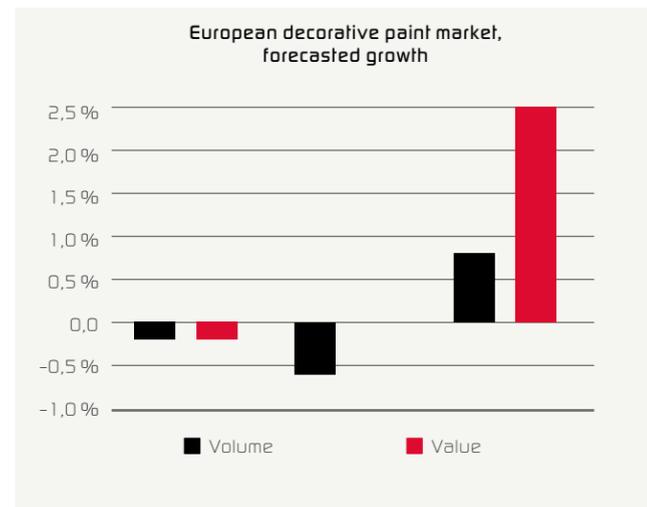
A summary of the decorative paint market in some of the key countries is given below.

**Germany:** The environment in Germany continues to be challenging. The decorative paint market in Germany was among the fastest growing in the 2010s. That growth has resulted in a steeper fall now that the market is declining. The other factors influencing the decorative coatings market are similar as in other markets. Higher prices and interest rates depressing consumer spending and construction. Overall, we think that the decorative paint market volume in Germany may be down 25 % since its peak in 2021.

**France:** The construction in France is also struggling. Building activity and consumer confidence has declined impacting both the new build and the repaint markets. We estimate that the market declined in the 2-4 % volume range in 2023 with a similar decline expected in 2024.

**Spain and Portugal:** In 2023, the Iberian decorative paint market experienced a slight rebound after declining in 2022. As shown in the above chart, the construction and building index showed some growth in 2023. This led to some slight growth in both the Spain and Portugal decorative paint markets.

**Italy:** Italy was growing due to government incentives related to exterior façade renovations. These government incentives ended in 2023. Nonetheless,



Forecasted growth of the European decorative paint market.

there continues to be some slight growth in Italy decorative paint market.

**UK:** In the UK, volume was down an estimated 2 % in 2023. So far, volume is close to flat in 2024.

### FORECAST

The inflationary pressures are easing and interest rates are starting to be reduced. As of the writing of this article, the European Central Bank has made one interest rate reduction. The expectation is that there will be more. This should help normalise the markets and lead to a pickup in the construction markets. Although we think that the rebound will be modest and that it take a number of years for the market to regain the 15 % volume that has been lost since 2021. Given the expected interest rate reductions,

we think that the European decorative paint market will grow by a volume CAGR of 0.8 % through 2029.

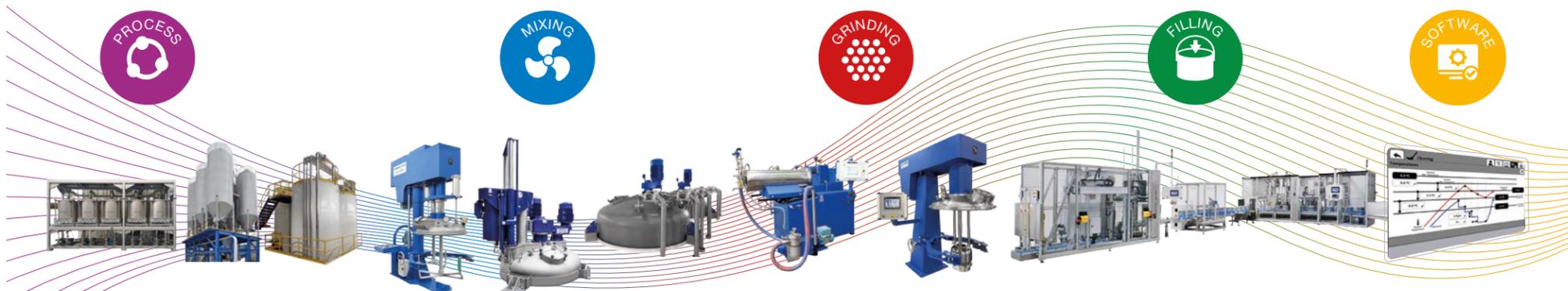
### CONCLUSION

It has been a challenging three years. With the start of the Ukraine war, the 2022 energy crisis and the interest rate increases, the European decorative paint market has declined by 15 % volume since its 2021 peak. We do think that most of the downturn is behind us. Some of the southern European markets are starting to grow like Italy, Spain, and Portugal. The construction markets do remain challenging in Germany, France, Poland, and the other European countries. But we are hopeful that as interest rates are reduced, the construction markets in those countries will benefit.



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VINCENZ

## “RENEWED INTEREST IN WATER-BORNE ALKYDS”

Hybrid resin technologies and multi-functional additives may address key performance challenges of water-borne coatings



Source: varzbed - stock.adobe.com



Dr Ioanna Tzortzi  
Perstorp  
Stand 3C-425

**Dr Ioanna Tzortzi, Associate Specialist in Resins & Coatings Innovation at Perstorp, explains the reasoning behind the primary R&D focus areas in the water-borne coatings sector and how we might address the current limitations in performance.**

**Which is the primary focus in the development of new water-borne coatings currently – new technologies or raw materials?** With the reduction or elimination of solvents, formulators must maximise the intrinsic properties of water-borne resins and additives to overcome performance challenges in water-based systems. Within the resin design context, the focus is on new technologies as well as modifying established resins for water-borne use. For example, there is renewed interest in water-borne alkyds due to their high bio-based content and low VOC potential, leading to advancements in drying time, gloss, adhesion, and corrosion resistance. However, solvent-borne alkyds still dominate the market due to key challenges in emulsification methodology and emulsifier selection, which determine whether a stable water-borne alkyd emulsion can be formed and how it will influence the final coating properties. Alkyds also offer a hybridisation potential with other resin systems, such as polyurethane, acrylics, and epoxies, enabling advancements for high-performance applications.

**What is the biggest limitation for water-borne industrial coatings technically?** The biggest limitation remains their less forgiving application window and performance challenges related to weather durability, adhesion, corrosion and chemical resistance. Water-borne coatings have already been adopted in industrial applications such as au-

tomotive primers and clearcoats, metal components in appliances and machinery, wood and furniture coatings, and electronic devices. These applications benefit from controlled application environments with suitable temperature, humidity and ventilation levels. However, higher application costs can make solvent-borne alternatives more attractive. For heavy-duty applications, coatings must withstand extreme humidity, temperature fluctuations and immersion conditions, requiring high-performance protection against corrosion and chemical resistance – areas where water-borne systems still face limitations.

**How can the performance variations of water-based coatings in different climates be addressed?** Water-borne coatings are highly sensitive to climatic conditions, affecting application, durability and performance. Hybrid resin technologies and multi-functional additives may address these challenges by enhancing resistance to temperature fluctuations, humidity and UV exposure. This could expand their application window, ensuring suitable film formation, performance and durability across diverse climate conditions. Given the environmental variability, climate-specific formulations and optimised application periods may also be necessary. Ongoing research remains essential to validate and refine these solutions.



**HALL 1  
 BOOTH  
 225**

# EVERYTHING NEW

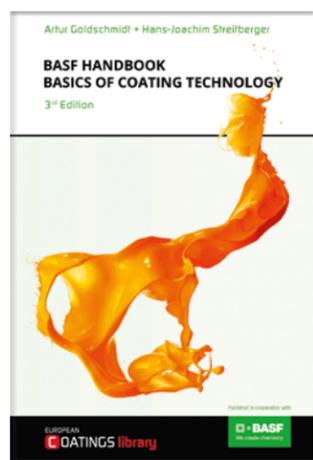
The EC Library features works by experts in the global coatings and raw materials industry, offering both general and specialised coverage of coatings technology. You can explore all of them at stand 454 in hall 3. Come and visit us!



## WATER-BASED ACRYLIC DISPERSIONS

**Roland Baumstark, Roelof Balk**  
 2<sup>nd</sup> Edition

Water-based polyacrylates, as emulsion binders, dispersing resins or thickening polymers, are nowadays impossible to do without as raw materials in the paint and coatings industry. In its second, updated edition this standard work offers a clear and comprehensive overview of everything one needs to know about the various types of binders, systems and test methods associated with the application of water-based acrylic dispersions in architectural coating systems. Essential for novices to the technology or those switching specialisms, along with students and experts who wish to expand and deepen their knowledge about the formulation and testing of water-based acrylic dispersions.



## BASF HANDBOOK

**Hans-Joachim Streitberger, Artur Goldschmidt**

The industry's most comprehensive handbook – now available in its 3<sup>rd</sup> edition: the BASF Handbook covers the entire spectrum from coatings formulation and relevant production processes through to practical application aspects. It takes a journey through the industry's various sectors, placing special emphasis on automotive coating and industrial coating in general. The new edition has been completely updated, featuring several new sections on nanoproductions, low-emissions, biobased materials, wind turbine coating, and smart coatings.



## LAB AUTOMATION AND DIGITALISATION IN COATINGS

**Detlef Gysau**  
 1<sup>st</sup> Edition

How are the megatrends automation and digitalisation changing the coatings industry and in which areas are new technologies already being implemented? Curated specifically for coatings professionals, this book provides an in-depth exploration of how cutting-edge technologies are currently transforming the industry.



## FORMULATING HIGH-PERFORMANCE COATINGS

**Martin Winkler and Ulrich Poth**  
 1<sup>st</sup> Edition

Looking to master the art and science of modern coatings formulation? This textbook is your ultimate guide to understanding the complex world of coatings technology. From achieving stable colour effects to ensuring robust corrosion protection, the book dives deep into the chemical and physical principles that define the performance of coating systems. It offers a clear and structured approach to understanding the role of individual components, their interactions, and how production and application processes shape the final properties. Whether you're an experienced formulation expert, or a newcomer eager to navigate this fascinating field, this resource provides valuable insights, practical examples, and strategies to tackle common challenges. Students will appreciate its solid foundation, while industry professionals can explore innovative approaches to enhance product quality. With this book, you'll not only expand your knowledge but also gain practical tools to control coating properties, avoid mistakes, and correct defects. Step into the world of modern coatings formulation and take your expertise to the next level!



## SILICON AND NANOTECHNOLOGY FOR COATINGS

**Stefan Sepeur, Gerald Frenzer, Frank Groß**  
 2<sup>nd</sup> Edition

New global challenges in terms of energy, economy, and the need for alternative sources of raw materials are raising various future issues for the field of coatings formulation. This is where silicone chemistry comes into play, offering exciting possibilities and novel properties for coatings systems.

Join the authors on their journey into a world of new raw materials that are sure to be adopted in the next generation of coatings: different types of silicon-based binders are clearly classified along with practical examples and real-life products. Their composition and chemical structures as well as their production and examples of their applications are explained in detail.

Step by step, the authors dive into the various areas of chemistry that make up silicon technology, such as glass, ceramics, nanotechnology, and sol-gel-technology.

Building on their first edition "Nanotechnology", the authors pay particular attention to the field of nanoparticles, offering powerful opportunities to integrate new functions into innovative high-tech coatings.

Delve into this fusion of silicon chemistry and nanotechnology, unlocking innovative, high-tech coatings formulations that are poised to conquer entirely new application markets in the future.

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WE DELIVER SOLUTIONS

# SCIENCE MEETS INDUSTRY

Representatives from several institutes and universities will be at the show and conference

Several well-known universities and institutes in the coatings field are in attendance, many of which have participated in previous ECS events

At the show, you can for instance meet the Niederrhein University of Applied Sciences in Hall 3, stand 3-101. Esslingen University can also be found in the same hall; at the stand 3-301.

The Fraunhofer IFAM has a stand in Hall 4A | 4A-221 and presents various paint-related topics. These include barrier coatings, testing technology, PFAS-free coatings, self-healing coatings, anti-icing and anti-erosion coatings, corrosion protection, and biofunctional surfaces. The range will be supplemented by the topic of sealants and a presentation by the Center for Crosslinked Surface and Coating Technology. Another focus is the development and testing of new raw



Institute of Engineering Science and Technology, and ICPEES – CNRS (Institut de Chimie Physique et de l'Environnement de Strasbourg). Additionally, Johanneum Forschungsgesellschaft, Karlsruher Institut für Technologie, and KU Leuven will participate, along with Leitat Technological Center, Materia Nova, and PFI AS-Research Institute. SINTEF Industry, the Technical University of Denmark, Technische Universität München, TU Bergakademie Freiberg, and the University of Groningen will also be involved. Browse exhibitors and conference.

materials for adhesives, matrix resins and polymeric materials.

### AT THE CONFERENCE

Of course, many universities and institutes are also presenting at the ECS Conference. Various institutions will be represented at the ECS Conference, where they will present their research and findings. These include California Polytechnic State University, CeNTI, the Indian



# ON DISPLAY

Plenty of novelties to be launched at the ECS

## A FINES RECYCLING SYSTEM FOR POWDER COATING

The XTS Compactor is a fines recycling system, designed to effectively reduce waste by compacting fines and enabling them to be reintroduced to the mill as reusable chips. The system sits in line with the mill and only compacts when it is given material. Fines are sent to the compactor via a diverter valve that is connected to the baghouse. The fines are then fed between two large rolls and compacted into a sheet, which is then bro-



Source: Xtrutech.

ken into chips by the breaker unit. This solution to fines waste can offer a 99.5% product yield

by reducing waste. By eliminating the need to reprocess fines through an extruder, it supports businesses to reach their sustainability targets, reduce cost to landfill waste, and improve production capacity.

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[www.xtrutech.com](http://www.xtrutech.com)

## BIO-DEGRADABLE MULTIFUNCTIONAL ADDITIVES

Advancion has launched its next-generation portfolio of multifunctional additives based on its new aminoamy alcohol technology platform. The new multifunctional additives are readily bio-degradable and op-

timised for use in various end-use applications. Optimine is specifically engineered to deliver performance exceeding that of AMP in formulations across all known market applications while simultaneously providing

a best-in-class safety and toxicity profile.

**ADVANCION**  
Stand 3A-426  
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[www.advancionsciences.com](http://www.advancionsciences.com)

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**VINCENTZ**

## WHAT'S NEW IN NUREMBERG?

Plenty of novelties to be launched at the ECS

### BIO-BASED CARBON WITHOUT COMPROMISE

Ucecoat 7997 is an eco-friendly, all-round polyurethane dispersion derived from renewable feedstocks. The dispersion has a 39% "Better Carbon" content, of which 15% is bio-based carbon certified by ASTM D6866. It is solvent-free, APEO-free, and doesn't contain organic tin

compounds. It's ideal for clear and pigmented coatings, wood furniture and doors.

Key features:

- > renewable feedstocks, solvent-free, APEO-free, and a very good performance-cost balance
- > tack-free after water evapora-

tion, quick curing, sustainable, and adheres well to wood > suitable for various application methods

**ALLNEX**

Stand 1-339  
NL - Bergen op Zoom  
[www.allnex.com](http://www.allnex.com)

### HIGH-TEMPERATURE RESISTANT SILICONE BINDER

Momentive's CoatOSil P905 is an innovative 50 wt% solids emulsion of phenyl-methyl silicone, designed to meet stringent regulatory requirements with less than 1 wt% solvent content. It is an excellent candidate for formulating water-borne high-temperature resistant coatings, offering exceptional thermal resistance up to 600 °C in combination with

pigments. The emulsion can be used as a sole or co-binder, providing excellent adhesion, corrosion resistance, and a balanced combination of hardness and flexibility in several applications across household and industrial heaters, ovens, furnaces, automotive mufflers, exhausts, and pipelines. Unlike traditional organic-resin based coatings, which struggle at tem-

peratures above 150-200 °C, the emulsion can ensure superior performance and durability where high-temperature resistance and sustainability are required.

**MOMENTIVE PERFORMANCE MATERIALS**

Stand 3-444  
US - Niskayuna  
[www.momentive.com](http://www.momentive.com)

### BOOST R&D AND STREAMLINE QA/QC WITH NEW ANALYSER

PowMaster is a next-generation analyser for the comprehensive characterisation of powdered materials. Its measurement concept is ideal for particles with complex structures. Using two independent, non-optical techniques, the analyser directly measures the mass (in femtograms; 10<sup>-15</sup> g) and diameter of single particles, eliminating assumptions about shape, density, or aggregate level as required by traditional methods. From pigments to fillers, this



Source: Femtog.

index. A full scan takes less than 10 minutes, making it ideal for both routine QA/QC and fast-paced R&D. With versatile sample preparation or direct sampling, PowMaster probes particle size, structure, stability of encapsulated particles, and more - delivering application-specific insights.

**FEMTOG**

Stand 2-532  
CH - Zurich  
[www.femtoG.com](http://www.femtoG.com)

device analyses complex materials regardless of their chemical composition or refractive

### FLUROSURFACTANT-FREE SOLUTION FOR ARCHITECTURAL PAINTS

Developed as an alternative to fluorosurfactants in water-borne architectural paint formulations, Rhodoline HBR enables paint formulations to meet increasingly stringent regulatory requirements while providing exceptional early hot block resistance without inhibiting performance. Beyond hot

block resistance, the product provides excellent dirt pick-up and stain resistance, along with very good wetting properties. Its fluorosurfactant-free and APE-free composition, along with its low VOC levels, ensure it meets stringent sustainability and regulatory requirements. Suitable for various types of

formulations, it provides reliable performance and compatibility across a variety of lattices and neutral-based paints.

**SYENSQO**

Stand 1-420  
IT - Bollate  
[www.syensqo.com](http://www.syensqo.com)

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## ON DISPLAY

Plenty of novelties to be launched at the ECS

### ENERGY-EFFICIENT PUMP THAT MEETS FUTURE IE5 STANDARDS

The Quantm is an electric double diaphragm pump designed to meet the growing demand for sustainable technologies. Compared to conventional air-operated double diaphragm pumps (AODDs), it offers numerous advantages, reducing energy consumption and op-

erating costs, while lowering the carbon footprint. Powered by its FluxCore motor, it generates up to 8 times more torque at low speeds while saving space. It is easy to clean, maintenance-friendly, and highly energy-efficient, already meeting tomorrow's IE5 standards.

Compared to traditional pump designs, the new series offers clear advantages.

#### UNI-FÖRDERTECHNIK

Stand 4-151  
DE - Salzgitter  
[www.uni-f.de](http://www.uni-f.de)

### NEW TMP-FREE, UNIVERSAL TITANIUM DIOXIDE GRADE

The Chemours Company introduces Ti-Pure TS-6706. This is a TMP- and TME-free, universal titanium dioxide grade for coatings applications, suitable for water-borne, solvent-borne, and powder formulations. The new TiO<sub>2</sub> grade helps coatings producers prepare for an

evolving regulatory landscape by providing a TMP- and TME-free alternative to the universal grade R-706. It features the same durability, undertone, and universal properties and can be used as a replacement for that grade with minimal reformulation efforts. It also

provides flexibility and reliability for applications and formulations where appearance is critical.

#### CHEMOURS

Stand 5-265  
US - Wilmington  
[www.tipure.com/en/](http://www.tipure.com/en/)

### EFFICIENT COLOURANTS THAT SAVE TIME AND MONEY

Holland Colours, a leading supplier of colouring solutions, is launching a new range of solid colourants, designed to enhance efficiency during paint production. This innovation marks a significant step towards a cleaner, faster and more flexible production environment, using less energy and contributing to a reduced carbon footprint. Holcopearl (for solvent-based coatings) and Holcoprill (for water-based coatings) give advantages over traditional liquid or powder pigment alternatives. They offer superior consistency at QC, flexibility of batch size, faster processing



Source: Holland Colours.

time, no milling step, less cleaning and an overall reduction in production costs.

#### HOLLAND COLOURS

Stand 3C-106  
NL - Apeldoorn  
[www.hollandcolours.com](http://www.hollandcolours.com)

### HIGH-TECH COATINGS AND SUSTAINABLE SOLUTIONS

Sicrylates show an impressive requirement profile and represent a new era in material development. The materials are based on sol-gel technology and are characterised by their high strength, extreme temperature resistance and outstanding flexibility. This unique

combination makes these binders the ideal candidate for use in areas such as aerospace, medicine, electronics and automotive engineering. Pilot projects in the field of stainless steel and concrete block coatings have shown the potential to set new standards. The

products, made from sustainable raw materials, are 100% recyclable and contain neither microplastics nor PFAS.

#### NANO-X

Stand 1-514  
DE - Saarbrücken  
[www.nano-x.de](http://www.nano-x.de)

### STRONG ADHESIVE, CLEAN REMOVAL

Synthomer unveils Plextol RecyClear, a water-based acrylic pressure-sensitive adhesive for PET bottle recycling. This product offers a reliable, solvent-free option for filmic labels, with strong anchorage to BOPP or PET foil, balanced peel and tack properties, and excellent water and blush resistance.

Engineered for PET bottles, the new adhesive washes off cleanly as per European recycling standards, maintaining wash water and PET flake quality. Removal at low temperatures (down to 65 °C) enhances energy efficiency. The innovative pressure-sensitive adhesive supports the recycling industry,

offering customisable solutions compatible with various coater types.

#### SYNTHOMER

Stand 2-222  
DE - Marl  
[www.synthomer.com](http://www.synthomer.com)

### VERSATILE LAB DISSOLVER THAT DELIVER CONSISTENT RESULTS

VMA-Getzmann presents the completely redesigned Dispermat CV3evo, a new generation of laboratory dissolvers developed for demanding applications in laboratories, research institutions and quality control. In addition to its primary function as a disperser, the modular function means it can also be used as a vertical bead mill, basket mill, vacuum disperser or homogeniser with the SR rotor-stator system. The powerful 0.75 kW three-phase motor enables speeds from 0 to

20,000 rpm. The newly developed control panel, made of highly resistant special glass, is intuitive to operate and makes it easy to control the device and monitor all process parameters. The robust design and modular architecture ensure flexibility and consistent results.

#### VMA-GETZMANN

Stand 4-114  
DE - Reichshof  
[www.vma-getzmann.de](http://www.vma-getzmann.de)



Source: VMA-Getzmann.



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NÜRNBERG MESSE



VINCENTZ

# “THERE IS NO ONE-SIZE-FITS-ALL SOLUTION”

There are a lot of hurdles to conquer for new preservatives for paints and coatings



Nicolas Gallacier  
Lanxess Material Protection  
Products business  
Stand 4A-138

**Nicolas Gallacier, Global Business Director at Lanxess Material Protection Products business unit, gives detailed insights in the challenges of preservation in paints and coatings.**

**What is the main driver of R&D in biocides?** R&D in biocides is heavily influenced by regulatory pressure in Europe. We see some technical-driven developments, like slow-release technologies, but the high costs and stringent data requirements under the Biocides Product Regulation (BPR) hinder innovation. Constantly changing regulations make investing in new active substances risky and unpredictable. The repeatedly postponed Review Program distorts competition, with some substances under evaluation for over 15 years, and only a few companies carrying the financial burden. However, some companies in the paints industry are gradually aligning their purchasing focus with their R&D and regulatory interests, fostering partnerships with BPR Review Participants for a sustainable R&D.

**How safely and reliably are water-based coatings still protected against bacteria, fungi and yeasts?** The reduced number of active substances and low-



Source: ggw - stock.adobe.com

**How can/will eventually resistance to microbes be countered in the future?** Increased restrictions for biocides push some end-users to seek alternatives or try to avoid using biocides in some products, for instance, high alkaline paints for DIY uses or additives with unclaimed antimicrobial efficacy. Those approaches could raise concerns about either safe use or long-term resistance to microorganisms, as water-based industrial products need proper and sustainable preservation systems. Only biocide solutions evaluated and registered under the BPR provide both proven effectiveness against target organisms and safe use for human health and environment. To deal with this increased complexity, our proven approach is to preserve raw materials and intermediates using our product range during production, followed by degradation and gentler after-preservation. ☺

er concentration limits raise concerns about preservation system quality. Addressing this requires a holistic view of biocide use in paint factories and understanding the value chain: which preservation system does the polymer emulsions supplier use? What is the water supply quality? What is

the plant hygiene strategy? There is no one-size-fits-all solution. Implementing an efficient preservation system must include plant hygiene measures, continuous monitoring, efficient cleaning, and early detection from the water tank to raw materials, blending, and filling lines to ensure

contamination-free water-based coatings. The “Control, Detect, Prevent” concept by Lanxess supports the coatings industry in achieving high protection levels against bacteria, mold and yeasts throughout the manufacturing chain while considering market and regulatory challenges.

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## INSIGHTS INTO UV CURING

Interview on latest developments in UV curing



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Dawn Skinner  
Excelitas Technologies  
Stand 4-531

**Dawn Skinner, Process Development Manager, Excelitas Technologies, gives insight into trends and challenges in UV curing.**

**What technological developments are currently influencing the performance and efficiency of UV-curing lamps in the field of coating curing?**

UV output and total UV power continue to improve every year for UV LED curing, opening the door to new high-performance applications. In addition to technological advances, innovations in coating formulation for UV LED technology have evolved significantly. There are a growing number of suppliers developing coatings that work well with UV LED light sources. Customers increasingly require process control via real-time monitoring of UV LED curing lamps. Even in facilities with human operators, customers want to be notified about curing issues immediately in order to minimise down-time and scrap.

Consistent curing and process control are key. Real-time monitoring provides in-line LED monitoring without having to shut down production lines. Any outage is communicated electronically in real time. Smart detection technologies are now available that continually monitor the curing power coming from the LEDs and detect when there is a fault. If the lamp is not performing as expected, an immediate notification can be sent to minimise down-time and scrap.

**“To develop a successful UV curing process the coating formulation and the UV lamp system should work in partnership.”**

**What specific requirements do coating formulations place on UV-curing lamps, for instance concerning new binders and photoinitiators?**

To develop a successful UV curing process the coating formulation and the UV lamp system should work in partnership. For an efficient UV polymerisation process, it is important to select the UV lamp spectral output which most closely matches the absorption profile of the photoinitiator package in the coating formulation. In addition, it is important to understand how the formulation responds to both the irradiance of the UV delivered from the UV lamp system and the total energy that the coating is exposed to during the UV curing process. Then the appropriate power of UV lamp can

be selected and the position of the lamp relative to the coating can be optimised to make sure that the exposure conditions meet the specification. New photoinitiators which have enhanced absorption at the specific wavelengths of the UV lamp systems are always welcome.

**How does UV curing contribute to reducing energy consumption and increasing efficiency?**

UV curing delivers the energy directly to where it is needed, that is the coating itself, to initiate the cross-linking process. UV curing is often carried at room temperature so eliminating the need for heating and cooling of substrates and therefore reducing the energy consumption compared to thermal curing processes. The compact design of the UV installation, together with the fast reactivity of the UV process, means that the UV system has a smaller footprint and enables additional processing of the material to take place in-line; improving the overall efficiency of the coating process. UV LED curing systems require significantly less energy than traditional drying methods, contributing to lower electricity usage up to 85% and a substantial decrease in carbon emissions. Unlike conventional curing methods that can release volatile organic compounds (VOCs) into the atmosphere.

## A CITY OF HISTORY, CULTURE, AND CULINARY DELIGHTS

There are lots of things to do and enjoy in Nuremberg

Nuremberg, located in Bavaria, Germany, is a city rich in history, cultural heritage, and culinary traditions. Known for its medieval charm and significance in modern history, it attracts visitors from around the world.

**N**uremberg was a major hub of the Holy Roman Empire, often serving as the unofficial capital. The city flourished during the Middle Ages as a center for trade, craftsmanship, and art. During World War II, it became infamous as a Nazi stronghold and later the site of the Nuremberg Trials, where key war criminals were prosecuted. Today, the city balances its past with a commitment to remembrance and education.

### MUST-SEE ATTRACTIONS

- > **Imperial Castle (Kaiserburg):** A stunning medieval fortress offering panoramic views of the city.
- > **Old Town (Altstadt):** Featuring half-timbered houses, the Hauptmarkt (main market square), and St. Lorenz Church.
- > **Nazi Party Rally Grounds:** A historical site reflecting Germany's efforts to confront its past.
- > **Germanisches Nationalmuseum:** The largest museum of German cultural history.
- > **Nuremberg Trials Memorial:** An exhibit in Courtroom 600, where the trials took place.

### CULINARY HIGHLIGHTS

Nuremberg is famous for its food, especially:

- > **Nuremberg Bratwurst:** Small, flavorful sausages traditionally served with sauerkraut or potato salad.
  - > **Lebkuchen:** A spiced gingerbread that has been a specialty since the Middle Ages.
  - > **Schäuferle:** A Franconian dish of slow-roasted pork shoulder with crispy skin.
- With its rich history, stunning sights, and delicious cuisine, Nuremberg is a must-visit destination in Germany. Whether exploring its medieval streets or indulging in local specialties, visitors will find plenty to enjoy.

More information can be found at: <https://tourismus.nuernberg.de/en/>

## FROM BRATWURST TO TRENDY FOOD TRUCKS

Nuremberg's diverse culinary scene

Nuremberg is a city that seamlessly blends tradition with innovation when it comes to food. From hearty Franconian cuisine and award-winning fine dining to a thriving contemporary food scene, the city offers something for every palate.

**I**n 2015, Gault & Millau named Bavaria the most culinary federal state in Germany. Among Nuremberg's culinary highlights is "Essigbrätlein" (18 points, 2 Michelin stars), one of the country's top-tier gourmet restaurants. Fine dining enthusiasts will find exceptional cuisine in various districts, including "Würzhaus" and "Wonka" in St. Johannis, "Zirbelstube" in Worzeldorf, "Entenstuben" in Wöhrd, "Rottner" in Großreuth b. Schweinau, "Koch & Kellner" in Gostenhof, "ZweiSinn" in St. Jobst. Several standout spots are also located in the historic old town, such as "Sebald", "Fischer", "Einzimmer Küche Bar", and "Imperial by Alexander Herrmann".

### TRADITIONAL DELIGHTS

For those seeking classic flavours, Nuremberg's bratwurst kitchens, including "Bratwurstroslein" and "Bratwursthäusle", serve up authentic Franconian sausages. Other beloved traditional eateries, such as "Albrecht-Dürer-Stube" and "Spießgeselle", offer regional specialties made with



fresh, local ingredients from Knoblauchsland, Nuremberg's agricultural region. Signature Franconian dishes like Schäuferle (roasted pork shoulder), carp, asparagus, and spicy horseradish provide a true taste of the region.

### OFF THE BEATEN TRACK

Beyond the classics, Nuremberg's modern food scene is thriving. The city is home to a growing number of trendy burger joints and artisanal coffee roasters, where visitors can often watch skilled baristas and chefs in action. It was here in Nuremberg that Germany's food truck movement first took off, and today, these mobile kitchens are a staple at street food markets and truck round-ups. Since 2015, NürnbergMesse has even hosted a street food convention, highlighting the latest

trends in the industry. For a truly unique experience, Nuremberg is also home to a pretzel drive-in. At "Brezeln Kolb", customers can grab legendary pretzels as early as 2:15 a.m.

### SWEET TREATS

Nuremberg doesn't disappoint when it comes to sweet indulgences. Long-established confectioners like "Konditorei Neef" and "Cafe Beer" are renowned for their exquisite pastries and desserts. For something a little different, "Il Massimo" offers a luxurious fusion of handmade truffle pralines and premium whisky, creating an irresistible gourmet treat. Whether you're drawn to time-honoured recipes or the latest food trends, Nuremberg's culinary landscape is as diverse as it is delicious.



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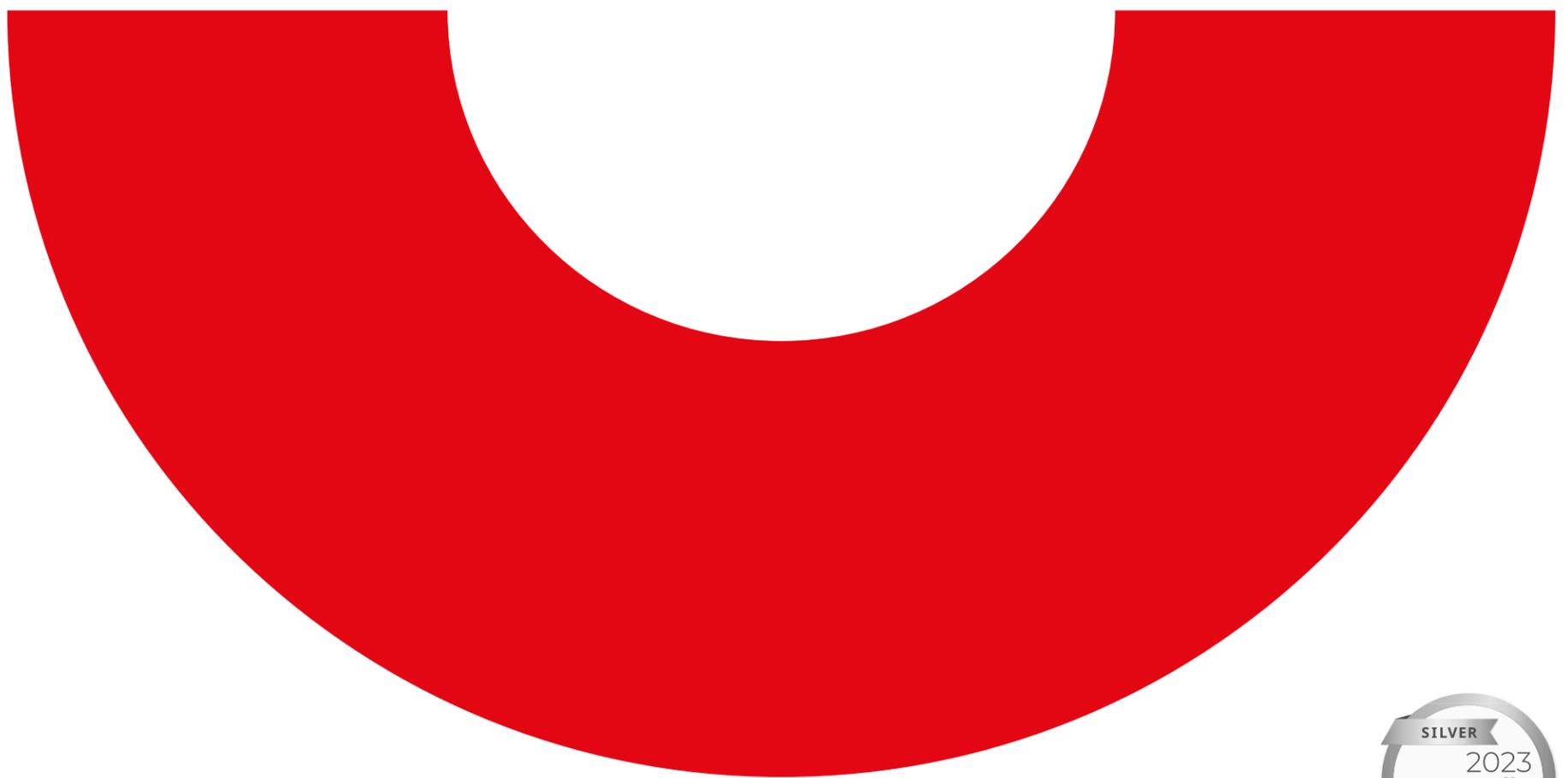
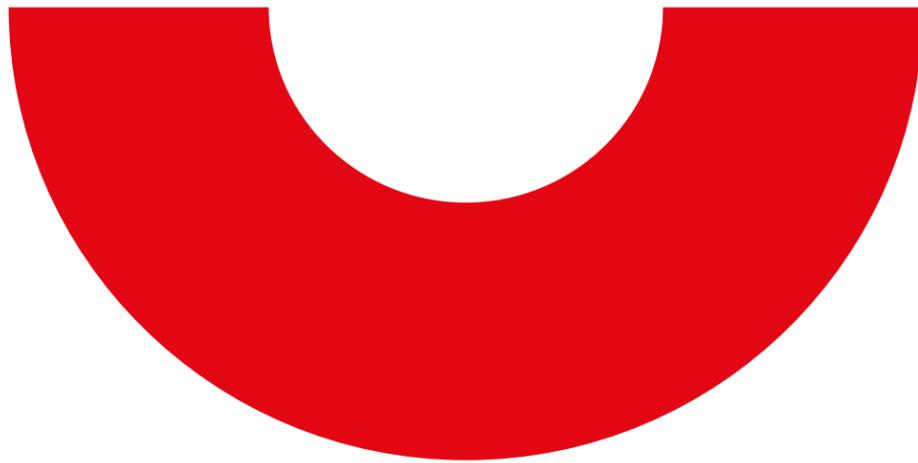
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