



Wood Coatings Symposium to Explore Changing Business Environment

Coatings for wood and wood-based substrates will be the focus of an upcoming symposium sponsored by the Federation of Societies for Coatings Technology (FSCT). Coating Wood and Wood Composites: The Changing Future will be held September 25-27, 2005 in Charlotte, NC. This ACSeries event has been endorsed by Master Painters Institute, RadTech International North America, and the Painting and Decorating Contractors of America. This unique event will bring together wood experts and coatings formulation experts to exchange information about the changing nature of wood substrates and how to improve the performance and durability of coatings for them.

Staying abreast of current trends and issues can be a significant challenge in a rapidly changing business environment, and this is the situation that faces those involved in all aspects of coatings designed for wood and wood composites. Increasing regulatory restrictions, introduction of tropical woods, and development of wood composites are just some of the factors impacting this market. The Coating Wood and Wood Composites conference was specifically designed to explore the changing nature of wood and wood composites and the coatings used on these materials. Attendees will learn about new technologies related to the different properties of wood and wood-based materials in order to be able to maximize the performance and durability of the coatings applied to them.

by Cynthia Challener
JCT COATINGS^{TECH} Contributing Writer

The schedule of the event includes a Short Course on the first day followed by two days of presentations covering wood/coatings research, materials testing, regulations, construction techniques, and solving problems in the field. The Short Course will provide a comprehensive overview of the current issues associated with the use of wood and wood composites. Participants will learn how various characteristics of wood, such as weathering, new preservatives, and moisture can affect coating performance. Wood composites, regulatory developments, and laboratory testing methods will also be reviewed.

During the two-day symposium, experts in the research, development, and testing of coatings for wood and wood composites will present a series of lectures on current market trends and issues and state-of-the art technology designed to address the needs of the marketplace. On each day, two tracks of topics will be running concurrently. Sessions include the following topics:

- The changing nature of wood-based substrates
- Meeting VOC requirements for the future
- Moisture problems and how to deal with them
- New developments in interior finishes
- Getting the most out of your performance testing
- UV curing uses on wood/factory finishes

The conference should benefit anyone involved in research and development of coatings (resin, pigment, additive suppliers and formulators) for wood and wood composites, those who used 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. Some topics to be addressed include factory application of UV and powder coatings, correlating testing results with actual performance, applications for nanotechnology, how to address moisture issues, preventing and addressing wood coatings failures, and selection of appropriate wood-based materials. The conference also provides attendees

the opportunity to improve contacts between the wood and paint industries.

Dr. R. Sam Williams, project leader, Wood Surface Chemistry with the USDA Forest Service Forest Products Laboratory (FPL) and Chair of the Coating Wood Task Force will be presenting the opening talk of the Short Course on "The Effects of Wood Properties on Coatings Performance." The presentation will include a discussion of wood anatomy, wood chemistry, how this varies with different species, and how processing the lumber affects the wood surface properties and, thus, its finishing characteristics. "One of the main goals of the Symposium is to increase awareness among the coatings industry and their suppliers of wood properties and the effect these properties have on the performance of different types of coatings," notes Dr. Williams. "This talk will set the stage for the remainder of the Short Course and the presentations on the following two days."

Dr. Williams will also be presenting talks on changing characteristics of cedar siding and prevention of the release of metal salts from CCA-treated wood. The Forest Products Laboratory has found that saw textured surfaces give far superior performance to those of smooth-planed surfaces when coated with low VOC formulations. With arsenic-treated woods, Dr. Williams

and Stan Lebow have found that finishes such as semi-transparent stains that retard photochemical degradation of the wood surface, decrease the loss of chromium, arsenic, and copper salts from the wood surface. "The conference offers an opportunity for technology transfer of FPL research. I hope to be able to help increase the understanding of wood and its properties among those doing research and development in the coatings industry and make them aware of the changes that are taking place in the wood and paint industries," Dr. Williams adds.

Having representatives from both the coatings and wood industries in one conference is a key attribute for this symposium, adds Dr. Victoria Scarborough, Director of R&D, The Thompson's Brand, The Sherwin Williams Wood Care





Group. "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 stresses.

Dr. Scarborough, who is also a member of the Wood Coatings Task Force, will talk about "The Changing Nature of Exterior Decks," specifically focusing on how decking materials are different from the past and what considerations may need to be made when developing finishes for these new surfaces. "Both the contractor and the DIY homeowner are increasingly being exposed to these new decking materials. As they age, they will require maintenance that includes treating with some type of protective coating." She will also discuss the importance of testing of newer materials, because there is no guarantee that they will behave the same way as the older traditional materials.

This presentation on decking materials is just one example of the changing nature of wood and wood composites. "The key idea for the conference is to let everyone know that while coatings have changed significantly due to VOC regulations, wood is also changing with the introduction of composites, tropical hardwoods, and new wood preservatives into the marketplace," says Dr. Scarborough. "Thus, coatings formulations may have to make adjustments to account for these changes."

For Doug Mall, architectural coatings specialist with The Dow Chemical Company, the symposium offers a unique opportunity to get information about the best practices for protecting and finishing wood and wood

composites to a much broader audience, including architects, retailers, and contractors. Mr. Mall is a member of the Wood Coatings Task Force and the current coatings chairman of the Joint Coatings and Forest Products (JCFP) committee, which is focused on developing public domain information on enhancing performance of wood-based products. He will be presenting a talk on the changing market dynamics for exterior substrates, including wood and wood composites. "A formulator or company who is informed of new trends, substrates, and building recommendations will have a decided market advantage in providing workable and accurate solutions for today's homeowner, contractor, and architect," he says.

In the past decade, the use of wood has dropped from a 33% share of the market for exterior siding for new single family homes in part because the public has developed an unwarranted negative perception of its performance capabilities, according to Mr. Mall. Difficulties with wood siding have resulted from changes in substrate choices, coatings, and construction techniques, resulting in an influx of different types of substrates being offered for exterior siding. An awareness of these issues and choices, and an understanding of current best practices may make it possible for homeowners to obtain the best performance possible from their siding, which will benefit both the wood and coatings industries. "By building a new state-of-the-art latex plant at its St. Charles, LA, facility, Dow is making a significant investment in its UCAR Emulsion Systems business and the markets UES serves. These include the architectural and building products markets, and Dow recognizes that offering a robust product mix is essential to meet the future trends of these markets."

Through his talk, Mr. Mall also hopes to make attendees aware of the JCFP committee and its efforts to gather information about best practices. "We want people to be aware of the amount of reliable information that is available and to get a sense of the incredible level of activity in this sector," he explains. "The committee is a source of unbiased public domain information to help the industry and its customers to get the best performance possible out of wood-based materials and the coatings applied to them." The committee also welcomes new information and, especially, new volunteers who would like to participate in its activities.

Christopher White, research chemist with the National Institute of Standards and Technology (NIST) is excited about the opportunity to talk about service life prediction at the conference. "It is my hope that the attendees will have a greater understanding of the important issues related to durability and the accurate prediction of service life, which includes the economic costs associated with not having accurate data. This understanding will help them make more informed deci-

sions about the actual costs of the materials they select," he explains.

Dr. White's talk will highlight the continuing work at NIST with industrial partners to develop data that will allow for accurate prediction of in-service performance in less than real time. He will also provide a link between the data and the economic consequences of materials acquisition decisions. "Not knowing about the durability of the material can be very expensive. NIST/USDA/Industry is working hard to provide the tools to help customers make more informed materials selection decisions. The conference is an opportunity to get that information out to the right people," he adds.

The Environmental Protection Agency (EPA) will be represented at the conference by environmental scientist H. Lynn Dail, who will be giving a talk on current and upcoming environmental regulations. "I want to be in contact with the industrial sector that produces wood building products to ensure an ample margin of safety from hazardous air pollutant (HAP) emissions exists in this country," he notes. He will be discussing the maximum achievable control technology (MACT) requirements for the wood building products National Emissions Standards for Hazardous Air Pollutants (NE-SHAP), specifically the applicability of the rules to different wood building products and the emission limits associated with these products. "Controlling HAPs from coatings is good business and good stewardship of our country's air."

The issue of moisture in wood and wood composites will be addressed by several speakers. Stephen Smulski, Ph.D., president of Wood Science Specialists Inc., will be giving two presentations on this topic. Dr. Smulski has investigated moisture-caused problems in energy-efficient wood-frame buildings for over 20 years, and wants to share the knowledge he has gained on how to address these problems. "Construction practices and the characteristics of wood siding have changed over the years such that walls of wood-frame buildings have gone from being leaky, warm, and forgiving of getting wet to being tight, cold, and unforgiving. Additionally, manufacturers began formulating solid color stains that tend to sit on the surface of wood rather than penetrate into the wood as traditional oil-based paints did," he explains. His talk will in-

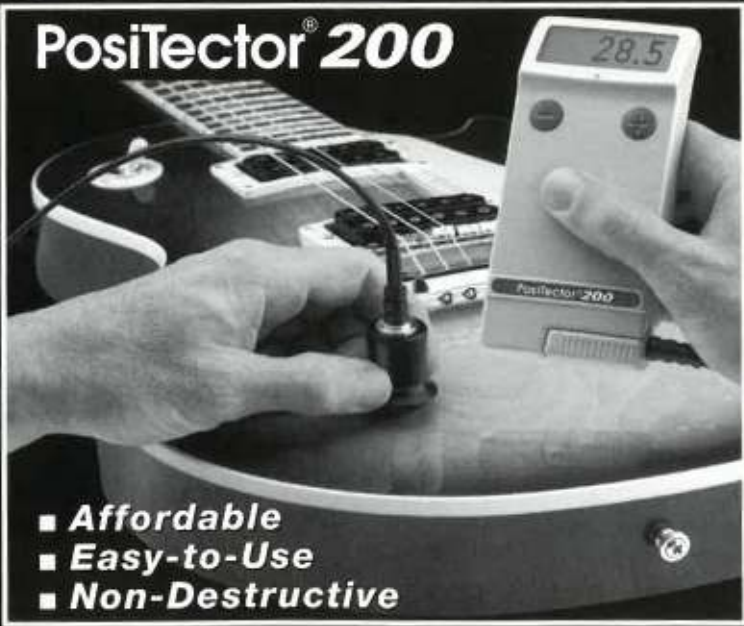
clude suggestions for addressing the chronic mildew, extractive staining, and premature flaking and peeling of coatings—all of which are caused by excessive moisture in siding.

As can be seen from the variety of presentations discussed in this article, there will be an abundant choice of relevant topics for attendees. Once the conference is concluded, they will have gained insight into the current dynamics of the market for wood and wood composites, learn how to select appropriate wood-based materials and coatings formulations, and understand how to maximize the performance of these products.

"Performance of finishes and their interactions with the structure all start with an understanding of the wood substrate. This is no different than coatings on other materials, such as metals. Wood shrinks and swells with changes in moisture content. It can decay, it can be infected with insects, but it can also last for more than 1000 years in properly designed and maintained structures," says Dr. Williams. "It all depends on the choices made by architects, contractors, and the industries supplying materials for structures. Attendees at this conference should leave with more tools in their toolbox to achieve long service life for finishes and the structures on which they are applied." □

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