

Wood Coatings Research Group, Inc.

EIN 56-2196933
P.O. Box 5355 High Point, N.C. 27262
Tel. 336/802-1132

Practical Wood Coatings Formulation and Application Virtual Training Course

The Practical Wood Coatings Formulation and Application Training Course is a virtual training consisting of eleven separate modules. Each module is designed to cover a different aspect of the wood coatings market, formulation, application appearance, performance, and theory. The course is designed to cover the same topics, items, and details as our successful on-site course, without the travel requirement. The virtual course combines both lecture and video laboratory instruction and demonstration with opportunity for interaction between instructor and participants. Course participants may pick and choose which modules will meet their particular needs. Also, Participants may opt for complete course options.

As a whole, the course provides an overview of the wood coatings market. Further, the course introduces students to 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 comparative, and enlightening manner. The course is a comprehensive technical, marketing, and idea generation, resource. Participants will leave each module with a heightened sense of confidence regarding their knowledge in the selected module focus area and Participants who choose to participate in all modules will leave the course with an overall improved knowledge, skill, and understanding of wood coatings. Researchers, formulators, chemists, applicators, users of wood coatings, and sales, marketing, and technical service personnel of raw material suppliers, will find the course quite beneficial. We also offer a one-half day module specifically targeted towards market managers as an overview of the market and technology, e.g., Module 12. Please visit www.woodcoatingsresearchgroup.com for more information and registration.

Practical Wood Coatings Formulation and Application Virtual Training Course - Individual Modules					
Module	Sections	Contents	Date(s)	Hrs. / Module	Cost, US \$
1	a, b, c	Wood Coatings, an overview of market value, characteristics, and needs	August 3, 2021; October 12, 2021	2	250
2	a, b, c	Technology of Wood Finishing I – Wood/Substrate Properties	August 4, 2021; October 13, 2021	2	190
3	a, b, c	Technology of Wood Finishing II – The composition of a wood finish	August 5, 2021; October 14, 2021	2	190
4	a, b, c	Technology of Wood Finishing III – Pigmentation in coatings	August 10, 2021; October 19, 2021	2	190
5	a, b, c	Technology of Wood Finishing IV – Specialty Finishes	August 11, 2021; October 20, 2021	2	190
6	a, b, c	Technological Background of Solvent based and Water based Wood Coatings I – Solvent Based Coatings	August 17, 2021; October 26, 2021	2	190
7	a, b, c	Technological Background of Solvent based and Water based Wood Coatings II – Water Based Coatings	August 18, 2021; October 27, 2021	2	190
8	a, b, c	Application and Application Properties of Solvent based and Water based Coatings	August 19, 2021; October 28, 2021	2	190
9	a, b, c	Reactive Polymers and Crosslinkers I - Background, Chemistry, and Reactive Crosslinkers	August 24, 2021; November 2, 2021	2	190
10	a, b, c	Reactive Polymers and Crosslinkers II - Radiation Cure Technology	August 25, 2021; November 3, 2023	2	190
11	a, b, c	Paint Calculations	August 26, 2021; November 4, 2021	2	190
12	a	Wood Coatings – Market Manager Overview	August, 12, 13, 30, 31; October 21, 22; December 14, 15	4	440

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The Section times for each module are as follows:

Section Time for Each Module	
Section	Start time, EST
a	8:00 AM
b	11:00 AM
c	3:00 PM

Although each Module is configured to stand alone from the other modules, it is highly recommended that Modules are appropriated in order, especially for Modules 6, 7, and 8. For single individual attendees desiring to purchase the entire course as individual modules, (Modules 1 – 11), a refund of \$250 will be provided at the end of the training. Alternatively, the training may be purchased as a complete 5-day virtual course for \$1900. Sessions run from 8:00 AM to 12:00 Noon, with a break, Monday through Thursday. Session on Friday will run from 8:00 AM to 2:00 PM, with a break and Lunch. See the table below for additional details regarding the 5-day course.

It is important to note that registration is limited to 10 participants for all modules and trainings.

Practical Wood Coatings Formulation and Application Virtual Training Course - 5-Day Course Offerings		
5-Day Course Dates	Section	Registration Deadline
September 13 – 17, 2021	a	September 3, 2021
October 4 – 8, 2021	a	September 24, 2021
November 8 – 12, 2021	a	October 29, 2021
December 6 – 10, 2021	a	November 26, 2021

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 and of the Wood Coatings Research Group, an Independent Research and Development and Think Tank organization. Ronald has over 30 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.”