



SWST – International
Society of Wood
Science and Technology



SWST 63rd July 12-15, 2020

VIRTUAL CONFERENCE

Renewable Resources for a Sustainable and Healthy Future

Time zone: GMT+2

SUNDAY, JULY 12

18:00-19:00 Reception

MONDAY, JULY 13

16:00 to 16:05 Welcome - Andreja Kutnar , InnoRenew CoE & University of Primorska, Slovenia

16:05 to 16:25 Keynote - Bohumil Kasal - Wood Aging
Fraunhofer Institute for Wood Research, Germany

16:25 to 17:00 Early Stage Researcher
(Chairs: Benedikt Neyses, Luleå University of Technology, Sweden;
Martin Nopens, Universität Hamburg, Germany)

“Slovenian Wood-Based Bioeconomy: Present State and Future Perspectives”
Domen Arnič, Slovenian Forestry Institute, Slovenia

“Distributed Ledger Technology for Data Privacy and Traceability in Wood Supply Chain Environments”
Sidra Aslam, InnoRenew CoE & University of Primorska, Slovenia

“Spatial Augmented Reality to Improve Manufacturing of Timber Frame Prefabricated Wall Elements”
Birger Bartuska, Wood K Plus, Austria

“Can Woody Biomass from Orchards Still Be Considered a Waste Material”
Maria Roberta Bruno, University of Basilicata, Italy

“The Differentiating Anatomical Features of Five Tree Species from East Seram, Indonesia”
Tekat Dwi Cahyono, University of Darussalam Ambon, Indonesia

“Water Resistance of Wood Adhesives Derived from Cottonseed Meal With all Components Utilization”
Nairong Chen, Fujian Agriculture and Forestry University, China

“Comparison of Devices for Acoustic Tomography of Tree and Material Properties of Degraded Wood”
Valentino Cristini, Mendel University in Brno, Czech Republic

“Cascading Potential for Recovered Wood from Heavy Timber Frame Typology in Pre-Modern Dwelling Buildings in Madrid”
Marina de Arana-Fernández, Universidad Politécnica de Madrid, Spain

“The Economic Balance of Obtaining the Raw Material for Briquettes and Pellets from Forest Sanitation”
Molnár Gabor, Transilvania University, Romania

“Determining the Aerodynamic Diameter of Various Wood Dust Types to Better Assess Possible Health Risks”
Maria Georgiades, BOKU - University of Natural Resources and Life Sciences, Vienna, Austria

“Rapid Determination of the Quality of Spanish Coniferous Wood by Models based on IR Spectroscopy”
René Herrera Díaz, University of the Basque Country, Spain

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“Different Types of Coatings used for Wooden Shingles Exposed to Natural and Artificial Aging”

Dominik Hess, Mendel University in Brno, Czech Republic

“Modeling and Optimisation of Alkaline Sulphite Pretreatment of Maize (*Zea mays*) Stalk Fractions for Bioethanol Production”

Tolulope Kolajo, University of Ibadan, Nigeria

“The Effect of Growing Conditions on Wood Density”

Luka Krajnc, Slovenian Forestry Institute, Slovenia

“Differences between Hygroscopicity Limit and Cell Wall Saturation Investigated by LF-NMR on Thermally-modified and Lignin-removed Southern Pine (*Pinus spp.*)”

Jingyu Li, Beijing Forestry University, China

“Some Mechanical Properties of Particleboards Produced from Four Agro-forest Residues using Cassava Starch and Urea Formaldehyde as Adhesives”

Prosper Mensah, CSIR-Forestry Research Institute of Ghana, Ghana

“Spectroscopic Characterisation of Wood Treated By Different Coatings After Weathering In Subarctic Conditions”

Olena Myronycheva, Luleå University of Technology, Sweden

“Identification of Wood Vibro-acoustic Parameters for Musical Instruments”

Patrik Nop, Mendel University in Brno, Czech Republic

“Triboelectric Activation of Sawdust During Cutting and Sanding Processes, a New Approach to Lower Wood Fine-Dust Contamination”

Luca Nüssel, BOKU - University of Natural Resources and Life Sciences, Vienna, Austria

“ABES and DMA Cure Monitoring of Tannin Adhesive”

Jaša Saražin, University of Ljubljana, Slovenia

“Characterization of Raw Materials and Physical Properties of Particleboard made from Douglas-fir Bark”

Mathias Schuh, Technical University of Munich, Germany

“Pulp and Paper Making Potential of Elephant and Thatching Grasses Growing in Zambia”

Kennedy Sichamba, Copperbelt University, Zambia

“Numerical Study of Sorption Behavior of Piano Soundboard”

Pavlina Suchomelova, Mendel University in Brno, Czech Republic

“Papermaking Fines a Potential Wood-component for New Materials Outside the Paper Industry?”

Armin Winter, BOKU - University of Natural Resources and Life Sciences, Vienna, Austria

“Effect of Lacquer Decoration on VOCs and Odor Release from *P.neurantha* (Hemsl.) Gamble”

Bin Zeng, Northeast Forestry University, China

“Numerical Analysis of Tree Dynamic Response”

Barbora Vojáčková, Mendel University in Brno, Czech Republic

“Assessment of European Beech Timber Based on Non-destructive Measurement”

Jan Zlámal, Mendel University in Brno, Czech Republic

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MONDAY, JULY 13

17:00 to 17:05

Break

17:05 to 18:45

Timber Engineering, Mass Timber & Sustainable Architecture

(Chairs: Bohumil Kasal, Fraunhofer Institute for Wood Research, Germany;
Mariapaola Riggio, Oregon State University, USA)

“Deconstructable Timber-concrete Composite Connectors”

Mohammad Derikvand, Aalto University, Finland

“CLT Panels from Below-grade Yellow-poplar Sorted by Non-destructive Proof Loading”

Rafael Azambuja, West Virginia University, USA

“Development of a Simplified Method for Prediction of Acoustic Behaviour of CLT with Facing Layers”

Franz Dolezal, IBO - Austrian Institute for Building and Ecology, Austria

“A Knowledge Management System to Support the U.S. Cross Laminated Timber Industry”

Omar Espinoza, University of Minnesota, United States

“Recovered Wood as Raw Material for Structural Timber Products. Characteristics, Situation and Study Cases: Ireland and Spain”

Daniel F. Llana, Universidad Politécnica de Madrid, Spain

“Connection Ductility Demand for Different Ductility Levels in Capacity Design of Multi-Storey CLT Buildings”

Igor Gavric, InnoRenew CoE & University of Primorska, Slovenia

“Environmental Impacts and Carbon Offset of Mass Timber Construction – A Comparative Life Cycle Assessment Study”

Marilia Hellmeister, University of Maine, United States

“VOC-emission Optimized Cross Laminated Timber”

Marko Kovacevic, Wood K Plus, Austria

“What is the Best Timber for Construction? Available Forest Resources, Mechanical Efficiency, Carbon Storage”

Jean-Michel Leban, INRA, France

“Monitoring Mass Timber Buildings: A Case Study of the InnoRenew CoE Building”

Eva Prelovšek Niemelä, InnoRenew CoE, Slovenia

“The Case for Mass Timber Tall Buildings using a Net Zero Carbon Framework”

Azzeddine Oudjehane, SAIT - Southern Alberta Institute of Technology, Canada

“Regenerative Wooden Buildings in Europe: Comparing Spain to Other Countries”

Alberto Quintana Gallardo, Universitat Politècnica de València, Spain

“Click Design Project Approach to Model Aesthetic Performance of Buildings”

Jakub Sandak, InnoRenew CoE & University of Primorska, Slovenia

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“Parameters to Minimize the Environmental Footprint of Wood and Engineered Wood Products”

Erwin M. Schau, InnoRenew CoE, Slovenia

“TallWood Design Institute: Latest Resilient Design and Seismic Engineering Research”

Evan Schmidt, TallWood Design Institute (TDI), United States

“Are Wood and Sustainability-related Terms Emphasized More Nowadays than 20 Years Ago? Corpora-based Study in Czech and Slovenian Languages”

Vaclav Sebera, InnoRenew CoE, Slovenia

“Options for Climate Change Performance Indicators for Cross-laminated Timber”

Lars G. F. Tellnes, Ostfold Research, Norway

18:45 to 18:55

Break

18:55 to 19:45

Business, Marketing, Digitalisation, and Regulations

(Chairs: Eric Hansen, Oregon State University, USA;
Rob Kozak, University of British Columbia, Canada)

“Contribution and Potential of the Wood Industry and its Products to the Circular Economy: Case Examples from the U.S. and Central-Southeast Europe”

Andreja Pirc Barcic, University of Zagreb, Croatia

“Digitalization Rate of SMEs Involved in the Wood Fibres Value Chains in the Alpine Region”

Tina Beranič, University of Maribor, Slovenia

“A Circular Economy for Wood under the European Green Deal”

Michael Burnard, InnoRenew CoE & University of Primorska, Slovenia

“Raising the Bar: Women Administrator Leaders in Top World Forestry Universities”

Pipiet Larasatie, Oregon State University, United States

“The Oil Palm Trunk: Opportunities and Challenges for the Malaysian Timber-Based Industries”

Yueh Feng Loh, Malaysian Timber Industry Board, Malaysia

“Moving Past the Traditional Structure of Academic Publishing – Re-aligning Incentives with the Goals of Science”

Benedikt Neyses, Luleå University of Technology, Sweden

“The Wood Science and Technology Program at West Virginia University: A Case Study”

Gloria Oporto, West Virginia University, United States

“Material Choice: A New Frontier in Corporate Sustainability”

Rajat Panwar, Appalachian State University, United States

“Barriers and Drivers of Thermally-modified Wood: Perceptions of Architects in the U.S.”

Henry Quesada, Virginia Tech, United States

“Wood Waste, Source of Sustainable Livelihood for Women Group.”

Haruna Seidu, CSIR - Forestry Research Institute of Ghana, Ghana

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TUESDAY, JULY 14

16:00 to 17:00

Composites & Adhesives

(Chairs: David DeVallance, InnoRenew CoE & University of Primorska, Slovenia;
Douglas Gardner, University of Maine, USA)

“Learning about and from the Functionality of Primers in Glulam Bonding”

Thomas Böger, Technical University of Munich, Germany

“Porous Structures Produced from Different Bark Particles by Mechanical Foaming”

Maria Busquets Ferrer, Wood K Plus, Austria

“Influence of Atmospheric Air Plasma Pre-Treatment of Veneers on the Mechanical Properties and Stability of Beech Plywood”

Sebastian Dahle, University of Ljubljana, Slovenia

“The Compatibility between Components of Wood-Plastic Composites using Chemical Force Microscopy”

Bernard Effah, Kumasi Technical University, Ghana

“Innovative High-Feed Rate Additive Manufacturing Using Sustainable Nano- Micro- Cellulose-Reinforced Thermoplastic Composites”

Doug Gardner, University of Maine, United States

“Green Enzyme-based Processes for Value-added Applications of Lignin”

Georg Guebitz, BOKU - University of Natural Resources and Life Sciences, Vienna, Austria

“New Bio-Based Sandwich Panel with High Impact-Resistance, following Cradle-to-Cradle Design”

Raphaella Hellmayr, BOKU - University of Natural Resources and Life Sciences, Vienna, Austria

“Systematic Evaluation of Wheat Flour, Wheat Starch and Wheat Protein in Urea and Phenol Formaldehyde Resins”

Elfriede Hogger, Wood K Plus, Austria

“Influences of Various Infill Patterns on Specific Mechanical Properties of 3D Printed Wood/Poly(lactic Acid (PLA) Composites which were Processed using Fused Deposition Modeling (FDM)”

Stefan Kain, Salzburg University of Applied Sciences, Austria

“4D X-Ray CT Studies on Wood-based Panels at UGCT-Woodlab”

Pierre Kibleur, Ghent University, Belgium

“Edge Banding Performance Analysis of Wood Based Material in the Furniture Industry”

Kucuk Huseyin Koc, Istanbul University - Cerrahpasa, Turkey

“Highly Efficient, Stable, and Recyclable Hydrogen Manganese Oxide/Cellulose Film for the Extraction of Lithium from Seawater”

Daxin Liang, Northeast Forestry University, China

“Agrocomposites for the Reinforcement of Concrete within Light-weight Structures”

Laetitia Marrot, InnoRenew CoE & University of Primorska, Slovenia

17:00 to 17:10

Break

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TUESDAY, JULY 14

17:10 to 17:40 Business Meeting & Awards Ceremony

17:40 to 18:55 Composites & Adhesives (continued)

“Laboratory Testing on the Face Bond Durability of Cross-laminated Hardwoods”

Munkaila Musah, Michigan Technological University, United States

“Characterization of Recycled Wood Plastic Composites with Added Torrefied Wood”

Jaka Gašper Pečnik, InnoRenew CoE, Slovenia

“Study on One-Shot Process for Wood-based Composites”

Vicky Reichel, Technische Universität Braunschweig, Germany

“Long Fiber Wood Compounds”

Thomas Schmid, Rosenheim Technical University of Applied Sciences, Germany

“Effect of Scavenger and Microwave Heating on Formaldehyde Emission from Particleboard”

Anil Kumar Sethy, Institute of Wood Science and Technology, Bangalore, India

“Biobased Porous Structures Based on Cellulosic Materials”

Axel Solt-Rindler, Wood K Plus, Austria

“Wood Species Dependent Performance of pMDI Adhesion”

Pia Solt, Wood K Plus, Austria

“Highly Anisotropic Wood-Based Composite with Layered Structure for Thermal and Electrical Conduction”

Hao Sun, Northeast Forestry University, China

“Low Temperature Adhesive Bonding for Structural Wood Materials”

Anita Tran, BOKU - University of Natural Resources and Life Sciences, Vienna, Austria

“Development of a Concept for Electrically Conductive Furniture Panels”

Christof Tschannen, Bern University of Applied Sciences, Switzerland

“Bonding Strength of Benuang and Duabanga Glulam Using Their Bark as Filler for Phenol Formaldehyde Resin”

Imam Wahyudi, Bogor Agricultural University (IPB), Indonesia

“Characteristic Properties of 3D-printed Wood/Polylactic Acid Composites with Different Extrusion Temperatures using Fused Deposition Modeling”

Chin-Hao Yeh, National Chung Hsing University, Taiwan

“Wood-Metal Bonding Strength Improved Via Atmospheric Plasma Pre-Treatment”

Jure Žigon, University of Ljubljana, Slovenia

18:55 to 19:05

Break

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TUESDAY, JULY 14

19:05 to 19:35

Wood Chemistry & Cell Biology

(Chair: Gloria Oporto, West Virginia University, USA)

“Simultaneous Chemical and Topographical Mapping of Wood Ultrastructures by Chemical Force Microscopy”

Claudia Gusenbauer, BOKU - University of Natural Resources and Life Sciences, Vienna, Austria

“Comparison of Wood Volumes and Quality Produced Both by Forestry and Agroforest Systems: The Case of Walnut (*Juglans x Regia x Nigra*)”

Lucie Heim, Arts et Métiers, France

“In Situ Synthesis of Mesoporous Carbon-encapsulated Iron Nanoparticles Derived from Rattan for Efficient Adsorption”

Lili Shang, International Center for Bamboo and Rattan, China

“The Visualization of Microstructure of Bamboo Nodes by High-resolution X-ray Microtomography (Micro-CT)” Shumin Yang, International Center for Bamboo and Rattan, China

“A Direct Bioautography as a Screening-method for Bioactive Wood Extracts against Basidiomycetes”

Regina Wanschura, Technical University of Munich, Germany

Time zone: GMT+2

WEDNESDAY, JULY 15

16:00 to 16:30

Wood in Health & Wellbeing

(Chairs: Mike Burnard, InnoRenew CoE & University of Primorska, Slovenia;
Eva Haviarova, Purdue University, USA)

“Building Wooden Hives for the Wellbeing of Honeybees”

Anna Duplex, University of Montpellier, France

“Human Physiological Responses during Tactile and Visual Contact with Densified and Laminated Wood”

Dean Lipovac, InnoRenew CoE & University of Primorska, Slovenia

“Preparation of Kenaf-based Nanobiocomposite as Sustainable Adsorbent for the Removal of Organic and Inorganic and Pathogenic Contaminants”

Sujata Mandal, University of North Texas, United States

“Wood as a Building Material Affects the Indoor Environment Quality (IEQ) and Well-being of Occupants”

Riina Muilu-Mäkelä, Natural Resources Institute Finland, Finland

“Demonstration of REED - Restorative Environmental and Ergonomic Design Principles on InnoRenew CoE Building Architecture”

Aarne Niemelä, InnoRenew CoE, Slovenia



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WEDNESDAY, JULY 15

16:30 to 16:50

Biodeterioration & the Impact of Forest Disturbances

(Chairs: Yusuf Sudo Hadi, Bogor Agricultural University (IPB), Indonesia;
Francesco Negro, DISAFA, University of Torino, Italy)

“Population Distribution and Structure of Afzelia Species in Southwestern Nigeria”

Adejoke Akinyele, University of Ibadan, Nigeria

“Termite Resistance of Stem and Branch Wood of Two Tropical Hardwood Species in Ghana”

Kwaku Antwi, Tamale Technical University, Ghana

“Accelerated Biodegradation of Kenaf Fiber/Soy Protein Composites Using Pectinase under Soil Burial Condition”

Yu Fu, University of North Texas, United States

“Impact of Forest Disturbances on Wood Quality: A Review”

Francesco Negro, DISAFA, University of Torino, Italy

16:50 to 17:00

Break

17:00 to 18:10

Wood Modification and Preservation

(Chairs: Anna Sandak, InnoRenew CoE & University of Primorska, Slovenia;
Dick Sandberg, Luleå University of Technology, Sweden)

“Investigation on Thermo-Hydro Mechanical Treatments Effects to Densify Tasmanian Planted and Native Timber Species”

Michelle Balasso, University of Tasmania, Australia

“Prospects for Powder Coatings”

Olha Baranova, National University of Life and Environmental Sciences of Ukraine, Ukraine

“Characterization of Spruce Log Soaking Water and their Antifungal and Wood Preserving Properties”

Aitor Barbero-López, University of Eastern Finland, Finland

“Integrated Flattening and Thermo-Hydro-Mechanical Modification of Bamboo Split”

Changhua Fang, International Center for Bamboo and Rattan, China

“Manufacturing and Optimization of a Cellulose-Based “Green” High-Performance Material”

Matthias Jakob, BOKU - University of Natural Resources and Life Sciences, Vienna, Austria

“Parameter Study on a Wood Impregnation Process”

Mariana Frias, Université Laval, Canada

“Inspired by Nature: A Novel Impregnation Process for Wood Preservation”

Shujun Li, Northeast Forestry University, China

“Microbial Dyeing - Infection Behavior and Influence of *Lasiodiplodia theobromae* in Poplar Veneer”

Yuansong Liu, Beijing Forestry University, China



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WEDNESDAY, JULY 15

“Effect of Moisture Content and Preservatives on Discoloration of Oil Palm Lumber”

Prosper Mensah, CSIR - Forestry Research Institute of Ghana, Ghana

“Characterization of some Properties of Fast-growing Masson Pine Wood Subjected to Two-step Freeze Silicon Oil Treatment”

Chukwuemeka, Onyinyechi Daphne, Michael Okpara University of Agriculture Umudike, Nigeria

“An Ionic-liquid Based Fire Retardant for Wood-based Panels”

Jussi Ruponen, Aalto University, Finland

“Bioinspiration as a Source for Alternative Wood Modification, Protection and Functionalization”

Anna Sandak, InnoRenew CoE & University of Primorska, Slovenia

“Hardness Determination in Surface-densified Wood: The Influence of the Hardness Test Method and the Density Profile”

Alexander Scharf, Luleå University of Technology, Sweden

“Coupling THM Treatments with Phenol-based Resin for Reduced Set-recovery”

Matthew Schwarzkopf, InnoRenew CoE & University of Primorska, Slovenia

18:10 to 18:20

Break

18:20 to 19:40

Wood Physics and Mechanics

(Chairs: Ales Straze, University of Ljubljana, Slovenia;

Mike Wolcott, Washington State University, USA)

“X-ray Computed Tomography Studies of Moisture-content Distribution in Spruce Boards Exposed to Liquid Water”

José Couceiro, Luleå University of Technology, Sweden

“Understanding the Energy Dissipation Process on Hardwoods and its Dependence on the Anatomical Structures”

Júlio Amando de Barros, University of Sao Paulo, Brazil

“Hardwood Cutting Forces at Different Speeds up to 80 m/s for an Evaluated Real Chip Thickness”

Ondrej Dvoracek, Wood K Plus, Austria

“Advanced X-ray CT Scanning: a Versatile Research Tool for Analyzing Cores of Living Trees”

Tom De Mil, Ghent University, Belgium

“A Sawmill Simulation Study of the Volume Yield Changes when Sawing with Thinner Kerfs”

Magnus Fredriksson, Luleå University of Technology, Sweden

“Mechanical Properties versus Structure of Oil Palm Wood (*Elaeis guineensis* JACQ.)”

Katja Fruehwald-Koenig, Ostwestfalen-Lippe University of Applied Sciences and Art, Germany

“Color Change and Physical–Mechanical Properties of Four Furfurylated Fast-Growing Tropical Wood Species”

Yusuf Sudo Hadi, Bogor Agricultural University (IPB), Indonesia

“Auto-ignition Characteristics of Wood”

Christian Hansmann, Wood K Plus, Austria

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WEDNESDAY, JULY 15

**“Mechanical Behavior of a Painted Wooden Panel from the Heritage Subject to Hygrothermal Variations:
Role of the Reinforcement”**

Delphine Jullien, University of Montpellier, France

“Dynamic Compensation of Load Cell Response for Cutting Force Measurements in Wood Machining”

Daniel Lechowicz, Wood K Plus, Austria

**“Assessment of Energy-Saving by Using a Membrane-Based Thermal Energy Recovery System to Improve the Energy
Efficiency of Kiln Drying Processes”**

Ling Li, University of Maine, United States

“The Steady-State Diffusion of Moisture in Southern Pine Lumber”

Ilona Peszlen, North Carolina State University, United States

“Review of Physical and Structural Properties of Oak Wood from Historical Constructions”

Ales Straze, University of Ljubljana, Slovenia

“Bark and Wood as Raw Materials for High Performance Insulations”

Oliver Vay, Wood K Plus, Austria

“Effects of Latent Heat Exchange on Water Vapor Sorption Kinetics”

Wim Willems, FirmoLin, Netherlands

19:40 to 19:50

Closing and Wrapup - Andreja Kutnar



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POSTER SESSION

(CHAIR: RUPERT WIMMER)

“Understanding the Thermodiffusion Properties of Ionic Liquids in a Cellulosic Medium”

student - Júlio Amando de Barros, University of Sao Paulo, Brazil

“Characterization of Spruce Log Soaking Water and their Antifungal and Wood Preserving Properties”

student - Aitor Barbero-López, University of Eastern Finland, Finland

“Hardwood Cutting Forces at Different Speeds up to 80 m/s for an Evaluated Real Chip Thickness”

student - Ondrej Dvoracek, Wood K Plus, Austria

“Simultaneous Chemical and Topographical Mapping of Wood Ultrastructures by Chemical Force Microscopy”

student - Claudia Gusenbauer, BOKU - University of Natural Resources and Life Sciences, Vienna, Austria

“The Importance of Cold Tack of Urea Formaldehyde in Plywood Production”

student - Elfriede Hogger, Wood K Plus, Austria

“Sustainable Development – International Framework – Overview and Analysis in the Context of Forests and Forest Products with Competitiveness and New Opportunities”

student - Annika Hyytiä, University of Helsinki, Finland

“Triboelectric Activation of Wood Surfaces by Mechanical Friction”

student - Lena Maria Leiter, BOKU - University of Natural Resources and Life Sciences, Vienna, Austria

“Structural, Chemical, and Multi-scale Mechanical Characterization of Waste Windmill Palm Fiber (*Trachycarpus fortunei*)”

student - Jing Li, Chinese Academy of Forestry, China

“Differences Between Hygroscopicity Limit and Cell Wall Saturation Investigated by LF-NMR on Thermally-modified and Lignin-removed Southern Pine (*Pinus spp.*)”

student - Jingyu Li, Beijing Forestry University, China

“Preparation of Kenaf-based Nanobiocomposite as Sustainable Adsorbent for the Removal of Organic and Inorganic and Pathogenic Contaminants”

student - Sujata Mandal, University of North Texas, United States

“Bioinspired Wood Protection – Evaluation of Wood Treated with Biofinish”

student - Faksawat Poohphajai, InnoRenew CoE, Slovenia

“ABES and DMA Cure Monitoring of Tannin Adhesive”

student - Jaša Saražin, University of Ljubljana, Slovenia



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POSTER SESSION

(CHAIR: RUPERT WIMMER)

“Highly Anisotropic Wood-Based Composite with Layered Structure for Thermal and Electrical Conduction”

student - Hao Sun, Northeast Forestry University, China

“Low Temperature Adhesive Bonding for Structural Wood Materials”

student - Anita Tran, BOKU - University of Natural Resources and Life Sciences, Vienna, Austria

“The Vibrational Properties of *Catalpa Ovata* Wood for the Back Plate of the Guqin”

student - Yi-Hsuan Tsai, National Taiwan University, Taiwan

“Effects of Wood Decay on the Deformation Mechanism and Shear Performance of Screwed and Nailed Joints”

student - Rintato Ueda, Hokkaido University, Japan

“Adding Value to Timber Components through Consideration of Demolition and Disassembly”

student - St. John Walsh, University College Dublin, Ireland

“Preparation of Cellulose Acetate-Polyacrylonitrile Composite Nanofibers by Multi-fluid Mixing Electrospinning Method: Morphology, Wettability, and Mechanical Properties”

student - Dong Wang, Northeast Forestry University, China

“Analysis of VOCs and Odor-active Compounds from Veneered Particleboard Coated with Water-based Lacquer”

student - Qifan Wang, Northeast Forestry University, China

“Effect of Lacquer Decoration on VOCs and Odor Release from *P.neurantha* (Hemsl.) Gamble”

student - Bin Zeng, Northeast Forestry University, China

“Properties of Particleboard Made from Recycled Polystyrene and *Cocos Nucifera* Stem Particles”

Babatunde Ajayi, Federal University of Technology Akure, Nigeria

“Heterospecific Tree Density and Environmental Factors affect *Afzelia africana* Sm. Population Structure in the Pendjari Biosphere Reserve, West Africa: Implications for Management and Restoration.”

Atanasso Akpovi Justin, Université d'Abomey-Calavi, Benin

“Enhancing the Fire Resistance of Cement-bonded Particleboard made of Scots Pine and Poplar”

Tibor L. Alpár, University of Sopron, Hungary

“Promotion of Eucalyptus Hybrid Species as Utility Poles for Electricity Transmission: The Mechanical Strength Properties of *Eucalyptus urograndis* Grown in Ghana”

Emmanuel Appiah-Kubi, University of Education, Winneba, Ghana

“Increasing Cold Tack of pMDI resin with Partial Soy Flour Substitution”

Osei Asafu-Adjaye, Auburn University, United States

“Adhesive Bonding of Planed and Sawn Jointed Sugar Maple Lumber: Bending Strength of Glued Joints”

Mohammadali Azadfar, State University of New York, United States



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POSTER SESSION

(CHAIR: RUPERT WIMMER)

“The Influence of Oil Uptake on Moisture Excluding Efficiency in Thermally Treated Wood”

Jan Baar, Mendel University in Brno, Czech Republic

“Non-linear Material Model of Mechanical Behaviour of Oak Wood Exposed to Different Relative Humidity Conditions”

Martin Brabec, Mendel University in Brno, Czech Republic

“Development of Technology for One-sided Surface Carbonization of Wood”

Petr Cermak, Mendel University in Brno, Czech Republic

“Surface Free Energy of Ten Tropical Wood Species and their Acrylic and Alkyd Varnishes Wettability”

Wayan Darmawan, Bogor Agricultural University (IPB), Indonesia

“Bond Strength of Wood Adhesives: The Sensitivity of Standard Test Methods to Imperfections”

Mohammad Derikvand, Aalto University, Finland

“Experimental Analysis of Mass Loss Kinetics during Heat Treatment of Wood”

Jakub Dömény, Mendel University in Brno, Czech Republic

“Smart Thumper™, a Non Destructive Lumber Evaluation Phone Application”

Frederico José Nistal França, Mississippi State University, United States

“Building a Portable Offline Bark Identification System through Training a MobileNet-V2 by Knowledge Distilling and Network Pruning”

Rado Gazo, FNR, Purdue University, United States

“Assessing Success of Sustainability Curriculum Development Efforts: Evidence from a U.S. Higher Education Institution”

Rado Gazo, FNR, Purdue University, United States

“Circular Economy Principles for Furniture Industry”

Eva Haviarova, FNR, Purdue University, United States

“Natural Insulating Material in the Form of Burning”

Michaela Horváthová M, University of Zilina, Slovakia

“Dynamic Properties of Traditional Timber Building”

Gi Young Jeong, Chonnam National University, South Korea

“Cellulose Nanofiber Effect on Bonding Strength of PUR and PVAc Glued Wood Joint in Shear Loading”

Gourav Kamboj, Czech University of Life Science, Czech Republic



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POSTER SESSION

(CHAIR: RUPERT WIMMER)

“Digital Solutions in Architecture and Timber Construction”

Manja Kitek Kuzman, University of Ljubljana, Slovenia

“Investigations of the Strength and Resistance of Glued Pine Wood from Tuchola Region”

Tomasz Krystofiak, Poznań University of Life Sciences, Poland

“Variations of Earlywood Vessel Diameter of *Quercus petraea* Liebl According to Tree Size and Altitude”

Jean-Michel Leban, INRA, France

“Comparative Study on Moso Bamboo Shear Strength in Four Test Methods”

Huanrong Liu, International Center for Bamboo and Rattan, China

“Development of Palm Oil-based Resins for Natural Fiber Composites”

Wendi Liu, Fujian Agriculture and Forestry University, China

“Anatomical Features and Growth Ring Width Correlation of *Catalpa bungei*”

Yamei Liu, Anhui Agricultural University, China

“Structural Reliability Analysis of Cross Laminated Timber Plates Submitted to Bending Test”

Nilson Mascia, State University of Campinas, Brazil

“Physical Properties of Particleboard Produced from Residues of *Musa paradisiaca pseudostem*, *Theobroma cacao* and *Ceiba pentandra*”

Prosper Mensah, CSIR-Forestry Research Institute of Ghana, Ghana

“Characterization of Particleboard Produced from Residues of *Musa paradisiaca pseudostem*, *Theobroma Cacao* Pod, *Theobroma Cacao* Stem and *Ceiba Pentandra*”

Stephen Mitchual, University of Education, Winneba, Ghana

“Global CLT Industry in 2020: Growth Beyond the Alpine Region”

Lech Muszynski, Oregon State University, United States

“How *Megaplatus mutatus* Behaves inside a Trunk? Studying its Galleries via Computerized Axial Tomography and Digital Images Processing”

Esteban Ceriani Nakamurakare, CONICET - National University of Lujan, Argentina

“Introducing the SWST Wood Technology Student Chapter at DISAFA, University of Torino, Italy”

Francesco Negro, DISAFA, University of Torino, Italy

“Investigation of the Damping Behaviour of Beech Material”

Gábor Németh, University of Sopron, Hungary

“Measuring the Heat of Interaction between Lignocellulosic Materials and Water”

Martin Nopens, Universität Hamburg, Germany



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“Combined FTIR Spectroscopy and Rheology for Investigating the Influence of Different Wood Extracts on Adhesive Curing”

Merve Özparpucu, Technical University of Munich, Germany

“Dynamic Behavior of Phenol-formaldehyde Modified Wood under Cyclic Loading”

Jaka Gašper Pečnik, InnoRenew CoE, Slovenia

“The Way of Using Logging Waste in Wood-based Panels Production”

Olena Pinchevska, National University of Life and Environmental Sciences of Ukraine, Ukraine

“Utilization of Juniper Residues for Strandboard Manufacturing”

Tomas Pipiska, Oregon State University, United States

“Surface Modification of Bamboo Fibers for Reinforcing Cement-based Composites”

Renhui Qiu, Fujian Agriculture and Forestry University, China

“Mapping of Moisture on Wood Surface with Hyperspectral Imaging”

Jakub Sandak, InnoRenew CoE & University of Primorska, Slovenia

“Reduction of Phenol Formaldehyde Resin Content in Dry-processed Fibreboards by Adding Hydrolysis Lignin”

Viktor Savov, University of Forestry, Bulgaria

“Life Cycle Assessment of the New InnoRenew CoE Research Building – Hot Spots and the Effects of Methodological Differences on the Results for a Wooden Frame Building”

Erwin M. Schau, InnoRenew CoE, Slovenia

“Adhesives Based on Lignin, Tannin and Liquefied Wood”

Milan Sernek, University of Ljubljana, Slovenia

“Structural Joints of Furniture Made of Cardboard and Plywood”

Alena Sobotkova, Mendel University in Brno, Czech Republic

“Paper and Plastic Waste Composite Boards for Furniture”

Alena Sobotkova, Mendel University in Brno, Czech Republic

“Attracting Children to Wood Science and Renewable Material Professions”

Vesna Starman, InnoRenew CoE, Slovenia

“Effect of Moderate Thermal Treatment on Properties of Resonance Spruce for Piano Soundboard”

Jan Tippner, Mendel University in Brno, Czech Republic

“Effect of Cutting Parameters on Dust Emission and Surface Roughness during Helical Planing Sucupira Wood”

Bruna Ugulino, FPInnovations, Canada



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“Effects of Radial Growth Rate on Wood Quality Parameters of Superior Teakwood from Muna Island, Indonesia”

Imam Wahyudi, Bogor Agricultural University (IPB), Indonesia

“Modeling of Thermal Performance of Cellulose Insulation Imbedded with Phase Change Material”

Xun Wang, University of North Texas, United States

“Segmentation of Knot Defects on Coniferous Lumber Surface Using Deep Neural Network”

Hwanmyeong Yeo, Seoul National University, Republic of Korea

“Classification of Heat Treatment Degree of Wood Components Using Near-infrared Spectroscopy”

Hwanmyeong Yeo, Seoul National University, Republic of Korea

“Enhancing Particleboard Panels’ Performance Properties by Nanocellulose and Boric Acid Reinforcement”

Mert Yildirim, Istanbul University - Cerrahpasa, Turkey

“Development of Low Formaldehyde-emitting Furniture Components by Nanocellulose and Boric Acid Reinforcement”

Mert Yildirim, Istanbul University - Cerrahpasa, Turkey

“Improving the Mould and Blue-stain-resistance of Bamboo through Acidic Hydrolysis”

Zixuan Yu, International Center for Bamboo and Rattan, China

“Physical and Mechanical Properties of Flatten Bamboo Panel and Bonding Performance in Different Bonding Surface”

Xiubiao Zhang, International Center for Bamboo and Rattan, China