

ACS SHOW[®] 2022 DAILY TWO

The Show and Conference Daily | www.american-coatings-show.com | April 6, 2022

Joyful Reunions on the Show Floor

The industry gathers in Indianapolis for the American Coatings Show 2022



Source: ASH Interactive

Safety and Hygiene

For updated information on COVID 19-related hygiene and safety measures, please check the ACS mobile app or website at www.american-coatings-show.com

Happy faces on the show floor: the American Coatings Show opened its doors.

There was a special atmosphere in the air when show visitors and conference attendees alike poured into the Indiana Convention Center yesterday morning. "How have you been," "good to see you again," "long time no see" - these phrases could be heard all over the show floor.

People's happiness about their reunions with colleagues and acquaintances was obvious when the doors opened for the seventh edition of the American Coatings Show and Conference, which are being held concurrently for the first time.

The ACS 2022, organized by the American Coatings Association (ACA) in collaboration with Vincentz Network (VN), once again demonstrates the trade

show's importance for the coatings industry - even more after a break of four years, due to the global pandemic. More than 100,000 square feet of exhibit space are occupied, with 365 exhibitors showing their novelties in terms of coatings raw materials, technologies, equipment and services.

"We are excited to see the industry come together for the ACS again. The exhibitors' booths, conference and show attendees, and new ACS branding are all coming together to provide an energizing experience for all involved," said Cheryl Matthews, Vice President, Events & Expositions at ACA.

"It was a very exciting first day on the show floor and in the conference area. We've already had great feedback from

our exhibitors and attendees," added Kristina Wilger, Director of Event Management at Vincentz Network. "The poster and networking session rounded off the first day just perfectly."

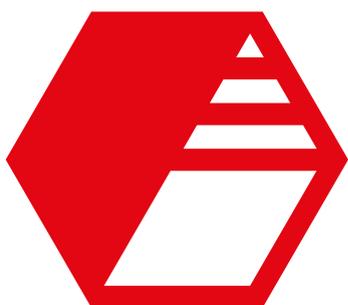
The Product Presentations on the show floor were well-attended right from the start and showed the visitors' great interest in novel paint and coatings developments. A new feature at the show is the powder coatings pavilion.

The conference, consisting of about 90 selected presentations in total, continues today with eight conference sessions. Approximately 750 attendees had registered for the event. 

 For additional information, please visit www.american-coatings-show.com

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INTERVIEW

“Strong Film Formation is Critical”

Challenges and advancements in waterborne coatings

Latoska N. Price, regional technical service manager coatings for Americas at Synthomer, provides an overview of limitations and advancements in waterborne coatings.

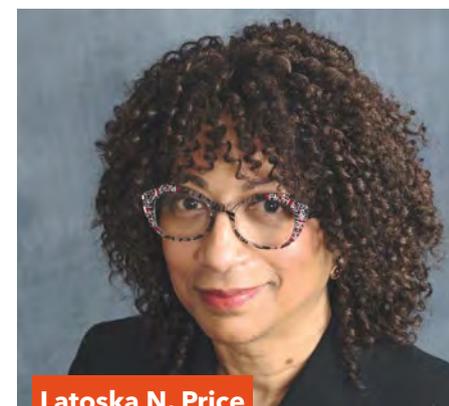
What would you say are some of the limitations of waterborne coatings? Overall, microbial stability is a challenge due to changing regulations for biocides both in the United States and abroad. Dirt pick-up resistance, surfactant leaching, and color stability improvements are a focus for exterior applications, while for interior decorative, there is a need for better stain and burnish resistance. Especially with the

pandemic and the need for sanitization, strong film formation is critical to allow cleaning ability without color rub-off or fade. Overall, we are excited by future advancements in waterborne technology making them more robust, and to rival the solvent-based performance that many industries demand.

Which binders are most suitable for waterborne formulations? Acrylic latex chemistry is incredibly versatile. Additionally, they are easy to work with and they offer UV stability. In a fully formulated coating, they can even help extend service life of the substrate they are protecting. With new polymer advance-

ments, acrylic-hybrids are becoming more popular as the performance of two unique polymers are combined while still delivering the safe, low-VOC properties needed to meet regulatory restrictions. In our view, it is most important to identify the critical desired performance properties, and then work in collaboration with your team of supplier partners (polymers and additives) to bring about the technical results you want.

Can waterborne systems achieve the same performance or even better properties as compared to solvent-borne coatings? It is unlikely; solvent-borne materials fulfill a critical need where extreme performance is required to meet industrial, commercial, and architectural specifications. Solvent-based coatings provide functional safety and protective importance in intumescent, industrial, transportation, and many metal applications. The question for us is, what can be done to make



Latoska N. Price

Synthomer
Booth #1654

solvent-borne paints more user friendly? We are invigorated by how R&D and Sustainability teams are incorporating ‘greener thinking’ into polymer design without sacrificing performance while formulators, industrial applicators, and contractors march toward safer application practices. 

“The question for us is, what can be done to make solvent-borne paints more user friendly?”

Sustainability

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ACS show
Booth #1737



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AC Conference

Wednesday, April 6, 2022

8:30 am - 12:30 pm	Session 5: Functional Coatings 1 Session 6: Architectural Coatings 1 Session 7: Epoxy Coatings Session 8: Waterborne Coatings
9:30 am - 11:00 am	Networking: Conference Break
2:30 pm - 6:30 pm	Session 9: Functional Coatings 2 Session 10: Architectural Coatings 2 Session 11: Polyurethane Coatings Session 12: Tools and Systems

Thursday, April 7, 2022

8:00 am - 11:30 am	Session 13: Bio-based Materials
8:00 am - 12:00 pm	Session 14: Weathering and Corrosion Testing
8:00 am - 12:00 pm	Session 15: Protective Coatings
8:00 am - 11:30 am	Session 16: Radiation Curing
9:30 am - 10:30 am	Networking: Conference Break



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AC CONFERENCE

The Coatings Industry Gets It

Sustainability and innovation were the focus of the keynote address

The American Coatings Conference 2022 was officially opened in the Plenary Session yesterday. After a welcome by Scott Braithwaite of the American Coatings Association and Sabine Bischoff of Vincentz Network, it was time for the keynote address.

This year, Chris Killian, Senior Vice President and Chief Technology Officer at Eastman was the keynote speaker. He gave a speech titled "The Role of Innovation in the Coatings Industry When Every Color Must Be Green." His address focused on how the resilience of technology innovation and creativity are leading the paint and coatings industry to be able to enable a more sustainable future as demanded by their customers.

OPPORTUNITIES GALORE

"We have a tremendous opportunity in front of us," stated Killian. He then outlined the trends that are creating exponential opportunities for growth in materials such as circular economy, health and wellness, natural resource efficiency and an emerging middle class. He first talked about circular economy as new vector of significant growth as global brands are making commitments to reduce material water and climate impact. Coatings here can offer more durable solutions based on sustainable feedstocks and there is new growth op-



This year Chris Killian, Senior Vice President and Chief Technology Officer, Eastman gave the keynote address.

portunities for bio-derived materials and compostable and biodegradable solutions. Moreover, there is a strong focus on providing materials solutions without compromising performance. Killian proceeded to discuss some possibilities to create value from bio-content and waste, such as biodegradable cellulosic biopolymer with carbon renewal technology and polyester renewal technology.

Chris Killian also underlined the role of customers: "For many of our customers it is absolutely essential that we de-

liver sustainable solutions - it is no longer just a hypothesis."

CUSTOMERS ARE ASKING FOR MORE SUSTAINABILITY

Two of the areas that are especially impacted are food and beverage packaging as well as architectural coatings. Killian shared the results of a consumer survey on BPA impact and more than half of the people are aware of BPA in canned food linings and concerned

about this issue. The keynote speaker also addressed results of a consumer study done on architectural coatings, a field that has long been affected by changing regulations. He then shared the results of what makes interior paint sustainable in the eyes of global consumers. 70% find the materials and ingredients important, followed by safety features, performance features, packaging and environmental safety.

Chris Killian also underlined the role of customers and that the coatings industry needs to meet the needs of "sustainable shoppers." He shared the results of what makes interior paint sustainable in the eyes of global consumers. 70% find the materials and ingredients important, defining sustainability of interior paints by ingredients.

COATINGS HAVE A HUGE IMPACT

"Working together the coatings and materials industry can be pivotal in solving significant world challenges," said Killian, summarizing his points and underlining the coatings industry's role in a more sustainable, green world.

"I think the coatings industry gets it - or at least begins to get it. And we should all be proud to be part of an industry that is responding with sustainable solutions. We have the opportunity to make a real impact." 

And The Winner Is...

Steve Block, NXTLEVEL Biochem, receives the American Coatings Award

Another highlight of the Plenary Session yesterday was the award ceremony.

The prestigious American Coatings Award honors the most outstanding technical presentation at the American Coatings Conference. The criteria used to assess these papers included innovation, scientific merit and relevance to the wider coatings industry.

This year, Steve Block of NXTLEVEL Biochem was chosen as the winner by the organizers, the American Coatings Association and Vincentz Network, for his presentation on "The Use of Levulinates as Coalescing Agents in Water-Based Coatings".

SUSTAINABILITY AND RENEWABLE IN THE FOCUS

The need to develop and implement affordable and sustainable large-scale operations for the conversion of renewable resources to chemical building blocks is becoming increasingly urgent and essential in reducing global de-

pendence on fossil fuels, including the critical aspect of minimizing the carbon footprint of the chemical industry. NXTLEVEL Biochem has implemented commercial scale manufacturing of second-generation biomass-derived chemicals, with novel technologies in bio-solvents based on the conversion of biomass to derivatives of levulinic acid that were originally developed by GFBiochemicals. Products that are now commercially available include ethyl levulinate, butyl levulinate, levulinate propanediol ketal and levulinate glycerol ketal.

During the session, Scott Braithwaite of the ACA and Sabine Bischoff of Vincentz Network handed over the prize to Block. "The work that has been done in the field recognizes the need to not just improve the technical aspect of coatings but also addresses the growing need to transition from fossil fuel-based chemistry to bio-based chemistry", said Block.

Steve Block's paper was also presented yesterday in the session on sustainability to the interested audience. 



Scott Braithwaite of the ACA and Sabine Bischoff of Vincentz Network handed over the prize to Steve Block of NXTLEVEL Biochem (pictured on the right).

Environment of Learning and Sharing

Pre-conference Tutorials proved again to be popular and attracted high interest

Ahead of the official start of American Coatings Conference 2022, once again 10 Pre-conference Tutorials drew strong interest by coatings professionals. In particular, the tutorials on anti-corrosive coatings and waterborne high-performance coatings were highly attended lectures.

The tutorials provided a brief summary of the key points of various important

coatings aspects. The seminars aim to refresh knowledge and teach new things, but also to share ideas with each other and become acquainted with many different points of view on different coatings topics. The tutorials proved once more to be hugely popular and attracted lively interest.

Yesterday, many coatings professionals reserved a seat in one of the 10 pre-conference tutorials. A variety of topics were covered in these lectures, such as:

- "Rheology"
- "Easy-to-Clean Coatings"
- "Anti-Corrosive Coatings"
- "Waterborne High-Performance Coatings"
- "Polyurethanes"
- "Functional Films"
- "Titanium Dioxide"
- "Biocide Selection Process for Coatings"
- "Formulating with Intelligence: Machine Learning in the Coatings Laboratory"
- "An Overview of Green Building Standards, Life Cycle Assessment, and ACA's Forthcoming Sustainability Program"

Well-attended was the Pre-conference Tutorial on anti-corrosive coatings. Con-

sultant Brian Skerry reviewed the fundamentals of electrochemical processes, and outlined and discussed typical ingredients and formulation characteristics of anticorrosive coatings. "It is always good to come here and refresh my knowledge and see what more has been invented. The speaker was very well prepared and gave a very good introduction of the background of corrosion. He went into the details of how to protect and prevent," said Anil Kumar of PPG.

As in previous years, the tutorial on waterborne high-performance coatings was among the front-runners of drawing high interest and attendance. Timothy December of BASF discussed what is possible today with waterborne clear-coats for different substrates – including wood and metal – and what is not. He also covered the theory behind different binder technologies, as well as fundamental aspects of the film-formation process and the performance of these coatings systems. Attendee Javier Jimenez, Altima International Group, said: "The tutorial is a good opportunity to learn from other work and share experiences. It also gives me the possibility to approach new

ideas because there are always different ways of doing things. When you see other perspectives, it enhances your way of understanding things." Apart from the tutorials' contents, attendees were enthusiastic about having the ACC back as a platform. "It is beautiful to be back together with people, it is great to be training again and seeing your peers," Jimenez said. 



Douglas Mazeffa, The Sherwin-Williams Company



Erik Sapper, California Polytechnic State University

Audience Poll: Sharing Opinions on Hot Topics

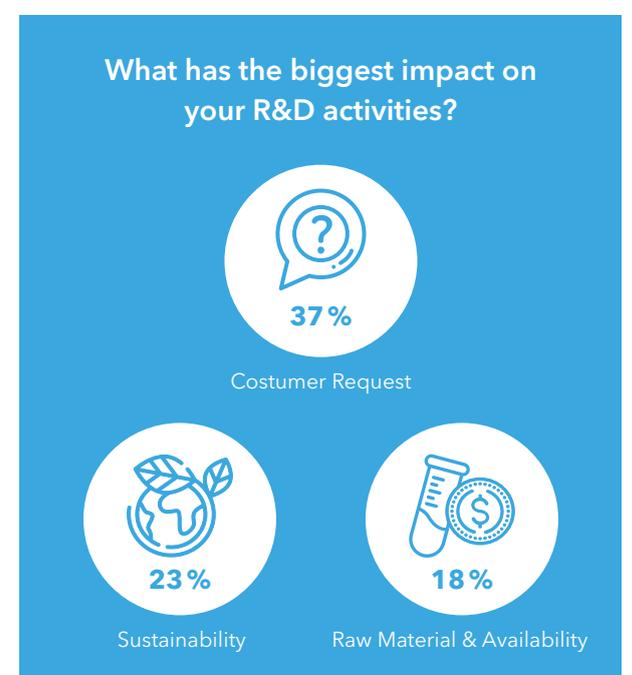
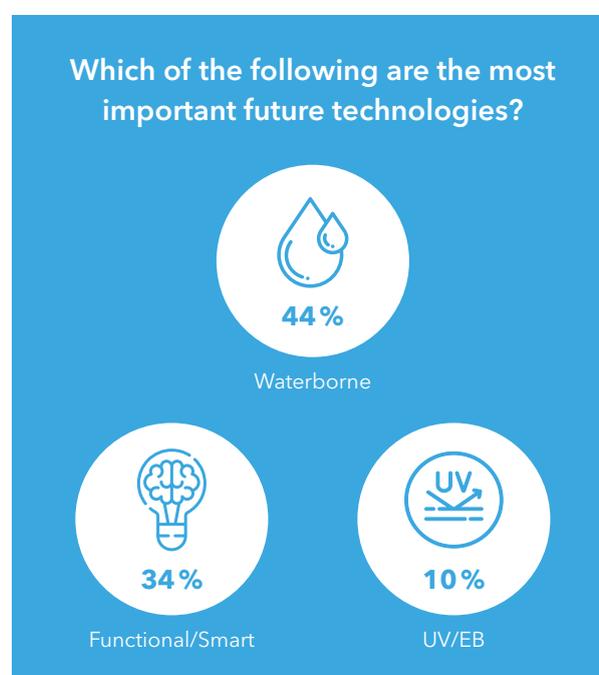
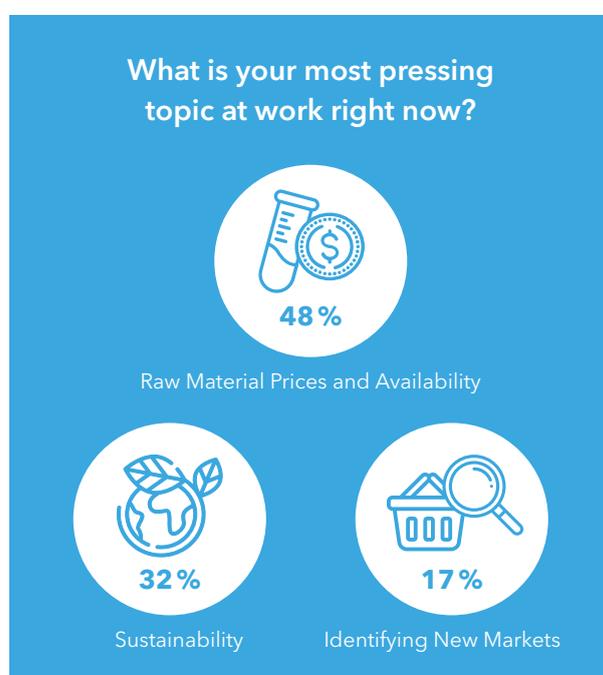
Conference survey results: raw materials issues and sustainability keeping the industry on its toes

During the plenary session of the AC Conference the audience was invited to participate in a short survey. The coatings experts were able to cast their votes via smartphone and could see the results immediately as they appeared live on the big screen. They could share their opinion on various topics, such as most pressing challenges, important future technologies and impact on R&D activities.

There were no surprises at the audience poll. When it came to vote on the most pressing topic at work, raw materials availability and prices ranked first. Nearly a third considered sustainability and about 17% choose identifying new markets as hot topics. Fulfillment of regulations as well as automation or digitization of production processes received nearly no votes from the audience.

The most important future technology remain waterborne systems, for the polling participants. The majority of respondents (44%) gave their vote to these systems, which means a slight decrease to the results in the years before – when the share always reached more than 50%. With 34% of the votes, "functional or smart systems" made a huge increase compared to 2018 – when these systems only reached a share of 22%.

When it came to the most important regulation, VOC ranked first with 54%. Labeling and hazard communication followed with 26% of the votes and 14% voted for food contact. Over a third gave their vote to customer requests on the question "What is the biggest impact on your R&D activities?" Sustainability (23%) and raw material availability (18%) also received higher votes for having relevant impact. 



INTERVIEW

“Weathering Chamber Technology Will Continue to Evolve with Better Environmental Controls”

Interview on weathering testing

Sean Fowler, senior technical director at Q-Lab Corporation, addresses the latest developments in weathering technology and offers an assessment of how the sector will evolve in the future.

Where does R&D in weathering testing focus on at the moment? The big picture challenges do not change much over time. The goal is to obtain results that anticipate real-world performance over years or even decades, in as short a time in the lab as possible. Today, com-

panies are pursuing two approaches. The first is to increase the concurrent stresses of sunlight, heat, and moisture as much as possible to screen out some lower performing products, then assume those that pass will perform acceptably in the field. The second is to make lab testing replicate the real-world stressors as accurately as possible, and then develop evaluation techniques that detect degradation processes before they visibly affect the material's performance. Balancing the stressors in a way that

achieves realistic results is often the biggest challenge.

What do you see as the remaining challenges? A hybrid approach to the above is to investigate, on a case-by-case basis, how the most realistic weathering cycles can be accelerated by increasing a single stressor, such as the intensity of the simulated sunlight, to achieve results faster with minimal loss of accuracy. This is more difficult than it first appears. When one has developed a lab test cycle that provides a realistic simulation of the natural weathering environment, that cycle, in theory, should be applicable over a wide range of products or materials. However, when one stressor is accelerated, such as testing at higher UV-irradiance or temperature, the simulation is thrown off-balance. Not only that, but the way it has shifted off-balance is material dependent. What works well for one material probably won't work as well for other materials, and the adjusted test parameters could completely ruin the simulated test's accuracy.

How do you think the sector will develop in the upcoming years? Weathering chamber technology will continue to evolve with better environmental controls and improvements to their ability to simulate natural weathering. Weathering standards committees are already working on this. In addition to that, microscopic evaluation techniques give researchers tools to find early signs of degradation that differentiate performance levels. What can



Sean Fowler

Q-Lab Corporation
Booth #1966

take thousands of hours to see with typical weathering evaluation techniques – gloss loss, color change, tensile strength degradation, etc. – may be detected by microscopic techniques much earlier. I hope another focus is on revisiting outdoor weathering. Obtaining outdoor weathering data is critical for validating any new developments in lab weathering; but all too often, developments in the lab are hindered by a lack of the outdoor data. The solution to this problem is to maintain a regular schedule of outdoor weathering to anticipate future needs. Microscopic evaluation techniques should be applied to outdoor weathering more than they currently are, in my opinion. Finally, there are ways to increase the intensity of natural exposures, such as with sunlight concentrators and tracking weathering boxes. These tests are surprisingly underutilized by industry. ◀

“Microscopic evaluation techniques should be applied to outdoor weathering more than they currently are.”

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1954
Xenotest® 150



1977
Ci65 Weather-Ometer®



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Ci4000
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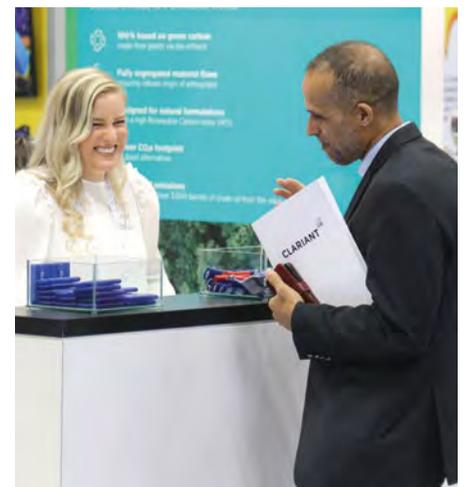
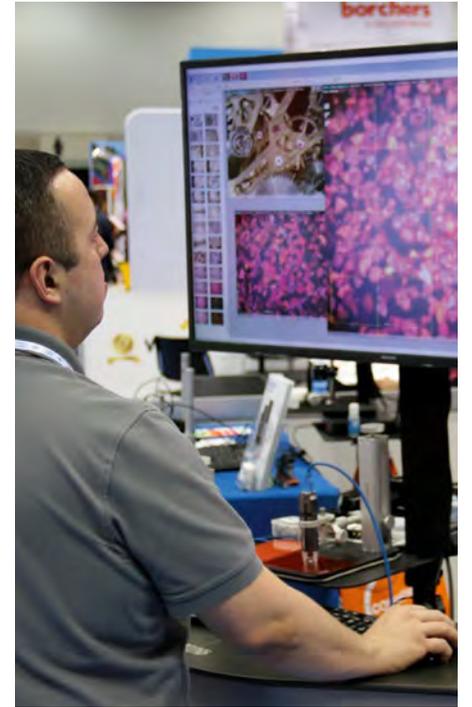
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AC SHOW

A Picture Paints a Thousand Words

Impressions of the American Coatings Show 2022



Breaking Down Gender Biases in the Workplace

For more than half a century, traditionally male-dominated industries have made progress towards gender inclusion, but there is still a lot of work to be done. To truly transform the coatings industry, change is needed at the individual, enterprise, and societal levels. There will be a discussion at the ACS tomorrow from 5:00 to 7:00 pm in room 233. Sarah Eckersley, R&D vice president, Dow Industrial, Intermediates & Infrastructure, will talk with panelists from the global coatings industry who will share their successes and challenges. Attendance is limited.

More information is available at www.american-coatings-show.com/women-in-coatings

Source: ASHInteractive (13)

Product Presentations Today

Exhibitors highlight their novel products in short presentations

Hear about new innovations in the coatings industry during live, on-stage Product Presentations. Exhibitors highlight their new products in 15-minute presentations at Booth #1053.

9:20 - 9:35 am

Stahl Carbodiimide Crosslinker Technology
Sara Roig
Stahl Polymers

9:40 - 9:55 am

The Future of Online Formulating and Advanced Product Searches
Raymond Somich (Synthomer) and Benjamin Kompka (Coatino)
Synthomer

10:00 - 10:15 am

Performance Solutions for Radical Polymerization
Jeanine Snyder
Sasol Chemicals

10:20 - 10:35 am

"Visiomer" Specialty Methacrylates - Uniting Sustainability and Performance
Michael E. Webb
Evonik - Specialty Methacrylates

10:40 - 10:55 am

"Vestanat IPDI eCO" - Same Performance, Less CO₂ Emissions
Georg Michels
Evonik - Crosslinkers

11:00 - 11:15 am

"Omyasphere" - Lightweight Filler Solutions for Improved Performance and Cost Savings in Elastomeric Roof and High Reflective Coatings
David Gonzalez Amago
Omya

11:20 - 11:35 am

"Solsperse W430" Hyperdispersant Technology
Jeff Norris
Lubrizol

11:40 - 11:55 am

Options for Reducing Reliance on TiO₂ ("Encor 317" Vinyl Acrylic, "Celacor AF" Opaque Polymers)
Jeff Arendt
Arkema

12:00 - 12:15 pm

U.S. Soy: The Sustainable Solution for Coatings
Lee Walko
United Soybean Board

12:20 - 12:35 pm

Use of "Lattice" Colloidal Microcrystalline Cellulose in Sustainable Waterborne Coating Formulations
Jason Folkenroth
IFF Industrial Solutions

12:40 - 12:55 pm

"NduroMatt" - Novel, More Durable Matting Agents for Coating Applications
Michael Jablon
Honeywell International

1:00 - 1:15 pm

New "Acematt" Finer-Grade Matting Agents
Maria Nargiello
Evonik - Coating Additives

1:20 - 1:35 pm

Innovations in High-Performance Pigments to Improve Sustainability
Mark Ryan
The Shepherd Color Co.

1:40 - 1:55 pm

"Bermocoll Flow" - Next Generation of Rheology Control for Decorative Paint
Helena Wassenius
Nouryon

2:00 - 2:15 pm

Achieve Maximum Wetting and Dispersing Performance, Viscosity Reduction, Outstanding Pigment Stability and Perfect Optical Properties with "Disperbyk-2018" and "Disperbyk 2019"
Christopher Mosinski
BYK USA

2:20 - 2:35 pm

Polyester Polyols for Advanced Coating Systems
Steve Hollman, Sr.
Univar Solutions

2:40 - 2:55 pm

Solutions for Carbon Negativity with Green Ethoxylated Derivatives
Sebastian Prock
Clariant Paints & Coatings

3:00 - 3:15 pm

Unique Micronized Wax Technologies for an Evolving Industry
Tyler John
Keim Additec Surface

3:20 - 3:35 pm

"Maincote HG-100" Emulsion Water-Based High Gloss Acrylic Binder for General Metal Applications
Kathleen Auld
The Dow Chemical Company

3:40 - 3:55 pm

"Crayvallac LV" & "Crayvallac Optima" - Next Generation Polyamide Rheology Modifiers for Very High Solids and Solvent-free Industrial, Protective and Marine coatings
Mark Piggott
Arkema

4:00 - 4:15 pm

Michelman Multi-Functional additive
Scott Smallwood
Michelman

4:20 - 4:35 pm

"Q-Chain SuMo" - A New Modular System for Non-destructive Corrosion Testing
Ralph J. Woerheide
Orontec

"Higher Speed in Research and Development"

High Throughput Experimentation plants provide various benefits to the coatings industry

"Digitalization, in combination with machine learning, enables accelerated and broader screening capability with ultimate precision leading to higher speed in research & development and securing intellectual property," says Detlef Gysau, vice president business development at Chemspeed Technologies.

What are the advantages of High Throughput Experimentation (HTE) plants? A HTE plant provides various benefits to the industry. Digitalization, in combination with machine learning, enables accelerated and broader screening capability with ultimate precision leading to higher speed in research & development and securing intellectual property. Also, earlier market entry boosts revenue development and leadership in innovation. In addition, HTE plants allow reallocation of

highly skilled lab personnel to other - more value-added tasks - and contribute to safety and health by reducing the contact to possible harmful substances. Finally, a much smaller scale of sample sizes cuts the raw material and waste turnover in the lab for a more sustainable working environment.

For which types of formulations are they particularly suitable? HTE solutions are suitable for water- and solvent-based formulations, zero to high pigment volume concentration (pvc) formulations, 1-pack and 2-pack formulations, curing mechanisms at room temperature, heat activated, UV/IR initiated, etc.

As the global market leader of HTE, we create, develop and deliver full workflow application oriented solutions. With our unique blending vessel and robotic tool

exchange technology including unrivaled overhead gravimetric dispensing in the mg range for liquids, viscous liquids, powders and granules, even during mixing and dispersing, we offer formulation solutions without compromise.

Can a HTE plant be adapted to any kind of scale, regardless of company size or production capacities? Different platforms offer solutions to automate formulation, application, characterization and testing, as well as any combination thereof. These solutions are available, as benchtop and single platforms to be combined and connected to complex systems with a high degree of flexibility plus integration options for third-party instruments. The HTE plant can be configured from very small sample sizes up to small pilot scale sizes. Customers sim-



Detlef Gysau

Chemspeed Technologies
Booth #2774

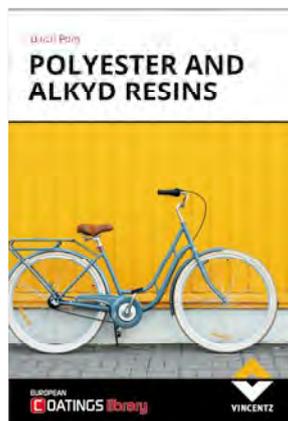
ply need to define their specific requirements and goals to get a system configured accordingly. 

LITERATURE

Coatings Know-How

Broaden your knowledge with an extensive series of textbooks on coatings technology

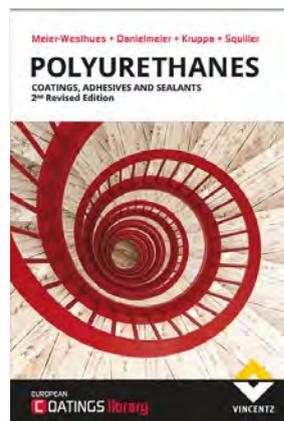
With brand new titles and new editions of technical coatings textbooks, the American Coatings Association and Vincentz Network's AC BOOKSHOP provides a selection that is targeted to both newcomers to the coatings field, as well as established specialists.



Polyester and Alkyd Resins

By Ulrich Poth

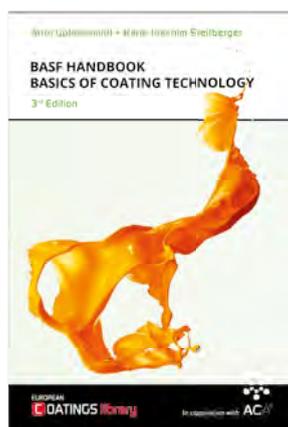
Polyester and alkyd resins belong to the most diverse and key material classes of paint chemistry with their usage as binders long established. This standard text details the composition, structure and properties of these important binder groups and subjects previous findings in that field to a critical review. It demonstrates different precise calculation approaches in modern coatings development, different ways to formulate polyester and alkyd resins in experimental designs, and how to vary them systematically. This is a practical and future-oriented reference book that should not be missing from any laboratory!



Polyurethanes, 2nd Revised Edition

By Karsten Danielmeier, Peter Kruppa, Ulrich Meier-Westhues and Edward P. Squiller

The chemistry of polyurethane coatings is of great significance in many applications worldwide, and their development potential has yet to be exhausted. New applications are being identified and the product range will undoubtedly grow. This text provides a comprehensive overview of the chemistry and the various possible application fields of polyurethanes. It starts by illustrating the principles of polyurethane chemistry, enabling the reader to understand the current application technologies and offers insight into current trends and promising developments.



BASF Handbook – Basics of Coating Technology

By Artur Streitberger and Hans-Joachim Goldschmidt

The *BASF Handbook*, now available in its third edition, comprehensively covers the entire spectrum from coatings formulation and relevant production processes to practical application. This text journeys through the industry's various sectors, with special emphasis on automotive coatings. The new edition has been completely updated, featuring several new sections on nanoproducts, lower emissions, bio-based materials, wind turbine coatings, and smart coatings.



Electrocoat

By Michael Brüggemann and Anja Rach

Electrophoretic paints, commonly known as electrocoats, are organic coatings dispersed in water, carrying an electric charge. This enables the paint for deposition onto a metal carrying the opposite charge. This textbook details the requirements and particularities for the electrocoat process and its troubleshooting. It illustrates the theoretical basics of electro-deposition, paint formulation, manufacturing, application process, and countermeasures for failure of the electrocoat process. Newcomers and practitioners alike will get a comprehensive overview of the wide field of electrocoats and deeper insight into this technology.

Connecting Talent and Opportunity

Online Career Center Service

The 2022 American Coatings Show will offer an online ACS Career Center. Connecting job seekers with employers, the Career Center will provide virtual opportunities that meet the needs of both companies and industry professionals.

Prior to the event, the online Career Center will launch, inviting exhibitors and registered attendees to post jobs or resumes, respectively. In the weeks leading up to the ACS, exhibitors will obtain access to the searchable resume database; and registrants will have the ability to upload a resume or search available positions of participating employers.

The goal of the Career Center is to match employers and job seekers using the online system. Companies will have the opportunity to meet candidates in-person at the ACS or schedule virtual

interviews. The Career Center may be particularly beneficial to students attending the AC Conference, since it offers the opportunity to maximize the learning and networking experience with the added bonus of potential of career advancement. 

 More information about this offering is available on the ACS website at www.american-coatings-show.com/career/



ANATOMY
of the
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HUNT

“Sustainability is Currently the Driving Force”

Research and development in printing inks



Ray Verderber

**Eckart America Corporation
Booth #2239**

Ray Verderber, technical manager at Eckart America Corporation, addresses drivers and challenges for printing inks.

What factors are driving current R&D for printing inks? Sustainability is currently the driving force influencing

how R&D is conducted for printing inks. When it comes to sustainability, it is a very broad topic, including recycling, carbon footprint, bio-degradable and environmentally friendly ingredients. For example, consumer product companies expect the supply chain to deliver sustainable solutions aimed at improving recycling rates. To meet these needs researchers are developing formulations that allow for easier recovery of plastic and paper-based substrates.

How significant are water-based printing inks and what are their drawbacks? Waterborne inks continue to be a significant portion of the overall ink market. The extreme weather last winter and ongoing supply-chain issues have had a severe impact on the ability of manufacturers to provide consistent supply, resulting in shortages of feedstocks used to make acrylic and urethane polymers, for example. One of the drawbacks with water-based inks is the energy needed for drying them, especially on film sub-

strates. Another concern is that the majority of the waterborne polymers today are derived from petroleum feedstocks, while formulators are looking for more sustainable solutions such as waterborne polymers that contain higher levels of bio-based carbon.

What are the prospects for packaging printing compared to publication printing? Publication printing will continue to contract since the communication of information in this segment is ideal for digital alternatives. Packaging printing

will continue to grow as it plays a valuable role in how products and merchandise are brought to market, providing protection, brand identity and shelf appeal for consumer product companies. Packaging printing will develop further through offering more than just product protection and distribution, including information and functionality. Research is being conducted that could embed the packaged product with information that would communicate, for example, at a sorting and recycling facility, whether the package is indeed recyclable. 

“Waterborne inks continue to be a significant portion of the overall ink market.”



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INTERVIEW

“The Focus is Clearly on Resource Efficiency”

A look into developments in adhesives



Matthias Popp

Fraunhofer IFAM Institute

What is the current focus of research and development in the field of adhesives? At the moment, the focus at our institute is clearly on resource efficiency. This is not only due to the current funding landscape, but also to a still growing interest on the part of industry. In my opinion, “push marketing” has clearly been replaced by “pull marketing.” This is especially true for polyurethane adhesives, where bio-based polyols have been established for some time. There are also promising solutions in the field of epoxy adhesives, which include not only the epoxy resins but also the hardeners.

Matthias Popp, head of adhesive Formulation at the Fraunhofer IFAM Institute, addresses current trends in adhesives and sealants and the topic of debonding on demand.

What functionalities are currently in focus? Currently there are many requests for adhesives that can be debonded at the “push of a button,” or debonding-on-demand. This is not a new topic, but it is still mainly in the area of academic research. Many interesting papers on the modification of raw materials with reversible bonds have been published in the last few years.

To what extent is the trend toward sustainability discernible in this area? The interest in adhesives with debonding-on-demand properties is, among other things, also due to directives on waste electrical and electronic equipment, i.e., the effort to push the recycling economy. In addition, fast and user-friendly repair solutions are also in

demand, for instance, in the automotive industry. The development of systems that undergo a drastic change in properties (debonding) due to a thermal trigger – which on the one hand lies far outside the application temperature range and on the other hand does not stress the joining parts – is still challenging. 

“Currently there are many requests for adhesives that can be debonded at the “push of a button.”



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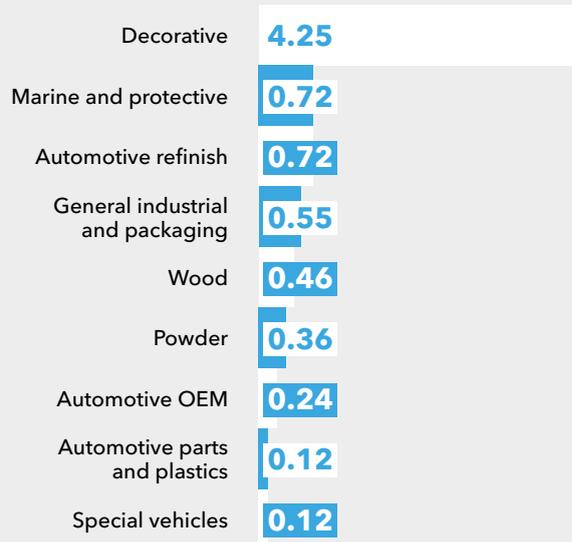
South American Paint Market

Five facts you should know about South America

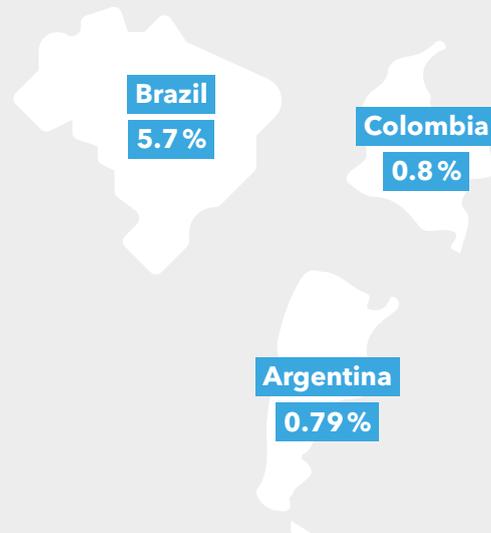
Fact 1: Market size



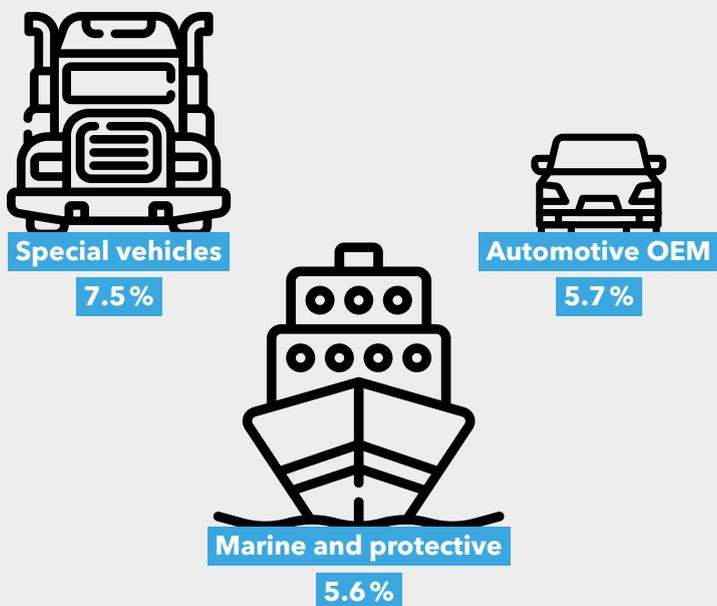
Fact 2: Market size by segment and value (in EUR billion)



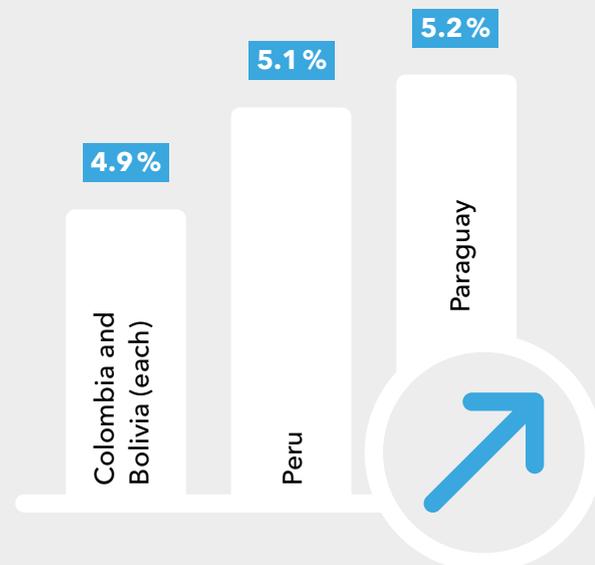
Fact 4: Top three countries by value (EUR billion)



Fact 3: Volume growth by segment by 2025 (Top 3)



Fact 5: Three fastest growing countries by 2025 (CAGR)



INTERVIEW

"A Need for Breakthrough Functional Coatings that Help Reduce Environmental Impact"

Trends and opportunities in the mobility and construction sector



Thierry Destruhaut

PPG Industries

Thierry Destruhaut, global product portfolio director for Architectural Coatings at PPG Industries, shares why functional coatings will show increasing demand, based on developments in the transpor-

tation and construction sectors. Here he addresses R&D trends and the challenges functional coatings face.

Functional/smart coatings is already a vibrant enough topic to have spawned dozens of R&D projects. What is the next "big thing" for smart coatings? There is a huge demand for smart coatings that can support the transition towards a sustainable economy model. For example, if we look at the mobility and construction industry, there is a need for breakthrough functional coatings that help reduce environmental impact and greenhouse gas emissions.

Regarding mobility, PPG is developing new generation of smart coatings that make electric vehicles (EVs) and autonomous vehicles more efficient and safer. Some examples:

- Low-noise coatings for reducing the interior cabin noise in EVs. Since EVs are four times less noisy than traditional

engine vehicles, smart coatings are required to make sure that EV drivers are not hearing the outside ambient noise that is usually covered by the noise of traditional engine;

- Electrochromic coatings that instantly switch color or switch from transparent to opaque simply when a button is pressed;
- Fire-protection coatings that protect the batteries of EV vehicles;
- New generation of heating ink for more energy efficient seat heating systems;
- Coatings that maximize near infrared reflection to improve the detectability of a car by the Radar/Lidar sensors of autonomous vehicles; and
- Easy-to-clean coating technology that allows dirt and water to quickly and easily wash away from sensor lenses and improve driving safety.

For the construction industry, smart coatings should be developed to contribute to

ing and promising for R&D for novel smart/functional coatings? Bio-mimicry was already the foundation of our "egg-plant" heat reflecting coatings for aerospace and architecture. Currently, we have a particular focus on learning how to create our resin chemical building blocks from natural renewable resources as opposed to fossil resources. Also, if we can copy and reproduce how plant photosynthesis captures carbon from the air, it could potentially be a great help to limiting global warming.

For what functional coatings do you see a larger demand in the market – the ones with intrinsic or extrinsic functionalities?

The focus of our R&D teams is for more sustainable coatings. As such, the intrinsic property of extending the service life of the coated object is key. Thus, it is key to keep developing even more durable coatings because that helps making manufactured

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"Currently, we have a particular focus on learning how to create our resin chemical building blocks from natural renewable resources."

improving energy efficiency of buildings. The aim is to reach carbon neutral housing and improve the air quality in the indoor environment. Here's why:

- Energy management coatings are key because the largest contributor to CO₂ emission comes from housing heating/cooling. Thus, coatings must contribute to thermal insulation or heat reflection. New insulation materials are developed but also energy reflective coatings that reflect infrared or UV light. PPG is already advanced in this field thanks to its presence in the aerospace coating segment where heat and UV management is already key.
- Indoor air cleaning coatings are required to reduce pollutants present in the indoor air. Not only should coatings not emit chemicals, they are also required to have a positive contribution to the indoor air quality.
- Easy-clean and even antimicrobial coatings are also a focus area in order to improve hygiene and reduce the risks of disease transmission.
- Smog/outdoor pollution can also be decreased with the use of exterior photocatalytic coatings.

Often, nature serves as a model when it comes to functional coatings. What other functions in nature seem interest-

objects and buildings more sustainable. That said, there is also a societal need to expand the role of coatings from their original protective function and add new smart functionalities that will further support the transition towards a sustainable planet.

Where do you see the biggest challenges when it comes to developing functional/smart coatings? Emerging technologies typically have a higher cost, so it is important that the functional benefit that the coatings provide are fully valued in our customers' decisions. In that respect, credible performance standards are required to quantify the benefits of smart coatings. For example, life-cycle analysis over the full-service life can be a very useful tool to factor the benefits of a green smart coating. But other performance standards are also key to demonstrate the new functional benefits of coatings and convince customers of their value.

Finally, there are still some gaps in the science that have yet to be resolved. For example, we read a lot in the press about coatings that can produce electricity or that can capture carbon from the air, but we believe that in those cases it will take quite some time before science progresses for that to become feasible.

INTERVIEW

“Uncertainty Surrounding Regulatory Requirements is the Biggest Challenge”

Research and development for antimicrobial coatings

Richard Strittmatter, chief technology and sustainability officer at Arxada, addresses the search for innovative antimicrobial coatings solutions.



Richard Strittmatter

Arxada
Booth #1538
(Troy - an Arxada Company)

What is R&D in antimicrobial coatings space focused on at the moment? Perhaps the biggest focus area is the search for innovative solutions that lead to more effective microbial control while minimizing the use of traditional biocides, resulting in more sustainable products for the long term. Advanced microbiology techniques such as metagenomics and mode of action studies are providing critical insight to uncover new and innovative approaches. These technologies are helping us tackle environmental issues in many applications - in marine antifouling, for example, where deeper understanding of the marine microbiome is enabling the development of reduced cuprous oxide and copper-free solutions.

What are the current challenges in this area? Uncertainty surrounding regulatory requirements is the biggest challenge to innovation today. Bringing innovation to the industry

just that, as we achieve critical mass to invest in new technologies.

What trends do you think will dominate the market for antimicrobial coatings in the near future? At least two key areas come into focus for the coming few years: sustainability and health. Sustainability is a word that is on everyone's lips right now - among all businesses and all consumers. Awareness of these issues, such as

“At least two key areas come into focus for the coming few years: sustainability and health.”

requires investment in the development of novel tools and methodologies that must be incorporated into coatings seamlessly and without impacting other key performance requirements. The new chemistries and processes need to meet stringent regulations across multiple geographies, from manufacturing and testing to marketing and distribution. Clear regulatory decisions that are based on science-driven risk assessments, using realistic exposure scenarios, would encourage and accelerate investment in innovation. Decisions that are hazard-based and driven by ever-changing public perception result in limiting the toolbox of antimicrobial technologies available to the industry.

Meeting these challenges requires significant resources, with a real focus on innovation and considerable investment. Our recent merger with Troy Corporation will allow us to do

the proliferation of copper from certain types of coatings, plastics in our oceans, and the carbon footprints of product lifecycles, has never been higher. Developing more effective and efficient microbial control technologies will help balance improved performance with reduced exposure, resulting in more sustainable solutions.

The COVID-19 pandemic is another main driver that has significantly increased awareness around the importance of hygiene, disinfection, and controlling microbes on surfaces. The pandemic has alerted the public to the benefits and critical role of antimicrobial technologies. Innovative technology in the coatings space can provide benefits not only for critical areas such as hospitals, but also in hospitality, food service, and even the residential home. We expect to see exciting and new technologies continue to be developed and launched in this area in the coming years. 

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PRODUCTS

Further increase in production capacity of chloride process TiO₂

G&J Resources Inc, exclusive representative of Yibin Tianyuan TiO₂ in the international market, announces that the group will start the construction of its third line of chloride process TiO₂ in 2022 to add another 100K MT to its current production capacity.

Based on its chlor-alkali resources, the company invested in its first chloride process TiO₂ production line with an annual capacity of 50K MT, which started commercial operation in October 2019. The second line of 50K MT annual capacity has been in operation since October 2021. Two grades of TiO₂ are now available for coating and plastic applications from a company with a global presence in more than 40 different countries. A slag plant with 80K MT capacity will start operation in 2022.

i G and J Resources
www.gandjresources.com
Booth #3038

Low-leaching paints and textured powder coatings

Dispersogen plf 100" is a polymeric dispersing agent with excellent storage stability, color strength, and low foaming during pigment paste fabrication. In a finished paint it shows reduced blocking and low leaching for exterior paints and offers extremely high pigment loading with minimal impact on viscosity and rheology.

Our new "Emulsogen cpa" reactive emulsifiers resolve leaching issues by co-polymerizing with binder building blocks to produce paints without snail trails and dirt pick-up. Our anionic and non-ionic emulsifiers efficiently stabilize monomer emulsions and the resulting polymer dispersions to decrease water sensitivity.

"Licocene pe ma 4351a" is a PTFE-free innovation for textured powder coatings and makes textured protective coatings possible. It is similar to conventionally used PTFE and used in hot melt formulations, it offers improved adhesion and cohesion combined with a high-heat resistance.

i Clariant Paints & Coatings
www.clariant.com
Booth #2846

Solvent-free silicone defoamer for perfectly defoamed and crater-free coatings

"Byk-1789" is a new, solvent-free silicone defoamer for improving air release and preventing microfoam in aqueous high-build and fast-drying coatings and adhesives. It is a new 100% defoamer that has been specially developed for aqueous epoxy-based corrosion protection coatings. It is highly compatible despite its strong effect, supports substrate wetting, and is extremely effective in reducing microfoam and macrofoam.

A particular advantage is the exceptionally good internal air release of the coating, even in fast-drying systems. This particularly good air release can ultimately be seen in the improved corrosion protection characteristics.

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- Effective defoaming and internal air release
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i BYK
<http://www.byk.com>
Booth #2229

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- Improved weld seam - a new computer-controlled feedback loop welder produces a smoother and stronger seam, enhancing the exterior appearance. A cleaner weld

also reduces the possibility of sharp burrs or feathers that may be dangerous or interfere with the integrity of the interior lining.

- Improved body profile - an enlarged labeling area permits a larger label without wrinkling or tearing, making it possible to include all the necessary regulations, directions for use, and warning statements.



i Cleveland Steel Container
www.cscpails.com
Booth #2881

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i DeFelsko Corporation
www.defelsko.com
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Bio-based waterborne binder rivals conventional products

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The binder is made from 97% bio-based raw materials from byproducts of predominantly Nordic foresting and is free from APEO, ammonia, solvent, and plasticizer. This product can help formulators achieve a wide range of desirable benefits in their interior wall paint and primer formulations, including gloss potential, chemical and scrub resistance, and hardness development. It also offers all the benefits of conventional products in terms of cost, availability, and performance. The bio-based label assures that the percentage of renewable bio-based content is third-party certified and strictly monitored by the USDA.

i Arkema
www.arkema.com
Booth #1130

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i Elemental Container
www.aluminiumbottles.com
Booth #2763

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Pigment grinding is by far the most costly and time-consuming process when manufacturing paints and coatings. To minimize efforts while preparing a fine and consistent pigment particle distribution, the choice of an effective dispersant is critical. It not only impacts the grinding process but also significantly affects the quality of the dry paint film. Optical properties like color strength, hiding, gloss, etc., are all strongly dependent on how finely and uniformly distributed the pigment particles are in the liquid matrix.

Our "Edaplan 490" series of polymeric

dispersants offer universal use in organic and inorganic carbon black pigments and fillers. Excellent pigment stabilization, reduction of grind viscosity for high pigment concentration and broad compatibility with various binders are some of the features of this powerful dispersant. It is characterized by an ability to wet the pigment surface, adsorb on it effectively, and offers long-term dispersion stability.

i Münzing
www.munzing.com
Booth #1447

Latest graphene technology for anti-corrosion coatings

Applied Graphene Materials, the producer of specialty graphene nanoplatelet dispersions, is pleased to showcase the latest developments in graphene dispersion technology at the ACS.

Our graphene nanoplatelet dispersions offer an innovative approach to combatting corrosion, which is a more environmentally friendly alternative to

zinc-based chemistries. Formulators can maximize the potential of existing additives in synergy with graphene to significantly extend the life of coating materials.

i Applied Graphene Materials
www.appliedgraphenematerials.com
Booth #2374

Polymeric dispersants for aqueous, printing inks and colored concentrates

Lubrizol will present two innovative polymeric dispersants at the ACS. A 50% active APE-free polymeric hyperdispersant from the "Solsperse" range for waterborne coatings will improve pigment dispersion and stability in aqueous paints and inks. The innovation brings a robust range of benefits to applications such as building & construction coatings and industrial OEM coatings. These benefits include excellent color development, dispersant efficiency, fast wetting, high color strength, high pigment loading, milling efficiency, particle-size reduction, overall cost reduction, and more.

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i Lubrizol, www.lubrizol.com/coatings, Booth #1840

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SAS Nanotechnologies has developed a smart and self-healing polymer microcapsule technology. Our microcapsule technology allows storage of coatings' functional additives such as corrosion inhibitors and/or the biocides inside them. The additives are released either in response to a trigger or sustainably over time. Adding functional additives via microcapsules to coatings prevents their rapid leaching into the environment and preserves them in the coating for a longer period. This technology enables coatings to be formulated with smaller quantities of often toxic functional additives, making coatings more sustainable and cost-effective. Give us your favorite functional additive to encapsulate in microcapsules and enjoy the improved performance of your product while being more sustainable. Visit our booth to find out more about our microcapsule technology and microcapsule products based on organic and inorganic corrosion inhibitors and biocides.



i SAS Nanotechnologies, www.sasnanotechnologies.com, Booth #1577



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i DCL Corporation
www.pigments.com
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i Hexion / Westlake Epoxy
www.hexion.com
 Booth #2348

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- Printing roller powder coatings
- Anti-static floors
- Conductive acrylic primers for vehicles
- Conductive and static dissipative powder coatings

i OCSiAl
www.ocsial.com
 Booth #1166

Bio-based methacrylates that create possibilities for a sustainable world

Looking for sustainable monomers to reduce the carbon footprint of your products and boost their performance at the same time? With us, you get the bio-based methacrylates you need to tackle the challenges of CO₂ reduction for your products. "Visiomer Terra" offers sustainable building blocks for your polymers.

We are constantly exploring opportunities to produce methacrylate monomers with reasonable bio-content. Our sustainable monomer structures are manifold, ranging from monofunctional methacrylates with various functionalities, to multifunctional hydrophilic and hydrophobic

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i Evonik
www.evonik.com
 Booth #2030

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i New Brook International
www.newbrookintl.com
 Booth #2682

Easily mix coatings with intelligent laboratory mixer

Hauschild Engineering presents a new highly sophisticated series of intelligent DAC (Dual Asymmetric Centrifugal) laboratory mixers: its "SmartMixer SMART DAC" series. This product innovation combines craftsmanship and expertise with smart innovations like real-time temperature control, vacuum-robotic, sensor integration, variable counter-rotation, Internet-of-things compliance, QR-code reader, remote control, and automatic pot cooling system.

Many companies in the coating industry already mix with the predecessor models of this bladeless mixing system. The laboratory mixers are known for their fast mixing and dispersing of all kinds of substances within a particularly short time, producing absolutely homogenous mixes with reproducible results.

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of our new mixer series, which now allows mixing from 250 g up to 1.5 kg and 2 kg, and offers mixing volumes from 310 ml up to 2.8 liters.

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 Booth #3145

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For over a half century Prom has been dedicated to the product development and manufacture of specialty biocides. We pride ourselves on innovation, application expertise, sustainable supply, and value-added tech support for our customers and target industries. We are now expanding our product portfolio to include dry-film preservation to en-

hance the performance and durability of our customers' products. Our "Promex" aqueous formulations include protection for water-based and/or solvent-borne coatings.

i Prom USA
www.prombiocides.com
 Booth #2160

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CONFERENCE

APRIL 30 - MAY 2, 2024

Indiana Convention Center
Indianapolis, Indiana

www.american-coatings-show.com



SERVICE

Indy After Hours

Plenty of bars and clubs to visit after show days

While an early night at the hotel can be great after a day at the show, winding down at one of the local pubs or bars might also prove equally relaxing.

Whether you prefer a craft beer, exotic cocktail or want to dance to live music, Indy's nightlife has much to offer. After the American Coatings Show you can walk to the conveniently close downtown area with plenty of entertainment options.

CITY OF CRAFT BEER

The craft beer scene in Indy is ever-growing and offers a great variety of options for beer lovers. The first local brewery was the *Broad Ripple Brewpub*. Today, it not only offers a variety of craft beers but also traditional British food and a cozy decor that will make you feel like you are sitting in a pub in the English countryside. Another great spot is the *Indiana City Brewing Company*, located in a bottling house dating back to the pre-Prohibition era.

Indy also has many casual sports bars with great food and beers. *Chatham Tap*, *High Velocity* and *Kilroy's* are just a few.

HAPPY HOUR

More in the mood for an exotic cocktail at a chic bar? *The Platt 99* is an ultra-modern lounge inside *The Alexander Hotel*. Choose from their great variety of unique cocktail creations and relax in style. Above one of the restaurant favourites in Indy, *St. Elmo*, the *1933 Lounge* serves classic cocktails in a vintage speakeasy atmosphere. Other great spots for cocktails are *The Libertine*, *ball & biscuit*, and *Thunderbird*.

LIVE MUSIC AND DANCING

From big stadiums to small venues, Indy has plenty of spots to listen to live music. Visitors can check out indie bands at *The Hi Fi* and *Radio Radio*, or enjoy jazz music at *Chatterbox* and *Jazz Kitchen*. An Indianapolis classic is the *Slippery Noodle Inn*, a Blues bar. Other live music spots are *Howl at the Moon* and *Tin Roof*.

i For more information, visit: www.visitindy.com

Local Beer, Wine and Cider

Fountain Square Brewing

www.fountainsquarebeer.com

It all started when a couple of chemists put their heads (and passion!) together to do one thing: craft great beer. Located in the hip, funky Fountain Square Cultural District, the owners converted an old warehouse into a most dazzling soda pop fountain-esque brewery.

1301 Barth Ave., Indianapolis, IN 46203, 317-493-1410



Source pictures: Visit Indy

Broad Ripple Brewpub

www.broadripplebrewpub.com

The brewpub was the city's first ever microbrewery when its Englishman-owner opened its doors in 1990. Since then this Broad Ripple staple has served a consistent menu of English pub food like shepherd's pie and scotch eggs which perfectly pair with one of their microbrews.

842 E. 65th St., Indianapolis, IN 46220 317-253-2739



Source: Visit Indy

Source: freeskyline - StockAdobe.com

Easley Winery

www.easleywinery.com

With over 40 years making award-winning wines, Easley's family-owned business produces something everyone will love. Located right downtown, it's easy to stop in for tours and tastings of Indiana champagne, Reggae and Sweet Tulip wines, and seasonal specialties like warm mulled wine.

205 N. College Ave, Indianapolis, IN 46202, 317-636-4516



Source pictures: Visit Indy

Ash & Elm Cider Company

www.ashandelmcider.com

Ash & Elm makes complex and balanced ciders that are never from concentrate and are naturally gluten-free. Each cider uses fresh-pressed apple juice and all-natural ingredients like hand-peeled lemons, real fruit infusions, and crushed, toasted, and blended whole spices. Talk with the knowledgeable bar staff, try a flight to find your favorite style, and enjoy a scratch-made meal while you're at it..

2104 E. Washington St. Indianapolis, IN 46201, 317-600-3164

Source of information and text: Visit Indy



Source pictures: Visit Indy

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Lowering the Overall Carbon Footprint of Pigments

Novel approaches and developments in pigments for coatings

Minimizing the energy required to disperse pigments is a novel approach to improve the sustainability of pigments, says Romesh Kumar, senior technical sales manager for Heubach.

What are the most promising pigments novelties for sustainable coatings solutions? One of the more novel approaches to improve the sustainability of pigments and lower their overall carbon footprint is to minimize the energy required to disperse the pigment. We have specifically modified a number of the most common pigments used in coatings to decrease the amount of energy needed to disperse the pigment. The challenge is to preserve the optimum color and maintain the overall attributes of the pigment while simultaneously making them easier to disperse. These manufacturing modifications result in dissolver dispersible pigments, which only require about 25 % of the energy and milling time versus regular pigments. We are also a pioneer in the development of sustainable color technologies, including bio-based raw materials and the substitution of questionable materials to improve environmental characteristics and spearhead regulatory compliance. These include some of the most common pigments used in coatings, including quinacridones types. This means reducing petrochemical consumption and decreased amount of greenhouse gases released to the atmosphere.

On what new pigment products for the paint and coatings industry are you currently working? Organic pigments are relatively dusty in the pure powder form and can be messy to work with. For a cleaner workplace with less dust, we are developing low dusting pigments. Another key focus has been development of high-pigment loaded dispersions packed in pails and totes that can be reused for finished paints. Since these dispersions are optimized, it means that you have the same color every time, minimizing the

need for adjustment and the added benefit of not having to dispose of the empty containers. This makes paint manufacturing faster and more consistent.

How do legislation and regulations drive your R&D for pigments in coatings applications? We were the first to offer

a number of alternates to heavy metal pigments for coatings. These opaque organic pigments have good gloss and rheology and are well established in the coatings market because of excellent price and performance. We are also first in the development of low-VOC dispersions with APEO-free surfactants and

right biocides for architectural and other applications. We constantly and vigilantly monitor global legislation and regulations to ensure our projects in development are either ahead of or on pace with pending regulations. This is a huge factor in all our R&D and continuous improvement initiatives. 



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BOOKSHOP



“Supply-Chain Issues and Product Availability Have Created a Significant Challenge”

VOC compliance and higher coatings performance remain challenges for industrial coatings

As regulations get stricter, the need for bio-based solutions and products will continue to grow and be adopted by formulators, says Brendan M. Cullinan, technology director for Specialties-Material Science at Brenntag North America. The current supply-chain issues forced formulators to look for higher performing alternatives, not just upgrades, he says.

What are the current challenges for the industrial coatings segment? Supply-chain issues and product availability have created a significant challenge.

Customers have gone from looking at direct offset replacement products to replacement technologies from raw materials with a better supply forecast. Products with substantial cost differentials are now priced on par in many applications and resin-derivations. Alternative technologies can address supply issues sufficiently well if given good reason to change, and good starting point formulas for which to work. What are the trends in the formulation of industrial coatings? VOC compliance, and a trend to higher coatings performance remain the biggest challenges.

Not surprisingly, supply issues have driven customers to look at available higher performing resins, but not mere upgrades to current resin technology. There has been somewhat of a shift to different resin technologies to address these obstacles for long-term solutions.

To what extent will the share of eco-friendly, sustainable, or bio-based solutions in industrial coatings develop in the coming years? Product supply has been the biggest hurdle. However, more readily available bio-based modifiers are making wholesale changes to alternative resin technologies much easier (e.g., lower MWt oligomeric resins improving solids and solvent solubility in higher MWt alternatives). Once in, we believe these are here to stay. The compatibility of bio-based resins and plasticizers (primarily esters and hydrogenated materials – some coming over from the synthetic lubricant market) have improved substantially in recent years. Borrowing from biodiesel technology, as well, has



Brendan M. Cullinan

Brenntag North America
Booth #1954

made adhesion promoters more economical, synthetic esters more readily available, and has provided a new platform for bio-based materials as essential modifiers and additives. As regulations get stricter, the need for bio-based solutions and products will continue to grow and be adopted by formulators.

“The compatibility of bio-based resins and plasticizers have improved substantially in recent years.”

Relaxing in Indy – From Sports to Shopping

Take in what Indy has to offer

Don't have any plans for what to do after the show closes its doors? There is plenty to do for sports fans in Indianapolis. If you prefer shopping, make sure to check out the Circle Center Mall and Indy's cultural districts.

Indianapolis is a great place for sports lovers and home to some great teams – from the NBA Pacers, WNBA Fever, NASL Indy Eleven soccer team or ECHL Indy Fuel hockey team. Indy is also home to the Indianapolis Motor Speedway, where each May, 33 drivers race at the Indy 500.

Visit the NCAA Hall of Champions that showcases all 24 collegiate sports and displays the dedication behind being a student-athlete. It offers two levels of interactive exhibits, including several sports simulators and a 1930s retro gymnasium. Visitors can also test their knowledge of sports trivia and learn about the past of featured champions.

Indiana is home to famous golf course architect Pete Dye and many of his designs, such as the Brickyard Crossing. Four holes of this course are located in the infield of the Indianapolis Motor Speedway. You can learn more at the Pete Dye Golf Trail, which celebrates his impressive work.



Source: greens87 - Stock/Adobe.com

SHOPPING

Connected to the Indiana Convention Center and many hotels via the convenient skywalk, is the Circle Center Mall, a favorite for shopping lovers. On four levels, the large mall offers over 100 shops and dining options. Just north of

Indianapolis is the Fashion Mall at Keystone where you will find high-end retailers, luxury designers, and fine dining.

Indy also has many locally made gifts and small, independent boutiques. On Mass Avenue or at Fountain Square you can find unique clothing, art and gifts.

Visit Homespun and Silver in the City for goods by local artists, or check out Indy Reads, which maintains the charm of an old-fashioned bookstore.

For more information, visit: www.visitindy.com

EXHIBIT 1929



THE SHAPE OF THE PAINT-AND- COATINGS INDUSTRY HAS CHANGED

For retailers and consumers, TruSnap™ Square by KW Container is a win-win. Injection molded from our proprietary, high-quality resin, it's shaped to make it easier to fill, tint, and paint out of. The square design also makes it easier to stack, store and ship; and yes, it's even easier to pour from as well.

Stop by and see the advantages of TruSnap Square from all sides.



TruSnap™
trusnapcontainer.com



KW CONTAINER