



SWST 66TH INTERNATIONAL CONVENTION

JUNE 25-30, 2023

CROWNE PLAZA RESORT ASHEVILLE ASHEVILLE, NORTH CAROLINA, USA

WOOD SCIENCES IN THE CARBON ECONOMY- RETURN TO THE BIRTHPLACE OF U.S. FORESTRY

WWW.SWST.ORG/WP/MEETING/2023-ANNUAL-CONVENTION-ASHEVILLE-NC-USA

SUNDAY, JUNE 25

- 12:00-16:00 Registration
- 11:00-16:00 Young Research/Mentor Outing - Adventure Center of Asheville (Crowne Plaza Resort Grounds)
- 18:00-21:00 Reception (Women in Science Exhibit) Expo Veranda

MONDAY, JUNE 26

ALL TECHNICAL SESSIONS WILL BE HELD IN THE CROWNE BALLROOM, CROWNE PLAZA, ASHEVILLE
 General Chair: Jeffrey Morrell, University of the Sunshine Coast, Australia

- 7:00-8:00 Registration
- 7:30 Breakfast Buffet
- 8:00-8:45 **Keynote Speaker** - Robert Beanblossom, Volunteer Caretaker, Cradle of Forestry in America, United States, "The Cradle of Forestry in America-A History"

9:00-9:30 PAST PRESIDENTS INTRODUCTION
 Henry Quesada, Purdue University, United States

MASS TIMBER – NEW MATERIALS, ENGINEERING PROPERTIES, AND CONNECTIONS
 Chair: Ian Morrell, Oregon State University, United States

- 9:30-9:45 Nan Nan, Louisiana Tech University, United States, "From Seedling to Product: The Louisiana Forest Products Innovation Center at Louisiana Tech University"
- 9:45-10:00 Minami Suzuki, Chiba University, Japan, "Study on Load-Bearing Capacity and Failure Modes of Tensile-Bolted Joints in Timber Structures"
- 10:00-10:15 Lei Han, InnoRenew CoE & University of Primorska, Slovenia, "A Review on Adhesive- and Metal-Free Assembly Techniques for Prefabricated Multi-Layer Engineered Wood Products"
- 10:15-10:30 Coffee
- 10:45-11:00 David DeVallance, Commonwealth University of Pennsylvania, United States, "Utilization of High-Grade Yellow-Poplar Lumber for Cross-Laminated Timber Panels"

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MONDAY, JUNE 26 continued

11:00-11:15 Amy Simmons, InnoRenew CoE & University of Primorska, Slovenia, **"Driving Innovation and Collaboration in Taller Timber Buildings – COST Action HELEN"**

11:15-11:30 Rok Prislan, InnoRenew CoE & University of Primorska, Slovenia, **"The Use of an Acoustic Camera to Evaluate Sound Transmission Through CLT Junctions During Construction"**

11:30-11:45 Sailesh Adhikari, Virginia Polytechnic Institute and State University, United States, **"State of Arts of Hardwood Cross-Laminated Timbers (HCLTs) and Outlooks"**

11:45-12:00 Ian Morrell, Oregon State University, United States, **"Fragility Analysis Approaches to Biodeterioration of Cross-Laminated Timber Connections"**

12:00-13:00 **Lunch**

13:00-13:15 Kenneth Udele, Oregon State University, United States, **"Fungal Degradation of Dowel Bearing Strength of CLT and its Effect on Connection Design"**

13:15-13:30 Avishek Chanda, Washington State University, United States, **"Effect of Thermal Modification on the Sorption Behavior of Thermally Treated Strands Prepared from Low-Quality Small Diameter Logs"**

13:30-13:45 **Questions/Discussion**

COMPOSITES – NEW OPPORTUNITIES

Chair: Islam Hafez, Oregon State University, United States

13:45-14:00 Griffin Miller, North Carolina State University, United States, **"Functionalization of Cellulose for Biocomposite Compatability: Toughening of P3HB/PLA Composites"**

14:00-14:15 Armando McDonald, University of Idaho, United States, **"Characterization of PRF Resin – Wood Fiber Blends for Potential Use in Additive Manufacturing"**

14:15-14:30 Byung-Dae Park, Kyungpook National University, Republic of Korea, **"Surface Adhesion of Wood Adhesives to Cellulose, Hemicellulose, and Lignin in Wood Bonding"**

14:30-14:45 Lee Smith, Z & S Tech, United States, **"Bacteria Retted Hemp Fiber/PLA Composites for Automotive Applications"**

14:45-15:00 Ke Zhan, Auburn University, United States, **"Mechanical, Morphological and Thermal Properties of Polypropylene/Polyethylene/Microcrystalline Cellulose Composite"**

15:00-15:15 Lukmanul Hakim Zaini, University of Natural Resources and Life Sciences, Vienna, Austria, **"Ultra-Lightweight Foamed Insulation Panels Made of Oil Palm Trunk Fibres"**

15:15-15:30 Sungjun Hwang, University of Maine, United States, **"Melt Compounding of Spray-Dried CNFs/Polypropylene and Their Application in 3D Printing"**

15:30-15:45 **Coffee**

15:45-16:00 Yucheng Peng, Auburn University, United States, **"Wood Fiber Production From Downed Timber for Manufacturing Wood Polymer Composite: Fiber Property Characterization"**

16:00-16:15 Tomas Pipiska, Mendel University in Brno, Czech Republic, **"Underutilized Wood Species for Manufacturing Laminated Strand Lumber"**

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MONDAY, JUNE 26 continued

16:15-16:30 David DeVallance, Commonwealth University of Pennsylvania, United States "Development of Bio-Based Carbon Particles for Use in Coatings to Improve Indoor Air Quality"

16:30-16:45 Questions/Discussion

18:00-20:00 STUDENT TRIVIA NIGHT, PISGAH & PILOT BALLROOMS

TUESDAY, JUNE 27

7:00-8:00 Registration

7:30 Breakfast Buffet

8:00-10:00 WORKSHOP – GUIDE TO PUBLISHING IN A JOURNAL

Jeffrey Morrell, University of the Sunshine Coast, Australia & Editor of Wood and Fiber Science; Eric Hansen, Oregon State University, United States & Editor of BioProducts Business

COMPOSITES – NEW OPPORTUNITIES

Chair: Islam Hafez, Oregon State University, United States

10:00-10:15 Xueqi Wang, Auburn University, United States, "Spray-Dried Cellulose Nanocrystal Reinforced Homopolymer Polypropylene Composites"

10:15-10:30 Coffee

10:30-10:45 Birger Bartuska, Wood-K Plus, Austria, "Characterization of Recycled Wood Particles Using Deep Learning"

10:45-11:00 Roger Moya, Instituto Tecnológico de Costa Rica, Costa Rica, "Magnetic and Physical-Mechanical Properties of Wood Particleboards Composite (MWPC) Fabricated With fe₃o₄ Nanoparticles and Three Plantation Woods"

11:00-11:15 Milan Šernek, University of Ljubljana, Slovenia, "Laminated Composites From Native and Invasive Alien Wood Species"

11:15-11:30 Islam Hafez, Oregon State University, United States, "Lattice Structures From Wood Flour and Cellulose Nanofibrils Using Microwave Drying"

11:30-11:45 Christoph Preimesberger, Wood-K Plus, Austria, "Factors Influencing the Fire Properties of Birch Plywood, Even on a Small Scale"

11:45-12:00 Questions/Discussion

12:00-13:00 Lunch

TIMBER DURABILITY/WOOD PROTECTION

Chair: Beth Stokes, Mississippi State University, United States

13:00-13:15 Weiqi Leng, Nanjing Forestry University, China, "Super-Dimensional Stable Wood Upon Modification With Enzymatic Hydrolysis Lignin"

13:15-13:30 Cody Wainscott, Oregon State University, United States, "In-Depth Characterization of Bondlines in Cross-Laminated Timber Made With Preservative-Treated Lumber"

13:30-13:45 Jeff Morrell, University of the Sunshine Coast, Australia, "Treatability of the Australian Softwood Resource: Preliminary Results"

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TUESDAY, JUNE 27 continued

13:45-14:00 Chih Cheng Chen, Purdue University, United States, "The Bending Moment Capacity of the Lap and Dowel Joints Fabricated From Salvaged CLT Panels"

14:00-14:15 Talbot Rueppel, U.S. Army Corps of Engineers, United States, "Durability and Mechanical Properties of Thermally Modified Western Hemlock CLT"

14:15-14:30 Nathan Kotlarewski, The University of Tasmania, Australia, "Change in Timber Moisture Content With Non-Permeable Packaging to Protect Timber Products in the Supply Chain"

14:30-14:45 Beth Stokes, Mississippi State University, "Deterioration Concerns in Mass Timber Products"

14:45-15:00 Matthew Schwarzkopf, InnoRenew CoE & University of Primorska, Slovenia, "Using Bark for Healthy Indoor Environments"

15:00-15:15 Marian Justine Adebrah, Kwame Nkrumah University of Science and Technology, Ghana, "Efficacy of Blends of Linseed Oil, Beeswax, and Turpentine as Preservative Treatment for *Ceiba pentandra*"

15:15-15:30 Abasali Masoumi, Virginia Tech, United States, "Mechanical Properties of Selected Thermally Modified Appalachian Hardwoods"

15:30-15:45 Questions/Discussion

POSTER SESSION & STUDENT POSTER COMPETITION, BLUE RIDGE ROOM, CROWNE PLAZA HOTEL, ASHEVILLE

Chair: Henry Quesada, Purdue University, United States

16:15-19:15 Poster Session & Student Poster Competition

Idowu Abimbola Adegoke, Federal University Gashua, Nigeria, "Briquetting Technology: Guaranteed Concept to Mitigate Climate Change and Global Warming"

Michael Adedotun, Federal University of Agriculture, Nigeria, "Forests and Forestry Reserves as Security Threat in Federal Capital Territory, Abuja Nigeria"

Olusola Samuel Aero, Forestry Research Institute of Nigeria, Nigeria, "Assessment of Occupational Hazard Prevention at Oko Baba and Amu Sawmills, Lagos State, Nigeria"

Martin Bohm, Czech Technical University in Prague, Czech Republic, "Microscopic Characterization of the Bonded Joint of Basalt Fiber-Modified Polyurethane Adhesive"

Brian Bond, Virginia Tech, United States, "Educating Architects and Builders About Opportunities for Thermally-Modified Wood Products From Low-Value Hardwood Species"

Daniel Burnett, Surface Measurement Systems, United States, "Surface Energy and Surface Wettability of Wood and Cellulosic Materials by Inverse Gas Chromatography"

Alexandra Migue Guevara Castillo, Universidad de Guadalajara, Mexico, "Chemical-Morphological Analysis of Densified Ash Wood"

Eva Haviarova, Purdue University, United States, "Humidity-Responsive Design Based on Pinecone Function – A Collection of Fabrication Principles"

Eva Haviarova, Purdue University, United States, "Small-Scale Production and Application of Some Sustainable Biochar and Charcoal Production Technologies"

Peter Jurkovič, VIPO, Slovakia, "Effect of Steam Treatment on the Surface and Adhesive Properties of Maple Wood"

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TUESDAY, JUNE 27 continued

Manja Kuzman, University of Ljubljana, Slovenia, **"The Role of Eco-Innovations in the Hardwood-Products Sector for the Development of a Sustainable Society"**

Frederik Laleicke, North Carolina State University, United States, **"Challenges and Success of Urban Wood Businesses"**

Yucheng Peng, Auburn University, United States, **"Cellulose Nanomaterial-Based Film for Grease-Resistant Food Packaging Application"**

Brunela Pollastrelli Rodrigues, Clemson University, United States, **"Anatomy, Density, and Chemical Properties of Eucalypt Wood Affected by Abiotic Stress"**

Talbot Rueppel, U.S. Army Corps of Engineers, **"Fluorescence Spectrometry to Quantify Percent Wood Failure in Adhesive Bonds"**

Rico Ruffino, North Carolina State University, United States, **"Sustainable Design, Eco Chair: A Concept Design That Services the User and the Environment"**

Ján Sedliačik, Technical University in Zvolen, Slovakia, **"The Efficiency of Deadwood Particles as a Formaldehyde Scavenger in Particleboard"**

Ján Sedliačik, Technical University in Zvolen, Slovakia, **"Oak Wood Pretreated by Radiofrequency Plasma"**

Ján Sedliačik, Technical University in Zvolen, Slovakia, **"Reduction of Formaldehyde Emissions From Wood-Based Panels Glued With UF Resins Modified With Collagen and Keratin"**

Marina Totsuka, Chiba University, Japan, **"Longitudinal Compression Strength and Stiffness of Wood Including Joints With Concrete or Epoxy Adhesives"**

Ahmet Turer, Middle East Technical University, Turkey, **"Timber Spaced-Column Strength Interaction P-M Diagram"**

Isabel Urdaneta, North Carolina State University, United States, **"Life Cycle Assessment of Alkaline Peroxide Mechanical Market Pulps From Wood and Wheat Straw: A Comparison"**

Jan Vanerek, Brno University of Technology, Czech Republic, **"Influence of Different Modification Processes on Birch Plywood Densification"**

Hui Wan, Southwest Forestry University, China, **"Circular Forest Products and the Trend"**

Pei Yang, Nanjing Forestry University, China, **"Synthesis and Application of Carbon Dots as Environmentally Friendly Modifier for Low-Molar-Ratio Urea-Formaldehyde Resins"**

Xiaoyan Zhou, Nanjing Forestry University, China, **"Solar Energy-Driven System for Lignin Oxidation: An Emerging Strategy for Promoting the Development of Lignin-Based Resins"**

Student Poster Competition

Oluwafunbi Adeleye, Oregon State University, United States, **"Long-Term Response of Wood-Based Composites in Variable Climate Conditions"**

Ewura Ama Nhyira Aggrey, Kwame Nkrumah University of Science and Technology, Ghana, **"Evaluation of the Physical, Mechanical, and Fuel Properties of Briquettes of *Ceiba pentandra* Sawdust and *Delonix regia* Seed Pod Flour"**

Courage Alorbu, University of Idaho, United States, **"Leachability and Biological Decay Resistance of Zinc Oxide Eugenol Organic Cement Treated Wood"**

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TUESDAY, JUNE 27 continued

Ebenezer Oku-Ampofo Asiedu-Agyei, Kwame Nkrumah University of Science and Technology, Ghana, "Efficacy of Blends of Linseed Oil, Beeswax, and Turpentine as Preservative Treatment for *Ceiba pentandra*"

Nelson Barrios, North Carolina State University, United States, "Unveiling the Nanocellulose-Water Interactions Through Computational Simulations"

Christina Bjarvin, University of Washington, United States, "Reuse, Recycle, Incinerate, or Landfill? LCA-Based Environmental Implications of End-of-Life Scenarios for Mass Timber Buildings"

Chih Cheng Chen, Purdue University, United States, "The Bending Moment Capacity of the Lap and Dowel Joints Fabricated From Salvaged CLT Panels"

Lieke Droog, University of Washington, United States, "Global Warming Mitigating Role of Forests in Washington State, by Land Ownership Type"

Avani Flanagan, Eastern Illinois University, United States, "Assessing the Potential Use of a CBD Extraction Byproduct as a Wood Finishing Product"

Yu Fu, University of North Texas, United States, "Life Cycle Assessment of Laboratory Scale Biological Hemp Retting Process"

Lei Han, InnoRenew CoE & University of Primorska, Slovenia, "A Review on Adhesive- and Metal-Free Assembly Techniques for Prefabricated Multi-Layer Engineered Wood Products"

Sungjun Hwang, University of Maine, United States, "Utilization of CNC Nanoparticles Prepared Via Ultrasonic Spray Dryer as Reinforcement for PVA-Composite Films"

Daisuke Kanagaki, Chiba University, Japan, "Experimental Study of Reinforcement by Self-Tapping Screws on Glulam Beams"

Lena Maria Leiter, University of Natural Resources and Life Sciences, Vienna, Austria, "Introducing WOOD*VERSITY"

Dan Meyer, North Carolina State University, United States, "End-Grain Flooring From Underutilized Raw Materials: Solution to Extend and Enhance the Hardwood Resource"

Griffin Miller, North Carolina State University, United States, "Functionalization of Cellulose for Biocomposite Compatibility: Toughening of P3HB/PLA Composites"

Jue Mo, Purdue University, United States, "Effect of Surface Thermal Treatment on Colors of Three Hardwood Species: Application of Artificial Neural Network"

Liam O'Brien, University of Maine, United States, "Hygrothermal Simulation of a Wood-Fiber Insulated Panel (WIP) Wall Assembly in Selected Climate Zones"

Ighoyivwi Onakpoma, Oregon State University, United States, "Wood Property Variation Within Douglas Fir Trees Grown at Different Spacing"

Christoph Preimesberger, Wood K Plus - Kompetenzzentrum Holz GmbH, Austria, "Auto-ignition Behaviour of Wood - Impact of Size and Temperature"

Lea Primožic, InnoRenew CoE & University of Primorska, "Outreaching and Informing Society About Sustainable Construction Through Social Media"

Andreas Tockner, University of Natural Resources and Life Sciences, Vienna, Austria, "Individual Tree Analysis via Person-Carried Laser Scanning (PLS) in Forest Stands"

Ting-ho Tsai, Purdue University, United States, "Developing Potential Value-Added Product of Small-Diameter Timber in Indiana"

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TUESDAY, JUNE 27 continued

Fernando Urdaneta, North Carolina State University, United States, "**Hemp Hurds Alkaline Peroxide Mechanical Pulp for Hygiene Tissue Applications**"

Cody Wainscott, Oregon State University, United States, "**In-Depth Characterization of Bondlines in Cross-Laminated Timber Made With Preservative-Treated Lumber**"

Xueqi Wang, Auburn University, United States, "**Spray-Dried Cellulose Nanocrystal Reinforced Homopolymer Polypropylene Composites**"

Lukmanul Hakim Zaini, University of Natural Resources and Life Sciences, Vienna, Austria, "**Ultra-Lightweight Foamed Insulation Panels Made of Oil Palm Trunk Fibres**"

Ke Zhan, Auburn University, United States, "**Mechanical, Morphological and Thermal Properties of Polypropylene/Polyethylene/Microcrystalline Cellulose Composite**"

WEDNESDAY, JUNE 28 - FREE DAY

THURSDAY, JUNE 29

7:00-8:00 **Registration**

7:30 **Breakfast Buffet**

WOOD PROPERTIES

Chair: Ilona Peszlen, North Carolina State University, United States

8:00-8:15 Peter Kessels Dadzie, Kumasi Technical University, Ghana, "**Physical and Mechanical Properties of Ten-Year-Old Plantation Teak Grown in Ghana for Structural Applications**"

8:15-8:30 Benoit Belleville, The University of Melbourne, Australia, "**Densification of Low-density Australian Hardwood Species**"

8:30-8:45 Gloria Oporto, West Virginia University, United States, "**Densification of Commercially Important Appalachian Hardwood Species**"

8:45-9:00 Natalia Farkas, USDA FS Forest Products Laboratory, United States, "**Sensitivity and Uncertainty Analysis for Modeling Water Absorption in Wood**"

9:00-9:15 Matthew Arvanitis, USDA FS Forest Products Laboratory, United States, "**The Wilcoxon Rank Sum Test is Not an Appropriate Test for Comparing MOE or MOR Design Values**"

9:15-9:30 Roger Moya, Instituto Tecnológico de Costa Rica, Costa Rica, "**Effect of Steaming and Furfuryl Alcohol Impregnation Pretreatments in the Spring Back, Set Recovery and Thermal Degradation of Densified Wood of Three Tropical Hardwood Species**"

9:30-9:45 **Questions/Discussion**

10:00-10:15 **Coffee**

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THURSDAY, JUNE 29 continued

EDUCATION ISSUES/RECRUITING

Chair: Pipiet Larasatie, University of Arkansas, Monticello, United States

10:15-10:30 Ahmet Turer, Middle East Technical University, Turkey, "Challenges Faced During Turkish National Timber Building Design Regulation Preparation Work"

10:30-10:45 Perry Peralta, North Carolina State University, "A Social-Impact Audit Tool for Students Learning Social-LCA"

10:45-11:00 Eric Hansen, Oregon State University, United States, "Collaborative Efforts to Promote Wood-Focused Undergraduate Programs in the US"

11:00-11:15 Dean Lipovac, InnoRenew CoE and University of Primorska, "Understanding Student Willingness to Participate in Research: Exploring Factors That Influence Motivation and Engagement"

11:15-11:30 Andreja Kutnar, InnoRenew CoE and University of Primorska, "Co-Designing a Professional Bachelor's Degree Program: Challenges and Opportunities Working With Industry Stakeholders"

11:30-11:45 Rupert Wimmer, University of Natural Resources and Life Sciences, Vienna, Austria, "Wood Science in a Changing World: Where Are We Going?"

11:45-12:00 Questions/Discussion

12:00-13:00 Lunch

WOOD PROPERTIES

Chair: Ilona Peszlen, North Carolina State University, United States

13:00-13:15 Avishek Chanda, Washington State University, United States, "Composite Laminates Thermoformed From Wood-Based Prepregs for Interior Automotive Applications"

13:15-13:30 Perry Peralta, North Carolina State University, "Eco-Audit: A Tool for the Exploration of the Environmental Impact of Materials"

13:30-13:45 Lena Maria Leiter, University of Natural Resources and Life Sciences, Vienna, Austria, "The Effect of Surface Treatment on Triboelectric Activation of Wood by Brushing"

13:45-14:00 Ighoyivwi Onakpoma, Oregon State University, United States, "Wood Property Variation Within Douglas Fir Trees Grown at Different Spacing"

14:00-14:15 Vilius Gendvilas, University of the Sunshine Coast, Australia, "Impact of Needle Diameter on Resistance Drilling to Assess Wood Quality of Southern Pines"

14:15-14:30 Questions/Discussion

BIOMASS/BIOENERGY – MEET THE NEED WHILE PROTECTING THE ENVIRONMENT

Chair: Francesco Negro, University of Torino, Italy

14:30-14:45 Yu Fu, University of North Texas, United States, "Comparative Life Cycle Assessment of Laboratory Scale Biological and Thermochemical Hemp Retting Processes"

14:45-15:00 Fernando Urdaneta, North Carolina State University, United States, "Hemp Hurds Alkaline Peroxide Mechanical Pulp for Hygiene Tissue Applications"

15:00-15:15 Questions/Discussion

15:15-15:30 Coffee

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THURSDAY, JUNE 29 continued

15:30 EARLY STAGE RESEARCHER (3-MINUTE PRESENTATIONS)

Chair: Lee Smith, Z & S Tech, United States

Michael Adedotun, Department of International Development, Michael Adedotun Oke Foundation, Nigeria, "A Concise Visual Depiction of Firewood Use in Africa, With a Focus on the Federal Capital Territory of Abuja, Nigeria"

Abiodun Alawode, Auburn University, United States, "Comparative Evaluation of Various Fillers on pMDI Resin Performance"

Courage Alorbu, University of Idaho, United States, "Leachability and Biological Decay Resistance of Zinc Oxide Eugenol Organic Cement Treated Wood"

Tolulope Bodunde, Forestry Research Institute of Nigeria, Nigeria, "Physico-Mechanical Properties of Selected Species Subjected to Thermo-Oil Treatment"

Kayode Ojunjobi, Federal University of Agriculture, Nigeria, "Efficacy of Plant Extracts Against Basidiomycetes Fungi of Wood"

Lea Primozic, InnoRenew CoE & University of Primorska, "Outreaching and Informing Society About Sustainable Construction Through Social Media"

Ting-ho Tsai, Purdue University, United States, "Developing Potential Value-Added Product of Small-Diameter Timber in Indiana"

18:00-22:00 Banquet, Expo Veranda

FRIDAY, JUNE 30

7:00-8:00 Registration

7:30 Breakfast Buffet

BIOMASS/BIOENERGY – MEET THE NEED WHILE PROTECTING THE ENVIRONMENT

Chair: Francesco Negro, University of Torino, Italy

8:00-8:15 Wanhe Hu, West Virginia University, United States, "Thermodegradation of Naturally Decomposed Forest Logging Residues: Characteristics, Kinetics, and Thermodynamics"

8:15-8:30 Workson Siwale, Karlstad University, Sweden, "Variations in Extractive Content of Scots Pine Sapwood and Heartwood and the Effect on Off-Gassing During Storage of Wood Pellets"

8:30-8:45 Md Sarwar Jahan, Bangladesh Council of Scientific and Industrial Research, Bangladesh, "Effect of Prehydrolysis on the Hardwood Pulp Dissolution in Ionic Liquid"

8:45-9:00 Ebenezer Oku-Ampofo Asiedu-Agyei, Kwame Nkrumah University of Science and Technology, Ghana, "Evaluation of the Physical, Mechanical, and Fuel Properties of Briquettes of *Ceiba pentandra* Sawdust and *Delonix regia* Seed Pod Flour"

SUPPLY CHAIN, OPERATIONS, AND MARKETING OF WOOD PRODUCTS, CIRCULAR ECONOMY

Chair: Jaana Korhonen, Oak Ridge Institute for Science and Education (ORISE), United States

9:00-9:15 Jaana Korhonen, Oak Ridge Institute for Science and Education (ORISE), United States, "Advancing Workforce Well-being and Inclusion in the Forest Sector: Insights From Discussions at the Women's Forest Congress"

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FRIDAY, JUNE 30 continued

- 9:15-9:30 Andreas Tockner, University of Natural Resources and Life Sciences, Vienna, Austria, **"Individual Tree Analysis via Person-Carried Laser Scanning (PLS) in Forest Stands"**
- 9:30-9:45 Benedikt Neyses, Luleå University of Technology, Sweden, **"Using Deep Learning for Feature Segmentation in Computed Tomography Images of Logs"**
- 9:45-10:00 Zahra Hosseini, Université Laval, Canada, **"Evaluating Circular Economy Scenarios at the End-of-Life of a Building: Application of a CE Framework on a Mass Timber Building in Canada"**
- 10:00-10:15 Dan Meyer, North Carolina State University, United States, **"End-Grain Flooring From Underutilized Raw Materials: Solution to Extend and Enhance the Hardwood Resource"**
- 10:15-10:30 **Coffee**
- 10:30-10:45 Rupert Wimmer, University of Natural Resources and Life Sciences, Vienna, Austria, **"Circular Economy in Wood Construction Through Additive Manufacturing of Fully Recyclable Walls"**
- 10:45-11:00 Tobias Schauerte, Linnaeus University, Sweden, **"Production Technology in the Wooden Single-Family House Industry – A Case of Reasoning Against Automation"**
- 11:00-11:15 Francesco Negro, DISAFA, University of Torino, Italy, **"The Use of Wood in the World of Sport: a Sustainability Perspective"**
- 11:15-11:30 Nathan Kotlarewski, The University of Tasmania, Australia, **"Managing Timber's Moisture Content in the Supply Chain, Construction and in Service"**
- 11:30-11:45 Pipiet Larasatie, University of Arkansas Monticello, United States, **"Wood vs Concrete Rhetoric in Building Supply Chain"**
- 11:45-12:00 Jaana Korhonen, Oak Ridge Institute for Science and Education (ORISE), United States, **"Workforce Diversity in the US Forest Sector: What Can Data Tell Us?"**
- 12:00-12:15 **Questions/Discussion**
- 12:30-14:00 **Lunch and Business Meeting/Awards Ceremony**