



# 59th SWST International Convention

## FOREST RESOURCE AND PRODUCTS: MOVING TOWARD A SUSTAINABLE FUTURE

In Cooperation with APRE (Associação Paranaense de Empresas de Base Florestal),  
II Expo Wood & Construction, and EBRAMEM (Encontro Brasileiro em Madeiras e em  
Estruturas de Madeira) XV Symposium Wood & Construction

MARCH 6-10, 2016 ▶ CURITIBA, BRASIL



### Sunday, March 6

- 17:00-18:00 Registration - Hotel Bourbon
- 18:00-20:00 Evening Welcome Reception, Opening Ceremony and Awards Presentation  
Bourbon Curitiba Convention Hotel, All Seasons Room  
(All technical presentations, March 7-10, held at Salão de Atos, Parque Barigüi)

### Monday, March 7

- 7:00-8:00 Registration - Salão de Atos, Parque Barigüi
- 8:00-8:15 Welcome to the Conference by Conference Co-Chairs - Sudipta Dasmohapatra,  
North Carolina State University, USA; and Carlos Mendes, APRE, Brasil
- 8:15-9:00 Keynote - Juscelino Portela, Portela Woods, Brasil  
**Status of the Wood Industry in Brasil**
- 
- 9:00-12:00 **Lignocellulosic Materials Science Session**  
**Moderators David DeVallance, West Virginia, USA; and Andreja Kutnar, University of Primorska, Slovenia**
- 
- 9:00-9:20 José Couceiro, Luleå University of Technology, Sweden  
**In situ CT-scanning of Checking and Collapse Behaviour of Eucalyptus nitens during Drying**
- 9:20-9:40 David DeVallance, West Virginia University, USA  
**Influence of Processing Parameters on the Piezoresistivity of Bio-based Carbon Sensor Material**
- 9:40-10:00 Benedikt Neyses, Luleå University of Technology, Sweden  
**Development of a Continuous Wood Surface Densification Process - The Roller Pressing Technique**
- 10:00-10:20 Gloria Oporto, West Virginia University, USA  
**Nanofibrillated Cellulose from Appalachian Hardwoods: Red Oak (*Quercus rubra*) and Yellow Poplar (*Liriodendron tulipifera*) as Template for Copper Nanoparticles**
- 10:20-10:40 COFFEE BREAK
- 10:40-11:00 Jacob Owoyemi, Federal University of Technology, Nigeria  
**Physico-Mechanical Properties of Thermally Modified *Gmelina arborea* (Roxb.) Wood**
- 11:00-11:20 Ilona Peszlen, North Carolina State University, USA  
**Two-stage Fungal Pretreatment of Genetically Modified *Populus trichocarpa* with White-rot Fungus, Ceriporiopsis Subvermispora, and Brown-rot Fungus, Postia Placenta**

59th SWST International Convention, March 6–10, 2016  
FOREST RESOURCE AND PRODUCTS: MOVING TOWARD A SUSTAINABLE FUTURE



Monday, March 7 *continued*

- 11:20–11:40 Morwenna Spear, Bangor University, United Kingdom  
**Mild Thermal Modification to Add Value to UK Grown Larch: Monitoring Quality, Physical Properties, and Benefits**
- 11:40–12:00 H. Michael Barnes, Mississippi State University, USA  
**Properties of Southern Pine Modified with Melamine Formaldehyde**
- 12:00–13:00 LUNCH
- 
- 13:00–14:45 **Bio-Composites Session**  
**Moderators Jerrold Winandy, University of Minnesota, USA; and Rupert Wimmer, BOKU Vienna, Austria**
- 
- 13:00–13:20 Paige McKinley, Oregon State University, USA  
**Multi-scale Investigation of Adhesive Bond Durability**
- 13:20–13:40 Jacob Owoyemi, Federal University of Technology Akure, Nigeria  
**Evaluation of the Physical and Mechanical Properties of Composite Board Produced from Banana Stalk (*Musa sapientum*) and Pozzolan**
- 13:40–14:00 Divino Eterno Teixeira, Brazilian Forest Service, Brasil  
**Recycling Wood Waste from Construction Sites: Part 1: Manufacture and Characterization of Blockboard**
- 14:00–14:20 Rupert Wimmer, BOKU Vienna, Austria  
**Connecting Wood and 3D printing**
- 14:20–14:30 Discussion
- 14:30–14:45 COFFEE BREAK
- 
- 14:45–16:45 **Marketing, Policy & Strategy Session**  
**Moderators Henry Quesada-Pineda, Virginia Tech, USA; and Marcelo Wiecheteck, STCP Engenharia de Projetos Ltda, Brazil**
- 
- 14:45–15:05 Karen Bayne, New Zealand Forest Research Institute (SCION), New Zealand  
**The Environment for Innovation within the New Zealand Forest Sector**
- 15:05–15:25 Kendall Conroy, Oregon State University, USA  
**Roadblocks, Hurdles, and Glass Ceilings: The Female Executive Perspective**
- 15:25–15:45 Eric Hansen, Oregon State University, USA  
**Lingering Impacts of the Global Financial Crisis: Innovativeness of US Forest Sector Manufacturers**
- 15:45–16:05 Andreja Kutnar, University of Primorska, Slovenia  
**Public Perceptions of Wood as Building Material**
- 16:05–16:25 Henry Quesada-Pineda, Virginia Tech, USA  
**Measuring Effectiveness of Kaizen Events within the Wood Products Industry**
- 16:25–16:45 Discussion and Questions

Tuesday, March 8

- 
- 8:00–12:00 **Chemistry and Forest Products Utilization Session**  
**Moderators Gloria Oporto, West Virginia University, USA; and Flavio Geraldo, Lonza, Brasil**
- 
- 8:00–8:20 Lawrence Aguda, Forestry Research Institute of Nigeria, Nigeria  
**Efficacy *Gliricidia sepium* Heart Wood Extractives as Preservatives against Fungi Attack**

**59th SWST International Convention, March 6–10, 2016**  
**FOREST RESOURCE AND PRODUCTS: MOVING TOWARD A SUSTAINABLE FUTURE**



**Tuesday, March 8** *continued*

8:20–8:40	Charles Frihart, US Forest Products Laboratory, USA <b>Potential for Biobased Adhesives in Wood Bonding</b>
8:40–9:00	Jerrold Winandy, University of Minnesota, USA <b>Relating Wood Chemistry and Strength</b>
9:00–9:20	Francisca Maria Figueiredo Teles, Universidade Federal do Acre-Ufac, Brasil <b>Aspects of the Quality Management in the Tropical Joinery Sector: A Case Study in Rio Branco, State of Acre-Brasil, 2013</b>
9:20–9:40	M. Sarwar Jahan, BCSIR, Bangladesh <b>Pulping of Gamari (<i>Gmelina arborea</i>) and Rubber Root</b>
9:40–10:00	Svetka Kuljich, Laval University, Canada <b>Chip Formation Studied by High Speed Photography during Log Fragmentation by a Chipper-canter</b>
10:00–10:20	COFFEE BREAK
10:20–10:40	Andrea Cardoso, Universidad ORT, Uruguay <b>Proposal of Visual Grading Rules for Uruguayan Loblolly and Slash Pine Timber</b>
10:40–11:00	Leandro Domenech, Universidad de la República, Uruguay <b>Structural Calculation with Timber in Uruguay: Proposal for a National Annex to Eurocode 5</b>
11:00–11:20	Tâmara Suely Filgueira Amorim França, Mississippi State University, USA <b>Visual and Mechanical Properties of Southern Pine No.2 Lumber</b>
11:20–11:40	Frederico José Nistal França, Mississippi State University, USA <b>Nondestructive Assessment of Southern Pine No.2 Lumber</b>
11:40–12:00	Richard D. Bergman, US Forest Products Laboratory, USA <b>Gate-to-gate Life-cycle Inventory Analysis on Carbon Activation of Biochar</b>
12:00–13:00	LUNCH
13:00–13:30	Business Meeting
<b>13:45–16:00</b>	<b>Biomass and Bioenergy Session</b> <b>Moderators Jingxin Wang, West Virginia University, USA; and Alex Berg, Universidad de Concepción, Chile</b>
13:45–14:05	Alex Berg, Universidad de Concepción, Chile <b>Biomass as an Energy Source in Chile</b>
14:05–14:25	Richard Bergman, US Forest Products Laboratory, USA <b>Estimating GHG Emissions of Field-applying Biochar Pellets</b>
14:25–14:45	Jingxin Wang, West Virginia University, USA <b>Integrated Techno-Economic and Life Cycle Analyses of Biomass Utilization for Biofuels and Bioproducts</b>
14:45–15:05	Eini Lowell, USDA Forest Service, PNW Research Station, USA <b>Biofuels from Forest Residuals – What is on the Minds of Stakeholders?</b>
15:05–15:25	Stephen Mitchual, University of Education Winneba, Ghana <b>Briquettes: An Alternative to Firewood and Charcoal as a Domestic and Industrial Fuel in Ghana</b>
15:25–15:45	Discussion and Questions
15:45–16:00	COFFEE BREAK
<b>16:00–18:30</b>	<b>Poster Session and Student Poster Competition</b> <b>Moderator Manja Kuzman, University of Ljubljana, Slovenia</b>



Tuesday, March 8 *continued*

\*\*Lawrence Aguda, Forestry Research Institute of Nigeria, Nigeria  
**Efficacy *Gliricidia sepium* Heart Wood Extractives as Preservatives against Fungi Attack**

Ajayi Alex Ajigbon, Federal Polytechnic Ado-Ekiti, Nigeria  
**Mechanical Properties of Eight Wood Species Grown in Nigeria**

\*\*Stephen Amiandamhen, University of Stellenbosch, South Africa  
**Effect of Barks on the Physical and Mechanical Properties of Phosphate Bonded Wood Composites of Black Wattle (*Acacia mearnsii*)**

Xinxin An, International Center for Bamboo and Rattan, China  
**Radial Variation in Crystallite Size and Crystallinity Index in Cellulose of Moso Bamboo**

Mario Bulhões, Universidade Federal da Bahia - UFBA, Brasil  
**Development of Bio Composites of Eucalyptus Wood Sawdust and Latex**

Fernanda Costa, Universidade Federal do Acre-Ufac, Brasil  
**Opportunities and Challenges for the Adoption of Glued Laminated Bamboo (*Guadua weberbaueri*) in Joinery Sector acting in the State of Acre-Brasil, 2015**

\*\*Victor Almeida De Araujo, University of São Paulo, Brasil  
**Problems and Possible Solutions to the Wood Waste from the Wooden Housing Production in Brasil**

\*\*Jennifer DeBoer, University of British Columbia, Canada  
**Typology of Sustainable Forest Certifications**

\*\*Tâmara Suely Filgueira Amorim França, Mississippi State University, USA  
**Natural Durability of Two Species of African Mahogany Planted in Brasil Against Termite Attack**

Charles Frihart, US Forest Products Laboratory, USA  
**Soy Products for Wood Bonding**

\*\*Annika Hyytiä, University of Helsinki, Finland  
**Sustainable Development - International Framework - Overview and Analysis in the Context of Forests and Forest Products - Ecosystem Services and Competitiveness in the Bio-economy with Stakeholders**

Claudia Ibañez, Universidad de la República, Uruguay  
**Natural Durability of Wood from Two Species of Eucalyptus: *E. bosistoana* and *E. sideroxylon***

Gaurav Kakkar, Virginia Tech, USA  
**Assessment of Pre-fabricated Wooden Homes as an Affordable Housing Alternative for Low Income Households**

Manja Kitek Kuzman, University of Ljubljana, Slovenia  
**Understanding Eco-innovation in Slovenia**

Jin Heon Kwon, Kangwon National University, Republic of Korea  
**Three Grades of Liquid Urea-formaldehyde (UF) Resins with Different Formaldehyde Emission Levels such as Super EO (SEO)**

\*\*Paige McKinley, Oregon State University, USA  
**Multi-scale Investigation of Adhesive Bond Durability**

\*\*Priscilla Morris, North Carolina State University, USA  
**Factors Contributing to Business Success of Forest Products Industry in Coastal Communities Affected by Climate Change**

\*\*Frederico José Nistal França, Mississippi State University, USA  
**Nondestructive Assessment of *Eucalyptus grandis* vs *Eucalyptus urophylla***

\*\*Oluwatosin Oginni, West Virginia University, USA  
**Activated Carbons from Herbaceous Bioenergy Crops**

# 59th SWST International Convention, March 6–10, 2016

## FOREST RESOURCE AND PRODUCTS: MOVING TOWARD A SUSTAINABLE FUTURE



Tuesday, March 8 *continued*

Ilona Peszlen, North Carolina State University, USA  
**Characterization and Enzymatic Hydrolysis of Genetically Modified *Pinus taeda* with Decreased Lignin Content and Incorporated Syringyl Lignin**

Henry Quesada-Pineda, Virginia Tech, USA  
**Sustainability Factors Leading to Advanced Biofuel Cellulosic Project Success**

Ricardo Teles, Brasilia Federal Institute of Education, Science and Technology, Brasil  
**Effect of Preservative Treatment on the Velocity Propagation of Ultrasonic and Stress Waves in Brazilian Hardwoods**

Lili Yu, Tianjin University of Science and Technology, China  
**Effects of Boric Acid/Borax Treatments on the Fire Resistance of Bamboo Filament**

*\*\* indicates participation in Student Poster Competition*

## Wednesday, March 9

**Conference Tour - Sustainable Wood Structures and Culture in Curitiba (Separate \$50 charge - not included in registration fee)**

## Thursday, March 10

8:00–12:00	<b>Sustainable Wood Construction Session - Moderators Sudipta Dasmohapatra, North Carolina State University, USA; and Carlito Calil, Universidade de São Paulo, Brasil</b>
8:00–8:30	Victor Almeida De Araujo, University of São Paulo, Brasil <b>Wood Waste Generated by the Wooden Housing Manufacturers in the Brazilian State of São Paulo</b>
8:30–9:00	Jorge Daniel De Melo Moura, Londrina State University, Brasil <b>Facing the Challenges on Wooden Construction in Paraná State - Brasil</b>
9:00–9:30	Manja Kitek Kuzman, University of Ljubljana, Slovenia <b>Comparison of Timber House Technologies in Slovenia and Sweden</b>
9:30–10:00	Andreja Kutnar, University of Primorska, Slovenia <b>InnoRenew CoE - Renewable Materials and Healthy Environments Research and Innovation Centre of Excellence - Innovative Renewable Material Uses Living Laboratory (LL InnoRenew)</b>
10:00–10:30	Neto Calil, REWOOD, Brasil <b>Glued Laminated Timber in Brasil: The Rewood Industry</b>
10:30–11:00	COFFEE BREAK
11:00–11:30	Pedro Moreira, Tecverde, Brasil <b>Pre-manufactured Light Wood Frame House Construction in Brasil</b>
11:30–12:00	Vini Barreto, ITA, Brasil <b>Glued Laminated Timber in Brasil: The ITA Industry</b>
12:00–13:00	LUNCH
13:00–15:15	<b>Early Stage Researcher Session</b> Moderator Paige McKinley, Oregon State University, USA

*schedule continues on next page*



**59th SWST International Convention, March 6–10, 2016**  
**FOREST RESOURCE AND PRODUCTS: MOVING TOWARD A SUSTAINABLE FUTURE**



**Thursday, March 10** *continued*

- 13:00–13:15** Jerry Adutwum, Forestry Research Institute of Ghana, Ghana  
**The Physical Properties Variation Within and Between the Sapwood and Heartwood of *Pterocarpus erinaceus* (Poir)**
- 13:15–13:30** Stephen Amiandamhen, University of Stellenbosch, South Africa  
**Effect of Barks on the Physical and Mechanical Properties of Phosphate Bonded Wood Composites of Black Wattle (*Acacia mearnsii*)**
- 13:30–13:45** Annika Hyytiä, University of Helsinki, Finland  
**Sustainable Development - International Framework - Overview and Analysis in the Context of Forests and Forest Products - A Policy Point of View with the CSR**
- 13:45–14:00** Priscilla Morris, North Carolina State University, USA  
**Forest Landowners' Assessment of Climate Change Risk in Coastal North Carolina**
- 14:00–14:15** COFFEE BREAK
- 14:15–14:30** Roger Moya, Instituto Tecnológico de Costa Rica, Costa Rica  
**The Use of Daily Drying Rate to Decrease in Kiln Drying Time of Juvenile *Tectona grandis* L. Wood**
- 14:30–14:45** Oluwatosin Oginni, West Virginia University, USA  
**Activated Carbons from Herbaceous Bioenergy Crops**
- 14:45–15:00** Jennifer DeBoer, University of British Columbia, Canada  
**Systematic Review of the Environmental Performance and Sectoral Competitiveness of Canada's Forest Industry**
- 15:00–15:15** Discussion and Questions
- 15:15–17:00** II Expo Wood and Construction - Renault Expo Center, Parque Barigüi
- 
- 18:30–20:00** **Closing Ceremony and Banquet - KF Grill Churrascaria**
-