Wood Coatings Symposium to Serve Wide Audience

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Coatings for wood and wood-based substrates will be the focus of an upcoming symposium sponsored by the FSCT. "Coating Wood and Wood Composites: Designing for Durability" will be held July 23–25, 2007, in Seattle, WA. This ACSeries event is co-sponsored with the Journal of Architectural Coatings (JAC).

This symposium on wood coatings follows the very successful one held in 2005 in Charlotte, NC. The FSCT is hoping to build on that success and broaden the attendance to include all groups that affect wood coatings, from those who develop formulations to those involved in maintenance and testing of applied products. The inclusion of architects is one major change from the 2005 conference. According to the FSCT, programming will go a step further than what was presented previously, exploring the ways in which coating performance is dependent upon the architectural design of a building. There is an entire section of the symposium that will be certified by the Architectural Institute of America (AIA).

This approach was a perfect fit for JAC. "JAC focuses on technology and reaches out to a very broad audience," says publisher Harold Flower. "With respect to wood coatings, we cover topics that are of interest to raw material suppliers, applicators, builders, contractors, architects, building owners, etc. The Coating Wood and Wood Composites symposium is trying to reach a similarly broad audience and make it possible for all of the constituent groups to inform one another about their experiences, needs, and possibilities with regard to technology. It will help catalyze interactions that are unlikely to take place otherwise," he continues.

The symposium should benefit anyone involved in the research and development of coatings (resins, pigment, and additive suppliers and formulators) for wood and wood composites, those who use wood-based materials (architects and builders), and those who apply coatings to wood substrates. Attendees will gain an increased knowledge of current market dynamics, new regulations, and technological advances.

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Having representatives from both the coatings and wood industries at one conference is a key attribute for this symposium, adds Dr. Victoria Scarborough, director of New Technology for Sherwin-Williams’ Diversified Brands Division. "Attendees will have the opportunity to mingle with experts who specialize in both wood chemistry and coatings chemistry. Bringing the two disciplines together is rare and very useful in advancing the understanding of how to best coat wood," she declares. "It is thrilling to get coatings formulators together with forest products folks, and include architects as well," notes D. Douglas Mill, architectural coatings specialist with The Dow Chemical Company.

The symposium will begin with a session focusing on the properties of different wood-based substrates. Dr. Frederick A. Kamke, JELD-WEN Professor of Wood-Based Composite Science in the Department of Wood Science and Engineering at Oregon State University, will open this session with a discussion about how the basic material properties of wood and wood composites can affect the durability of different coatings systems. "Each specific application will have a different requirement for durability. When developing and selecting coatings, a first step is to define durability for the intended application. Coatings formulators and applicators need to have a good understanding of wood substrates and the different nuances of durability in order to be able to do so," repeats Dr. Kamke. His talk will address these issues.

Two speakers from the USDA Forest Service Forest Products Laboratory (FPL) will follow with presentations about basic wood anatomy and how manufacturing processes can affect wood surfaces. Alex Wiedenhof will provide an introduction to wood structure and the differences between species. Dr. R. Sam Williams, project leader, Lignocellulosic Materials and Surface Science and a member of FSCF’s Coating Wood Task Force, will talk about how the processing of wood can affect its surface. "The performance of wood products depends on the grade of the wood, which relates to the type and part of the tree it came from and the cutting process at the mill. A particular type of wood of a particular grade will be ideal for a particular purpose," he explains. An awareness of these issues will help coatings formulators and applicators develop and select the best coating for different wood substrates.

Dr. Scarborough, who is also a member of the Coating Wood Task Force, will talk about how durability of coatings can be affected when re-formulating for low VOC content. "Meeting VOC regulations by changing formulations can directly impact the durability of a coating. Formulators must consider how removing or replacing ingredients to lower VOCs can change the durability of the final coating product," she states.

Three additional sessions will cover the application and testing of performance products, designing for durability, and engineered wood composites. Each session has three tracks, one of which is related to architectural issues.

Dr. Rod Stirling, wood chemist with Forintek Canada Corp., will present a session on "When you turn to Noveon for industrial coating additives, you get more than just high-performance products. Sure, our innovative technologies - like Lexon®, Lexco Glid and Lexco Flow – protect the coating surface from scratches, metal marking or other damage during fabrication and shipping. But, with Noveon in the mix, it’s what you don’t see that makes all the difference. Our scientific know-how and years of experience can also help you identify new opportunities and ensure that the best technology available is integrated into your products. We combine global resources, unmatched technical expertise and a commitment to responding to your unique needs - making us the single-source supplier for industrial coating additives."

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talk about the use of a UV/Visible spectrophotometric method for measuring the effectiveness of add-
itives in wood finishes that are designed to block damage from UV radia-
tion. He is looking forward to learning about the latest advances in wood coatings research and networking with colleagues across the wood coating field.

Andres Larson, area manager, Coatings of YKE, the Institute for Surface Chemistry, is also hoping to learn about the latest trends and innovations in wood coatings and to meet people involved in different aspects of the industry. He will talk about the challenges of fighting mold in mildew. The challenge is that mold and mildew will have longer growth seasons due to warmer and more humid autumns, and at the same time lower levels of biocides will be required by environ-
mental regulations. "Mold and mildew have good conditions for growing on coated wood, which reduces wood's aesthetic durability. New strategies must be developed to increase this durability," says Mr. Larson.

The changing nature of exterior substrates is the subject of a presenta-
tion by Mr. Mall. The popularity of classic exterior substrates is changing, whether due to cost, availability, new technology, or legal or regulatory pressures. This shift has required a change in the para-
digms and/or formulating ap-
proaches so coatings can continue to provide best solutions for overall substrate/coatings package durability. Dr. Scarborough adds that the symposium will specifically address issues related to new, imported materials like tropical hardwoods.

"Gaining an understanding of the properties of these different woods and composites is important so that coatings can be designed with optim-
um performance," she notes.

Waterborne polyurethane coat-
ings for wood floors will be dis-
cussed by Peter Schmit of Bayer

MaterialScience LLC. The company has developed a new low-VOC resin based on an oxidative crosslinking technology that offers improved abrasion and chemical resistance in a variety of formulations. Ronald Obie, president of the Wood Coatings Research Group, will discuss novel formulating tools to help in the development of high performing low-VOC coating products.

The basic fundamentals of pow-
der coating medium-density fiber-
board will be the subject of a pres-
centation by Jeff Hale, marketing and distribution manager with IFW Gema. "We hope to gain some under-
standing of the potential role that powder coatings can play in the wood market," he notes. "The sym-
posium provides a great oppor-
tunity to get exposure for our technol-
y and to meet other people that we might not normally interact with, but could have valuable ideas.

Kelly Williams of Inhance/Fluoro-Seal will discuss technology for improving paint adhesion to wood-plastic composites. Elemental fluorine-based reactive chemistry, such as fluoro-oxidation, have been proven to robustly produce a per-
manent, high energy surface for which any type of paint or coating can adhere with 100% adhesion. Mr. Williams will provide details on a reactive gas method for modifying the surface of wood-plastic compos-
ites with application of UV-curable coatings.

The symposium wraps up with a session on the global marketplace and looks at the current market trends and issues facing those in-
volved in developing or working with coatings for wood and wood composites. Following the session, attendees will have the opportunity to visit local lumber mills to ob-
serve the manufacturing process directly.

As can be seen from the variety of presentations discussed in this article, there will be many relevant topics available from which atten-
dees may choose. Once the confer-
ence is concluded, attendees will have gained insight into the current dynamics of the market for wood and wood composites, increased their understanding of wood prop-
erties and how they affect coating performance, recognize the impact that architectural design can have on coatings performance, and un-
derstand better how to select appropriate coatings formulations for wood-based materials.

"Performance of finishes and their interactions with the structure all start with an understanding of the wood substrate. Wood shrinks and swells with changes in moisture content, so it can decay, it can be in-
fected with insects, but it can also last for more than 1,000 years in properly designed and maintained structures,"" says Dr. Williams of Lignocellulose Materials and Surface Science. "It all depends on the choices made by architects, con-
tractors, and the industries supplying materials for these structures. Attendees at this conference should leave with more tools in their tool-
box to achieve long service life for finishes and the structures on which they are applied."

The symposium and the entire AC Series of conferences have as their foundation the goal of educat-
ing ESCI members and others.

"ESC is endeavoring to provide more educational opportunities and increase its focus on educating form-
ulators about the business of making paints and coatings," notes Dr. Scarborough. This particular symposium is a good example of the holistic approach the associa-
tion is taking to expand the knowl-
dge base for its members. "Coat-
ings manufacturers must be aware of the other elements that play a role in the performance of their products. This symposium provides the perfect opportunity for them to begin to accumulate some of that knowledge," she asserts.