AC American Coatings Conference

Indianapolis, Indiana
May 7-9, 2012

Conference Program

www.american-coatings-show.com/conference

during the AC American Coatings Show | May 8-10, 2012

Exclusive Media Partner:
CoatingsTech

ACA

VINCENTZ

Steve Sides
Vice President
Science, Technology &
Environmental Policy
American Coatings
Association

Jim Kassner
Senior Advisor
American Coatings
Association

Sonja Schulte
Editor-in-Chief
Science & Technology
Vincentz Network

Preparing for Future Demands

The American Coatings CONFERENCE, offered in conjunction with the American Coatings SHOW, invites the American coatings community to learn about the most recent research results and industrial developments covering the full range of coatings products and raw materials used in their formulation. From about 200 submissions a diverse program of 96 high-level technical papers has been developed. Additional detailed technical presentations from industry experts and academia will be offered in a highly interactive poster session.

Five reasons to attend:

- **Advance your thinking** and set the stage for innovation through the cutting-edge information in the technical sessions
- **Tool-up your skills** in the 9 exclusive pre-conference tutorials
- **Update your knowledge** of the latest and most relevant industry trends
- **Hear from research and development professionals** presenting key technology advances
- **Network with other industry experts,** thought leaders, and technology movers

We're sure you won't want to miss this important event, so register and make your plans now. See you in Indianapolis!

For further trade show information visit: **www.american-coatings-show.com**

AC Conference at a Glance

Monday, May 07, 2012

8:30 am – 10:00 am	Pre-Conference Tutorials 1-5
10:00 am – 10:30 am	Networking: Coffee Break
10:30 am – 12:00 pm	Pre-Conference Tutorials 6-9
11:30 am – 12:15 pm	Networking: Welcome Lunch
12:15 pm – 1:30 pm	Plenary Session Welcome Address and Conference Introduction, Keynote Presentations, Award Ceremonies
1:30 pm – 2:00 pm	Networking: Coffee Break
2:00 pm – 5:30 pm	Session 1: Science Today – Coatings Tomorrow Session 2: Measuring & Testing Session 3: Radiation Curing Session 4: Pigments
5:30 pm – 7:00 pm	Poster Session/ Networking: AC Conference Reception

Tuesday, May 08, 2012

9:00 am – 12:30 pm	Session 5: Architectural Coatings I Session 6: Protective Coatings I Session 7: Biobased Coatings I Session 8: Modeling & Measuring
12:30 pm – 2:00 pm	Networking: Conference Lunch
2:00 pm – 5:30 pm	Session 9: Architectural Coatings II Session 10: Protective Coatings II Session 11: Biobased Coatings II Session 12: Polyurethanes

Wednesday, May 09, 2012

8:00 am – 9:00 am	**Mattiello Lecture**
9:00 am – 12:30 pm	Session 13: Epoxy Coatings Session 14: Waterborne Systems Session 15: Smart & Functional Coatings Session 16: Novel Materials
12:30 pm	End of Conference

American Coatings Award

The prestigious American Coatings Award will be bestowed upon the most outstanding technical presentation at the American Coatings Conference. Selected and sponsored by ACA and Vincentz Network, it is endowed with a $2,500 cash award along with an attractive sculpture. The winner of the American Coatings Award 2012 will be presented at the conference Plenary Session on May 7.

Attendees' Pre-conference Survey

Drawing on the combined expertise and market knowledge of both speakers and attendees at the American Coatings Conference, an anonymous survey will be held some weeks/days before the event, shedding light on the views and expectations of this leading assembly regarding the current research situation and market climate the American coatings industry is experiencing. The results and an analysis of this survey will be presented during the plenary session of the conference.

Pre-Conference Tutorials Monday Morning | May 07, 2012

8:30 – 10:00 am

Tutorial 1: Antimicrobial Surfaces

Melinda Wales, Texas A&M University

Representing a relatively new variety of novel functional coatings, specific solutions have been put forward in recent years to achieve hygienic, antimicrobially active surfaces for various uses. The tutorial will feature a concise review of the different technologies proposed as well as give an outline of the current state-of-the-art applications – with emphasis on the impact of severely restricting legal frameworks concerning the use of biocidal substances, such as the European Biocidal Products Directive and likely US EPA requirements.

Tutorial 2: Easy-to-clean Coatings

W. Marshall Ming, Georgia Southern University

Discussed and put forward in more and more applications – including exterior and interior architectural coatings, industrial coatings and even automotive coatings – effective and lasting easy-cleanability of surfaces is quite high on the wish-list of coatings functionality. This tutorial will explain the different concepts that are put to work in such coatings and review the state-of-the-art systems in practice.

Tutorial 3 : Radiation Curing

Michael L. Dvorchak, Rad Tech North America This tutorial has been designed in collaboration with RadTech North America.

The tutorial will provide you with a concise overview on the fundamentals of radiation curing coatings, their benefits and limitations. The basic chemistry involved, typical formulation characteristics as well as common and new applications of UV curing and e-beam coatings will be explained.

Tutorial 4: Waterborne High-Performance Coatings

Ivan Tyre, Alberdingk Boley & Tim December, BASF

Waterborne coating is a fast developing technology. In many applications, these systems have become a standard solution, replacing their solventborne counterparts. In some important clearcoat or topcoat applications, however, solventborne systems remain the preferred technology. This tutorial aims to discuss what is possible today with waterborne clearcoats for different substrates – including wood and metal – and what is not. It covers the theory behind different binder technologies as well as fundamental aspects of the film formation process and the performance of these coatings systems. This tutorial will also cover some fundamental aspects of rheology for waterborne applications.

Tutorial 5: Smart Coatings

Jamil Baghdachi, Eastern Michigan University

The most recent emerging technologies that provide a basis for the development of smart coatings will be reviewed. A brief discussion of smart polymers and coatings, governing principles, types and examples of smart coatings, necessary raw materials, approaches for their preparation, their unique properties, applications and markets will be presented.

10:30 am – 12:00 pm

Tutorial 6: Polyurethanes

Mike Jeffries, Bayer MaterialScience

Their chemistry is very versatile, as is their application and application potential: Polyurethane coatings and their typical components – polyisocyanates and polyols – will be reviewed and compared in this tutorial. This includes a discussion of the various PUR coatings technologies in use and their advantages and limitations, including 1K and 2K solventborne as well as waterborne chemistries, radiation curing PUR coatings and PUR powder coatings formulations and their typical end use applications.

Tutorial 7: Titanium Dioxide

Michael Diebold, DuPont

Coatings formulators are increasingly interested in finding ways to use less TiO_2 without compromising opacity performance. This tutorial provides you with practical advice to maximize TiO_2 efficiency and strategies. In addition, alternative technologies for paint opacity will be covered.

Tutorial 8: Antifouling Coatings

Dean Webster, North Dakota State University

Marine structures are subject to diverse and severe biofouling. Methods for inhibiting both organic and inorganic growth on wetted substrates are varied but most antifouling systems take the form of protective coatings. Biofouling can negatively affect the hydrodynamics of a hull by increasing the required propulsive power and the fuel consumption. This tutorial addresses the basics and fundamentals of anti-fouling coatings and explains the concepts that are put to work in such coatings. It also will review the state-of-the-art systems and give an outlook on current trends.

Tutorial 9: Anticorrosive Coatings

Gordon Bierwagen, North Dakota State University

What principles govern the corrosion of metals, and how can protective coatings help in preventing corrosion? This tutorial will review the fundamentals of the electrochemical processes involved will be reviewed, and typical ingredients and formulation characteristics of anticorrosive coatings will be outlined and discussed.

Plenary Session

Monday Afternoon | May 07, 2012 | 12:15 - 1:30 pm

12:15 pm

Welcome Address and Conference Introduction

Steve Sides, American Coatings Association
Sonja Schulte, Vincentz Network

12:30 - 12:50 pm

Keynote Presentation

Bio-based Coatings Technology: Collaborative Research with Supply Chain Partners

Kent Young,
The Sherwin-Williams Company

The high cost and uncertain availability of petroleum-based raw materials makes development of renewable raw material sources that are sustainable a research imperative. A multi-year partnership between soybean farmers, the United Soy Bean Board, and The Sherwin-Williams Company resulted in one of 2011's Presidential Green Chemistry Challenge Awards from the US Environmental Protection Agency (EPA). Kent Young from Sherwin-Williams will describe the results of this partnership, which included the development of an innovative new paint technology that utilizes soybean oil and recycled plastic bottles (PET), while also reducing volatile organic compound (VOC) content.

12:50 - 1:10 pm

Keynote Presentation

Accelerating Discovery to Innovation

Kesh S. Narayanan,
National Science Foundation

The National Science Foundation (NSF) uses public–private partnerships to encourage private industry to draw upon the expansive pool of science and engineering knowledge in academic institutions. This knowledge may form the basis for new technologies and provide a competitive advantage. Dr. Kesh Narayanan will describe NSF opportunities for university–industry collaboration.

1:10 - 1:20 pm Presentation of the Roon Award

1:20 - 1:30 pm Presentation of the American Coatings Award

Monday Afternoon May 07, 2012 | 2:00 – 5:30 pm

Session 1:
Science Today – Coatings Tomorrow

Chair: Raymond Fernando,
California Polytechnic State University

A continuous source for innovations in coatings technology is fundamental research in materials science, particularly in polymer science. In this special session globally renowned academic scientists share their latest research results, and present their visions on novel materials and new applications. The development of bioinspired coatings with smart properties will be presented in this session as well as biobased materials and coatings.

2:00 - 2:30 pm

1.1 Bridging the Molecules-to-Materials Gap in Multifunctional Coatings
Santanu Chaudhur,
Washington State University

2:30 - 3:00 pm

1.2 Bioinspired Slippery Surfaces with Pressure-Stable Omniphobicity and Self-Repair
Tak-Sing Wong,
Harvard University

3:00 - 3:30 pm

1.3 Anti-fouling Coatings for Medical and Marine Applications
Melissa Grunlan,
Texas A&M University

3:30 pm **Networking: Coffee Break**

4:00 - 4:30 pm

1.4 Bio-based High-Performance Thermosets
Dean Webster,
North Dakota State University

4:30 - 5:00 pm

1.5 Interfacial Biomaterials as Novel Coatings for Controlling Surface-Biological Interactions
Martin Grinstaff,
Boston University

5:00 - 5:30 pm

1.6 Controlling Cell Adhesion using Polyelectrolyte Multilayers
Joseph B. Schlenoff,
Florida State University

Session 2:
Measuring & Testing

Chair: Mark Nichols,
Ford Motor Company

Testing, analysis and characterization of raw materials and coatings are essential in the development of industrial goods. This session focuses on important studies on different methods, including new technologies to objectively describe the particle dispersion in paints, a fundamental study of coating performance during weathering as well as a study on the influence of metal oxide particle characteristics on functional properties of coatings.

2.1 Chemical Activator for Intercoat Bonding of Exterior Aerospace Topcoats
Douglas Berry,
The Boeing Company

2.2 Pigment Particle Characteristics: Effects on Coatings Functional Properties
Irina Belov,
Praxair Surface Technologies

2.3 A Microscopy Study of the Particle Dispersion in Dry Paint Films
Maria Stjerndal,
Akzo Nobel Functional Chemicals, Sweden

2.4 Gel Point Behavior of Colloidal Unimolecular Polymer (CUP) Particles
Minghang Chen,
Missouri University of Science and Technology

2.5 Spectroscopic Analysis of Aging Fluoropolymer and Acrylic Clear coatings
Natasja Swartz,
Portland State University, Dep. of Chemistry

2.6 De-Formulating Complex Polymer Mixtures by GPC-IR Hyphenated Technology
Ming Zhou,
Spectra Analysis Instruments

Session 3:
Radiation Curing

Chair: Michael L. Dvorchak,
Bayer MaterialScience

The environmental and economic benefits of EB and UV curing underly the growing popularity of this technology – the number of industrial applications keeps expanding as radiation curing coatings rapidly evolve into high-performance products. The six papers of this session present novel binders, additives and methods around radiation curing including low-migration photoinitiators as well as a new UV-curable coating consisting of only one oligomer and an initiator.

3.1 UV Curable Polysiloxane-acrylic Hybrid Resins
Koji Uemura,
DIC, Japan

3.2 A Novel, Cross-linkable Polymer and Application
David Hood,
Ashland Specialty Ingredients

3.3 Current Status of Chemistry and Technology of Release Coatings
Igor Khudyakov,
Solutia Performance Films

3.4 Low-migration Photoinitiators with High Performance
Eugene Sitzmann,
BASF

3.5 Advances in Field Applied UV Curable Floor Coatings
Jo Ann Arceneaux,
Cytec Industries

3.6 VOC Content of UV-Curable Coatings using Static Headspace Gas Chromatograph
Dane Jones,
California Polytechnic State University

5:30 – 7:00 pm **Poster Session | Networking: AC Conference Reception**

Session 4:

Pigments

Chair: Dan Phillips,
Evonik Industries

Titanium dioxide is the most widely used white pigment and coatings formulators are looking for solutions to use TiO_2 more efficiently. In this session different technologies on this topic are discussed. A study on the influence of shear rate on dispersions is also presented as a technique to determine the degree of dispersion and a novel pigment for powder coatings.

4.1 Alternative Polymerization Techniques for Improved TiO_2 Efficiency
Arno Tuchbreiter,
BASF

4.2 TiO_2 Light Scattering Optimization and Not-In-Kind Opacity Alternatives
Robert Kwoka,
DuPont Titanium Technologies

4.3 Ways to Reduce Dependence on TiO_2 without Sacrificing Key Performance Properties
David Fasano,
The Dow Chemical Company

4.4 Shear Rate Dependent Structure of Polymer Stabilized TiO_2 Dispersions
Antony Van Dyk,
Dow Coating Materials

4.5 Automated Determination of Degree of Dispersion in a Paint Grind
Timothy Selby,
DuPont

4.6 Powder Coating Innovation Combines Gold Color with Functionality
Paer Winkelmann,
Eckart, Germany

Poster Session

The poster session will be held after the oral presentation programs of the first conference day from 5:30 pm to 7:00 pm during the AC Conference Reception. Posters will be on display in the conference area, and poster contributors will be available to explain and discuss their results to interested attendees during this session. Accepted and confirmed posters are:

p.1 Novel Matting Agents for Low VOC Coatings
Matthew Linares, Evonik Degussa Corporation

p.2 Reduction in Binder Consumption in Paper Coating REC
Sunil Sunil, TCIRD, India

p.3 Internal Lining of Storage Tanks, Pressure Vessels and Pipelines
Joaquim Quintela, Petrobras, Brazil

p.4 100 % Solids LED Curable Coating and the Application Machine
Elena Komarova, Kegel Co

p.5 Influence of Cure Degree on Adherence of the UV coating - FT-IR Evaluation
Valéria do Carmo Barbosa, Renner Sayerlack S.A., Brazil

p.6 Waterborne Roofing System for Adhesion to Thermoplastic Polyolefin (TPO)
John Dockery, Arkema Coating Resins

p.7 Utilizing a Novel Antimicrobial Chemistry for Recovery of Spoiled Coatings
Jon Raymond, Dow Microbial Control

p.8 Variations in Dispersion Stability and Thermal Properties of UV-curable Acrylates
Chong-Min Ryu, Chungnam National University, South Korea

p.9 Application of Computer Aided Mixture Design in Paints and Coatings
Emerson Venceslau, Oxiteno, Brazil

p.10 Highly-Functionalized Polyester Resins: Design and Use Considerations
Jeffery Powell, Eastman Chemical Company

p.11 Bio-Based Functionality in Thermoset Composite Materials
Eric Williams, Reactive Surfaces

p.12 Melamine & Aziridine Cure of Acrylic Colloidal Unimolecular Polymer (CUP)
Jigar Mistry, Missouri S&T Coatings Institute

p.13 Colloidal Unimolecular Polymer (CUP) Particles as Epoxy Curing Agents
Sagar Gade, Missouri University of Science and Technology

p.14 Highly Functional Biobased Polyols and their use in Melamine-Formaldehyde S
Thomas Nelson, North Dakota State University

p.15 Soybean-based Epoxy-anhydride Thermoset Coatings
Adlina Paramarta, North Dakota State University

p.16 Study of Bond Breakage During Corrosion Exposure
Josh Hanna, USM School of Polymers and High Performance Materials

p.17 Microstructure and Morphology of Watersoluble Conjugated Polymers for Flexible Electronics
Cameron Danesh, California Polytechnic State University

p.18 Wet Coating of Zinc Oxide Nanowires
Neil Redeker, California Polytechnic State University

p.19 The Effects of Pigments on the Long-term Properties of Artists' Oil Paint Films
Malia Zee, North Dakota State University

p.20 Design and Development of Self-stratifying Polymers and Coatings
Bingwen Wang, Eastern Michigan University

p.21 A Comparison of Direct and Static Headspace Gas Chromatography Methods for VOC Analysis of Very Low VOC
Dahlia Ningrum, California Polytechnic State University

p.22 Calcined Neuburg Siliceous Earth as TiO_2 extender in Coil Topcoats
Reimund Pieter, Hoffmann Mineral, Germany

Please visit **www.american-coatings-show.com/conference** for abstracts and online registration

Tuesday Morning May 08, 2012 | 9:00 am – 12:30 pm

Session 5:
Architectural Coatings I

Chair: Diana Strongosky,
The Sherwin Williams Company

The formulator is faced with many challenges to create coatings that minimize the impact on the environment and yet also meet important performance requirements.
This session discusses the latest developments in binder chemistry and additives exhibiting improved performance in terms of gloss potential, block resistance, mechanical properties and color retention. A performance study of commercially available low VOC stain blocking primer coatings is also presented.

9:00 - 9:30 am

5.1 Performance of Stain Blocking Primer Coatings with Low VOC
Raymond Fernando,
California Polytechnic State University

9:30 - 10:00 am

5.2 Structured Nano-Acrylic Polymers for Low VOC, High Gloss Paints
Wenjun Wu,
Arkema Coating Resins

10:00 - 10:30 am

5.3 Improving Application Properties of High-Gloss Alkyd Emulsion Paints with NSATs
Hilbert Esselbrugge, Ashland Specialty Ingredients, The Netherlands

10:30 am Networking: Coffee Break

11:00 - 11:30 am

5.4 New Technology for High PVC Paints
Jean-Yves Loze,
Arkema Coating Resins, France

11:30 - 12:00 pm

5.5 Performance Attributes of a Water-Based FEVE Polyol for Exterior Coatings
Bob Parker,
AGC Chemicals Americas

12:00 - 12:30 pm

5.6 Waterborne Wet Look Sealer for Concrete using EBS Technology
Richard Flecksteiner,
Omnova Solutions

Session 6:
Protective Coatings I

Chair: Jeff Lackey,
Vogel Paint

When organic coatings are applied to metals, corrosion protection becomes their most important technical feature. This session presents six papers dealing with the latest developments in binder chemistry and additives for anticorrosion coatings. Different approaches to achieve high-performance systems are discussed. Examples include chromium-free waterbased coatings and antifouling coatings for marine structures as well as novel concepts for protective coatings.

6.1 Novel WB Epoxies and Curing Agents for Protective Coatings
Tim Miller,
Dow Coating Materials

6.2 Use of Fluoro Silane Monomers to Improve the Performance of Epoxy Polymers
Safak Oturakli,
Kanat Paints and Coatings, Turkey

6.3 Anticorrosive Concepts for Modern High Performance Protective Coatings
Lars Ludwig Kirmaier,
Heubach, Germany

6.4 Cr(VI) Free, Waterbased Sol-Gel Systems for Metal Corrosion protection
Ramón Sánchez Morillo,
Evonik Degussa

6.5 Silicone Foul-release Coatings for Vessels and Marine Structures
Rob Thomaier,
Nusil Technology

6.6 Novel Multiphase Acrylics for High Performance Coatings
Ivan Tyre,
Alberdingk Boley

Session 7:
Biobased Coatings I

Chair: Richard Bott,
Wacker

Booming energy prices, climate change impacts, sustainability solutions, reducing CO_2 footprints, and supply chain management are just some of the challenges facing the coatings industry. Use of renewable resources is one option for facing these challenges. This session provides examples of what the coatings industry has in store to successfully address these increasingly important issues without compromising performance. Examples presented include coatings with higher biocarbon content and critical considerations for biobased resins.

7.1 Catalyzed Crosslinking of Highly Functional Biobased Resins
Thomas Nelson,
North Dakota State University

7.2 Surface Modification of Green Coatings with Smart Non-Polar Binder
Senthilkumar Rengasamy,
Eastern Michigan University

7.3 Sustainable High-bio-based Content Binders for Advanced Coatings
Vijay Mannari,
Eastern Michigan University

7.4 Bio-sourced Supramolecular Chemistry Innovations for Coatings
Michael Smith,
Arkema

7.5 Switchable Functionality: Engineering Multi-functional Bio-Based Coatings
Eric Williams,
Reactive Surfaces

7.6 Use of Bio-based Polyol for Low VOC Solvent-borne 2K Polyurethane Coatings
Ayumu Yokoyama,
DuPont

12:30 pm Networking: Conference Lunch

Session 8:

Modeling & Measuring

Chair: Remi Briand,
Tnemec Company

Optimization of processes and "de-bottle necking" of operations is a permanent challenge for paint manufacturers. This session presents papers dealing with different approaches, including a model of a polyester melamine system, simulation of an architectural paint plant, and a mixture statistics approach to study interactions between multiple additives of similar and dissimilar chemistries. Additionally, interpretation of test results for better understanding of coatings and raw materials is discussed.

8.1 Modeling is more than just a Stroll Down the Catwalk
Christopher Lowe,
Becker Industrial Coatings, UK

8.2 A look at Asset Productivity for an Architectural Paint Plant
Thomas Hanna,
DuPont

8.3 Discovering Synergistic Relationships of Multiple Coatings Additives
Kip Howard,
OMG Americas

8.4 Coatings Penetration into Concrete
Michael Praw,
BASF

8.5 Ground Calcium Carbonate versus Feldspatic Minerals
Stephen Raper,
Imerys

8.6 Optimizations of Coating Formulation and Baking Process
Jung Teag Kim,
Graduate Institute of Ferrous Technology(GIFT),
Postech, South Korea

Roon Award

The Roon Foundation Awards were established and sponsored in 1957 by Leo Roon, founder of Roxalin Flexible Finishes and the Nuodex Corporation. Since 1977, these awards have been sponsored by the Coatings Industry Education Foundation (formerly the Paint Research Institute) from a grant maintained by the Roon Foundation. The Roon Award is designed to recognize technical papers representing original scientific and innovative research directly related to the protective coatings industry and presented by an individual associated with the organic coatings industry. Award competition presenters are individuals associated with the organic coatings industry–including manufacturers, raw material suppliers, educational institutions and research laboratories. In order to be eligible for this award, presenters must request to be considered with their abstract submission. This award is given annually at the American Coatings Conference and the CoatingsTech Conference.

The following ten papers have been nominated for the Roon Award:

4.3 Ways to Reduce Dependence on TiO_2 without Sacrificing Key Performance Properties
David Fasano, The Dow Chemical Company

7.1 Catalyzed Crosslinking of Highly Functional Biobased Resins
Thomas Nelson, North Dakota State University

7.2 Surface Modification of Green Coatings with Smart Non Polar Binders
Senthilkumar Rengasamy, Eastern Michigan University,

7.3 Sustainable High-bio-based Content Binders for Advanced Coatings
Vijay Mannari, Eastern Michigan University

7.6 Use of Bio-based Polyol for Low VOC Solvent-borne 2K Polyurethane Coatings
Ayumu Yokoyama, DuPont

9.5 New Reactive Surfactants for Hydrophobic Coatings and Freeze-Thaw Stability
Charles Palmer, Ethox Chemicals

10.1 Smart Coatings for Self-healing Corrosion Protection
W. Marshall Ming, Georgia Southern University

12.2 Design and Development of Self-stratifying Systems as Sustainable Coatings
Jamil Baghdachi, Eastern Michigan University

15.2 Novel Application of Fluorosurfactant in Easy-clean Architectural Paint
Jean Meng, DuPont

15.5 A Multiscale Simulations Approach to Predictive Paint Design
Jie Xiao, Washington State University

Do not miss the Plenary Session on Monday afternoon to find out who is the winner!

Tuesday Afternoon May 08, 2012 | 2:00 pm – 5:30 pm

AC Conference Reception

Conference attendees, chairmen and speakers will be able to meet in a relaxed atmosphere after the end of the first day of the conference at the AC Conference Reception, Monday, May 7, 2011 from 5:30 pm – 7:00 pm.

The AC Conference Reception is an ideal opportunity to renew and strengthen contacts, cultivate business relationships, exchange the latest news, and participate in open discussions.

The reception also takes place at the same time, and is integrated with the poster session. Come and enjoy the opportunity to interact with other attendees. Refreshments and music wil be provided.

Session 9:
Architectural Coatings II

Chair: Rajeev Farawaha, Celanese

Due to the persistent challenges in architectural Coatings formulation, a second session is dedicated to these coatings. The six papers on this session are focussing on novel additives and their mode of action for architectural coatings. This includes presentations on the use of organic matting agents versus inorganic types in low VOC coatings, and on novel additives to address the increased tendency for foam generation in waterborne systems.

Session 10:
Protective Coatings II

Chair: Anthony Gichuhi, Halox

Since formulators are continually searching for performance improvements in protective coatings a second session is dedicated to these systems. The six papers discuss the latest developments for protective coatings including intelligent self-healing coatings, the influence of nanoparticles on performance, modified nano-structured particles based on SiO_2, as well as novel binders and low VOC solutions.

2:00 pm

9.1 The use of Micronized Polymerics in low VOC Architectural Coatings
Warren Pushaw, Micro Powders

10.1 Smart Coatings for Self-healing Corrosion Protection
W. Marshall Ming, Georgia Southern University

2:30 - 3:00 pm

9.2 Foam Control in Low VOC Waterborne-Architectural Coatings
Bruce Fillipo, Ashland Specialty Ingredients

10.2 Nano-structured Particle Solutions to Improve Primer Performance
Maria Nargiello, Evonik Degussa

3:00 - 3:30 pm

9.3 Rheology Development in Next-Generation Latexes
Joshua Mathes, Southern Clay Products

10.3 Performance of Epoxy-siloxane Binders
Daniel Calimente, Wacker

3:30 pm — **Networking: Coffee Break**

4:00 - 4:30 pm

9.4 Designing Hyper-branched Polymer Architecture for Superior Thickening Effic
Cindy Muenzenberg, BASF, Germany

10.4 Durable Multi-purpose Protective Coatings
William Schaeffer, Sartomer USA

4:30 - 5:00 pm

9.5 New Reactive Surfactants for Hydrophobic Coatings and Freeze-Thaw Stability
Charles Palmer, Ethox Chemicals

10.5 Low VOC SB Epoxy for Corrosion Resistant Primers with Improved Flexibility
Daniel Haile, Dow Coating Materials

5:00 - 5:30 pm

9.6 New Strategies for Improving Film Properties of Zero VOC Coatings
Kaliappa Ragunathan, BASF

10.6 Dispersed Nanoparticles Their Positive Influence on Corrosion and UV Protection
Robert McMullin, BYK USA

Session 11:

Biobased Coatings II

Chair: Michael Johnson,
The Dow Chemical Comany

Sustainability is one of the global "mega trends" for corporations and the use of biobased materials is one possible route to more sustainable products. This second session dedicated to biobased coatings has papers exploring such topics as development of reactive additives capable of undergoing enzyme-catalyzed transformations, phenalkamides as a renewable product derived from cashew nutshell liquid, and novel additives based on soy methyl ester chemistry.

11.1 Reversible Transformation of Bioactive Film Additives via Dispersed Enzymes
James Rawlins,
University of Southern Mississippi

11.2 Phenalkamide – A new Hybrid Molecule and its Unique Coating Properties
Yun Mi Kim,
Cardolite

11.3 Low VOC Coating Additives and Solvents utilizing Soy Methyl Ester Chemistry
Paul Coty,
Soy Technologies

11.4 New Advancements in High Performance Carbon Black
Thomas Papasso,
Orion Engineered Carbons

11.5 Renewable Coalescents for Low VOC Waterborne Coatings
Juliane Pereira Santos,
Oxiteno

11.6 Novel HEC for Direct Powder Addition
K. Abraham Vaynberg,
Ashland Speciality Ingredients

Session 12:

Polyurethanes

Chair: Mark Soucek,
University of Akron

With a huge variety of binder chemistries combinable with a growing number of polyisocyanate varieties, polyurethanes are one of the most versatile classes of organic coatings, and usually represent the high-performance range of applications. Research continues unabated to further increase their performance. This session presents the latest developments for 1K and 1K PUR coatings as well as for waterborne and solvent-based systems.

12.1 Comparative Study of PUD-based on Different Chemical Nature Polyols
Colera Manuel,
UBE Europe, Spain

12.2 Design and Development of Self-stratifying Systems as Sustainable Coatings
Jamil Baghdachi,
Eastern Michigan University

12.3 1K Thermally Cured PUDs for Industrial Coatings Applications
Raymond Stewart,
Bayer MaterialScience

12.4 Hybrid Polyols for SB & WB 2K PU Topcoats with Superior Appearance
Denis Heymans, Momentive Specialty Chemicals, Belgium

12.5 New WB OH Functional Acrylic Resin Technology for WB2K Coatings
Jon Cronin,
DSM Coating Resins

12.6 Advanced Solutions for 2K Polyurethane Dispersions
Philippe Barbeau, Perstorp France, France

Session 13:

Wednesday Morning May 09, 2012 | 9:00 am – 12:30 pm

Mattiello Award

The Joseph J. Mattiello Lecture was designed to recognize an individual who has made outstanding contributions to science, technology, and engineering related to the coatings industry. The lecturer will present a paper on a phase of chemistry, engineering, human relationship, or other discipline fundamental to paint, coatings, varnish, lacquer, or related protective and decorative coatings. In order to be eligible for this award, one must be nominated. Each candidate nomination is judged based on the following criteria: technical accomplishment, service to the coatings industry, product and/or technology available to the industry, scope/impact, and presentation capability. This award is presented annually at the American Coatings Conference and the CoatingsTech Conference.

Wednesday May 09, 2012 | 8:00 - 9:00 am

Mattiello Lecture

Application and Limitations of Current Understanding to Model Failure Modes in Coatings

Prof. Stuart Croll,
Chair Coatings and Polymeric Materials,
North Dakota State University

This lecture will offer some ideas on further research that might provide better linkage between coating composition and durability. Stochastic models have provided some understanding of how coating properties, such as gloss, toughness, corrosion protection, etc., deteriorate in service and have also helped in understanding why accelerated weathering has only a tenuous connection with natural exposure. Using these models and making other observations, for example of film formation and adhesion, has allowed better identification of where knowledge is incomplete and where assumptions and approximations must, otherwise, be inserted. Discussion will include questions on film formation, network degradation, surface topography, ionic transport, adhesion and the fatigue properties of coatings.

Epoxy Coatings

Chair: Charles Nelson,
Lubrizol

Epoxy coatings are characterized by high chemical resistance, excellent adhesion and outstanding corrosion protection properties. However, formulators are continuously searching for performance improvement and new applications. This session discusses the latest developments for these systems including new binder chemistries, a novel toughening agent, novel curing agents for zero to ultra-low VOC epoxy coatings and waterborne systems for low VOC.

9:00 - 9:30 am

13.1 New 2k Epoxy Hybrid Dispersion Technology for Durable Floor & Wall Coatings

Thomas Tepe,
Dow Coating Materials

9:30 - 10:00 am

13.2 Waterborne Epoxy Systems for Low VOC, Two Component Zinc Rich Primers

Derek Crawford,
Momentive Specialty Chemicals

10:00 - 10:30 am

13.3 A Novel Toughening Agent for Improved Impact Resistance of Epoxy Coatings

Eric Brouwer,
Croda Industrial Specialties, The Netherlands

10:30 am

13.4 New Oraganomettalic Catalysts for Epoxy Carboxy Coatings

Ravi Ravichandran,
King Industries

11:30 - 12:00 pm

13.5 Development of New Low Emmission Epoxy Curing Agents for Ambient Cure Applications

Rajesh Turakhia,
The Dow Chemical Company

12:00 - 12:30 pm

13.6 Novel Curing Agent Technologies for Zero to Ultra Low VOC 2K Epoxy Systems

Daniel Totev,
Air Products and Chemicals

12:30 pm

Session 14:

Waterborne Systems

Chair: Paul Lewis,
Quest Specialty Chemicals

Thanks to its VOC-reduced or VOC-free character, waterborne coating is a fast developing technology. In many applications, waterbased systems have become a standard solution, replacing their solvent-based counterparts. This session picks up new binder-based and additive developments for waterborne coatings for different applications, such as new self-crosslinking acrylic resins, new defoamers design concepts and a new class of pressure sensitive adhesives.

14.1 Development of Novel Self-Crosslinking Resins for Waterborne Wood Finishes
Laura Vielhauer,
The Dow Chemical Company

14.2 Innovative Protection for Wooden Surfaces
Terri Carson,
Alberdingk Boley

14.3 The Role of Molecular Defoaming Actives in Low VOC Paint Defoamer Design
John Mangano,
BASF

Networking: Coffee Break

14.4 New Waterborne PSAs based on Soft and Hydrophobic Vinyl Esters
Francois Simal,
Momentive Specialty Chemicals, Belgium

14.5 Improving the Water Resistance of Water borne coatings.
Steffen Pilotek,
Buhler

14.6 Dispersing Agents for Transparent Pigments in WB and HS Applications
Steffen Onclin,
BASF SE, Germany

Session 15:

Smart & Functional Coatings

Chair: Ken Perry,
BASF

Smart and functional coatings are often referred to as structured coatings providing additional benefits by giving an appropriate response to outside conditions. Much talked about are self-healing or superhydrophobic and hydrophilic coatings, to name a few. More examples will be given in this session, comprising IR-reflecting coatings, functionalization on demand and re-chargeable coatings. Other interesting developments are core-shell nanostructures for photovoltaic and easy-to clean coatings.

15.1 Functionalization-On-Demand and Re-chargeable Coatings
Eric Williams,
Reactive Surfaces

15.2 Novel Application of Fluorosurfactant in Easy-clean Architectural Paint
Jean Meng,
DuPont

15.3 Superhydrophobic Coatings
Volkmar Eigenbrod,
Rhenotherm No1 Coatings, Germany

15.4 Solution-based Coating of Core-shell Nanostructures for Hybrid Photovoltaics
Shanju Zhang,
California Polytechnic State University

15.5 A Multiscale Simulations Approach to Predictive Paint Design
Jie Xiao,
Washington State University

15.6 Considerations in Formulating and Using Cool Roofing Coatings
J. D. Connolly Jr.,
DuPont

Session 16:

Novel Materials

Chair: Kevin Lassila,
Altana

Raw materials suppliers are in constant search for innovative products and technologies that offer new opportunities for the design and improvement of coatings systems. Examples presented in this session include novel rheology additives zero VOC de-aerators for waterborne coatings, novel methacrylic core-shell polymers with polymer-fixed activators, a new generation of barium sulphate and tailor made wetting and levelling agents.

16.1 Cellulose Ester Rheology Additives for Automotive OEM Clearcoats
Jianhui Zhou,
Eastman Chemical Company

16.2 Novel Methacrylic Systems to Control Open Time in Reactive Resins
Gerold Schmitt, Evonik Industries, Germany

16.3 The Impact of Biocide Regulatory Changes on the U.S. Coatings Industry
Scott Brown,
Arch Chemicals

16.4 Novel Zero VOC De-aerators for Waterborne Coatings
Jim Reader,
Air Products and Chemicals

16.5 The Role of Particle Functionalization in Coatings
Petra Fritzen,
Sachtleben Chemie, Germany

16.6 Tailormade Substrate Wetting & Leveling Agents
Ralf Knischka,
BASF, Germany

End of Conference

All You Need to Know

Your Key Contacts

Conference

Vincentz Network Coatings Events:
conference@american-coatings.com

American Coatings Association:
cmatthews@paint.org

Conference Website:

www.american-coatings-show.com/conference

Trade Show

NürnbergMesse North America, Inc.
400 Interstate North Parkway, Suite 550
Atlanta, GA 30339, USA
Phone: 770-618-5830

visitor@american-coatings-show.com
www.american-coatings-show.com

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This conference program is subject to change

Venue

The American Coatings SHOW and the American Coatings CONFERENCE 2012 will be held at:

Indiana Convention Center

100 South Capitol Ave
Indianapolis, IN 46225
http://icclos.com/

Organizers

American Coatings Association
1500 Rhode Island Avenue, N.W.
Washington, D.C. 20005, USA
Phone: 202-462-6272
Fax: 202-462-8549

Vincentz Network
2885 Sanford Ave SW#15817
Grandville, MI 49418, USA
Phone: 202-684-6630
Fax: 202-380-9129

Duration & Opening Hours

Conference: May 7 – 9, 2012
Exhibition: May 8 – 10, 2012
Opening Hours Exhibition:
May 8 – 9, 2012: 9 am – 5 pm
May 10, 2012: 9 am – 3 pm

Registration Options

American Coatings CONFERENCE Registration

Fees include:

- Admittance to the Conference (Full or Days Booked)
- Conference Proceedings (CD)
- List of Conference Attendees
- Permanent Exhibition Ticket
- Exhibition Directory
- Conference Lunch & Coffee Breaks

Pre-Conference Tutorials Registration

Fees include:

- 1.5 hours interactive lecture in a small group
- Pre-Conference Tutorial Proceedings (Hardcopy)
- List of Pre-Conference Tutorial Delegates
- Exhibition Ticket
- Exhibition Directory
- Coffee Break before or after the Pre-Conference Tutorial

American Coatings SHOW Registration:

Fees include:

- Exhibition Ticket to the Exhibition Day booked
- Exhibition Directory

Register online at
http://www.american-coatings-show.com/conference/

Fax or e-mail registration form to
EPIC Registration
10900 Granite Street, Charlotte, NC 28273, USA
Fax: 980-233-3800
registration@epicreg.com

Cancellation/Refunds:

Cancellation deadline is April 30, 2012. All cancellations must be received in writing by April 30, 2012, to receive a refund minus $100 processing fee. Refund requests received after April 30, 2012, will not be honored. All refund requests are processed post-show. Substitutions are welcome instead of cancellation anytime, free of charge.

Hotel Reservation

Hotel accommodation is not included in the registration fees. Reservations will be handled by the AC Housing Bureau. To secure your hotel of choice and to get the rates negotiated for attendees, please book online at www.american-coatings-show.com/accommodation or by email to the AC Housing Bureau housing@visitindy.com or by fax to Phone: 317-262-8191.
AC Housing Bureau
200 S. Capitol Ave. Suite 300
Indianapolis, IN 46225-1063

Visa Information

Please keep in mind that international attendees might need to obtain a visa for visiting the USA. In order to obtain a letter of invitation from the organizer, please contact the visitor service of the NürnbergMesse North America at: **visitor@american-coatings-show.com**

Conference Registration Form

After May 4, 2012 interested attendees are asked to register on-site in Indianapolis. Please note that on-site registrations cannot be guaranteed as conference attendance is limited. Also note that on-site registration carries an additional fee of 10% of the conference fee to cover processing costs.

AC American Coatings CONFERENCE

Step 1 General Information

Title | First Name | Last Name

E-mail

Phone | Fax

Mailing Address

Company | Department (if applicable)

Address | City/State/ZIP | Country

Register online! www.american-coatings-show.com/conference

Step 2 Registration Options

	Standard Fee	Reduced Fee*	University Members
Full Conference May 7 – 9, 2012 excl. Pre-Conference Tutorials (Best Value)	☐ $ 799	☐ $ 729	☐ $ 399
Your all-access pass to the complete American Coatings SHOW and CONFERENCE. All speakers, all sessions in every track - including keynote presentations, all coffee breaks, luncheons, AC conference Reception, and full access to the American Coatings SHOW.			
Two-Day Pass Choose one combination:			
May 7 + 8, 2012	☐ $ 579	☐ $ 519	☐ $ 289
May 8 + 9, 2012	☐ $ 579	☐ $ 519	☐ $ 289
May 7 + 9, 2012	☐ $ 519	☐ $ 469	☐ $ 259
Single-Day Pass Choose one:			
May 7, 2012	☐ $ 349	☐ $ 309	☐ $ 179
May 8, 2012	☐ $ 409	☐ $ 399	☐ $ 209
May 9, 2012	☐ $ 349	☐ $ 309	☐ $ 179

***Discounts:** Companies who are exhibitors at the American Coatings SHOW 2012 or members of ACA will be given a 10 % discount of the standard fee.
I am exhibitor/member of: ☐ ACS 2012 ☐ ACA

Pre-Conference Tutorials

Please note that the Pre-Conference Tutorials (Extra) and the main conference are two individual events. Participation is limited at the exclusive tutorials and will be handled on a first come, first served basis. Advance-registration is absolutely necessary.

Pre-Conference Tutorial 1 – 5 Please choose one:	8:30 – 10:00 am	☐ Tutorial 1, $ 175 ☐ Tutorial 2, $ 175	☐ Tutorial 3, $ 175 ☐ Tutorial 4, $ 175	☐ Tutorial 5, $ 175
Pre-Conference Tutorial 6 – 9 Please choose one:	10:30 – 12:00 pm	☐ Tutorial 6, $ 175 ☐ Tutorial 7, $ 175	☐ Tutorial 8, $ 175	☐ Tutorial 9, $ 175

Step 3 Method of Payment

After conference registration is sent attendees will also receive confirmation and an invoice.

Credit Card ☐ Amex ☐ Master Card ☐ VISA

Card Number

Expiration Date

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Date, Signature

Mail or Fax to
EPIC Registration
10900 Granite Street, Charlotte, NC 28273
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registration@epicreg.com

For Registration Questions Call:
EPIC Registration
Phone: 866-692-2071 or 980-233-3808

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