

ACS SHOW[®] 2022 DAILYONE

The Show and Conference Daily | www.american-coatings-show.com | April 5, 2022

Face-to-Face Again

American Coatings Show and Conference 2022 opens today



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The American Coatings Show and Conference 2022 is starting today.

Expectations and anticipation are high – the American Coatings Show and Conference commences today. Due to the global pandemic, the event was canceled two years ago. Now the time has come to meet again face-to-face at the Indianapolis Convention Center and enjoy an on-site exchange of ideas.

The American Coatings Show and Conference 2022, hosted by the American Coatings Association (ACA), in collaboration with Vincentz Network (VN), marks the fourth time this biennial event has convened in Indianapolis. Starting today at the show, industry is offering access to an array of its products, ranging from coating raw materials, to laboratory, production and packag-

ing equipment, and testing and measuring technology.

According to Cheryl Matthews, vice president of Events and Expositions at ACA, "We are thrilled to welcome the industry to the ACS 2022. Indianapolis has been the home of the ACS for years, and we are eager to provide an occasion for companies and professionals to engage with one another again. It has been four years since we've held this major event, and we look forward to offering almost 100 presentations for learning the most recent advancements in coatings technology. It is an ideal environment for networking and discovering more about the newest products companies have to offer."

"We are very excited to open the doors again after such a long period and at the

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

same time introduce new features at the leading North American event for the industry," says Kristina Wilger, director of event management at Vincentz Network. "The conference is now located at the same level as the exhibit hall and runs concurrently with the exhibition for the first time. Besides the new Powder Coatings Pavilion, the product presentation and the Fun Run are great highlights."

The program of the AC Conference, which also starts today, consists of some 90 selected presentations, clustered in 16 conference sessions. 📍

📍 For more information on the American Coatings Show and Conference 2022, please visit www.american-coatings-show.com



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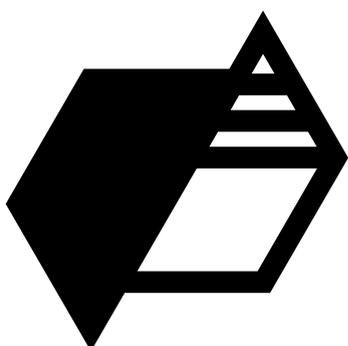
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AC Show

"Opportunity to Reconnect is Long Overdue"

ACA and Vincentz Network are excited to return to Indianapolis for the ACS 2022

It is with great anticipation that I welcome you to the American Coatings Show and Conference 2022 (ACS/ACC)! The American Coatings Association and Vincentz Network are excited to return to Indianapolis this year to offer the industry a platform for high-level learning and engagement. It has been four years since the industry has gathered for this event, and the opportunity to reconnect is long overdue.

The past few years have indeed brought about unprecedented change in the way business is conducted. Despite these changes, it is our intention to bring you the quality experience for which the ACS/ACC have come to be known. It is our hope that you will find this year's show and conference both engaging and informative and that these events will exceed your expectations.

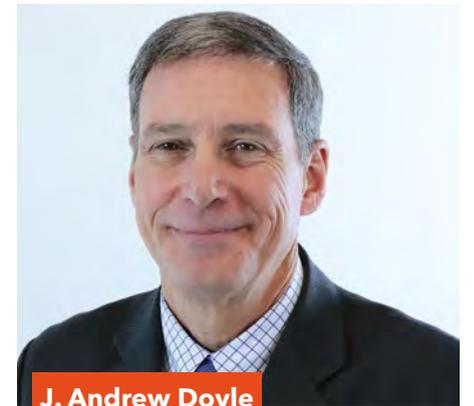
For the first time, the conference and show are being held in adjoining areas of the hall. We trust that this will create a smooth transition, allowing conference attendees to move freely between the sessions and the exhibit hall. With the theme "Strong and Resilient: Innovation in Coatings Technology," the conference will officially kick off this afternoon, with a keynote address from Chris Killian, senior vice president and CTO at Eastman. His message, titled "The Role of Innovation in the Coatings Industry When Every Color Must be Green," will be followed by several days of intense learning. Industry professionals have the opportunity to immerse themselves in a wide range of topics presenting the most recent advancements in coatings research and technologies.

The show promises to be equally stimulating, with exhibitors showcasing their newest products, reconnecting with cus-

tomers in person, and developing new business relationships. The ACS mobile app provides updates on activities during the event and will prove valuable in navigating interactions and locating exhibitor booths on the show floor.

Beyond the sessions and product presentations, the ACS has even more to offer. Our online Career Center is available to connect companies with qualified professionals and promising students. This evening's Poster Session is an especially opportune time for networking and interaction. Another popular activity is tomorrow's Fun Run at White River State Park. If you haven't already registered for this early morning outing, be sure to sign up at the registration desk today!

As you experience all the show and conference have to offer, we encourage you to remain aware of our safety protocols. Your wellbeing is of the utmost im-



J. Andrew Doyle

**President & CEO
American Coatings Association
Booth #1888**

portance to us, as is your overall experience. Thank you for your support. May the ACS/ACC be a conduit for successfully advancing your 2022 business goals! 📍

"A Premier Event And Unique Opportunity"

Voices of endorsement for the ACS 2022



Frank C. Sullivan

**Chairman and CEO
RPM International**

"RPM International Inc. is proud to support the American Coatings Show, a premier event that brings together industry professionals to network, exchange knowledge and identify solutions that meet market needs. The show provides a unique opportunity for our operating companies to connect with supply chain partners. Insights gained throughout the event help our businesses develop innovative products and solutions that protect, restore and beautify our customers' assets."



Michael McGarry

**Chairman and CEO
PPG Industries**

"The coatings industry continues to adapt to the evolving market trends around the world. Since coatings cover every element of daily life - from the ships that deliver goods, to the beverage cans in your refrigerator, to the walls of your home, and to the car you drive - our researchers and scientists must develop new innovations that meet the changing needs of our customers in every market. As consumers move towards greener, more sustainable forms of consumption and transportation, we are presented with entirely new opportunities to innovate. This now includes sustainable packaging coatings that expand the use of aluminium, new coatings to facilitate the growth and success of electric vehicles, and paint that reduces the fuel consumption of airplanes and ships. Another current challenge will be to reduce the environmental impact of our customers' footprint. Our industry is well positioned to enable a more sustainable future, driven by new innovations that protect and beautify the world."

AC Conference

Tuesday, April 5, 2022

| | |
|--------------------|--|
| 12:00 pm - 1:15 pm | Plenary Session: Welcome Address, Conference Introduction, Keynote Presentation, Award Ceremony |
| 1:30 pm - 4:30 pm | Session 1: Science Today, Coatings Tomorrow Session 2: Sustainability Session 3: Measuring and Testing Session 4: Automotive Coatings |
| 3:00 pm - 3:30 pm | Networking: Coffee Break |
| 5:00 pm - 6:30 pm | Poster Session |

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

Conference Kicks Off

Today marks the official start of the American Coatings Show Conference 2022

The event will once again feature many highlights with an engaging and varied program.

The ACS Conference kicks off with the Plenary Session and conference lunch, starting at 12:00 pm. In addition to the Welcome Address, the prestigious American Coatings Show Award for the most outstanding technical presentation at the American Coatings Conference will be presented. The Keynote Address is also part of the Plenary and will be given by Chris Killian, senior vice president and CTO at Eastman. His address is titled "The Role of Innovation in the Coatings Industry When Every Color Must be Green."

After the Plenary Session, the conference sessions will commence. Today's sessions include Science Today, Coatings Tomorrow; Sustainability; Measuring and Testing; and Automotive Coatings. These sessions will be followed by the Networking Reception and Poster Session. Posters are displayed, and contributors will be present to discuss their research. Browse



The American Coatings Conference is back.

the posters with a drink in hand and network with the other participants.

LOOKING AHEAD

Tomorrow the conference program continues with sessions on the following topics: Functional Coatings; Architectur-

al Coatings; Epoxy Coatings; Waterborne Coatings; Polyurethane Coatings; and Tools and Systems. Thursday, the conference will conclude with sessions on Bio-based Materials; Weathering and Corrosion Testing; Protective Coatings; and Radiation Curing. The conference will end at noon on Thursday after the sessions.

GETTING A HEAD START

The popular Pre-Conference Tutorials will also take this morning, prior to the official conference kick-off. This morning's 10 tutorials provide an introduction and overview of important topics in the coatings industry. The Pre-Conference Tutorials address the following subjects: Formulation and Machine Learning in the Coatings Laboratory; Biocide Selection Process for Coatings; Titanium Dioxide; Functional Films; Polyurethanes; Waterborne High-performance Coatings; Anticorrosive Coatings; Easy-to-Clean Coatings; Rheology; and An Overview of Green Building Standards, LCA, and ACA's Sustainability Standard for Architectural Coatings.

View the entire schedule and learn more at: www.american-coatings-show.com/conference

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How Resilience and Creativity Drive Sustainability

Today's keynote address focuses on sustainability in the coatings industry

The keynote address at the AC Conference will take place during the Plenary Session, which starts at 12:00 pm.

This year, Eastman's senior vice president and CTO, Chris Killian, will deliver the keynote titled, "The Role of Innovation in the Coatings Industry When Every Color Must be Green." During his address, he will underscore how resilience has always been at the core of the coatings industry, and has long been a vital feature on the path to a more sustainable future. In his keynote address, Killian will note how the coatings industry can make a big contribution to sustainability. From providing the protection to extend the service life of assets, to adapting formulations toward more sustainable chemistries, to re-engineering application technologies to save resources, the industry is demonstrating its resilience and ability to adjust, says Killian. Customers are asking for coatings that save energy and reduce material use or which reduce waste through improving the durability and lifetime of assets. Industry is responding to that and also developing coatings that improve the safety and wellness of the consumers they touch, and coatings that will drive the circular economy.



Chris Killian

**Eastman
Booth #1582**

ABOUT THE KEYNOTER

Chris Killian joined Eastman in 1996 as a research chemist. During his career at Eastman, he has held various positions in technology and business areas. He holds a B.S. degree from the University of North Carolina, Greensboro, and a Ph.D. in Organic Chemistry from the University of North Carolina, Chapel Hill.

For more information, visit: www.american-coatings-show.com/conference/#keynote



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INTERVIEW

“A Toolbox with a Rather Limited Number of Available Components”

Creating partnerships is key for driving bio-based solutions in the coatings industry

There are many challenges in developing bio-based coatings. Joost Broeders, technical director at Baril Coatings, identifies these challenges and explains how they can be addressed. Here he underscores how performance is essential for the success of a bio-based system.

What are the main challenges in developing bio-based coatings? The challenges we encounter in developing bio-based coatings as a company are in the first place, availability of bio-based raw materials. Although more and more suppliers are working on developing bio-based coating components (binders, additives), it is a toolbox with a rather limited number of available components.

Secondly, when bio-based alternatives are available, they do not always meet the conventional product specifications. The performance should of course at least be equal, but preferably they should outper-

form the conventional components, and/or add an additional performance parameter. The latter would definitely help in the overall acceptance process in industry. We have successful examples of such bio-based components, for instance, with better surface tolerance and curing at lower temperature (e.g., phenalkamine based activators for epoxy products).

Thirdly, when commercially available they should be supplied in constant quality and in the required quantities. We have experience with bio-based components that met all criteria along the coating development stages, but in upscaling and even at the point of market introduction, gradually decreased in performance. An open and transparent dialogue throughout the supply chain is essential to prevent such issues.

As an SME, we know we can't change the world; but by setting up intense one-on-

one cooperation with raw material suppliers and by taking part in the Netherlands and EU-wide consortia to perform research on new bio-based building blocks and develop bio-based coatings with the created resins/additives/raw materials, we actively take part in co-initiating irreversible change. This is the ultimate way to fulfil goal 17 of the United Nations Sustainable Development Goals - create partnerships!

How would you rate the performance of bio-based coatings compared to conventional ones? To reiterate, the performance should at least be equal to conventional coatings. For us it is an essential part of the process of developing (bio-based) coatings. Concept formulations are constantly checked on the properties/performance in comparison to reference products. When introducing newly developed products, we select a number of certifications and have the products tested and certified. So, for both our Decorative and Protective Industrial coatings we can rate our bio-based qualities as good to even excellent in performance.



Joost Broeders

Baril Coatings

How would you describe the outlook for bio-based raw materials? Besides the rather limited overall 'toolbox' and the setbacks we encountered in our pioneering years, I have to say that bio-based raw materials helped us in the challenging situation of general shortages last year, as the availability of these bio-based alternatives was much better than the fossil-based versions. In many cases we could fulfil our customers' needs, where others were unable. 



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Digitalizing the Coatings Industry

The Smart Paint Factory Alliance gathers companies specializing in Industry 4.0

Digitalization enables linking the so-called haptic world of materials, processes, and assets with the complementing virtual world of data and digital applications. Individual small and mid-sized coatings companies may not be able to do this on their own in a holistic way due to limited resources.

The Smart Paint Factory Alliance, being set up in early 2022, will connect the haptic materials world with the virtual data world to benefit the coatings industry, companies, and society. The ultimate vision is a digitalized, end-to-end, sustainable and competitive coatings industry, ideally globally.

The Smart Paint Factory Alliance roadmap is currently under development. It will combine a cross section of human and artificial intelligence players throughout the coatings industry value chain and its periphery. The value chain needs to include mining and drilling

operations, raw material manufacturing, paint formulation and production, coatings applications, industrial and private customers, retro logistics and recycling. The periphery includes sustainability, digitalization, and other experts as well as scientific, technical and commercial services, and products and equipment from a variety of suppliers.

The Smart Paint Factory Alliance will orchestrate the synergy of scale required for what is a true transformation of an entire industry segment.

Smart Paint Factory Alliance founding members are:

- Hochschule Niederrhein, Krefeld in Germany
- Fraunhofer-IFAM, Bremen in Germany
- Orontec, Wuppertal in Germany
- European Centre for Dispersion Technologies (EZD), Selb in Germany and
- Wolfram Keller Professional Services, Darmstadt in Germany. 



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INTERVIEW

"Some Challenges Remain"

Transitioning from solvent-borne to waterborne coatings



Daniel J. Weinmann

Westlake Epoxy
Booth #2348

ical resistance, and excellent corrosion resistance. Although waterborne epoxy performance has advanced significantly over the past 40 years, there are some challenges that remain when transitioning from solvent- to waterborne coatings. These challenges fall into two primary categories: formulation development and application properties.

In formulation development, the main challenges are robustness, cost and component stability. Waterborne epoxy coatings typically require multiple additives

Regarding application properties, waterborne epoxy coatings are challenged when the end-use requires application at lower temperatures and higher relative humidity. Under these conditions, the reactivity and drying of the two-part epoxy/amine system slow down significantly, and the high relative humidity makes it more difficult for the water to evaporate from the coatings film. Some ways to address this issue are to use heaters to warm the substrate or to use warm air flow to drive the release of water from the coating film.

cost of waterborne epoxy coatings. These options include formulating acrylic/epoxy hybrid coatings for institutional applications; as well as, selecting waterborne amine hardeners that offer lower use levels. For example, "Epikure Curing Agent 8530-W-75" has a use level of only 24 PHR (parts per hundred weight resin). Another option to reduce cost is to select a more economical epoxy dispersion, or a liquid epoxy resin emulsion. When choosing to reduce cost, the resultant performance may be somewhat reduced. However, for light duty or medium duty applications, these lower cost options can still meet the minimum performance requirements depending on the service environment.

Although waterborne epoxy performance has advanced significantly over the past 40 years, there are some challenges that remain when transitioning from solvent- to waterborne coatings, says Daniel J. Weinmann, market development manager at Westlake Epoxy.

"In formulation development, the main challenges are robustness, cost and component stability."

What are the remaining challenges in the transition from solvent- to waterborne coatings? Over the past few decades, waterborne epoxy coatings have significantly improved their capability to deliver epoxy performance in real world applications. For commercial coating formulations, the solvent content in waterborne epoxy coatings has dropped from 150 g/L VOC to less than 50 g/L VOC: in some cases, even approaching zero VOC levels. Even at ultra-low solvent content, these waterborne epoxy formulations provide superior adhesion, higher chem-

to overcome specific hurdles related to the presence of water as the carrier; specifically, high interfacial tension (requires wetting and dispersing agents, flow and levelling agents) and the potential for accelerated corrosion (flash rust inhibitors). The choice of additives and their use level is critical to develop a coating formulation that has acceptable component stability, good application properties and superior film performance. Optimizing the additives in these formulations may increase the time (and costs) needed for coatings development.

Are there any developments that could expand the areas of application of water-based coatings? To protect the environment, improve worker safety and provide longer service life, coatings manufacturers are developing waterborne epoxy systems that deliver higher performance, faster return to service and superior film formation without any added co-solvents. With ultra-low VOC epoxy systems, formulators can take their waterborne epoxy coatings all the way towards zero solvent emissions. Another development area is to explore ways to reduce the

What is R&D in water-based coatings currently focusing on? Our goal is to help the coatings industry make a successful transition to solvent-free, waterborne coatings; and by working together, we can achieve this vision with our customers. The developments mentioned above are fully commercial so now, our R&D groups are focused on developing waterborne epoxy coatings for more challenging applications. The global R&D labs are working to improve lower temperature cure, to increase product stability and to develop new waterborne epoxy dispersions and amine hardeners that are easier to formulate, as well as, to improve adhesion to ultra-smooth steel, wood, and other difficult substrates. For improved performance, there are initiatives to develop very high corrosion resistance and higher chemical resistance, waterborne epoxy systems. 

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INTERVIEW

An Update on Regulations

Regulatory and legislative focal points for 2022 and beyond



Heidi McAuliffe

American Coatings Association
Booth #1888

Heidi McAuliffe, vice president of Government Affairs at the American Coatings Association, shares insight into some of the regulatory and legislative issues that the U.S. coatings industry is facing.

Will the U.S. Environmental Protection Agency's PFAS regulatory agenda affect paint and coatings manufacturers? It's important to note that PFAS – per- and polyfluoroalkyl substances – are a vaguely defined chemical grouping of fluorinated chemicals used as an additive in wide array of products. With growing public concern about potential hazards of PFAS in drinking water and other sources, regulators, including the U.S. Environmental

Protection Agency (EPA) – as well as state lawmakers – have proposed and/or initiated a variety of programs to evaluate and eventually regulate those substances. One of EPA's proposed regulations would designate certain PFAS as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act. As a result, industries – including paints and coatings – municipal utilities, and federal facilities will be challenged with conducting site remediation and disposal of existing stocks of firefighting foam and products onsite containing PFAS substances from legacy industrial uses. Additionally, they will have to report releases of some PFAS chemicals above a specified threshold.

What other activity related to PFAS is the American Coatings Association monitoring for industry impact? Well, in Fall 2021, EPA released its PFAS Strategic Roadmap, a three-year plan describing specific regulations, with deadlines and research the agency plans to undertake to understand where additional controls may be needed, and a course of action based on evaluation of individual PFAS substances. Among those EPA regulatory initiatives are new rules setting final drinking water limits for PFAS, expected to be released by fall 2023. ACA is monitoring that federal initiative, but also closely watching proposals related to PFAS at the state

level. Several states passed PFAS legislation during the 2021 legislative session, including Maine, Connecticut, Nevada, West Virginia, and Illinois. While many of these laws related to firefighting foam or food packaging, none went further than Maine, which banned the use of intentionally added PFAS in more product categories – carpets, rugs, and fabric treatments by 2023 – but importantly, by 2030, all products that contain intentionally added PFAS are banned unless a decision has been made by the environmental agency that the use of PFAS was unavoidable. Given the proliferation of these proposed bans across state legislatures, ACA is engaging in advocacy to ensure no undue burdens for industry.

Are there other regulatory or legislative trends you're seeing that might concern industry? Extender Producer Responsibility (EPR) legislation was prevalent across the states in 2021 and will continue to garner focus. Many of these EPR proposals require producers to manage the end-of-life of products introduced into commerce, including the products' packaging as means of reducing the packaging waste stream and shifting the cost burden from state government to industry. ACA and its industry are leaders in the EPR space with its vanguard PaintCare program – a true product stewardship model that ensures environmentally responsible

end-of-life management for leftover paint, while relieving local and state governments of their economic burden without creating new, expensive local or state-run programs. Because of ACA's PaintCare paint product stewardship program, last year, ACA was able to mitigate further burdens on industry in two states where PaintCare has longstanding programs. ACA's engagement during the legislative process on bills enacted in Maine and Oregon establishing EPR programs for plastic containers will save the industry potentially millions of dollars in fees that will be assessed annually. While these bills differed in their construct, both would impose significant fees on paint manufacturers and are completely financed by a fee. ACA succeeded in incorporating language in both bills that exempts containers for architectural paint, subject to a paint stewardship program, because of PaintCare operations in both Maine and Oregon. ACA is working to ensure that divergent EPR proposals arising across the states recognize the work conducted by product stewardship organizations like PaintCare and don't impose undue regulatory or financial burdens on industry. The association and industry are working to broaden adoption of its landmark environmental stewardship program beyond the 11 jurisdictions where the program has been adopted. 

Handy Helpers

The ACS app, social media channels and website

Have a full day planned for today? Key resources for your visit are the ACS app and website.

Save time looking for exhibitors by using the booth plan with booth numbers available in the ACS app. This free app is offered for Apple and Android devices and easily allows you to browse through information about exhibiting companies, products and technologies. Just search for "American Coatings Show" in your app store.

Attendees of the American Coatings Conference will appreciate the app's ability to organize a personal conference agenda. It offers access to the complete program, including all abstracts, and allows you to select presentations in which you're interested.

ON ALL CHANNELS

Did you know that the American Coatings Show is on social media? Make sure to follow us on Facebook, Twitter and LinkedIn for updates on the show.

THE WEBSITE

Another indispensable resource is the American Coatings Show website. Plan your day at the show with a comprehensive list of all exhibitors, booth numbers, products, and the exhibit hall plan. The conference section of the site provides detailed information on the event, including the conference schedule, awards, and the keynote address.

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

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Product Presentations Today

Exhibitors highlight their novelties in short presentations

Hear about new innovations in the coatings industry during live, on-stage Product Presentations. Exhibitors present their novelties in 15-minute talks at booth #1053.

9:20 - 9:35 am

New Biosourced HEUR PU Thickeners
Lori Howell
Arkema

9:40 - 9:55 am

"Omyamatt" - Efficient Alternative to
Conventional Matting Agents
Dino Papagianidis
Omya

10:00 - 10:15 am

New Universal Dispersant for Pigment
Concentrates and Waterborne Coatings
Sunny Wang
The Dow Chemical Company

10:20 - 10:35 am

Adhesion Promotion via Surfactants
David Law
Univar Solutions

10:40 - 10:55 am

Biobased Surface Modifiers
Amanda Andrews
Michelman

11:00 - 11:15 am

"Agocel" Advanced Rheology Additives
for Architectural Paints and Coatings
Cody Lindemulder
Keim Additec Surface USA

11:20 - 11:35 am

Improve Wood Coatings and Powder
Coatings Using Modified Natural Waxes
Michael Watson
Clariant Paints & Coatings

11:40 - 11:55 am

Sustainable Solutions for Matting and
Improved Surface Protection While Main-
taining High Transparency with "Ceraflour
1001" and "Ceraflour 1002"
Mary Kate Nolan
BYK USA

12:00 - 12:15 pm

High Performance Multi-Functional
Additives for Waterborne Paints and
Colorants
Brian Vest
Solvay

12:20 - 12:35 pm

Use of "Lattice" Colloidal Microcrystal-
line Cellulose in Sustainable Waterborne
coating Formulations
Hui Yang
IFF Industrial Solutions

12:40 - 12:55 pm

Breakthrough Epoxy Curing Agent
Technology for Protective Coatings Gets
You Back in Service in Under an Hour
Sudhir Ananthachar
Evonik - Crosslinkers

1:00 - 1:15 pm

Redefining Pigment Dispersions for
Tinting Systems
Hersjel Wehrens
Heubach

1:20 - 1:35 pm

Levasil Colloidal Silica - Sustainable
Solutions for Waterborne Coatings
Peter Greenwood
Nouryon

1:40 - 1:55 pm

Differentiated and Sustainable
Exterior Architectural Coatings
Anna Sanchez-Fischer
Arkema

2:00 - 2:15 pm

"Aptalon 8080HS" -
High Solids Polyamide Polyurethane
Kent Maghacut
Lubrizol

2:20 - 2:35 pm

Synthomer New Product Innovations
Terri John and Thomas Bernhofer
Synthomer

2:40 - 2:55 pm

"Synaqua 9511" Acrylic Polyol Emulsion, a
Low VOC Solution for Industrial Coatings
Claire Reynier and Alicia Albrecht
Arkema

3:00 - 3:15 pm

"Tego Humectant 7005" for Binder-Free
Colorants
Kersten Forsthoefel
Evonik - Coating Additives

3:20 - 3:35 pm

Unique, High Performance Epoxy Curing
Agents
Paul Lewis
Univar Solutions

3:40 - 3:55 pm

Enabling the Switch to APE/VOC-free
Solutions in Architectural Coatings
Linda Adamson
Solvay

4:00 - 4:15 pm

"Sipomer PAM 600" Enhances
Performance of Waterborne Architectural
Coatings
Joey Ruiz
Solvay

4:20 - 4:35 pm

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INTERVIEW

"A Lot of Potential to Improve the Sustainability of Paints"

Sustainability efforts impact trends in architectural coatings

There are different factors driving architectural coatings manufacturers to alternate and more eco-friendly solutions. According to Stephan Krieger, director of Global R&D Emulsion Polymers/Technical Service P&C EMEA at Celanese Services Germany, demographic shifts and regulatory issues, which will spread from one region to others, is accelerating this trend.

What solutions are most sought through R&D for architectural coatings? To formulate paints without coalescent agents that generate emissions, paint manufacturers often use vinyl emulsions with low MFFT (~0°C). However, such soft binders usually have poor paint properties such as wet scrub performance, dirt pick-up, scratch, and block resistance. By using innovative concepts, such as heterogeneous morphology, emulsion, manufacturers have developed harder vinyl emulsions at low MFFT that can overcome these limitations en-

abling formulators to avoid costly tradeoffs. In the North American market, significant R&D resources are being spent to reformulate paints, to remove APE surfactants, meet stricter VOC limits and third-party certifications. More recently, supply-chain constraints have redirected R&D resources toward qualifying alternate raw materials and extending binders with other out-of-kind binder chemistries.

What technological or major trends do you expect to influence architectural coatings in the next few years? Sustainability is becoming ever more important for paints. Renewable raw materials are increasingly replacing fossil fuel-based raw materials. Furthermore, new technologies to reduce carbon footprint through use of renewable energies and recycling are being implemented. From a global perspective, however, there is still a lot of potential to improve the sustainability of paints

by more consistently avoiding the use of solvents and plasticizers. For this purpose, VAE dispersions are available as binders that enable the formulation of paints without coalescent agents and plasticizers.

In American markets, the demographic shift toward millennials becoming the primary decision makers for buying paints is also helping sustainability's cause. Also, increasing use of recycled products/new materials in construction is raising the performance bar on contractor paints and enhanced user experience requirement in DIY space is moving consumer paint up the quality continuum.

How will stricter biocide regulations affect formulators of architectural coatings? Stricter regulations on the use of preservatives is already being implemented in Europe. For example, in 2020, the



Stephan Krieger

Celanese Services Germany

MIT (methyl isothiazolinone) threshold limits for labeling paint was reduced to 15 ppm. This level is below the minimum inhibitory concentration of MIT to preserve paint. The reduced number of preservatives available and the trend toward lower limits is likely to reduce the shelf life of paints and require better hygiene in paint manufacturing raising production and overall paint costs. This trend is expected to spread to other regions. 

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American Coatings Association (ACA)
901 New York Avenue, NW
Suite 300 West
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Vincentz Network (VN)
2885 Sandford Ave.,
SW #15817
Grandville, MI 49418



Editorial Contacts

Lisa Warren Román (ACA)
T (202) 462 6272
lroman@paint.org

Kirsten Wrede (VN)
T +49 (511) 9910 212
kirsten.wrede@vincentz.net

Layout and Production

Maik Dopheide
T +49 (511) 9910 165
maik.dopheide@vincentz.net
Nathalie Heuer
T +49 (511) 9910 267
nathalie.heuer@vincentz.net

Sales

Anette Pennartz
T +49 (511) 9910 240
anette.pennartz@vincentz.net

Printer

Miles Printing
4923 W 78th Street
Indianapolis, IN 46268
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“Pressing Need for Young Talent in the Coatings Industry”

There are several ways for academia, industry, and coatings organizations to cooperate and improve recruitment

A fierce battle for talent is ongoing, according to James W. Rawlins, professor of polymer science at the School of Polymer Science and Engineering, University of Southern Mississippi. The coatings industry has to compete with other high-tech disciplines such as biomedical or chemical engineering and their competitive work/salary benefits and career accolades.

What is the current demand for young talent in the U.S. paint and coatings industry? There is a pressing need for young talent in the coatings industry. The coatings industry, especially the realm of coatings formulation, is highly dependent on skilled scientists that often possess many formulation techniques ‘tricks.’ Coatings formulation can accurately be described as both a skill and an art. The depletion of experienced coatings formulators often results in lost knowledge if their replacements don’t have the opportunity to work alongside them in an apprenticeship fashion. There are many aspects of the coatings industry which cannot be transferred to upcoming scientists by formal education alone.

Many of the primary formulators, managers, etc., are baby boomers and are approaching retirement age. Many “set in their ways processors” exist. And yet these “set ways” are the prior art and are based upon trial and error over many decades of working through problems, nuances, and modifications that were complex, painful, and necessary. There is a need in the coatings industry for young talent in every facet and skill-set that can draw upon the existing wisdom. Talent that has depth of knowledge and is multi-disciplinary requires a strong foundation based on both education and strong research and development experience specific to coatings to avoid the normal “newbie pitfalls.” Many material types, material limits, and technical specifications are antiquated in a sense but were required for us to get where we are in understanding today. The necessary new talent must be educated in both historical practices and areas of newer and/or “greener” chemistry alternatives including bio-friendly and bio-based materials that can accelerate R&D, provided the basics concepts are well understood from regular daily efforts. I recommend industry-sponsored research and development projects with students during their education at bachelors, masters, and doctoral levels, so that this practical experience can be translated during the regular interactions that occur with industry partners and academic research grounded in real solutions.

To what extent is there a battle for talent? The battle is fierce! To the unformed, working in the coatings industry

can be falsely generalized as ‘watching paint dry’ by those seeking to divert talent to other industry sectors. Those who work with coatings understand that there is much more to it than that, with many exciting opportunities and novel needs to be met. We have to “sell” the coatings industry to prospective talent and highlight the cutting-edge opportunities that are prevalent in the industry.

Again, the battle for talent is incredible. My perspective is that students only want to work in areas where they have a high probability of “changing the world for the better.” That could be medical, clean water, less pollution, but something that seems like a life mission to improve the world! That said, surface coatings, at first glance may not sound as exciting as a new medical device for youthful scientist and engineers; however, most medical devices require coatings and films to be reduced to practice. Beyond the emotional driver, which is real and matters deeply to current students, there are dramatic differences in salaries, levels of engagement toward solutions they have in their early career, and of course a mismatch between wanting extremely early-career opportunities and the age-old need to prove themselves. Many higher revenue polymer engineering jobs offering better careers and salaries.

Polymer Science and Engineering battles for talent in this area with other high-tech disciplines such as biomedical or chemical engineering, and their accompanying work/salary benefits and career accolades.

How do academia, industry and associations cooperate to bring young talent into the industry? There are several ways for academia, industry, and coatings associations to cooperate and improve recruitment. Symposia, predominantly sponsored by coatings associations or academia, provide opportunities for students to interact with industry professionals. These personal interactions are paramount in spreading excitement and engagement to upcoming students. Personal interaction at such events helps to build relationships and buy-in to the industry.

Internships, sponsored programs, and cooperative programs engage students. Industrial partners that visit campuses and directly interact with students, especially through sponsored research and direct collaboration, provide mentoring, guidance, and challenging relationships. Industrial sponsored research in academic laboratories allows students to start as early as their freshman year of

college to collaborate to solve real world problems. They can address these challenges with practical industrial synthesis, engineering, and formulation solutions. The process delivers students the practical limits, whether those are cost or complexity, and the ability to work through those issues in real time toward a goal that could be as straight forward as increasing wet adhesion by 10% over a current system (sounds simple enough but often not so simple at all!). This is where the real teaching, training and education of historical and future needs come together in the form of a career scientist dedicated to the coatings industry solving real problems that make a difference (when presented with clarity, most of us do solve important and exciting problems in our careers). Technical conferences like our Waterborne High Solids and Powder Coatings Symposia enable industrial, and mentor collabora-



James W. Rawlins

University of Southern Mississippi
Booth #1678

tion and provide a platform for networking in addition to industry-sponsored internships, which are a welcome opportunity for many students. 

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INTERVIEW

“Chemistry, Computer Science, and Product Development Will Be Increasingly Interwoven”

Interview on digitization in the coatings industry



Erik Sapper

California Polytechnic State University
Booth #2973

“Their use is widespread, but optimization and mastery of using AI and ML tools is far from being the norm,” says Erik Sapper, assistant professor at California Polytechnic State University, San Luis Obispo. Here he offers insight into how AI can help in paint formulation.

How widespread is the use of AI in the paint and coatings industry? My take is that many companies are in the early stages of exploring the implementation and use of artificial intelligence (AI), machine learning (ML), as well as automation in their existing R&D workflows. It’s a tricky task to manage because the new technologies can be so disruptive, and not necessarily in readily apparent, controllable, or beneficial ways. I would characterize the landscape by saying that use is widespread, but optimization and mastery of using AI and ML tools is far from being the norm.

What are examples of how AI can help in paint formulation? AI is being used across the paint R&D, formulation, and production cycle, from optimizing supply-chain logistics, to using predictive analytics to determine the market demand for new products. Within those

two extremes exists the chemistry and formulation that we are so familiar with: AI tools are helping to make sense of synthesis and formulation results, creating synthesis/structure/formulation/property relationships quicker than the standard empirical analysis approaches. Fed with the appropriate starting data, AI can make predictions for a given synthetic procedure or proposed formulation but can also use the learned models to suggest novel procedures, materials, and formulations. This latter implementation is where chemistry, computer science, and product development will be increasingly interwoven as we become more comfortable with these digitally enhanced workflows.

How complex is it to implement AI/ML workflows in the laboratory? It is a complex task, to be sure. Foremost,

an organization must be supportive of changing its approach to science and product development, from a keep-the-winners mentality to one of all-experiments-create-usable data. This removes pressure on formulators, but also necessitates a clear vision for data management; that is, data creation, control, and sharing across the organization. If culture and data management have a strong foundation in place, in-house expertise in building and deploying AI and ML tools can grow more organically. Usually, however, there is much data housekeeping that must be performed first, before widespread AI implementation across the organization; and oftentimes companies may want to partner with outside labs, organizations, or universities to bootstrap and accelerate their efforts. 

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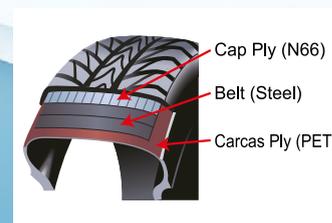
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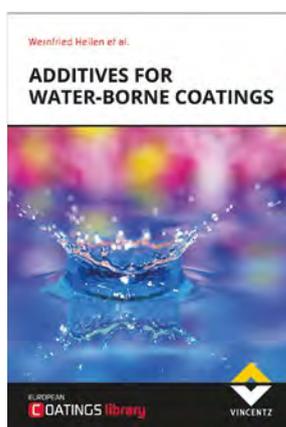
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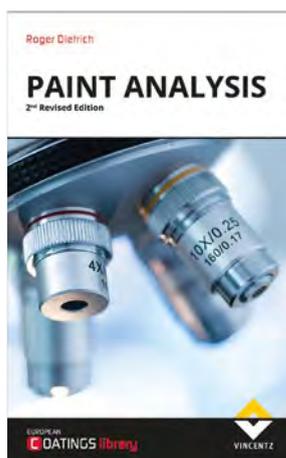
Visit the AC BOOKSHOP to browse technical literature on myriad topics ranging from coatings basics to formulation expertise, special applications, raw materials, and measuring and testing. Written by renowned experts from the international coatings industry, the AC BOOKSHOP offer ambitious technical knowledge and invaluable practical insights on different levels – for current and future coatings experts. Below is a selection of available titles.



Additives for Water-borne Coatings

By Wernfried Heilen et al.

Waterborne systems are the coatings of the future. The market is demanding ecologically sound coatings based on renewable raw materials, with matching demands on performance. Additives help to protect the environment by effectively reducing the use of organic solvents and many of today's waterborne coatings could not be formulated without them. *Additives for Water-borne Coatings* is a must read for formulators wishing to brush up on waterborne coating systems, as well as experts seeking detailed knowledge at their fingertips.



Paint Analysis, 2nd Revised Edition

By Roger Dietrich

The market demands modern, high-performance paints that possess specified properties. Where deviations from set points occur, the cause must be investigated and the error remedied. What "standard methods" don't disclose is why a particular coating either meets or fails to meet a requirement. *Paint Analysis* presents modern analytical techniques and their applications in the coatings industry that answer these and further complex questions. The information in this book can be used for performing failure analysis, production control and quality control, and also meet the requirements of modern high-level quality management. This text is an excellent combination of theory and practice for formulators, paint engineers, and applied technologists seeking an introduction to instrumental paint analysis and concrete answers to everyday problems.



The Rheology Handbook, 5th Revised Edition

By Thomas G. Mezger

In its fifth edition, this standard work describes the principles of rheology clearly, vividly, and in practical terms. The book addresses the rheology of additives in waterborne dispersions and surfactant systems. Not only it is a great reference book, it can also serve as a textbook for studying the theory behind the methods. The practical use of rheology is presented in the areas of quality control, production and application, chemical and mechanical engineering, materials science, and industrial research and development. After reading this book, the reader should be able to perform tests with rotational and oscillatory rheometers and interpret the results correctly.



Resins for Water-borne Coatings

By Jaap Akkerman, Dirk Mestach et al.

Expand your knowledge and get fully acquainted with the various aspects of waterborne coatings – from production, to properties, to special features of their use! With the shift from solvent-borne resins and coatings to waterborne coatings *Resins for Water-borne Coatings* is a must-read for any formulator wanting to expand their knowledge. The authors discuss important aspects of the "solvent-to-water-transition" of the past 40 to 50 years, take a deep dive into the key aspects and theories behind the production, properties, and applications of these resins, and provide an overview of how they are currently used in waterborne coatings.

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INTERVIEW

"Stronger Drivers Today than Two Years Ago"

Environmental, cost and supply sustainability are driving protective coatings

Chuck Jones, technical manager for Dispersions and Resins at BASF, comments on trends in raw materials for protective coatings, regulations and challenging applications.

What are the trends in raw materials for protective coatings? In protective coatings there is a continued shift toward raw materials that can enable both

lower VOC and waterborne coatings with solvent-borne performance. Environmental sustainability, cost sustainability, and supply sustainability are all stronger drivers today than two years ago. Coating suppliers are exploring what it means to drive sustainability in the industry. However, as the focus on low-VOC and waterborne coatings is increasing, we have customers thinking more critically

about how to reduce reliance on fossil fuels through bio-based raw materials and reducing overall carbon footprint of operations and products.

To what extent do regulations impact the development of novel protective coatings? Regulations have the largest impact on timelines for novel solutions development. Modifications to the

TSCA registration process for chemical substances are expected to increase the length of registration and the use of U.S. EPA's Significant New Use Rules (SNURs). This has incentivized raw material producers to utilize polymer exemption status. However, for certain chemistries, this will require more education and understanding among formulators about how to work with chemistries that have SNURs.

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"In protective coatings there is a continued shift toward raw materials that can enable both lower VOC and waterborne coatings with solvent-borne performance."

Additionally, there has been more scrutiny of the environmental and health impacts of chemistries that have been commonly used for protective coatings.

Which application areas for protective coatings are currently the most challenging and why? Adhesion to difficult substrates, like thermoplastic polyolefins (TPO) is a big challenge. Adhesion may be the most critical performance criteria for a coating, and it must be achieved on a given substrate before other performance advantages are realized. Another big challenge is C-4/C-5 corrosion resistance using a waterborne coating in a single layer ("direct-to-metal," or DTM). This type of protection traditionally requires multiple layers (primer and topcoat) and is more readily achieved using solvent-borne chemistries (alkyd or polyurethane). 



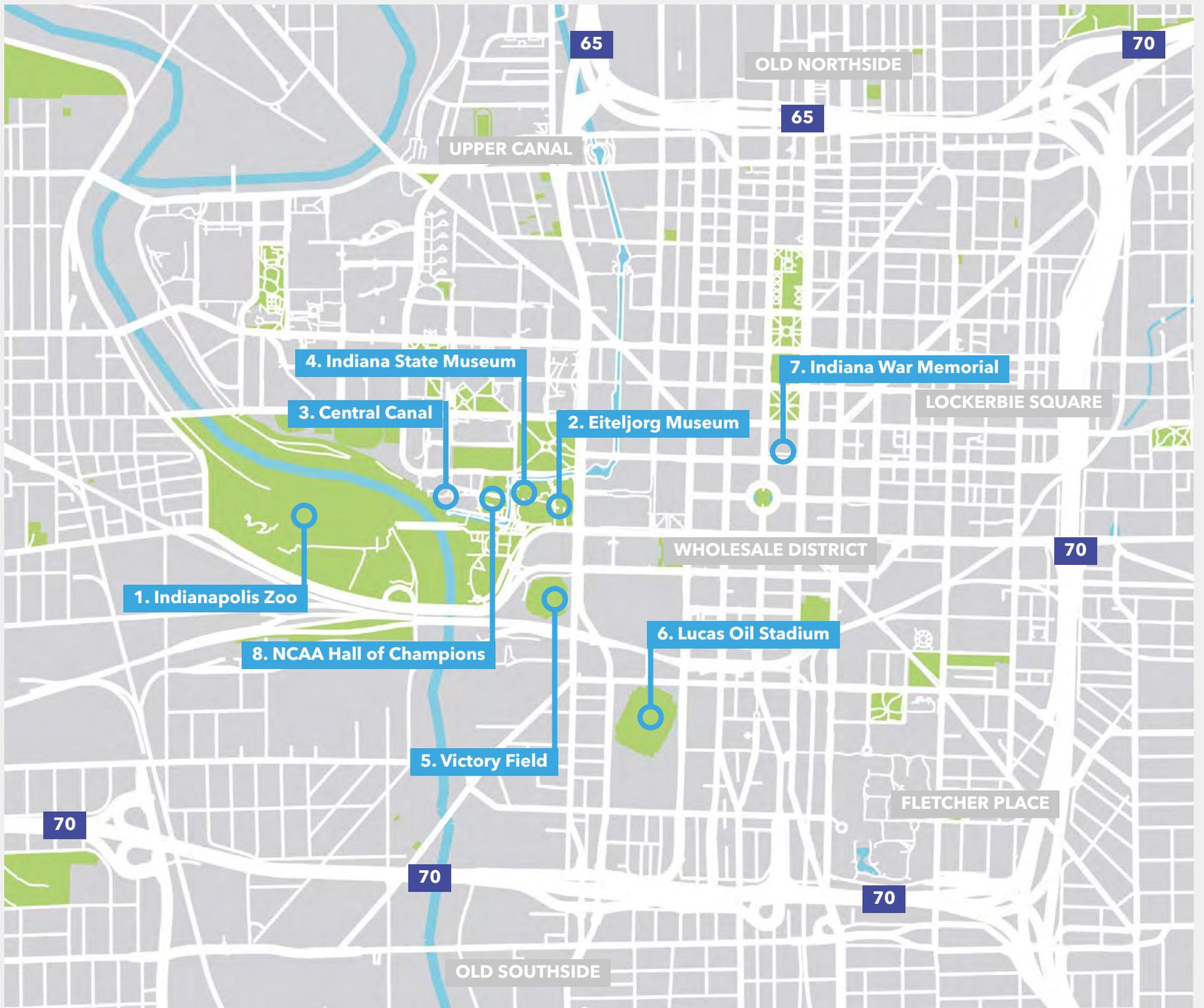
Chuck Jones

BASF
Booth #1529

Getting to Know Indy Better

From museums, to parks to sports - things to do in Indianapolis

Round off your experience at the American Coatings Show with some of the manifold leisure activities. On the map you can find some spots to visit in downtown Indy.



1. Indianapolis Zoo

The zoo, aquarium and botanical gardens are TripAdvisor favorites. 1200 W Washington St. IN 46222

3. Central Canal

Explore the main canal in the White River State Park, passing museums and cafés. 801 W Washington St. IN 46204

5. Victory Field

Enjoy a game or just the excellent views over downtown. 501 W Maryland St. IN 46225

7. Indiana War Memorial

There are many monuments worth visiting in Indy including the Indiana War Memorial. 55 E Michigan St. IN 46204

2. Eiteljorg Museum

The museum focuses on the history and cultures of Native Americans and the American West. 500 W Washington St. IN 46204

4. Indiana State Museum

Explore Indiana's past, present and future. 650 W Washington St. IN 46204

6. Lucas Oli Stadium

See behind the scenes during a tour. 500 S Capitol Ave. IN 46225

8. NCAA Hall of Champions

Two levels of interactive exhibits show all about NCAA sport history. 700 W. Washington St. IN 46204

INTERVIEW

“The Market of Electric Vehicles Offers Opportunities”

Trends in automotive coatings



Jeff White

EMD Electronics

Jeff White, president of EMD Electronics and head of Surface Solutions at Merck KGaA, Darmstadt, Germany, shares insight into trends in automotive coatings.

Where does R&D in raw materials for automotive coatings currently focus? In general, we seek new effects to increase formulation possibilities for our customers. But we are also continuously striving for higher quality and reliability of our products, our delivery, and the service for our customers. Together with them, we continuously improve our products, but also the services around them. With respect to color, the market can be divided into achromatic and chromatic colors. In the achromatic area, we currently focus on neutral sparkle and bright silver effects to enable highly textured neutrals sparkle effects and in metallic appearances. The latter are used to enable autonomous driving with low radio wave attenuation for cars employing radar sensors. For chromatic colors, we are pushing the boundaries of color saturation especially in the red and blue color spectrum. These high chroma blue and red pigments enable chromatic

formulations combined with desired hiding power by our coating's customers.

What impact do you expect from electric cars or self-driving cars? When people talk about the mobility of tomorrow, the topic of autonomous driving and electric vehicles quickly comes up. Autonomous driving requires sensors that allow the vehicle to see where it is

Apart from that, we also offer application solutions to enable the cars of tomorrow to communicate with the environment. Semi-transparent paint structures represent a promising approach here.

Is the trend toward sustainability also noticeable in this sector? Climate change and the increasing scarcity of natural resources are among the great-

“With EVs becoming more mainstream, their color palette is returning to the same broad variety as can be seen on today's combustion engine vehicles.”



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and where it's going. And these sensors in turn require radar transparent solutions. We are making an important contribution to these technologies by developing new effect pigments that fulfill the special requirements of the sensors, especially the black (LiDAR) and silver (radar) coatings. And the market of electric vehicles offers opportunities. Initially, manufacturers and owners of new electric vehicles chose specific colors, in particular white or blue, to underline the comparative ecological friendliness of their cars. With EVs becoming more mainstream, their color palette is returning to the same broad variety as seen on today's combustion engine vehicles.

est challenges of our time. For us as a leading science and technology company, scientific progress and responsible entrepreneurship go hand in hand. Therefore, sustainability is a vital element of our business and a responsibility we want to fulfill every day. We also see that sustainability is gaining importance for our customers. We enable and support the efforts of the coatings industry for a more efficient use of resources and environmentally friendly coating technologies. Our products, for example, enable a significantly improved transfer efficiency of the effect pigments and a significant reduction in the reject rate in the environmentally friendly powder coating. 



Source: BuffaloBoy - stock.adobe.com

The U.S. Paint and Coatings Market

Quick facts at a glance

Fact 1: Market size



USD
26.7 billion



4.9 billion
liters

Source: Orr & Boss

Fact 2: Decorative coatings market



USD 15.9 billion
3.26 billion liters

The **DIY** portion of the market is estimated at **47%** of the value and **37%** of the volume of the U.S. decorative coatings markets.

The **decorative coatings** market was estimated to have **grown** by **1%** volume and **9%** value rate in 2021. For 2022, the decorative coatings market is forecast to grow by 2% volume and 9% value.



In 2021:
+ 1 % volume
+ 9 % value

Source: Orr & Boss

Fact 4: Employment statistics

Over 295,000 people in the United States



are engaged in the manufacturing, application, sale, and distribution of industry products

The manufacturing sector



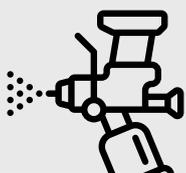
\$2.28 billion
annual payroll



42,600
employees

Source: Bureau of Labor Statistics, 2019

Fact 3: Non-decorative coatings market



USD 10.8 billion
1.68 billion liters

The largest non-decorative markets are general industrial, auto refinish, auto OEM and powder coatings.

The **non-decorative** coatings market was estimated to have **grown** at **5.4%** volume and **13.4%** value rate in 2021.

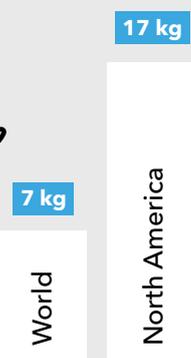
For 2022, the non-decorative coatings is forecast to grow by 2% in volume and 10.6% in value.



In 2021:
+ 1 % volume
+ 9 % value

Source: Orr & Boss

Fact 5: Per capita consumption



Source: The Freedonia Group

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Source: Visit Indy



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St. Cafe Patachou

www.cafepatachou.com

Martha Hoover's Cafe Patachou is a must visit for both the farm-to-table sustainable menu and the impact of food and social change in Indianapolis.

4901 N. Pennsylvania St., Indianapolis, IN 46205



Source: Facebook - Cafe Patachou



Source: provided by @homeispense - Visit Indy

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Since 1986, Bazbeaux has served dozens of signature pizzas with traditional and exotic toppings on handcrafted crusts alongside salads and sandwiches.

333 Massachusetts Ave., Indianapolis, IN 46204



Source: Visit Indy



Source: Visit Indy

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www.bruburgerbar.com

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410 Massachusetts Ave., Indianapolis, IN 46204



Source: instagram @bruburgerbar



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Indy's oldest neighborhood Holy Rosary is home to a daily rotating menu derived from local farms at Bluebeard, named after a Kurt Vonnegut novel.

653 Virginia Ave., Indianapolis, IN 46203



Source: Visit Indy



Source: instagram @bluebeardindy - Visit Indy

Yats

www.yatscajuncreole.com

Yats keeps Indy's food scene alive and spicy with fast Cajun and Creole dishes that rotate on and off a daily menu.

885 Massachusetts Ave., Indianapolis, IN 46204



Source: Visit Indy



Source: instagram @Gwetchie - Visit Indy

Harry & Izzy's

www.harryandizzys.com

Harry & Izzy's is the casual version of its sister restaurant St. Elmo that bridges steakhouse with modern American cuisine.

153 S. Illinois St., Indianapolis, IN 46225



Source: instagram @joebls - Visit Indy



Source: whataleceats - Visit Indy

Shapiro's Deli

<https://shapiros.com/>

Shapiro's Delicatessen has served sandwiches, soups, and other mainstay favorites in downtown Indy since 1905.

808 S. Meridian St., Indianapolis, IN 46225



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Source: Visit Indy

These are some of the Top 25 picks by Visit Indy

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Atlas presents its latest materials testing technology.

Weatherometer with remote monitoring: Designed for the world's most advanced xenon-arc weathering instrument, the web-based application enables easy access to test-parameter and control-system data from any Ci4400 instrument connected to a local area network.

Enhancement to new touchscreen: Two of the coating industry's standard xenon-arc instruments for lightfastness testing have been upgraded to the new 10.1" (260 mm) high-resolution touchscreen interface.

Fluorescent UV and condensation weathering instrument: Designed to quickly screen coating formulations for UV and hydrolysis resistance, our economical testing device is the top-selling fluorescent UV and condensation weathering instrument.



i Atlas Material Testing Technology
www.atlas-mts.com
Booth #1666

Specialty epoxy systems for greater sustainability

Westlake Epoxy (formerly "Hexion Coatings and Composites") business serves the global coatings, construction, adhesives, and composites markets. New product developments focus on delivering more sustainable solutions to make this world better, safer, and cleaner.

The following specialty epoxy systems support these goals:

- The "Infinium" resin and curing agent system offers lower yellowing, epoxy performance in isocyanate-free coatings
- Epoxy/polysiloxane hybrid system with improved flexibility and faster dry times
- Solid epoxy dispersion for use with specific curing agents to meet <50 g/L VOC limits
- Reduced indoor air emissions by using a cycloaliphatic amine without any intentionally added substances of very high concern
- Lower temperature cure (40 °F) with improved surface appearance
- Bis-A/Bis-F epoxy blends for superior crystallization-resistance

i Westlake Epoxy / Hexion
www.westlake.com
Booth #2348

New titanium dioxide pigments for coatings and inks

The LB Group manufactures a wide range of high-performance TiO₂ pigments for coatings and inks, including:

- A highly durable sulfate-process TiO₂ pigment designed for industrial and powder coatings and durable external and internal architectural coatings;
 - A chloride-process TiO₂ pigment that delivers brilliant whiteness with a blue undertone in external and internal architectural coatings; and
 - A specialist sulfate-process TiO₂ pigment designed specifically for printing inks.
- Our new "Billions TR53" pigment is a sulfate-process TiO₂ pigment designed for reverse laminate printing inks. It has been optimized to deliver excellent dispersion and high opacity in relevant resin systems.

An established super-durable chloride-process TiO₂ pigment for industrial coatings has also been further developed. With its newly optimized alumina and silica coating, this pigment provides superior durability for the most demanding exterior applications, while also delivering excellent optical and dispersion performance for visual appeal and formulation efficiency.

i LB Group
www.lomonbillions.global
Booth #840

Superhero drum washer with solvent recovery unit

You could earn the reputation of superhero by introducing your team to the new "GemiClean" drum washer with a fully integrated solvent recovery unit. Developed specifically for the paint and coatings industry to save both time and money, this industrial dynamic duo is powerful, fast, and reliable. Clean the inside and outside of two open-top 55-gallon drums in under 4 minutes - that's 30 drums per hour! The solvent recovery unit is always ready to deliver the knockout punch - a clean solvent final rinse every time. Paint residue is captured by the bag for disposal. The system works with all common solvents and will wash pails as small as 5 gallons. Are you crushing tight head drums for disposal? Why not remove the lid and sell your clean drums for top dollar?

i Progressive Recovery
www.prisystems.com
Booth #1973



Reduced CO₂ emissions with renewable materials

As a pioneer in isophorone chemistry, Evonik is unique in offering a renewable I-Chain platform including isophorone, -diamine, -diisocyanate products. With our brand new "Eco" grades, we've swapped fossil raw materials for renewable ones to make your coatings systems more sustainable.

Based on a 100% renewable acetone, our new product series offers the same

excellent performance at a significantly reduced CO₂ footprint. Chemically identical to their fossil fuel-based counterparts, this is a drop-in solution, which means no new formulation and no costly new product approvals.

With the mass balance accounting scheme, we keep track of the renewable quantities throughout the process and make sure that we only sell products for which we have purchased the equivalent amount of renewable acetone. All sources of renewable acetone fulfill strict ecological and social criteria, as audited and certified according to ISCC Plus.

i Evonik
www.evonik.com
Booth #2030



Optimum control of coating performance with minimal carbon footprint

At the ACS, we will be presenting the combined Troy and Arxada broad product portfolio. We will be focusing on a number of new products developed to enable customers to achieve optimum control of coating performance, while minimiz-

ing use levels, cost, and carbon footprint. These include the new controlled-release dry-film preservative line, as well as the new high-concentration dry-film preservatives. We will also be introducing the "Nuosept" preservatives and two further

Introducing collaborative innovation

Successful collaborations drive innovation. Finding the right collaboration partner, vetting their technology, and working to secure a technology solution for your business, while understanding market considerations and necessary validation testing is a process that requires special expertise. A practiced technology scout serves as a bridge between small technology providers and larger corporations. The relationship can be delicate and requires nurturing on both sides to deliver innovations that can be successfully commercialized. ChemQuest can guide the technology scouting process through all its nuances using our proven approach to collaborative innovation.

i The ChemQuest Group
www.chemquest.com
Booth #1566

Making chemical distribution less complex

At Brenntag North America we offer and drive technical innovation and market expertise for all types of coatings, construction, adhesives, elastomers, and sealant applications. Our Coatings & Construction team improves the commercialization time for our customers' new products. This is achieved through proof-of-concept formulation support, innovative supply-chain solutions, and access to raw materials from world-class suppliers. Our team focuses on developing industry formulations for customers while bringing significant product development and application knowledge to the table. Providing innovative industry expertise across an assortment of specific applications is what we do best.

i Brenntag North America
www.brenntagnorthamerica.com
Booth #1954

i Troy
www.troycorp.com
Booth #1538

products: an anti-defacement additive, which improves the surface properties of coating systems; and the open-time additive series, which delivers superior open-time performance without sacrificing other key coating properties.

Enhanced corrosion tester to meet automotive test standards



Q-Lab Corporation, a manufacturer of weathering and corrosion test equipment, is pleased to announce its "Q-fog crh" cyclic corrosion tester equipped with Gen 4 dual touchscreen displays, rapid ramp heater, and top-mounted swaying shower bar. The tester includes the following features:

- The Gen 4 main controller with dual touchscreen displays offers a simple interface and expands language capability to 17 different languages,

now including Chinese and Japanese;

- The rapid ramp heater enables the cyclic corrosion tester to meet the demanding temperature and relative humidity ramp times required by automotive test standards; and
- The top-mounted swaying shower bar delivers uniform electrolyte solution to specimens while meeting the specific design language in major standards from car manufacturers.

These innovations make the cyclic corrosion tester the ideal instrument for corrosion testing of a wide variety of coatings and other products.

i Q-Lab Corporation
www.q-lab.com
Booth #1966

Next generation multi-functional additives for water-based exterior wood coatings

Michelman is excited to introduce a family of next-generation multifunctional additives for exterior wood coatings at the ACS 2022. These innovative solutions allow formulators to potentially enhance multiple attributes with one additive. In addition to providing excellent water beading, these new water-based and low-VOC exterior wood additives impart good dirt pick-up resistance and foot-traffic durability. Furthermore, they help pro-

duce wood coatings with excellent weatherability characteristics that offer excellent water and swell resistance. Tested on hard wood, they help produce a natural surface appearance and extend the look and use of outdoor wood decks, sheds, and furniture.

i Michelman
www.michelman.com
Booth #2066

Improved performance in trim paints with catalyst for waterborne resin formulations

"Borchi oxy-coat 1101" is a cobalt-free, VOC-free, APEO-free, and REACH-compliant high-performance catalyst that has recently been tested in multiple formulations containing common U.S. waterborne alkyd resins. Results show improved performance and sustainability in trim paints as compared with formulations containing cobalt.

Learn how this product acts as more than just a drier: along with helping to re-

duce dry times, this solution can also help expand application windows, decrease return-to-service times, enhance durability, improve scrub performance, and strengthen the coating's ability to withstand direct sunlight.

i Borchers: A Milliken brand
www.borchers.com
Booth #2638

SDS authoring software and powerful on-demand color label printer

As a leading provider of GHS chemical labeling solutions for the coatings industry, Reliance Label Solutions is pleased to announce our partnership with Quantum Compliance, which provides SDS authoring and consulting services in both U.S. and non-U.S. markets. We will be presenting this SDS authoring software at the ACS.

A powerful on-demand commercial color label printer will also be exhibited, engineered for exceptional print quality and reliability on which you can count.

i Reliance Label Solutions
www.reliance-label.com
Booth #2177

Easy dispersion of new complex inorganic color pigments

The Shepherd Color Company is a leading global producer of complex inorganic color pigments (CICPs). These pigments are known for their durability, high-heat resistance, and special properties. We will showcase two new products at the ACS.

A "Dynamix" green pigment has been added to our line of IR-reflective pigments. This pigment is optimized for a dark green masstone visible color and invisible infrared reflectance for cool coatings applications. Along with these properties, the pigment is easily dispersible for quick scale-up and production.

Another new easily dispersed pigment we've developed is a yellow. Based on the PY184 bismuth vanadate pigment chemistry, the stir-in properties ensure high tint-strength and consistent, clean masstone color. The BV yellow makes an excellent addition to the NTP (niobium tin pyrochlore) yellow and RTZ (rutile tin zinc) orange for high-performance color matches in the yellow color space.

i The Shepherd Color Company
www.shepherdcolor.com
Booth #2760

Self-crosslinking polyurethane dispersions "Aptalon"

A novel direct-to-metal, waterborne, self-crosslinking polyurethane dispersion offers both excellent adhesion to metal surfaces and outstanding topcoat properties. It delivers a single-coat solution for a variety of protective and industrial applications. This resin uses patented polyamide polyol technology to deliver hardness and scratch resistance that far exceed other direct-to-metal waterborne systems. It also provides excellent hydrolysis and chemical resistance for excellent protective properties and can also be used over an epoxy primer.

A new high-solids, waterborne, one-component, self-crosslinking polyurethane dispersion uses patented polyamide polyol technology. It includes a high bio-based content and is designed for clear wood finishes. The self-crosslinking mechanism cures as the film dries, rapidly developing hardness for excellent chemical, mar, and scuff resistance. Its high-solids content allows for thicker films, reducing the number of applications and therefore application labor steps, job cost, and enabling a faster return to service.

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

Bio-based resins for coating formulators

Allnex will present three "Ebecryl" resins containing renewable raw materials that offer coating formulators greater sustainability:

- A resin with 57% C14 content that combines low viscosity with high cure-speed and low shrinkage to produce coatings with high hardness. Its high reactivity makes this resin suitable for standard UV-cure and UV-LED-cure applications, and applications such as kitchen cabinets and flooring where robust performance is essential.
- A dual-functional aliphatic urethane acrylate for adhesion to melamine or metal. This product combines flexibility with good adhesion and corrosion resistance, is tin-free, and contains 23% C14.
- A resin with a high bio-based content. Combining 74% C14 content with good pigment wetting and flexibility, this new resin is a good choice for industrial wood applications and meets the furniture industry's stringent sustainability needs.

i Allnex
Booth #1329
www.allnex.com

Bio-based additives to meet sustainability targets

Clariant's 100% bio-based surfactants and ethoxylate derivatives are a new surfactant and EOD range produced from bioethanol and therefore based entirely on green carbon that helps to remove fossil carbon from the value chain. As the molecular structure remains, the transition to green chemistry with the "Vita" range of ethoxylates and polyglycols offers a carbon-negative advantage to formulate your materials to meet sustainability targets.

Our range of "Ceridust Vita" is based on renewable resources with at least 98% RCI (Renewable Carbon Index). This range features a bio-based additive based on rice-bran wax that enhances durability, non-slip functionality, and appealing finishes for interior woods and metal applications. Better pigment dispersion results in brighter finishing colors. A micronized polar modified wax is easily dispersible in water- and solvent-based coatings and inks. It also displays excellent matting, as well as slip and scratch resistance.

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

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www.american-coatings-bookshop.com



AC AMERICAN COATINGS
BOOKSHOP



New 100% wetting and dispersing additive

There are already outstanding solutions for many organic pigments and carbon blacks –; but some pigments present challenges to achieve optimum product performance or avoid undesirable solvents. Some high-solid additives are difficult to handle, while others require labeling or are unsuitable for printing and inkjet inks.

“Disperbyk-2014” is a 100% wetting and dispersing additive for solvent-borne, solvent-free, and aqueous coatings and UV systems, as well as aqueous printing inks and inkjet inks. It offers maximum transparency and perfect color development of organic pigments and carbon blacks, and is compatible with a huge range of solvents and resins.

Benefits

- Significant viscosity reduction, even with high pigment loading
- Excellent color development, gloss and transparency
- For resin-containing and resin-free grinds, equally suitable in aqueous systems
- VOC-free (< 1500 ppm)
- Ideal product viscosity at 100 % active substance content – easy to handle
- Label-free
- Compliant with Swiss Ordinance

i BYK
www.byk.com
Booth #2229

New generation of mobile hardness testing



Erichsen’s “Smartpen” is the new generation of mobile hardness testing: a hardness test pencil with digital test force setting and display (resolution 0.05 N).

The new test pencil is used to determine the scratch resistance of surfaces. Depending on the module, it can be used to determine scratch resistance, mar resistance, the tendency towards metal marking, and the durability of printed markings. Our hardness test pencils are available in a choice of models and are well established throughout the industry.

The new test pencil is supplied in a plastic case with three springs and a USB-C charging cable, but without a test head. Depending on the requirements, the user can choose all of the test heads with the corresponding test tools from our hardness test pencils from the model series 318/435.

i Erichsen
www.erichsen-usa.us
Booth #3163

Latest paint tinting software offers greater efficiency

Chromaflo Technologies, a provider of colorant technology solutions, launched an updated version of its software, setting a new standard in point-of-sale (POS) paint tinting software.

“Innovatint” is widely accepted as the benchmark for managing POS-integrated tinting software in the coatings industry. The update ensures perfect performance and control over the entire color matching and tinting process. This new version makes ordering colors faster and more efficient and comes with the next generation of connectivity and user-interface technology.

All database and software updates are now cloud-driven for POS operations, eliminating the need for a physical software installation in each individual store; this guarantees current information, and ensures that related costs are kept to a minimum. The updated software offers a simple and fast way of operating tinting machines and gives you greater power to grow your business.

i Chromaflo Technologies
www.chromaflo.com
Booth #1336

Nanocomposites to replace PTFE-based additives

Micro Powders will be showcasing a portfolio of new products designed to replace PTFE based additives, including:

- A highly lubricious, high melting point PTFE replacement powder
 - An alumina-fortified wax nanocomposite for scratch and block resistance
 - A ceramic-fortified wax nanocomposite for maximum abrasion resistance
- New natural, bioderived and biodegradable products will be promoted, including:
- A high-performance rice bran wax emulsion
 - A new series of biodegradable cellulose-derived texture additives
 - A high bio-content (> 61%) additive for haptics and tactile surface effects

Lastly, the industry’s first soluble graphene oxide nanocomposite powder will be launched. This product is soluble in both alkaline water and alcohol, allowing for the safe and easy incorporation of graphene oxide into solvent and water-based liquid coatings for improved anticorrosion and mechanical durability.

i Micro Powders
www.micropowders.com
Booth #2254

Experience the future of coatings science

Since 1897, we have been consistently creating solutions for the materials science industry. But we’re more than our past. We’re envisioning the future of coatings trends, the future of digital engagement, and the future of our planet to help our customers meet their coatings needs.

We invite you to meet the Dow Coating Materials team to learn more about how we provide innovative, sustainable solutions, along with personalized customer service, and excellence in operations and safety to your coatings business. A brand-new innovation that will change the future of paint formulation.

i The Dow Chemical Company
www.dowcoatingmaterials.com
Booth #2330

Next generation of rheological additive for more sustainable coatings

The new rheology modifier, “Thixatrol pm 8058,” displays the capability to withstand higher amounts of various alcohols and other highly polar-solvent components. A highly efficient rheology modifier, this product outperforms other thickener classes in these systems. This property, in addition to wide temperature and easier incorporation, makes it the ideal rheology modifier for the sustainable formulation of industrial, marine, and protective coatings.



i Elementis
www.elementis.com
Booth #1729

A 1K moisture-curable silylated resin for use on multiple substrates

“CoatOSil Protec” is a 1K NCO-free, moisture-curable silicone-polyurethane hybrid resin. It is an excellent candidate to consider for use on multiple substrates, such as concrete, metals, wood, plastics, and glass. When used in protective coatings on metal substrates, this resin can help improve corrosion resistance, mechanical integrity, outdoor durability, and T-bend flexibility. In concrete floor coating applications, formulations containing this resin may exhibit improved hardness, chemical resistance, impact resistance, weatherability, and flexibility relative to commercially available technologies.

Additionally, it can be used to help improve adhesion and stain/mar resistance on wood, glass, and PC/ABS plastic substrates. Coupled with the ability to be cured under a wide temperature range, this 1K moisture-curable resin may be robustly formulated with other compatible resins, additives, and pigments to enhance required coating properties for existing applications or to help expand to new application spaces.

i Momentive Performance Materials
www.momentive.com
Booth #2942

Reliable color data in 30 minutes

Orontec will showcase its new advanced colorimetry software for graphical and numerical representation of color positions and color differences, and its three-angle liquid color measurement system, “Q-Chain LCM Gonio.”

The system provides reliable color data in 30 minutes. All values can be evaluated according to different standards for dE, tinting strength, metamerism, etc. Effect colors and components with effect pigments can also be measured.

Increase productivity by up to 50%. Testing takes less than 3 minutes and uses only 30 ml paint per measurement. This reduces and optimizes the process flow when producing colors, pigments, and coatings, and offers excellent reproducibility, equivalent to fully automatic lab application (spray-out).

The three-angle spectrophotometer can detect subtle differences, even at an early stage in the supply chain (e.g., for aluminum slurries or raw material quality control) to help its users ensure consistent color quality.

i Orontec
www.orontec.com
Booth #2956

The Leading Coatings Shows



PAINTINDIA

Mumbai, India
May 26 – 28, 2022
www.paintindia.in



São Paulo, Brazil
June 21 – 23, 2022
www.abrafatishow.com.br



Jakarta, Indonesia
September 21 – 23, 2022
www.pacific-coatings-show.com



Sharjah, United Arab Emirates
October 17 – 19, 2022
www.gulf-coatings-show.com



Nuremberg, Germany
March 28 – 30, 2023
www.european-coatings-show.com



Indianapolis, USA
April 30 – May 02, 2024
www.american-coatings-show.com

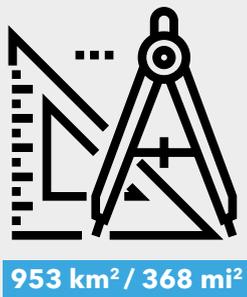
Indy Trivia

Five fun facts you should know about Indianapolis

Fact 1: As of August 2019, the population of Indianapolis is about 870,000 people. It is the 17th most populous city in the United States.



Fact 2: Indianapolis covers a total area of 953 square kilometers (368 square miles).



INDIANAPOLIS

Fact 4: Washington, D.C. is the only city in the country that has more memorials and monuments than Indianapolis. The Hoosier capital comes in second, with 33 such memorials.



Fact 3: Indiana is known as the Crossroads of America, and Indianapolis backs that name up, with six interstate highways crossing through town.



Fact 5: The Indianapolis Motor Speedway is the largest sporting facility in the world. It covers 253 acres and holds over 250,000 seats. The Roman Colosseum and Vatican City, Churchill Downs, Yankee Stadium and the Rose Bowl could all fit in the inside oval of the track.

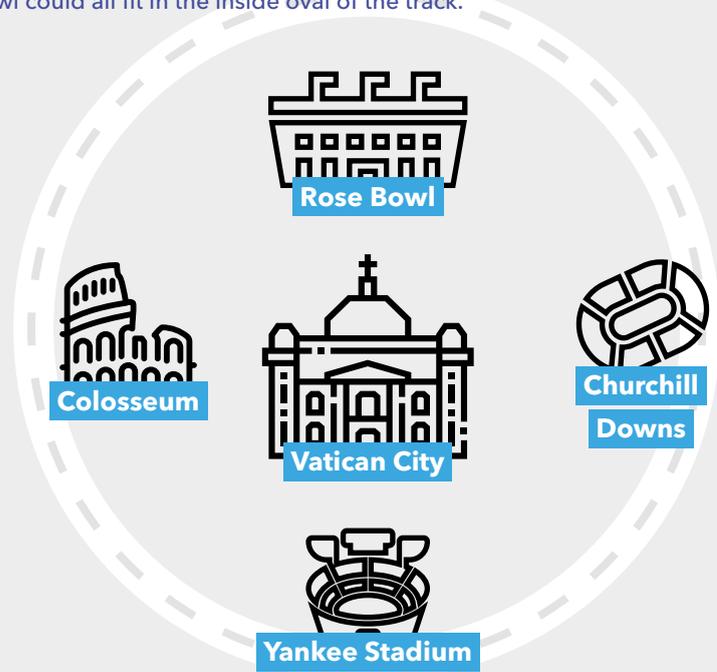


EXHIBIT 1929



THERE'S A NEW TWIST IN CONTAINER INNOVATION

TruSnap™ with TwistCap puts an award-winning twist on an industry revolution. KW Container has taken the first major innovation in paint cans in a century even further. The additional Pour Spout makes pouring even easier, while the TwistCap keeps contents fresh when closed.

Come experience the product of years of testing and research. TruSnap is what the future holds in paint and coatings.



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KW CONTAINER