

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[✓]

***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[✓]

Joseph J. MARCINKO
Polymer Synergies LLC, Bradenton FL

14:00 – 14:25

UNDERSTANDING THE FUNDAMENTAL INFLUENCE OF EXTRACTIVES ON WOOD ADHESION[✓]

*^a**D. CUARTAS-MARULANDA**, ^a**F. BELLO**, ^a**S. GURURAJA**, ^b**J. NAIRN**, ^b**J. SIMONSEN**, ^c**E. FRAZIER**, M. ^a**Soledad PERESIN**

^a**Auburn University**, Auburn, AL, Sustainable Bio-Based Materials Lab

^b**Oregon State University**, Corvallis, OR, Wood Science and Engineering

^c**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[✓]

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[✓]

***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[✓]

***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[✓]

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

14:25 – 14:50

ASYMETRICAL PARTICLE-BASED COMPOSITES[✓]

***Sergej MEDVED^a**, Domen ČRNEC, Marius Catalin BARBU^b, Eugenia Mariana TUDOR^b,
Alexander PETUTSCHNIGG^b, Alan ANTONOVIĆ^c, Timothy M. YOUNG^d
^a University of Ljubljana, Slovenia, Department of Wood Science and Technology
^b Salzburg University of Applied Sciences, Austria, Forest Prod Tech & Timber Const. Dept
^c University of Zagreb, Croatia, Faculty of Forestry and Wood Technology
^d 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[✓]

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

13:35 – 14:00

SUSTAINABLE PRODUCT DEVELOPMENT TOWARDS A CIRCULAR ECONOMY

Alina MEINDL[✓]
Salzburg University of Applied Sciences, Kuchl, Austria, Forest Products Technology and Timber Construction Department

14:00 – 14:25

INCREASING SCIENCE PROFICIENCY AND DEVELOPING THE NEXT GENERATION OF FOREST INDUSTRY WORKFORCE THROUGH RELEVANT ENVIRONMENTAL EDUCATION[✓]

***Carly CUMMINGS** and Maria Soledad PERESIN
Auburn University, Sustainable Bio-Based Materials Lab, College of Forestry Wildlife and Environment

14:25 – 14:50

**THE UNIVERSITY OF TENNESSEE SCHOOL OF NATURAL RESOURCES DATA
SCIENCE INSTITUTE FOR MACHINE LEARNING AND AI[✓]**

***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: Laya Khademibami, Mississippi State University

15:15 – 15:40

**SUPPORTING PROCESS TECHNOLOGY CHANGES IN MANUFACTURING WITH
AN INNOVATIVE MICROSCOPY METHOD[✓]**

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

15:40 – 16:05

**NANOCOMPOSITES DERIVED FROM NANOCELLULOSE AND METAL
NANOPARTICLES AND THEIR APPLICATIONS[✓]**

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

16:05 – 16:30

**PREDICTIVE CHEMOMETRIC ANALYSIS FOR THERMAL PROPERTIES OF
BIOREFINERY LIGNINS AND CHARACTERIZATION TECHNIQUES FOR BIO-
BASED NANOPLASTICS IN ENVIRONMENTAL STUDIES**

***^aA.F. ASTNER**, ^aD.G. HAYES, ^bT.M. YOUNG, ^bJ.J. BOZELL
The University of Tennessee, Knoxville, Department of Biosystems Engineering

16:30 – 16:55

**DEVELOPMENT AND APPLICATION OF LIGNIN BASED WOOD ADHESIVES FOR
PANEL PRODUCTS[✓]**

***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: Martin Weigel-Kuska, Holzforschung Austria

15:15 – 15:40

MACHINE LEARNING FOR PREDICTING WOOD PROPERTIES DURING MILLING[✓]

^{*ab}M. RIEGLER, ^aM. DERBAS, ^cA. JAQUEMOD, ^aS. AFRÖMEL-FRYBORT, ^cKamil GÜZEL,
^cH.C. MÖHRING

^aWood K plus - Competence Centre for Wood Composites and Wood Chemistry, Tulln,
Austria ^bUniversity of Natural Resources and Life Sciences (BOKU), Institute of Wood
Technology and Renewable Materials, Vienna, Austria
^cUniversity 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[✓]**

^{*a}T.M. YOUNG, ^{bc}M. REIGLER, ^dA. PETUTSCHNIGG

The University of Tennessee, School of Natural Resources, Knoxville

^bWood K plus - Competence Centre for Wood Composites and Wood Chem, Tulln, Austria
^cUniversity of Natural Resources and Life Sciences (BOKU), Institute of Wood Technology
and Renewable Materials, Vienna, Austria

^dSalzburg University of Applied Sciences, Austria, Forest Products Technology and Timber
Construction Department

16:05 – 16:30

A GREAT STATISTICAL PROGRAM CANNOT FIX POOR STRATEGY[✓]

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[✓]**

^{*}Z. NAGHIZADEH, L. ALVEREZ MARIN, M.S. PERESIN
Auburn University, Auburn, AL, Sustainable Bio-Based Materials Lab

15:40 – 16:05

USE OF SUSPENSION TECHNOLOGY TO INCORPORATE LIGNIN AND BIO-BASED WAX INTO ENGINEERED WOOD PANELS

***Larry SINNIGE and Niels SMEETS**

Walker Emulsions Ltd, Oakville ON, Canada and Burlington ON, Canada

16:05 – 16:30

OPTIMIZING OSB QUALITY: ASSESSING THE INFLUENCE OF BCD-EO TREATMENTS[✓]

Ethan TURO

Mississippi State University, Starkville, Department of Sustainable Bioproducts

16:30 – 16:55

FLEXURAL PROPERTIES OF STRUCTURAL INSULATED PANELS (SIPS)[✓]

^aLaya KHADEMIBAMI, ^aRubin SHMULSKY, ^bChristopher A. SENALIK,

^aRoy Daniel SEALE, ^bRobert J. ROSS

^aMississippi State University, Starkville, Department of Sustainable Bioproducts

^bUnited 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. Rich Vlosky, Louisiana State University

08:10 – 08:35

THERMALLY MODIFIED WOOD: A SUSTAINABLE ALTERNATIVE[✓]

Brian BOND

VIRGINIA TECH, BLACKSBURG, VA, DEPARTMENT OF SUSTAINABLE BIOMATERIALS

08:35 – 09:00

MASS TIMBER TODAY: SUCCESSES, CHALLENGES & OPPORTUNITIES[✓]

Kevin NARANJO

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

09:00 – 09:25

TITLE FORTHCOMING

Matt WHITE

Drax Biomass, LLC, Monroe, Louisiana

09:25 – 09:50

ENVIRONMENTAL, SOCIAL, AND ECONOMIC IMPACTS OF THE WOOD PELLET INDUSTRY IN THE U.S. SOUTH: PERCEPTIONS OF 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

INNOVATIVE CONSTRUCTION MATERIAL FOR BUILDING ENVELOPES: COLD-FORMED WOOD-BASED CORRUGATED PANELS[✓]

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

^aMississippi State University, Starkville, Department of Sustainable Bioproducts

08:35 – 09:00

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

09:00 – 09:25

TBA

09:25 – 09:50

TBA

Technical Session IX: 'Value-Added Technologies' (08:10 – 09:50)

Moderator: Dr. Brian Bond, Virginia Tech

08:10 – 08:35

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

08:35 – 09:00

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

09:00 – 09:25

INCENTIVE TO THE TECHNOLOGICAL USE OF WOODY TREE RESIDUES FROM URBAN PRUNING FOR USE IN THE INDUSTRIAL SECTOR[✓]

^aH.O. RIBEIRO, ^aL.C. FERRAZ, *^aK. SANCHES, ^aA.M. BOTELHO, ^aR. TELES, ^bD. TEIXEIRA,
^bR.M. MAGALHÃES, ^cA.P. CAMELO
^aFederal Institute of Education (IFB), Brasília Brazil, Dept of Furn Production.
^bForest Products Laboratory (LPF), Brasília, Brazil Forest Service (SFB)
^cBrasília Environmental Institute (Ibram), Brasília, Brazil

09:25 – 09:50

BIO-BASED SOLUTIONS FOR CONTROLLED-RELEASE OF AGRICHEMICALS

*¹Maria Soledad PERESIN, ¹Duber GARCES, ¹Sydney Brake, ²Wheeler FOSHEE, ³Howard FAIRBROTHER, ³Savannah PHILIPS, ⁴Diego Gomez-MALDONADO, ⁵Jason WHITE, ⁵Shital VIDAYA

¹Auburn University, Auburn AL, Sustainable Bio-Based Materials Laboratory, College of Forestry, Wildlife and Environment, ²Auburn University, Auburn AL Horticulture Department, AU, ³John Hopkins University, Chemistry Department, ⁴Northwestern University, Chemical Eng. Department, ⁵Connecticut Agricultural Experiment Station

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

Technical Session X: 'Industry News' (10:15 – 11:55)

Moderator: Dr. Scott Leavengood, Oregon State University

10:15 – 10:40

**REDUCTION OF MULTIPLE-PIECE BAT FAILURES IN MAJOR LEAGUE
BASEBALL[✓]**

Scott DRAKE
PFS-TECO, MADISON, WI

10:40 – 11:05

Roseburg Forest Products
Brandon Higgins, Regional Technical and CI Manager

11:05 – 11:30

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

11:30 – 11:55

Other Company News

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

Moderator: Martin Reigler, BOKU University

10:15 – 10:40

**THE TIMBERLOOP-PROJECT: CHEMICAL CONTAMINATION AS AN OBSTACLE
FOR TIMBER RE-USE**

***Martin WEIGL-KUSKA**, Christina FÜRHAPPER
Holzforschung Austria, Vienna, Unit for Bioenergy and Chemical Analytics

10:40 – 11:05

**SODIUM POLYACRYLATE – AN ULTRA-LOW DOSE STRENGTH ADDITIVE FOR
WOOD PANELS**

***^aBrian VIA**, Sujit BANERJEE, ^aAbiodun Oluseun ALAWODE

^a**Auburn University**, Forest Products Development Center, ^b**Georgia Tech**, Atlanta,
School of Chemical and Biomolecular Engineering

11:05 – 11:30

**DEVELOPMENT OF A NATURAL WOOD PRESERVATIVE SUITABLE FOR WOOD
COMPOSITE PRODUCTS[✓]**

H. OLAYIWOLA, ***Y. KIM**, E. ENTSMINGER, C. BEDICS

Updated 10/10/23

Mississippi State University, Starkville, Department of Sustainable Bioproducts

11:30 – 11:55

**ADVANCING AMAZON TIMBER INDUSTRY: SUSTAINABLE DIVERSIFICATION
FOR LONG-TERM VIABILITY ✓**

M.B.T. ANDRADE, G.J. ZENID, M.W. LENTINI, H.D. SANTOS, F. NUNES and J.N. COSTA

Technical Session XII: 'TBD' (10:15 – 11:55)

Moderator: TBD

10:15 – 10:40

To be Announced

10:40 – 11:05

To be Announced

11:05 – 11:30

To be Announced

11:30 – 11:55

To be Announced

Conference Adjourns 12:00 pm