

**Technical Sessions - Concurrent**

**Tuesday, October 31, 2023 (13:10 – 16:50)**

**Technical Session I: 'Wood Adhesives Technologies – Group I' (13:10 – 14:50)**

Moderator: Dr. Terry Liles, Huber Engineered Woods

13:10 – 13:35

**APPLICABILITY OF THREE TYPES OF COMMERCIAL ADHESIVES TO BONDING  
WOOD TO NON-WOOD MATERIALS<sup>✓</sup>**

\***Andrija NOVOSEL**, Hrvoje TURKULIN, Tomislav SEDLAR and Vjekoslav ŽIVKOVIĆ  
University of Zagreb, Croatia, Faculty of Forestry and Wood Technology

13:35 – 14:00

**USING THE BIO-BASED BYPRODUCT OF BIO-DIESEL PRODUCTION TO  
ENHANCE PMDI ADHESIVE PERFORMANCE<sup>✓</sup>**

**Joseph J. MARCINKO**  
Polymer Synergies LLC, Bradenton FL

14:00 – 14:25

**UNDERSTANDING THE FUNDAMENTAL INFLUENCE OF EXTRACTIVES ON  
WOOD ADHESION<sup>✓</sup>**

\*<sup>a</sup>**D. CUARTAS-MARULANDA**, <sup>a</sup>**F. BELLO**, <sup>a</sup>**S. GURURAJA**, <sup>b</sup>**J. NAIRN**, <sup>b</sup>**J. SIMONSEN**, <sup>c</sup>**E. FRAZIER**, M. <sup>a</sup>**Soledad PERESIN**

<sup>a</sup>**Auburn University**, Auburn, AL, Sustainable Bio-Based Materials Lab

<sup>b</sup>**Oregon State University**, Corvallis, OR, Wood Science and Engineering

<sup>c</sup>**Virginia Tech**, Blacksburg VA, Sustainable Biomaterials, Macromolecules Innovation Institute

14:25 – 14:50

**ENHANCING PARTICLEBOARD PERFORMANCE: COMPARING WOOD FLOUR  
AND SOY FLOUR SUBSTITUTION IN PMDI RESIN<sup>✓</sup>**

**Abiodun ALAWODE**  
Auburn University, Auburn AL, Forest Products Development Center

**Technical Session II: 'Advanced Materials Technologies' (13:10 – 14:50)**

Moderator: Dr. Robert A. Breyer, Bakelite Chemicals

13:10 – 13:35

**ADDRESSING HIGH COST ISSUES DURING THE PRODUCTION OF NANOLIGNIN AND  
POTENTIAL APPLICATIONS<sup>✓</sup>**

\***Siqun WANG**, Zhongjin ZHOU, Timothy M. YOUNG, Niki LABBE and Kalavathy RAJAN  
The University of Tennessee, Knoxville, Center for Renewable Carbon

13:35 – 14:00

**STUDY OF DYNAMIC-STATIC PROPERTIES AND CARBON FOOTPRINT OF BAMBOO TEXTILE REINFORCED POLYMER<sup>✓</sup>**

**\*Chun-Wei CHANG** and Feng-Cheng CHANG  
National Taiwan University, Taipei, School of Forestry and Resource Conservation

14:00 – 14:25

**MULTIFUNCTIONAL BIOCOMPOSITE FILMS FOR FOOD PACKAGING: TUNING OF PHYSICOCHEMICAL AND FUNCTIONAL PROPERTIES<sup>✓</sup>**

**\*Fatimatu BELLO** and Maria Soledad PERESIN  
Auburn University, Auburn, AL, Sustainable Bio-Based Materials Lab

14:25 – 14:50

**ASYMETRICAL PARTICLE-BASED COMPOSITES<sup>✓</sup>**

**\*Sergej MEDVED<sup>a</sup>**, Domen ČRNEC, Marius Catalin BARBU<sup>b</sup>, Eugenia Mariana TUDOR<sup>b</sup>, Alexander PETUTSCHNIGG<sup>b</sup>, Alan ANTONOVIĆ<sup>c</sup>, Timothy M. YOUNG<sup>d</sup>  
<sup>a</sup> University of Ljubljana, Slovenia, Department of Wood Science and Technology  
<sup>b</sup> Salzburg University of Applied Sciences, Austria, Forest Prod Tech & Timber Const. Dept  
<sup>c</sup> University of Zagreb, Croatia, Faculty of Forestry and Wood Technology  
<sup>d</sup> University of Tennessee, Knoxville, School of Natural Resources

**Technical Session III: 'Current Events' (13:10 – 14:50)**

*Moderator: Dr. Rich Vlosky, Louisiana-State University*

13:10 – 13:35

**CONTEMPORARY SOLID AND ENGINEERED WOOD RESEARCH AND DEVELOPMENT AT MISSISSIPPI STATE UNIVERSITY<sup>✓</sup>**

**Rubin SHMULSKY**  
Mississippi State University, Starkville, Department of Sustainable Bioproducts

13:35 – 14:00

**REDUCTION OF MULTIPLE-PIECE BAT FAILURES IN MAJOR LEAGUE BASEBALL<sup>✓</sup>**

**Scott DRAKE**  
PFS-TECO, MADISON, WI

14:00 – 14:25

**SUSTAINABLE PRODUCT DEVELOPMENT TOWARDS A CIRCULAR ECONOMY**

**Alina MEINDL<sup>✓</sup>**  
Salzburg University of Applied Sciences, Kuchl, Austria, Forest Products Technology and Timber Construction Department

14:25 – 14:50

**THE UNIVERSITY OF TENNESSEE SCHOOL OF NATURAL RESOURCES DATA  
SCIENCE INSTITUTE FOR MACHINE LEARNING AND AI<sup>✓</sup>**

**\*Donald G. HODGES**, Thomas K. LOONEY, Timothy M. YOUNG  
University of Tennessee, Knoxville, School of Natural Resources

**Afternoon Break & Exhibits: 14:50 – 15:15**

***Technical Session IV: 'Advanced Processing Technologies' (15:15 – 16:55)***

*Moderator: Dr. Anton Astner, The University of Tennessee*

15:15 – 15:40

**SUPPORTING PROCESS TECHNOLOGY CHANGES IN MANUFACTURING WITH  
AN INNOVATIVE MICROSCOPY METHOD<sup>✓</sup>**

Jessica JENNINGS and **\*Melissa CANNON**  
Bakelite Chemicals LLC, Decatur, GA

15:40 – 16:05

**NANOCOMPOSITES DERIVED FROM NANOCELLULOSE AND METAL  
NANOPARTICLES AND THEIR APPLICATIONS<sup>✓</sup>**

**Seung-Hwan LEE**  
Kangwon National University, Department of Forest Biomaterials Engineering  
Chuncheon 24341, Republic of Korea

16:05 – 16:30

***To be Announced***

16:30 – 16:55

**DEVELOPMENT AND APPLICATION OF LIGNIN BASED WOOD ADHESIVES FOR  
PANEL PRODUCTS<sup>✓</sup>**

**\*D. SUJATH**, B.S. MAMATHA, V. PRAKASH, D.N. UDAY, M.C. KIRAN  
Institute of Wood Science and Technology (IWST), Bangalore, India, Indian Council of  
Forestry Research and Education

***Technical Session V: 'Data Science, Machine Learning and AI' (15:15 – 16:55)***

*Moderator: Kim Tutin, Captis Aire*

15:15 – 15:40

**MACHINE LEARNING FOR PREDICTING WOOD PROPERTIES DURING MILLING<sup>✓</sup>**

\*<sup>ab</sup>M. RIEGLER, <sup>a</sup>M. DERBAS, <sup>c</sup>A. JAQUEMOD, <sup>a</sup>S. AFRÖMEL-FRYBORT, <sup>c</sup>Kamil GÜZEL,  
<sup>c</sup>H.C. MÖHRING

<sup>a</sup>Wood K plus - Competence Centre for Wood Composites and Wood Chemistry, Tulln,  
Austria <sup>b</sup>University of Natural Resources and Life Sciences (BOKU), Institute of Wood  
Technology and Renewable Materials, Vienna, Austria  
<sup>c</sup>University of Stuttgart, Institute for Machine Tools, Stuttgart, Germany

15:40 – 16:05

### **CAN THE FOREST PRODUCTS INDUSTRIES IMPLEMENT MACHINE LEARNING AND AI – CHALLENGES AND OPPORTUNITIES<sup>✓</sup>**

\*<sup>a</sup>T.M. YOUNG, <sup>bc</sup>M. REIGLER, <sup>d</sup>A. PETUTSCHNIGG

The University of Tennessee, School of Natural Resources, Knoxville

<sup>b</sup>Wood K plus - Competence Centre for Wood Composites and Wood Chem, Tulln, Austria

<sup>c</sup>University of Natural Resources and Life Sciences (BOKU), Institute of Wood Technology  
and Renewable Materials, Vienna, Austria

<sup>d</sup>Salzburg University of Applied Sciences, Austria, Forest Products Technology and Timber  
Construction Department

16:05 – 16:30

### **A GREAT STATISTICAL PROGRAM CANNOT FIX POOR STRATEGY<sup>✓</sup>**

**R.A. BREYER**

Bakelite Chemicals LLC, Atlanta, GA

16:30 – 16:55

*Title Forthcoming*

\*S. LEAVENGOOD, Oregon State University, Corvallis

### **Technical Session VI: 'Structural Wood Materials – Group I' (15:15 – 16:55)**

*Moderator: Steve Winistorfer, Huber Engineered Woods*

15:15 – 15:40

### **WOOD-EPOXY COMPOSITES EXTRUSION FOR CONSTRUCTION APPLICATIONS<sup>✓</sup>**

\*Z. NAGHIZADEH, L. ALVEREZ MARIN, M.S. PERESIN

Auburn University, Auburn, AL, Sustainable Bio-Based Materials Lab

15:40 – 16:05

### **INNOVATIVE CONSTRUCTION MATERIAL FOR BUILDING ENVELOPES: COLD- FORMED WOOD-BASED CORRUGATED PANELS<sup>✓</sup>**

\*Suman PRADHAN, Mostafa MOHAMMADABADI, Edward ENTSMINGER, Kevin RAGON,  
Laya KHADEMIBAMI, Jason STREET

<sup>a</sup>Mississippi State University, Starkville, Department of Sustainable Bioproducts

16:05 – 16:30

**OPTIMIZING OSB QUALITY: ASSESSING THE INFLUENCE OF BCD-EO TREATMENTS<sup>✓</sup>**

**Ethan TURO**

**Mississippi State University**, Starkville, Department of Sustainable Bioproducts

16:30 – 16:55

**FLEXURAL PROPERTIES OF STRUCTURAL INSULATED PANELS (SIPS)<sup>✓</sup>**

<sup>\*a</sup>Laya KHADEMIBAMI, <sup>a</sup>Rubin SHMULSKY, <sup>b</sup>Christopher A. SENALIK,

<sup>a</sup>Roy Daniel SEALE, <sup>b</sup>Robert J. ROSS

<sup>a</sup>Mississippi State University, Starkville, Department of Sustainable Bioproducts

<sup>b</sup>United States Department of Agriculture, Forest Products Laboratory

**Exhibits**

**16:55 – 17:30**

**Cocktails by the Ocean**

**17:30 – 18:30**

**Banquet**

**18:30 to Whenever**

**Wednesday, November 1, 2023 (08:10 – 11:55)**

***Technical Session VII: 'New and Evolving Opportunities for Wood' (08:10 – 09:50)***

*Moderator: Dr. Rubin Smulsky, Mississippi State University*

08:10 – 08:35

**THERMALLY MODIFIED WOOD: A SUSTAINABLE ALTERNATIVE<sup>✓</sup>**

**Brian BOND**

**VIRGINIA TECH, BLACKSBURG, VA, DEPARTMENT OF SUSTAINABLE BIOMATERIALS**

08:35 – 09:00

**MASS TIMBER TODAY: SUCCESSES, CHALLENGES & OPPORTUNITIES<sup>✓</sup>**

**Kevin NARANJO**

*Forest Service, State, Private & Tribal Forestry, Cooperative Forestry*

09:00 – 09:25

**WHAT DO PEOPLE REALLY THINK ABOUT ENVIRONMENTAL, SOCIAL, AND ECONOMIC IMPACTS OF THE WOOD PELLET INDUSTRY? ✓**

Mason T. LEBLANC and \*Richard P. VLOSKY

*Louisiana State University, Baton Rouge Louisiana Forest Products Development Center*

09:25 – 09:50

**ENVIRONMENTAL, SOCIAL, AND ECONOMIC IMPACTS OF THE WOOD PELLET INDUSTRY IN THE U.S. SOUTH: RESIDENTS LIVING NEAR PELLET PLANTS VS. URBAN RESIDENTS ✓**

\*Mason LEBLANC and Richard VLOSKY

Drax Biomass, LLC, Monroe, Louisiana

Louisiana State University, Baton Rouge, Louisiana Forest Products Development Center

**Technical Session VIII: 'Structural Wood Materials – Group II' (08:10 – 09:50)**

*Moderator: Dr. Sergei Medved, University of Ljubljana*

08:10 – 08:35

**EVALUATING THE PERFORMANCE OF CROSS LAMINATED TIMBER MADE USING GREVILLA ROBUSTA AND MELIADUBIA ✓**

\*D. SUJATH, B.S. MAMATHA, V. PRAKASH, D.N. UDAY, M.C. KIRAN

Institute of Wood Science and Technology (IWST), Bangalore, India, Indian Council of Forestry Research and Education

08:35 – 09:00

**To be Announced**

09:00 – 09:25

**To be Announced**

09:25 – 09:50

**To be Announced**

**Technical Session IX: 'TBD' (08:10 – 09:50)**

08:10 – 08:35

**To be Announced**

08:35 – 09:00

**To be Announced**

09:00 – 09:25

**To be Announced**

09:25 – 09:50

**To be Announced**

Morning Break & Exhibits: 09:50 – 10:15

**Technical Session X: 'Industry Updates on New Startups' (10:15 – 11:55)**

Moderator: TBD

10:15 – 10:40

**Roseburg Forest Products**

**Brandon Higgins**, Regional Technical and CI Manager

10:40 – 11:05

**Huber Engineered Woods, LLC**

**Steve Winistorfer**, Huber Engineered Woods, LLC

11:05 – 11:30

**To be Announced**

11:30 – 11:55

**To be Announced**

**Technical Session XI: 'Value-Added Residue Technologies' (10:15 – 11:55)**

Moderator: Dr. Brian Bond, Virginia Tech

10:15 – 10:40

**DESIGN OF DECORATIVE WOODEN WALL PANELS FROM PRODUCTION  
RESIDUE OF SLAVONIAN OAK VENEER USING DESIGN ELEMENTS AND  
PRINCIPLES**

Domagoj MAMIĆ and \*Danijela DOMLJAN

University of Zagreb, Croatia, Faculty of Forestry and Wood Technology

10:40 – 11:05

**TRENDS IN THE GENERATION OF WOOD WASTE FROM THE EUROPEAN WOOD  
INDUSTRY**

Jelena OBRAKOVIĆ, Karla KREMENJAŠ, \*Andreja PIRC BARČIĆ, Kristina KLARIĆ

University of Zagreb, Croatia, Faculty of Forestry and Wood Technology

11:05 – 11:30

**INCENTIVE TO THE TECHNOLOGICAL USE OF WOODY TREE RESIDUES FROM URBAN PRUNING FOR USE IN THE INDUSTRIAL SECTOR<sup>✓</sup>**

<sup>a</sup>H.O. RIBEIRO, <sup>a</sup>L.C. FERRAZ, <sup>\*a</sup>K. SANCHES, <sup>a</sup>A.M. BOTELHO, <sup>a</sup>R. TELES, <sup>b</sup>D. TEIXEIRA,  
<sup>b</sup>R.M. MAGALHÃES, <sup>c</sup>A.P. CAMELO

<sup>a</sup>Federal Institute of Education (IFB), Brasília Brazil, Dept of Furn Production.

<sup>b</sup>Forest Products Laboratory (LPF), Brasília, Brazil Forest Service (SFB)

<sup>c</sup>Brasília Environmental Institute (Ibram), Brasília, Brazil

11:30 – 11:55

**CAPTURE TECHNOLOGY ENABLES WOOD PRODUCTS MANUFACTURERS TO SELL VALUABLE BIOPRODUCTS, SELL CARBON OFFSETS, AND SIGNIFICANTLY REDUCE ENERGY USE AS IT CLEANS THE AIR<sup>✓</sup>**

Kim TUTIN

Captis Aire, Atlanta, GA

**Technical Session XII: 'Alternative Technologies' (10:15 – 11:55)**

*Moderator: Laya Khademibami, Mississippi State University*

10:15 – 10:40

**DEVELOPMENT OF A NATURAL WOOD PRESERVATIVE SUITABLE FOR WOOD COMPOSITE PRODUCTS<sup>✓</sup>**

H. OLAYIWOLA, <sup>\*</sup>Y. KIM, E. ENTSMINGER, C. BEDICS

Mississippi State University, Starkville, Department of Sustainable Bioproducts

10:40 – 11:05

*Title forthcoming*

Anton **ASTNER**

The University of Tennessee, Knoxville, Department of Biosystems Engineering

11:05 – 11:30

**LESS COMMERCIALIZED TROPICAL TIMBER SPECIES: AN OPPORTUNITY FOR PRODUCTION AND CONSERVATION IN THE BRAZILIAN AMAZON<sup>✓</sup>**

M.B.T. Andrade, G.J. Zenid, M.W. Lentini, H.d. Santos, F. Nunes and J.N. Costa

11:30 – 11:55

*To be Announced*

**Conference Adjourns**