



4th International Conference on Process Technologies for the Forest and Bio-Based Products Industries

Program

Tuesday, October 25 (8:10 – 12:00)

**Plenary Session I
Lanier II & III**

10:00 – 10:30 BREAK

**Plenary Session II
Lanier II & III**

Tuesday, October 25 (13:30 – 15:00)

Session 3.1: 'Advances in Materials Technology I'

Lanier I

Moderator: Brian Via, Auburn University

13:30 – 13:50: 3.1.1 - *'Mapping the Mechanical Properties of Biopolymer Composites using Advanced Instrumented Indentation'*
Yujie Meng, PhD, Nanomechanics, Inc, Oak Ridge, TN

13:50 – 14:10: 3.1.2 - *'Lignin-Based Carbon Fibers: Improve Spinning and Conversion Process to Carbon Fibers'*
Omid Hosseinaei, PhD, Center for Renewable Carbon, University of Tennessee

14:10 – 14:30: 3.1.3 - *'Nanocellulose and its biodegradable Nanocomposites'*
Qingzheng Cheng, PhD, Forest Products Development Center, Auburn University

14:30 – 14:50: 3.1.4 - *'3D Stereolithography Printed Lignin-Coated Cellulose Nanocrystal/Photopolymer Nanocomposites: Mechanical and Thermal Properties'*
Xinhao Feng, PhD, Visiting Scholar, University of Tennessee

14:50 – 15:00: **Discussion**



4th International Conference on Process Technologies for the Forest and Bio-Based Products Industries

Session 3.2: 'Processing and Product Innovation I'

Lanier II

Moderator: Adam Taylor, University of Tennessee

13:30 – 13:50: 3.2.1 - *'Cross-Laminated Timber: Research Needs as Perceived by Experts'*
Omar Espinoza, PhD, Dept. of Bioproducts and Biosystems Eng., Univ. of Minnesota

13:50 – 14:10: 3.2.2 - *'Tall Wood Rises High with CLT and Mass Timber'*
Iris Montague, PhD, USDA Forest Service

14:10 – 14:30: 3.2.3 - *'Control of Environmental Blackening on Exterior Surfaces of the Built-Environment'*
Edward Sobek, PhD, CEO - Assured Bio, Oak Ridge, TN

14:30 – 14:50: 3.2.4 - *'Modeling Long Term Emission Behavior in the Built Environment'*
Martin Weigel, Holzforschung, Vienna, Austria

14:50 – 15:00: **Discussion**

Session 3.3: 'Marketing and Education'

Lanier III

Moderator: Robert Smith, VirginiaTech

13:30 – 13:50: 3.3.1 - *'Thermally Modified Wood – How can this Process help the Industry Utilize Non-commercial Species for Production of Value-Added Products'*
Mathew Leitch, PhD, Lakehead University, Thunder Bay, Ontario

13:50 – 14:10: 3.3.2 - *'Internationalization of System Built Wood Construction Industry: Market Assessment in Developing Countries'*
Gaurav Kakkar, Dept. of Sustainable Biomaterials, VirginiaTech

14:10 – 14:30: 3.3.3 - *'Attitudes of Forest Landowners and Forestry Professionals Towards Salvaging Timber Disaster in the Gulf South'*
Nia Blair, Department of Sustainable Bioproducts, Mississippi State University

14:30 – 14:50: 3.3.4 - *'Consumer Demands and The Present Condition of Turkish Furniture Manufacturers'*
Emine Seda Erdinler, PhD, Istanbul University Turkey

14:50 – 15:00: **Discussion**



4th International Conference on Process Technologies for the Forest and Bio-Based Products Industries

15:00 – 15:30 BREAK

Tuesday, October 25 (15:30 – 17:00):

Session 4.1: 'Advances in Materials Technology II'

Lanier I

Moderator: Klaus Richter, Holzforschung München, Technical University of Munich

15:30 – 15:50: 4.1.1 - '*Drop in Soy Flour for Substitution into Adhesives in Oriented Strand Board*'
Brian Via, PhD, Forest Products Development Center, Auburn University

15:50 – 16:10: 4.1.2 - '*Stable and Durable Wood Composites Based on Molecular Level Chemical Modification*'
Roger Rowell, PhD, University of Wisconsin, Madison

16:10 – 16:30: 4.1.3 - '*Development of 100% Lignin-based Adhesive for Engineered Wood Products*'
Isal Kalami, Department of Sustainable Bioproducts, Mississippi State University

16:30 – 16:50 4.1.4 - '*Modification of Wood Properties using a 4-step Thermomechanical Process*'
Cláudio Del Menezzi, PhD, Dept. Forest Engineering, University of Brasilia

16:50 – 17:00: **Discussion**

Session 4.2: 'Processing and Product Innovation II'

Lanier II

Moderator: Rubin Smulsky, Mississippi State University

15:30 – 15:50: 4.2.1 - '*Process Optimization in a Commercial Wood Treating Plant*'
Scott Conklin, Universal Forest Products, Grand Rapids Michigan

15:50 – 16:10: 4.2.2 - '*Digital Image Acquisition To Achieve Log Traceability – A Field Study*'
Alexander Petutschnigg, PhD, University of Applied Sciences Salzburg, Austria

16:10 – 16:30: 4.2.3 - '*Assessment Of Volatile Metabolites For In Situ Detection Of Fungal Decay Of Wood*'
Nasim Maafi, Department of Sustainable Bioproducts, Mississippi State University



4th International Conference on Process Technologies for the Forest and Bio-Based Products Industries

16:30 – 16:50: 4.2.3 - *'Total Phenolic, Flavonoid, Tannin Contents and Antioxidant Properties of Pleurotus ostreatus and Pleurotus citrinopileatus Cultivated on Various Sawdust'*
Sibel Yildiz, PhD, Karadeniz Technical University, Turkey

16:50 – 17:00: **Discussion**

Concurrent Session 4.3: 'Wood and the Environment'

Lanier III

Moderator: Maureen Puetmann, WoodLife Environmental Consultants

15:30 – 15:50: 4.3.1 - *'Integrating Lean Thinking, Logistics, and Life Cycle Assessment: A case of Study in the Forest Products Industry'*
Henry Quesada, PhD, Dept. of Sustainable Biomaterials, VirginiaTech

15:50 – 16:10: 4.3.2 - *'Use of Linear Programming to Optimize the Social, Environmental, And Economic Impacts of Using Woody Feedstocks for Pellet and Torrefied Pellet Production'*
Robert Radics, PhD, North Carolina State University

16:10 – 16:30: 4.3.3 - *'Resource Efficiency of Cascading Wood using LCA and Exergy Analysis'*
Michael Risse, PhD, Technical University of Munich

16:30 – 16:50: 4.3.4 - *'Forest Certification and its Effects on Turkish Forest Products Industry'*
H. Tezcan Yildirim, PhD, Istanbul University, Turkey

16:50 – 17:00: **Discussion**

Wednesday, October 26 (08:30 – 10:00)

Session 5.1: 'Analytical Methods'

Lanier I

Moderator: Alexander Petutschnigg, University of Applied Sciences Salzburg

08:30 – 08:50: 5.1.1 - *'Estimation of Moisture Content in Wood using Dual X-ray Energies in a Medical CT-Scanner'*
José Couceiro, Department of Engineering Sciences and Mathematics, Luleå University of Technology, Sweden



4th International Conference on Process Technologies for the Forest and Bio-Based Products Industries

08:50 – 09:10: 5.1.2 - *'Ski Pairing By Evolutionary Algorithm Methods – An Applied Mathematical Education Example'*

Karl Entacker, PhD, Holztechnikum Kuchl Austria

09:10 – 09:30: 5.1.3 - *'Comparing Multi-Attribute Decision Supporting Tools'*

Robert Radics, PhD, North Carolina State University

09:30 – 09:50: 5.1.4 - *'Computer Integrated Manufacturing Problems of Turkish furniture industry'*

Emine Seda Erdinler, PhD, Istanbul University Turkey

09:50 – 10:00: **Discussion**

Session 5.2: 'Processing and Product Innovation III'

Lanier II

Moderator: Patti Lebow, USFS Forest Products Laboratory

08:30 – 08:50: 5.2.1 - *'Efficacy of Different Flame Retardants for Wood Products - Determination of Residual Length and Mass Burning Rate after Fire Shaft Tests'*

Andreas Boeck, PhD, Holzforschung München, Technische Universität München

08:50 – 09:10: 5.2.2 - *'Strategies For Reducing Fines In Orient Strand Board Production'*

Hui Wan, PhD, Department of Sustainable Bioproducts, Mississippi State University

09:10 – 09:30: 5.2.3 - *'Development and Application of OSB and its Finishing Technology in China'*

Youming Xu, PhD, College of Horticulture and Forestry Science, Huazhong Agric. Univ.

09:30 – 09:50: 5.2.4 - *'Moisture-Related Behavior of Bonded Ash (*Fraxinus excelsior* L.) for Structural Applications'*

Markus Knorz, PhD, Holzforschung München, Technical University of Munich

09:50 – 10:00: **Discussion**

Session 5.3 - 'Economics and Decision Support'

Lanier III

Moderator: Rubin Smulsky, Mississippi State University



4th International Conference on Process Technologies for the Forest and Bio-Based Products Industries

- 08:30 – 08:50: 5.3.1 - *'Barriers Impacting United States Advanced Biofuel Projects'*
Jeremy Withers, Dept. of Sustainable Biomaterials, VirginiaTech
- 08:50 – 09:10: 5.3.2 - *'An Overview of the Role of Ligno-Nanocellulosics in the Biorefinery Concept'*
Maria Soledad Peresin, PhD, Forest Products Development Center, Auburn University
- 09:10 – 09:30: 5.3.3 - *'Optimization Of Biorefinery Fractionation Applied to Loblolly Pine Using Response Surface Design: Maximization of Process Yields and Minimization Of Lignin Glass Transition Temperatures'*
Anton Astner, Center for Renewable Carbon, University of Tennessee
- 09:30 – 09:50: 5.3.4 - *'Economic Assessment of Woody Biomass Supply in The State of Kansas'*
Olga Khaliukova, Center for Renewable Carbon, University of Tennessee
- 09:50 – 10:00: **Discussion**

10:00 – 10:30 BREAK

Session 6.1: Analytical Methods for Process Improvement

Lanier I

Moderator: Karl Entacker, Holztechnikum Kuchl Austria

- 10:30 – 10:50: 6.1.1 - *'Relativity and the Control Chart'*
Don Windon, PhD, Louisiana-Pacific Corp.
- 10:50 – 11:10: 6.1.2 - *'Control Bands for Data Signatures'*
Tim Young, PhD, University of Tennessee'
- 11:10 – 11:30: 6.1.3 - *'Design of Experiment – Taking the Gut Out of Solving Real World Problems'*
Chris Wren, Hexion Corp.
- 11:30 – 11:50: 6.1.4 - *'Why are the IB's Dropping? Quick, Add Cost!'*
Robert Breyer, PhD, Georgia-Pacific Chemicals, LLC
- 11:50 – 12:00: **Discussion**



4th International Conference on Process Technologies for the Forest and Bio-Based Products Industries

Session 6.2: 'Processing and Product Innovation IV'

Lanier II

Moderator: Henry Quesada, Virginia Tech

- 10:30 – 10:50: 6.2.1 - *'Reduced Volume Sampling for Treated Wood Retention Assessment'*
Adam Taylor, PhD, Center for Renewable Carbon, University of Tennessee
- 10:50 – 11:10: 6.2.2 - *'Third Party Inspection for the Residential Treated Wood Industry'*
Jeremy Williams, Director - Treated Products Division, Timber Products Inspection, Inc
- 11:10 – 11:30: 6.2.3 - *'Treatment and Species Options for Glued-Laminated Timber ("Glulam") Used in Exterior Structures and Timber Bridges'*
Brett Franks, Quality Manager, Bell Lumber & Pole, New Brighton Minnesota
- 11:30 – 11:50: 6.2.4 - *'Testing Wood Dowel Welding in Wood Based Materials'*
Michael Ebner, PhD, University of Applied Sciences Salzburg, Austria
- 11:50 – 12:00: **Discussion**

Session 6.3: 'Processing and Product Innovation V'

Lanier III

Moderator: Maria Soleda Peresin, Auburn University

- 10:30 – 10:50: 6.3.1 - *'Laboratory Performance Evaluation of some Commercial Wood Finishing Systems'*
Ümit Cafer Yildiz, PhD, Karadeniz Technical University Turkey
- 10:50 – 11:10: 6.3.2 - *'Visual Perception of Adherence of Different Wood Finish Products'*
Ricardo Teles, PhD, Brasilia Federal Institute of Education, Science and Technology
- 11:10 – 11:30: 6.3.3 - *'Determination of CNC machining parameters for MDF'*
Ender Hazir, Istanbul University Turkey
- 11:30 – 11:50: Open
- 11:50 – 12:00: **Discussion**