

Practical Wood Coatings Formulation and Application Training Course



The Year 2023 Practical Wood Coatings Formulation and Application course is offered as both an On-Site and as a Virtual Training option. The On-Site offering is a 3 ½ -day intensive course combining lecture, laboratory instruction, and demonstration. The Virtual course offering is a 2 ½ day option designed to cover the same topics, items, and details as our On-site course, without the travel requirement. The virtual course combines lecture, video laboratory instruction and demonstration, with opportunity for interaction between instructor and participants.

As a whole, the course provides an overview of the wood coatings market. Further, the course introduces students to the historical aspects of wood coatings and then, systematically, brings them to the current state of the art. The course discusses solvent-based, water-based, and UV technology in a scientific, comparative and enlightening manner. The course is a comprehensive technical, marketing and idea generation resource. Participants will leave the course with improved knowledge, skills and understanding of coatings as well as a heightened sense of confidence regarding their knowledge of wood coatings. Researchers, formulators, chemists, applicators, users of wood coatings, sales, marketing and technical service personnel of raw material suppliers will find the course very beneficial. We also offer a one-half day virtual course module specifically targeted towards market managers as an overview of the wood coatings market and technology, e.g., Module 12.

Please visit www.woodcoatingsresearchgroup.com for more information and registration.

Year 2023 Dates of On-Site Training Course	Registration/Payment Deadline	Cost
Jan 24-27	January 10, 2023	\$1900 per course
April 18-21	March 24, 2023	
August 15-18	July 21, 2023	
October 31 – November 3	October 6, 2023	
This Course is offered four times in 2023 on the above dates		

On-Site classes begin on Tuesday at 1:00 PM and run through Friday to about 12:00 Noon.

Please visit <https://www.woodcoatingsresearchgroup.com/on-site-registration.html> to register for the On-Site Course.

It is important to note that registration is typically limited to 8 participants for On-Site trainings. Please contact us if you have need for individual company training needs.

Year 2023 Dates of Virtual Training Course	Registration/Payment Deadline	Cost
January 31 – February 2	January 23, 2023	\$1700 per course
March 28 - 30	March 20, 2023	
August 1 - 3	July 24, 2023	
November 15 - 17	November 7, 2023	
This Course is offered four times in 2023 on the above dates		

Virtual classes run from 8:00 AM to about 4:00 PM with breaks and lunch on days one and two; and from 8:00 AM to about 12:00 Noon on the third day.

The following links may be used to register for the Complete Virtual Training Courses

Year 2023 Dates of Virtual Training Course	Registration Link
January 31 – February 2	https://woodcoatingsresearch.webex.com/woodcoatingsresearch/k2/j.php?MTID=t7a5dc39689986338f2f414e634109f6c
March 28 - 30	https://woodcoatingsresearch.webex.com/woodcoatingsresearch/k2/j.php?MTID=t3afc5ce5beca20de32f4f9a40229a789
August 1 - 3	https://woodcoatingsresearch.webex.com/woodcoatingsresearch/k2/j.php?MTID=tedc6d18f26f8bd4d77e8dddab00d2587
November 15 - 17	https://woodcoatingsresearch.webex.com/woodcoatingsresearch/k2/j.php?MTID=tf6926d685d5f9f714fcd3c2e9d455f72

Year 2023 Dates for Virtual Market Manager's Training Course	Registration/Payment Deadline	Cost
January 19	January 13, 2023	\$440 per course
March 23	March 17, 2023	
July 27	July 21, 2023	
October 26	October 20, 2023	
December 14	December 8, 2023	
This Course is offered five times in 2023 on the above dates		

The Market Manager's Training runs from 8:00 AM to about 12:00 Noon, each day.

The following links may be used to register for the Complete Virtual Training Courses

Year 2023 Dates for Virtual Market Manager's Training Course	Registration Link
January 19	https://woodcoatingsresearch.webex.com/woodcoatingsresearch/k2/j.php?MTID=t91b2a01c0f83224890783f050ece3166
March 23	https://woodcoatingsresearch.webex.com/woodcoatingsresearch/k2/j.php?MTID=t4779671af9354752e84fe5cddaf014a3
July 27	https://woodcoatingsresearch.webex.com/woodcoatingsresearch/k2/j.php?MTID=tfe134b19729d0dd4560472792870eb4f
October 26	https://woodcoatingsresearch.webex.com/woodcoatingsresearch/k2/j.php?MTID=td710ddd10a1a7dedb3cfa8a762a7d2b5
December 14	https://woodcoatingsresearch.webex.com/woodcoatingsresearch/k2/j.php?MTID=t9e1f61f1d18cd87e63fe29b4ce3baf37

Syllabus

Module 1 - Wood Coatings, an overview of market value, characteristics, and needs

What you will learn in Module 1 -

- Learn the potential value of the wood coatings market
- Learn the market and technical characteristics of the 8 wood coatings market segments
- Learn what new technologies are most viable and poised for impact and growth in the various markets
- Learn the primary performance requirements and characteristics of the various markets
- Learn potential required areas for research of various markets

Module 2 - Technology of Wood Finishing I – Wood/Substrate Properties



What you will learn in Module 2

- Learn how the properties of wood varies based on species, plane of cut, and growth environment
- Learn about the wood substrate, its properties, characteristics, and anatomical and chemical composition; discover how these parameters impact coating and finish formulation, design, and performance
- Compare the properties, structure, and appearance of various wood

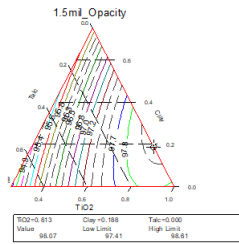
Module 3 - Technology of Wood Finishing II – The composition of a wood finish



What you will learn in Module 3

- Learn what goes into the make-up and composition of a coating and how coating components function within a coating
- Learn about the various operations of the finishing process and discover how and why coatings are formulated to address those operations and processes
- Gain valuable insight regarding critical parameters relative to topcoat appearance and performance
- Discover the meaning of “Total System Interdependence”

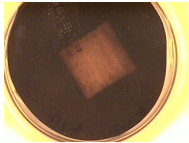
Module 4 - Technology of Wood Finishing III – Pigmentation in coatings



What you will learn in Module 4

- Learn about the use of decorative pigments, minerals, and fillers utilized in coating formulations
- Discover the properties and characteristics of decorative pigments, minerals, and fillers that are important to their successful utilization in coatings and how they impact coating properties and performance

Module 5 - Technology of Wood Finishing IV – Specialty Finishes



What you will learn in Module 5

- Learn parameters and properties that are necessary for the development of specialty finishes such as deck and fence stains, finishes, and coatings
- Learn about stain blocking coatings, and hardwood floor finishes
- Learn about the effects of weathering
- Learn about extractive bleeding and other stains
- Review some requirements of interior hardboard coatings

Module 6 - Technological Background of Solvent based and Water based Wood Coatings I – Solvent based coatings



What you will learn in Module 6

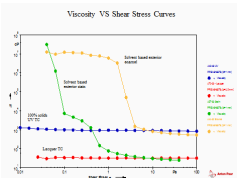
- Learn theoretical and practical properties and characteristics of solvents, polymers, resins, and binders, and how these properties impact coating appearance and performance
- Learn about the characteristics, properties, and formulation parameters of resins such as alkyds, vinyls, nitrocellulose, hard resins, acrylics, cellulose acetate butyrate, etc. and how they are utilized in wood coatings formulations

Module 7 - Technological Background of Solvent based and Water based Wood Coatings II – Water based coatings

What you will learn in Module 7

- Combined with Module 6, strategically compare characteristics and properties of solvent based and water based coating technologies
- Learn about film formation in water based coatings and parameters necessary for film formation
- Learn about polymer-coalescent-water interactions and how considering these can lead to more successful formulations and strategies
- Learn about various polymer particle morphologies and how these impact formulation and properties

Module 8 - Application and Application Properties of Solvent based and Water based Coatings



What you will learn in Module 8

- Discover the importance of coating rheology/viscosity and how to control these properties to beneficially impact paint/coating in-can stability, application, and final film appearance and performance
- Learn how to improve coating appearance by control of key physio-chemical and surface energy parameters that control flow, leveling, and defoaming characteristics
- Learn about thickeners, rheology control agents, flow and leveling agents, and defoamers and deaerators
- Learn the key characteristics and parameters affecting application and appearance of water based, solvent based, and UV cured coatings
- Learn about various pumping and application methodologies for wood coatings and their key characteristics

Module 9 - Reactive Polymers and Crosslinkers I – Background, Chemistry, and Reactive Crosslinkers

What you will learn in Module 9

- Learn the background of crosslinked systems and network polymers
- Learn about various functional groups
- Learn how to calculate reaction stoichiometry for various functional groups
- Learn about crosslinking and film formation in aqueous coating systems
- Learn chemistry, properties, and characteristics of amino resins
- Learn chemistry, properties, and characteristics of polyurethanes

- Discover parameters that impact pot life, cure, crosslinking, appearance, and performance

Module 10 - Reactive Polymers and Crosslinkers II – Radiation Cure Technology

What you will learn in Module 10

- Compare and learn the difference between UV and EB cure technology
- Learn chemistry, properties, and characteristics of UV/EB cured polymers and coatings. Discover parameters that impact and control viscosity, cure, crosslinking, appearance, and performance
- Discover relationships between photoinitiator absorbance, UV lamp spectral properties, and coating spectral properties and subsequent coating cure
- Study the influence of pigmentation on UV/EB cure technology

Module 11 - Paint Calculations

What you will learn in Module 11

- Learn definitions of coating formulation constants and parameters, and learn how to calculate them
- Learn how to completely characterize a coating formulation by calculation of formulation constants such as PVC, Volume Solids, VOC, and Spreading Rate from first principles
- Learn how to calculate a coatings formula from first principles

Module 12 – Wood Coatings – Market Manager Overview

This module is targeted specifically towards market managers of raw material suppliers who may only desire an overview and may not wish to take the entire coatings training or who are not necessarily interested in technical/scientific aspects of wood coatings technology.

What you will learn in Module 12

- Learn the potential value of the wood coatings market and identify the overall technical characteristics of the various wood coatings market segments
- Learn what new technologies are most viable and poised for impact and growth in the various markets
- Learn the primary performance requirements and characteristics of the various markets
- Gain background introduction into the make-up and composition of a coating and how coating components function within a coating
- Learn about the various operations of the finishing process
- Gain valuable insight regarding critical parameters relative to topcoat appearance and performance
- Discover the meaning of “Total System Interdependence”

Instructor – Ronald Obie

Ronald Obie is the founder of the Wood Coatings Research Group, an Independent Research and Development and Think Tank organization. Ronald has over 40 years of research, development, consulting, training, and problem solving experience in the wood coatings and coatings industry. Ronald has developed highly successful new coating technology platforms and technologies for the marketplace. He is extremely knowledgeable of the science, technology, and market characteristics of the wood coating industry. He has been a multiple short course Technology Conference instructor for FSCT / ACA in the area of wood coatings, teaching such courses as “Formulating for Factory Applied Wood Finishes” and “Crosslinking of Aqueous Wood Coatings.” Further, Ronald has taught as an Adjunct Instructor in the area of polymer chemistry. Ronald has also spoken at international and local societies, and symposia in the area of coatings science and technology.

Course language - ENGLISH

What Students are saying about the Practical Wood Coatings Formulation and Application Course



- “Excellent! – Achieved all of my objectives: Learning about techniques, ideas for future work, role of functional fillers.”
- This course taught me more about wood, wood application than I would have ever learned at my job. It gave me a whole new perspective on coating wood.”
- Excellent! The info that was given was in such detail and explained perfectly.”
- ...”I have never obtained as much knowledge from any job as I did from this course.”
- The content of this course was “very good. I thought the course offered a nice blend of background and current information on the wood coatings industry.”
- “The delivery was very good.”
- “I thought the course was very informative.”
- “I am really enjoying the e-course.”
- “Excellent Presentation”

- "I have never enjoyed a class so much. Enthusiasm of Ron and obvious enjoyment of the technology and industry is contagious."