



**SOCIETY OF
WOOD SCIENCE &
TECHNOLOGY**



**June 30 – July 5, 2024
Grand Hotel Bernardin
Portorož, Slovenia**

SWST 67th International Convention

Advancing Regenerative Sustainability with Wood Science

AGENDA

Sunday, June 30

- 12:00 - 16:00 Registration
- 13:00 - 17:00 Young Researcher / Mentor Activity
- 18:30 - 21:00 Welcome Reception (Women in Science Exhibit) Hotel Patio

Monday, July 1

All Technical Sessions will be held in Congress Halls at Grand Hotel Bernardin

General Co-Chairs: Ilona Peszlen (North Carolina State University, USA) & Andreja Kutnar (UP&InnoRenew CoE, Slovenia)

- 7:00-8:00 Registration
- 8:00-8:45 Keynote Speaker - Andreja Kutnar (InnoRenew CoE & University of Primorska, Slovenia)
"Where is wood science going"

INNOVATION IN THE FOREST SECTOR

Chairs: Manja Kitek Kuzman (University of Ljubljana, Slovenia) & Eva Haviarova (Purdue, USA)

- 8:45 - 9:00 **Martin Riegler** (Wood K plus, Austria), Daniela Groiss-Fuertner (Wood K plus, Austria)
"Potentials of Wood Products in Construction to Mitigate Environmental Effects - an Austrian Case Study"
- 9:00-9:15 **Robert Mařík** (Mendel University in Brno, Czech Republic), Valentino Cristini (Mendel University in Brno, Czech Republic)
"Acoustic Tomography for Standing Trees"
- 9:15 - 9:30 **Andreja Kutnar** (UP&InnoRenew CoE, Slovenia), Victoria Herian (USA)
"Historical overview of themes at the SWST's Conventions"
- 9:30-10:30 Coffee



Monday, July 1

STATE OF THE ART OF WOOD SCIENCE

Chair: Ilona Peszlen (North Carolina State University, USA) & Ruppert Wimmer (BOKU, Austria)

10:30 -10:45	Samuel Zelinka (US Forest Service FPL, USA), Keith J. Bourne (US Forest Service FPL, USA), Toby Beynon (Interfor, Canada), Christoph F. Schauwecker (Arclin Surfaces, USA), Daniel Davis (Arclin Surfaces, USA) "Fire resistance of floor framing members: Development of an intermediate scale test"
10:45 -11:00	Erni MA , Jingyu LI (Beijing Forestry University, China) "Investigation on Two Types of Cell Wall Water and Their Effects on Dimensional Changes of Wood"
11:00 -11:15	Yangyang Ran, Yuxiang Huang, Wang Wang , Jinzhen Cao (Beijing Forestry University, China) "Deep Eutectic Solvent Assisted Themally-modified Wood for Enhanced Autonomous Indoor Humidity Regulation"
11:15 -11:30	Heikko Kallakas (Tallinn University of Technology, Estonia), Nayomi Plaza, Casey Crooks, Derek Turner, Matthew Gargulak, Christopher G. Hunt, Charles R. Frihart (USDA Forest Service, FPL, USA) "Impact of Soy Protein Solubility and Particle Size on Adhesive Performance"
11:30 -11:45	Rosmi Biyo'O, Achille Bernard Biwole (University of Douala, Cameroon), Rostand Moutou Pitti (Universuté Clermont Auvergne, France), Charly Julien Nyobe, Emmanuel Yamb (University of Douala, Cameroon) "Crack Propagation on some Central African Tropical Woods: Experimental Approach and Numerical Simulation"
11:45 -12:00	Jingxin Wang , Perry Peralta, Medwick Byrd, Ilona Peszlen (North Carolina State University, USA) "Strategic Future of Forest Biomaterials Education, Innovation, and Engagement at North Carolina State University"
12:00 -13:30	Lunch



NOVEL APPLICATIONS OF WOOD IN THE BUILT ENVIRONMENT

Chairs: Bohumil Kasal (Fraunhofer WKI, Germany) & Levente Denes (West Virginia University, USA)

13:30 -13:45	Tomas Bravo , Joseph Gattas, Cristian Maluk (University of Queensland, Australia) "Downscale testing as an alternative to full-scale non-destructive testing of laminated timber"
13:45 -14:00	Joshua Madden (University of Queensland, Australia), Felix Wiesner (University of British Columbia, Canada), Ryan Hilditch (Hydrock Pty Ltd, Australia), Adam Ervine (Bloom Fire Consulting, Australia), David Lange (University of Queensland, Australia) "The Design of Timber Structures for Fire, and the Importance of Holistic Design"
14:00 -14:15	Sarah Suarez , Johannes Konnerth, Maja Vasiljevic (BOKU, Austria), Martin Riegler (Wood K plus, Austria), Anita Tran (BOKU, Austria) "Electrical and Mechanical Characterisation of Adhesive Functionalised with Electrically Conductive Fillers"
14:15 -14:30	Ana Prslja , Rupert Wimmer (BOKU, Austria), Stergios Adamopoulos (Swedish University of Agricultural Sciences, Sweden) "Pioneering fully bio-based material solutions of 3D-printed recyclable wall structures for houses"
14:30 -14:45	Lei Han (InnoRenew CoE & UP, Slovenia), Dick Sandberg (Luleå University of Technology, Sweden), Andreja Kutnar (InnoRenew CoE & UP, Slovenia) "A 3D-Scanning Method to Assess Deformation of Densified Beech Dowel"
14:45 -15:00	Lukas Malzl (BOKU, Austria) "Bending performance of cross-wise adhered unidirectional pine strand panels"
15:00 -15:15	Kiia Roininen, Szabolcs Galambosi, Pekka Kaitaniemi, Tuula Jyske , Juha Rikala (University of Helsinki, Finland), Michael Burnard (InnoRenew CoE & UP, Slovenia, University of Helsinki, Finland), Ritva Toivonen, Laura Alakukku (University of Helsinki, Finland) "Dynamic moisture content of CLT wall elements from manufacture through construction"



15:15 -15:30 Coffee

Monday, July 1

POSITIVE ENVIRONMENTAL CONTRIBUTIONS

Chair: Ben Neyses (Luleå University of Technology, Sweden) & Mariapaola Riggio (Oregon State University, USA)

- 15:30 -15:45 Wanhe Hu, Bibek Aryal (West Virginia University, USA), **Jingxing Wang** (Department of Forest Biomaterials, USA), Travis Goldsmith, Thomas Batchelor, Anand Ranpara, Timothy Nurkiewicz (Center for Inhalation Toxicology, USA), Robert Burns (West Virginia University, USA)
"Wood and municipal solid wastes for value-added bioproducts"
- 15:45 -16:00 **Armando McDonald** (University of Idaho, USA)
"CO₂ Curing and Sequestration in Wood-Sodium Silicate Composites"
- 16:00 -16:15 **Jonas Eckardt** (University of Padua, Italy), Thomas Sepperer (Salzburg University of Applied Sciences, Austria), Gianluca Tondi (University of Padua, Italy)
"Usability of hydrolysable tannin for the production of tannin-furanic foams compared to condensed tannin"
- 16:15 -16:30 **Wilfried Sailer-Kronlachner**, Peter Bliem, Hendrikus Van Herwijnen (Wood K plus, Austria)
"Replacement of Fossil-based Phenol by Bio-based Lignin: Phenol-Lignin Blends as Basis for Wood Adhesive Synthesis"
- 16:30 -16:45 **Tahiana Ramanantoandro**, Andry Clarel Raobelina (University of Antananarivo, Madagascar)
"How can the use of wood in construction contribute to the development of a carbon neutral bioeconomy in Africa?"
- 16:45 -17:00 **Daniela Groiss-Fuertner** (Wood K plus, Austria), Sabine Ober (BOKU, Austria), Martin Riegler (Wood K plus, Austria)
"Creating a Carbon Sink through Innovative Wood-hybrid Elements and Re-use Concepts in the Wood Construction - A Life Cycle Assessment Perspective"
- 17:00 -17:15 **Tripti Singh** (National Centre for Timber Durability & Design Life)
"Integrating timber circularity: A holistic strategy for sustainable wood resource management in Australia"
- 17:15 -17:30 Yingchun Sun, **Ru Liu**, Ling Long, Yuhui Sun (Chinese Academy of Forestry, China)
"A novel self-wrinkled polyurethane-acrylate wood coating with self-matting, anti-fingerprint performance and skin-tactile feeling via excimer lamp/UV curing"
- 17:30 -18:15 **Discussion with the editors of Springer Handbook of Wood Science and Technology**
(Peter Niemz, Alfred Teischinger, Dick Sandberg)

Tuesday, July 2

7:00 - 8:00 Registration

STATE OF THE ART OF WOOD SCIENCE

Chair: Ilona Peszlen (North Carolina State University, USA) & Ruppert Wimmer (BOKU, Austria)

- 8:00 - 8:15 **Shohei Kajikawa**, Megumi Goto, Takashi Kuboki (University of Electro-Communications, Japan)
"Influence of Particle Size on Thermal Flow Behavior of Wood Powder with Sucrose and Citric Acid"
- 8:15 - 8:30 Dunrui Cui, Jianyi Jiang, Jing Xue, Shumin Liu, Wang Wang, **Jinzhao Cao** (Beijing Forestry University, China)
"Fungal Competition in Thermally Modified Scots Pine Wood as Related to Chemical Composition Changes"

Tuesday, July 2

7:00 - 8:00 Registration

STATE OF THE ART OF WOOD SCIENCE

Chair: Ilona Peszlen (North Carolina State University, USA) & Ruppert Wimmer (BOKU, Austria)

8:30 - 8:45 Trisna Priadi (IPB University, Indonesia), **Tekat Dwi Cahyono** (Universitas Darussalam Ambon, Indonesia)
"Dimensional stability and wettability of samama wood after boron and citric acid impregnation, and heat treatment"

8:45 - 9:00 **Vaclav Sebera**, Patrik Nop, Jan Tippner (Mendel University in Brno, Czech Republic)
"Numerical Modal Analysis of CLT with Imperfections in Adhesive Bondline"

STATE OF THE ART OF WOOD SCIENCE

Chair: Ilona Peszlen (North Carolina State University, USA) & Ruppert Wimmer (BOKU, Austria)

9:00 - 9:15 **Anna Bogun** (University of Hamburg, Germany)
"Macroarray for Genetic Wood Identification of Trade-Relevant Tropical CITES Timber Species"

9:15 - 9:30 Qifan Wang (Northwest Agriculture & Forestry University, China)
"Sensory characterization and identification of odorants in birch wood (*Betula pendula* Roth)"

9:30 - 9:45 **Jeff Morrell**, Jed Cappellazzi, Matthew Konkler, Gerald Presley (Oregon State University, USA),
 Tripti Singh (USC, Australia)
"Long term performance of external barriers for minimising preservative migration and limiting fungal attack"

9:45 - 10:00 **Natalia Farkas**, Charles Boardman, Eleanor Lazarcik, Samuel Zelinka (US Forest Service, FPL, USA)
"Measurement and simulation of moisture transport in wood during isothermal drying"

10:00 - 10:30 Coffee



NOVEL APPLICATIONS OF WOOD IN THE BUILT ENVIRONMENT

Chairs: Bohumil Kasal (Fraunhofer WKI, Germany) & Levente Denes (West Virginia University, USA)

10:30 - 10:45 **Qiang Gao** (Beijing Forestry University, China)
"Preparation of strong and thermally conductive spider-silk-inspired soybean-protein-based adhesive for thermally conductive wood-based composites"

10:45 - 11:00 **Jakub Grzybek**, Thomas Schnabel (Salzburg University of Applied Sciences, Austria)
"Experimental Evaluation of Phase Change Material-Impregnated Wood for Thermal Management in Lightweight Building Structures"

11:00 - 11:15 **Milan Šernek** (University of Ljubljana, Slovenia), Andrej Fašalek (BOKU, Austria)
"Hybrid GLULAM made of beech and spruce wood bonded with MUF and PUR adhesives"

11:15 - 11:30 Annalisa Magnabosco, Maurizio Avancini, **Jonas Eckardt** (University of Padua, Italy), Primož Sket (National Institute of Chemistry, Slovenia), Gianluca Tondi (University of Padua, Italy)
"A bio-based solution to glue solid wood: Starch-tannin adhesives"

11:30 - 11:45 **Rico Ruffino**, Frederik Laleicke, Rudi Seracino (North Carolina State University, USA)
"Sustainable Bus Shelter"

11:45 - 12:00 **Vikram Yadama**, Avishek Chanda, Muhammad Khusairy Bin Bakri (Washington State University, USA)
"Natural fiber-based prepregs for thermoforming composite laminates"

Tuesday, July 2

NOVEL APPLICATIONS OF WOOD IN THE BUILT ENVIRONMENT

Chairs: Bohumil Kasal (Fraunhofer WKI, Germany) & Levente Denes (West Virginia University, USA)

12:00 -12:15 **Kevin Vitzthum** (W.E.I.Z. Forschungs & Entwicklungs GmbH, Austria), Hajir Al-musawi (BOKU, Austria), Johannes Painer ((W.E.I.Z. Forschungs & Entwicklungs GmbH, Austria), Bernhard Ungerer, Ulrich Müller (BOKU, Austria), Wolfgang Knöbl (Weitzer Woodsolutions GmbH, Austria), Thomas Krenke (W.E.I.Z. Forschungs & Entwicklungs GmbH, Austria)

"Estimating grain angle of thin beech veneer by means of sound transmission speed"

12:15 -12:30 **Vikram Yadama** (Washington State University, USA), Ian Morrell (Oregon State University, USA), Avishek Chanda, Muhammad Khusairy Bin Bakri (Washington State University, USA), Arijit Sinha (Oregon State University, USA)

"Connection performance of new mass timber panels fabricated from low-quality small diameter trees"

12:30 -13:45 Lunch



THE SIGNIFICANCE OF BASIC WOOD SCIENCE IN A SUSTAINABLE WORLD

Chair: Rupert Wimmer (BOKU, Austria) - organized by IAWS

13:45 -14:45 **Ingo Burgert** (ETH Zurich, Switzerland)
"Wood materials - potentials and limitations" (Academy Lecture)

14:50 -15:10 **Katarina Čufar** (University of Ljubljana, Slovenia)
"Wood anatomy and dendrochronology - a long tradition and current challenges"

15:10 -15:30 **Bohumil Kasal** (Fraunhofer WKI, Germany)
"Materials from renewable resources - great future or just a modern trend? Are they really sustainable?"

15:30 -15:50 **Juan Li** (Fraunhofer WKI, Germany)
"Aging of wood as a construction material measured by atomic force microscopy"

15:50 -16:10 **Andreas Krause** (Thünen Institute, Germany)
"Swelling of wood cell wall - in 3D at high resolution"

16:10 -16:30 **Markus Rüggeberg** (Technical university in Dresden, Germany)
"The dimensional instability of wood - a new look on an old problem"

POSTER SESSION and STUDENT POSTER COMPETITION

16:30-19:30

Reception Sponsored by IAWS

Chair: Rupert Wimmer (BOKU, Austria)

James Kudjo Govina, Robert Nemeth (University of Sopron, Hungary)
"Tree-Ring Characteristics and Climate-growth Relationship for Quercus cerris (L.) in West Hungary"

Estel Coloma Gonzalez, Adria Canals Calderon, Anna Cuadrench, Neus Puy (Forest Science and Technology Centre of Catalonia, Spain), Mireia Mora (Universitat Autònoma de Barcelona, Spain)
"Synthesis of Greener Phenol-Formaldehyde Resins from Pyrolytic Lignin of Forest Biomass"

Samuel Zelinka (US Forest Service FPL, USA), Emil Thybring (University of Copenhagen, Denmark)
"Lessons from a worldwide interlaboratory study on water vapor sorption"

Tuesday, July 2

POSTER SESSION and STUDENT POSTER COMPETITION

16:30-19:30

Reception Sponsored by IAWS

Chair: Rupert Wimmer (BOKU, Austria)

Andry Clarel Raobelina (University of Antananarivo, Madagascar), Gilles Chaix (CIRAD, France), Tahiana Ramanantoandro (University of Antananarivo, Madagascar)

"Near infrared spectroscopy can be an effective tool to control logging and trade of Malagasy rosewood, palisander and ebony woods"

Muhammad Effsal Hadinata, Paweł Kozakiewicz (Warsaw University of Life Sciences, Poland)

"Radial variability of silver fir wood density depending on genetic origin"

Bat-Uchral Batjargal, Taekyeong Lee, Hwanmyeong Yeo (Seoul National University, South Korea), Chang-Jin Lee (Jeonbuk National University, South Korea), Yonggun Park, Chang-Deuk Eom (National Institute of Forest Science, South Korea)

"Influence of Internal Moisture Transfer Direction and Surface Moisturization on Drying Defect Occurrence in Red Pine Round Timber"

Bat-Uchral Batjargal, Taekyeong Lee, Hwanmyeong Yeo (Seoul National University, South Korea), Sungwook Hwang (Kyungpook National University, South Korea), In-Gyu Choi, Hyo Won Kwak, Sangwoo Park, Jong-Chan Kim (Seoul National University, South Korea)

"Analyzing Moisture Content in Natural Wood Biomass and Sweet Sorghum Mixed with Soil using NIR Spectrum"

Soichi Tanaka (Kyoto University, Japan), Hiroaki Horiyama (National Institute of Advanced Industrial Science and Technology, Japan), Keisuke Kojiro (Kyoto Prefectural University, Japan), Tomoya Imai (Kyoto University, Japan)

"In situ SAXS analysis for tracking the change in multiscale structure of wood under flexural deformation"

Peter Jurkovic (VIPO, Slovakia), Igor Novák (Slovak Academy of Sciences, Slovakia), Ján Sedliačik, Pavlo Bekhta (Technical University in Zvolen, Slovakia), Angela Kleinová (Slovak Academy of Sciences, Slovakia), Ján Matyašovský (VIPO, Slovakia)

"Surface and Chemical Properties of Beech Wood after Treatment with Saturated Steam and Cold Plasma"

Ján Sedliačik (Technical University in Zvolen, Slovakia), Igor Novák, Angela Kleinová (Slovak Academy of Sciences, Slovakia), Ján Matyašovský, Peter Jurkovic (VIPO, Slovakia), Pavlo Bekhta (Technical University in Zvolen, Slovakia)

"Properties of Steamed Birch Wood Treated by Discharge Plasma"

Barbora Vojáčková, Jan Tippner (Mendel University in Brno, Czech Republic), Jan Novotný, Barbora Navrátilová (Global Change Research Institute CAS, Czech Republic)

"Reconstruction of tree structure in mechanical analysis"

Jan Tippner, Barbora Vojáčková, Robert Mařík, Patrik Nop (Mendel University in Brno, Czech Republic)

"From Static to Dynamic Mechanical Models of Trees"

Neja Bizjak (University of Ljubljana, Slovenia), Dávid Brodňanský, Jakub Kelar (Masaryk University, Czech Republic), Sebastian Dahle (University of Ljubljana, Slovenia)

"DCSBD Plasma Treatment as an Alternative to Commercial Surface Degreasing Agents Before Applying Clear Water-based Wood Coatings"

Cody Wainscott (Oregon State University, USA)

"Characterization of bondlines in cross-laminated timber made with preservative-treated lumber"

Zizhen Gao, Meng Gong, Mohsen Mohammadi (University of New Brunswick, Canada), Ling Li (University of Maine, USA)

"Fracture behaviour of solid and adhesive-bonded wood"

Meta Pivk, Jaka Levanič, Miha Humar (University of Ljubljana, Slovenia)

"Possibilities of hyperspectral imaging for sorting of recovered wood"

Keon-Ho Kim, Chang-Deuk Eom, Myungkil Kim (National Institute of Forest Science, South Korea), Byeong-il Ahn (Korea University)

"Major wood products monitoring tools in Korea Market"

Isaac Nunoo (Tropenbos Ghana, Ghana), Rosemary Nunoo, Gifty Houston Yankson (Rural Education and Agriculture Development International, Ghana), Georgina Nunoo (Institute of Agriculture, Education and Rural Development Research, USA)

"Saving and Restoring Ghana's Ecosystem: Evidence From Cocoa Agroforestry System"

Michael Adedotun (Michael Adedotun Oke Foundation, Nigeria)

"A Brief Overview of the Marketing of Firewood in the Federal Capital Territory of Abuja, Nigeria"

Daouia Messaoudi (Groupe Berkem, France), Andrew H.H. Wong (International Wood Culture Society, Malaysia)

"High hardwood protection from subterranean termites in tropical zones with new generation biobased/vegetal extracts in water-borne solutions"

Tuesday, July 2

POSTER SESSION and STUDENT POSTER COMPETITION

16:30-19:30

Reception Sponsored by IAWS

Chair: Rupert Wimmer (BOKU, Austria)

Eunice Adum-Atta, Kwadwo Boakye Boadu (Kwame Nkrumah University of Science and Technology, Ghana)

"Combatting Wood Misrepresentation in Domestic Markets: An Investigation in Ghana's Timber Industry"

Jiaqi Yu (University of Sheffield, UK), Kening Guo (University College London, UK)

"Assessment of Operational Carbon Emissions for Cross-Laminated Timber According to In-situ Measured U-value"

Pavlo Bekhta, Ján Sedliačik (Technical University in Zvolen, Slovakia), Vladimír Gryc (Mendel University in Brno, Czech Republic), Olga Sergan-Romanyuk (Ukrainian National Forestry University, Ukraine), Luboš Krišťák, Ján Iždinský (Technical University in Zvolen, Slovakia), Ján Matyašovský, Peter Jurkovic (VIPO, Slovakia)

"Some Properties of Plywood Panels Manufactured by Combining Veneers of Different Wood Species in One Structure"

Yoon-Seong Chang, Yonggun Park (National Institute of Forest Science, South Korea), Hee Han (Seoul National University, South Korea)

"Value Chain Analysis of Utilizing By-products from Wood Processing in South Korea"

Tajana Kruhac, Andreja Pirc Barčič, Kristina Klarić (University of Zagreb, Croatia)

"Life Cycle Assessment (LCA) of Sawn Veneer Wall Covering"

Franz Dolezal, Tudor Dobra, (IBO-Austrian Institute for Building and Ecology, Austria), Thomas Zelger (University of Applied Sciences Technikum Wien, Austria), Mathias Neumann (BOKU, Austria)

"Evaluation of the effect of biogenic carbon in wooden building products on climate change by dynamic modelling"

Eva Haviarova, Jue Mo (Purdue University, USA), Manja Kitek Kuzman (University of Ljubljana)

"Mapping the Value Chain of Wood Products"

Albert Kravos, Jakub Sandak (InnoRenew CoE & UP, Slovenia)

"Quantifying olive leaf pruning waste"

Blanca Lewo Nkondi, Rostand Moutou Pitti, Benoît Blaysat (Université Clermont Auvergne, France), Nicolas Azama (Institut National du Bâtiment et des Travaux Publics, Democratic Republic of the Congo), Héléne Baynast, Fabrice Audonnet, Mathilde Morvan (Université Clermont Auvergne, France)

"Improving the Thermal Performance of Fired Clay Bricks Produced in the Far West of DR Congo"

Richeal Turkson, Kwadwo Boakye Boadu (Kwame Nkrumah University of Science and Technology, Ghana)

"Assessing Heavy Metal Concentrations in Mangrove Stems Used for Traditional Fish Smoking: Implications for Sustainable Wood Practices and Environmental Health"

Sungwook Won, Sangwoo Park, Junsik Bang, Jungkyu Kim, Seungoh Jung, Heecheol Yun, Seojin Kim, Hyoseung Lim, Jong-Chan Kim, Hwanmyeong Yeo, In-Gyu Choi, Hyo Won Kwak (Seoul National University, South Korea)

"Structural control and chemical modification of lignin for application as biopolyol in polyurethane production"

Seungoh Jung, Sangwoo Park, Junsik Bang, Jungkyu Kim, Heecheol Yun, Sungwook Won, Hyoseung Lim, Seojin Kim, Jong-Chan Kim, Hwanmyeong Yeo, In-Gyu Choi, Hyo Won Kwak (Seoul National University, South Korea)

"Lignocellulosic Biomass-based Hydrogel for Efficient Microplastic Removal"

Heecheol Yun, Sangwoo Park, Junsik Bang, Jungkyu Kim, Seungoh Jung, Sungwook Won, Seojin Kim, Hyoseung Lim, Jong-Chan Kim, In-Gyu Choi, Hwanmyeong Yeo, Hyo Won Kwak (Seoul National University, South Korea)

"Preparation of alkylated graphene-coated melamine foam using lignin as an effective binding agent for application in oil-water separation process"

Annika Hyytiä (University of Helsinki, Finland)

"Sustainable development – international framework – overview and analysis in the context of forests and forest products with sustainable business opportunities"

Benjamin Okoe, Charles Antwi Bosiako, Kwadwo Boakye Boadu (Kwame Nkrumah University of Science and Technology, Ghana)

"Advancing Sustainability in Lithium-ion Batteries: Utilizing Coconut Shell Activated Charcoal as an Environmentally Friendly Electrolyte"

Yuyang Zhou, Meng Gong, (University of New Brunswick, Canada), Mohammad Mohammad (Natural Resources Canada, Canada)

"Creep behaviors of packaging boxes reinforced with columns"

Marlene Cramer (Edinburgh Napier University, UK)

"Predicting Compression Strength Perpendicular to Grain in Hardwoods"

Lukmanul Hakim Zaini, Stefan Veigel, Wolfgang Gindl-Altmatter (BOKU, Austria)

"Different Strategies for Utilization of Inner Part of Oil Palm Trunk Waste"

Tuesday, July 2

POSTER SESSION and STUDENT POSTER COMPETITION

16:30-19:30

Reception Sponsored by IAWS

Chair: Rupert Wimmer (BOKU, Austria)

Magdalena Komorowicz (Poznan Institute of Technology, Poland), Anita Schroeter-Zakrzewska (Poznan University of Life Science, Poland), Dominika Janiszewska-Latterini (Poznan Institute of Technology, Poland)

"Compost from post-production MDF waste – value-added approach towards circularity and cascading utilization of wood"

Michael Adedotun (Michael Adedotun Oke Foundation, Nigeria)

"Advantages of Using the Wooden Structure In the Barbershop in Gwagwalada, Federal Capital Territory, Abuja, Nigeria: Area Council"

Andreas Reichenauer, Franz Dolezal (IBO-Austrian Institute for Building and Ecology, Austria)

"A novel vibration sensing device for measuring flanking transmission in mass timber buildings"

Liam O'Brien (University of Maine, USA)

"The hygrothermal performance and durability assessment of a wood-fiber insulation and cross-laminated timber wall envelope"

Frederik Laleicke, Rico Ruffino, Marko Hakovirta, Philip Agbesi (North Carolina State University, USA)

"Thermal Modification and Steam Bending for Exterior Applications"

Tuula Jyske, Emilia Rosenborg, Jaakko Jussila (University of Helsinki, Finland), Jutta Kauppi (Natural Resources Institute Finland, Finland), Jouni Pykäläinen (University of Eastern Finland, Finland)

"Healing interiors: in search of yet non-quantitative dimensions of social sustainability in building with wood concepts"

Jozef Rahel, Tomas Pipiska, Barbora Pijakova, David Decky, Marek Nociar, Václav Sebera (Mendel University in Brno, Czech Republic), Pavlo Bekhta (Technical University in Zvolen, Slovakia)

"Technological Feasibility of Plasma Assisted Modification of Glued Joints for Cross-Laminated Timber"

Simon Rohrerhuber, Ritika Malik (BOKU, Austria), Hendrikus Van Herwijnen (Wood K plus, Austria), Johannes Konnerth, Anita Tran (BOKU, Austria)

"Effects of chemical denaturation and mechanical homogenization of plant proteins"

Ana Ilić (University of Primorska, Slovenia), Michael Burnard (InnoRenew CoE & UP, Slovenia, University of Helsinki, Finland)

"Early Identification of Moisture Changes in Building Envelopes Through Time-Series Anomaly Detection"

Eva Haviarova (Purdue University, USA)

"Strong and CO2 Consuming Living Wood for Buildings"

Eva Haviarova, Chih Cheng Chen (Purdue University, USA)

"Hardwood Cross Laminated Timber (CLT) Product Development and Joinery Evaluation"

Jihee Nam, Sumin Kim (Yonsei university, South Korea)

"Efficient moisture management in built environments: leveraging PCM in furniture materials"

Richard Acquah (InnoRenew CoE & UP, Slovenia), Josip Dijanić (InnoRenew CoE, Slovenia) Boris Forsthuber (Holzforschung Austria, Austria), Eva Frühwald Hansson (Lund University, Sweden), Brendan Marais (University of Goettingen, Germany), Jonas Niklewski (Lund University, Sweden), Philip Bester van Niekerk (University of Goettingen, Germany), Anna Sandak, Jakub Sandak, Ryszard Sandak (InnoRenew CoE & UP, Slovenia)

"Comparative Analysis of Wood Decay in Different European Climates: An Experimental Approach Using Flawed Playhouse Structures"

Dávid Takács, Olivér Hanzséros, Miklós Bak (University of Sopron, Hungary)

"Production of Transparent Wood with UV Assisted Lignin Modification using Beech and Oak Wood"

Ana Prslja, Rupert Wimmer (BOKU, Austria), Falk Liebner, Alaudini Nurali (Institute of Chemistry of Renewable Resources, Austria), Benjamin Kromoser (Institute of Green Civil Engineering, Austria)

"Revolutionizing Sustainable Construction: The 3DP Biowalls Project Approach to Resource Efficiency and Circular Economy"

Marek Nociar, Tomas Pipiska, Pavel Král (Mendel University in Brno, Czech Republic), Samo Grbec, Milan Šernek (University of Ljubljana, Slovenia)

"Effect of the Percentage Coverage of MUF Adhesive on the Shear Strength for Bonding Different Wood Species"

Michal Šulák, Marek Nociar, Tomas Pipiska, David Decky (Mendel University in Brno, Czech Republic)

"Influence of the layers composition of the spruce and larch strands for manufacturing laminated strand lumber"

Yong Choi, Sumin Kim (Yonsei University, South Korea)

"Investigating the synergistic effects of biochar addition on hygrothermal performance of eco-friendly building materials"

Tuesday, July 2

POSTER SESSION and STUDENT POSTER COMPETITION

16:30-19:30

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Chair: Rupert Wimmer (BOKU, Austria)

Andreja Kutnar (InnoRenew CoE & UP, Slovenia)

"Buildings and Education in Wood Ecosystem for the New European Bauhaus – BE-WoodEN"

Tessa DeHart (Oregon State University, USA)

"Breaking Barriers in Wood Science Education: A Deep Dive into the Multicultural Scholars Program at Oregon State University"

Lech Muszynski, Matthew Sparr (Oregon State University, USA)

"Looking for the Sweet Spot: The Elements of Logistics in the Global Mass Timber Panels Industry"

Štěpán Hýsek (BOKU, Austria), Jaromír Hradecký, Miroslav Jozífek, Miroslav Němec (Czech University of Life Sciences Prague, Czech Republic), Rupert Wimmer (BOKU, Austria)

"Mycelium-based composites from recycled wood: heat insulation materials with low VOC emissions"

Ján Matyašovský (VIPO, Slovakia), Ján Sedliačik, Pavlo Bekhta (Technical University in Zvolen, Slovakia), Igor Novák (Slovak Academy of Sciences, Slovakia), Peter Duchovič, Peter Jurkovic (VIPO, Slovakia)

"Research on the Preparation of Wood-Based Bio-Composites with Low Formaldehyde Emissions"

Olivia Moser (Wood K plus, Austria), Simon Danklmaier (Austria)

"Flexible and aesthetic wood veneers"

Marta Kaliszewicz, Reza Hosseinpourpia (Linnaeus University, Sweden)

"Impact of bio-based adhesives on VOCs emissions of wood-based panels"

Ben Neyses (Luleå University of Technology, Sweden), Buda Bajic (University of Novi Sad, Serbia), Johannes Huber, Linus Olofsson (Luleå University of Technology, Sweden), Ozan Öktem (KTH Royal Institute of Technology, Sweden)

"3D volume data of logs from sparse 2D X-ray scans with a combined data- and model-driven machine learning approach"

Ondrej Dvoracek, Cuauhtli Campos (InnoRenew CoE, Slovenia), Jakub Sandak (InnoRenew CoE & UP, Slovenia)

"Stereoscopic Vision As AI Tree Logging Enhancement"

Manja Kitek Kuzman, Mirko Kariž, Jože Kropivšek (University of Ljubljana, Slovenia)

"Advancing the Woodworking Industry through Integration of Artificial Intelligence"

Stephanie Weiss (Wodd K plus, Austria), Lukas Rauter (Silicon Austria Labs GmbH, Austria), Olivia Moser (Wood K plus, Austria), Manoj Jose (Silicon Austria Labs GmbH, Austria), Stefan Pandur (F.LIST GmbH, Austria)

"Functionalization of wood veneers using additive manufacturing techniques"

Min Ji, Wei Zhang (Chinese Academy of Forestry, China)

"Intelligent Manufacturing for Solid Timber Based on Machine Vision Detection and Optimization Grading System"

Edit Földvári-Nagy, Jakub Sandak (InnoRenew CoE & UP, Slovenia)

"Using a Collaborative Robot to Automate the Determination of Wood Sorption Isotherms"

Katarina Remic, Teja Bizjak Govedič, Manja Kitek Kuzman (University of Ljubljana, Slovenia)

"The potential of integrating life cycle assessment into the design phase of wood products"

Jacob Owoyemi, Joy Ogunsuyi, Olasunkanmi Ogunniyi (Federal University of Technology, Nigeria)

"Accelerated Aging Assessment of Bitumen as Preservative for the Treatment of Gmelina arborea Wood"

Byeongho Kim, Se-Yeong Park (Kangwon National University, South Korea), Kyoung-Jung Kim (Heat Treatment Co., Ltd, South Korea), Yong-hui Choi (Kangwon National University, South Korea)

"Physico-chemical and Morphological Properties of Phyllostachys edulis Culms Produced by Pilot-Scale Heat Treatment: Impact of Temperature Conditions"

Young-Min Cho, Jong-Chan Kim, Daye Kim, Junho Shin, Hanhee Kim, In-Gyu Choi (Seoul National University, South Korea)

"Development of Biodegradable Composite Material based on PLA via ring opening polymerization of lignocellulosic biomass components"

Junho Shin, Jong-Hwa Kim, Hyeseon Yoon (Seoul National University, South Korea), Bonwook Koo (Kyungpook National University, South Korea), In-Gyu Choi (Seoul National University, South Korea)

"Efficient Synthesis of Succinic Acid from Biomass via Chemical Oxidation"

Hanhee Kim, Jong-Chan Kim, Young-Min Cho, Daye Kim, Junho Shin, Hwanmyeong Yeo, In-Gyu Choi (Seoul National University, South Korea)

"Water Resistant Biodegradable Composite Films Fabricated by Hemicellulose and Lignin Derived from Lignocellulosic Biomass"

Wednesday, July 3

7:00 - 8:00 Registration

8:00 - 9:00

EARLY STAGE RESEARCHER - (3 minute orals)

Chair: Lea Primožič (InnoRenew CoE & UP, Slovenia)

Yuxiang Huang (Chinese Academy of Forestry, China)

"Super-strong biomimetic bulk bamboo-based composites by a neural network interfacial design strategy"

Jan Zlámal, Jan Tippner, Patrik Nop, Barbora Vojáčková, Valentino Cristini, Robert Mařík, Mojtaba Hassan Vand (Mendel University in Brno, Czech Republic)

"FEM analysis of static and dynamic mechanical response of branches"

Haruna Seidu, Marwa Brougui, Noor Roziana Abdul Rahim, *Róbert Németh* (University of Sopron, Hungary)

"Evaluation of Dynamic and Static Moduli of Elasticity of Hybrid Eucalyptus Wood from Different Locations in Ghana"

Fath Alrrhman Younis, Bader Mátyás, Miklós Bak, Róbert Németh (University of Sopron, Hungary)

"Radial Variation in the Anatomical Structure of Robinia pseudoacacia L. Wood and its Correlation with the Environment Factors"

Edit Földvári-Nagy, Jakub Sandak, Ondrej Dvoracek, René Alexander Herrera Díaz, Anna Sandak (UP&InnoRenew CoE, Slovenia), Elena Cvetanoska (UP, Slovenia), Witold Wachowiak, Agnieszka Jankowska, Włodzimierz Buraczyk, Paweł Kozakiewicz (Warsaw University of Life Sciences, Poland)

"DENDRO-SPEC project: Spectroscopic methods for rapid phenotyping of trees reflecting their ecological resilience"

Celia Lointier (BOKU, Austria), Johannes Konnerth (Wood-K-plus & BOKU, Austria), Stefan Veigel, Claudia Gusenbauer (BOKU, Austria)

"Cellulose Nanocrystals to Coat and Colour Wood Surfaces"

Jaakko Jussila (University of Helsinki, Finland), Michael Burnard (InnoRenew CoE & UP, Slovenia, University of Helsinki, Finland), Ritva Toivonen (University of Helsinki, Finland)

"The Role of Goal-Discrepancy in Restorative Experiences in Built Environment: A Post-Occupancy Survey Study"

Andrej Fašalek, Maximilian Pramreiter (BOKU, Austria), Hendrikus Van Herwijnen (Wood K plus, Austria), Johannes Konnerth (BOKU, Austria)

"How wood species influence the curing speed of adhesives used in panel production"

Patrik Nop (Mendel University in Brno, Czech Republic), Rok Prislan (InnoRenew CoE & UP, Slovenia), Václav Sebera, Jan Tippner (Mendel University in Brno, Czech Republic)

"Experimental modal analysis for the evaluation of the bond line in glued structural elements"

Kyung sun Ahn, Jung-kwon Oh, Minjeong Kim, Gwang Ryul Lee, Jae-Won Oh, Hae Seon Hwang (Seoul National University, South Korea)

"Structural Performance Evaluation of Timber-Concrete Composite Slab Connected with plywood notched connection"

Irina Shepeleva, (University of Primorska, Slovenia), Michael Burnard (InnoRenew CoE & UP, Slovenia, University of Helsinki, Finland), Balazs David (InnoRenew CoE & UP, Slovenia)

"Simulating The Costs And Benefits Of Implementing Design For Disassembly In Wood-Based Construction"

Tomas Bravo, Zeinab Darabi, Joshua Madden, Luis Yermán (University of Queensland, Australia)

"SWST Student Chapters: The Australian Experience"

CHANGING THE PARADIGM, THERE IS ONLY HIGH VALUE WOOD

Chairs: Jan Tippner (Mendel University in Brno, Czech Republic) & Lech Muszynski (Oregon State University, USA)

9:00 - 9:15

Johannes Painer (W.E.I.Z. Forschungs & Entwicklungs gmbH, Austria), Bernhard Ungerer, Hajir Al-musawi (Institute of Wood Technology and Renewable Materials, Austria), Philipp Matz (Virtual Vehicle Research GmbH, Austria), Kevin Vitzthum (W.E.I.Z. Forschungs & Entwicklungs GmbH, Austria), Wolfgang Knöbl (Weitzer Woodsolutions gmbH, Austria), Ulrich Müller (Institute of Wood Technology and Renewable Materials, Austria), Thomas Krenke ((W.E.I.Z. Forschungs & Entwicklungs gmbH, Austria)

"Key Factors Influencing the Formability of Beech Veneer"

Wednesday, July 3

CHANGING THE PARADIGM, THERE IS ONLY HIGH VALUE WOOD

Chairs: Jan Tippner (Mendel University in Brno, Czech Republic) & Lech Muszynski (Oregon State University, USA)

- 9:15 - 9:30 **Victoria Diederichs**, Mindy Crandall, Eric Hansen (Oregon State University, USA)
"Innovation and Sources of Knowledge in the Western North American Hardwood Sector"
- 9:30 - 9:45 **Felix Neudecker**, Stefan Veigel, Wolfgang Gindl-Altmatter (BOKU, Austria)
"Wheat straw: An untapped resource for high-performance materials"
- 9:45 - 10:00 **Tobias Nening**, Andreas Tockner, Michael Grabner (BOKU, Austria), Christian Hansmann (Wood K plus, Austria), Wolfgang Gindl-Altmatter, Johannes Konnerth, Maximilian Pramreiter (BOKU, Austria)
"Wood Beyond the Stem: Towards a New Material Concept for Underutilized Branch Wood from Deciduous Trees"
- 10:00 - 10:15 **Silvia Jánošíková**, **Viktória Satinová**, Nadežda Langová, Zuzana Vidholdová, Ján Iždinský (Technical University in Zvolen, Slovakia)
"The Effect of Type of Wood Based Recyclate and Low-Quality Timber in Particleboards on Mechanical Properties of Furniture Joints"
- 10:15 - 10:45 Coffee



SOCIO-ECONOMIC IMPACTS OF SUSTAINABLE WOOD PRACTICES

Chairs: Frederik Laleicke (NC State University)

- 10:45 - 11:00 **Roger Moya**, Jair Granados-Chacón (Instituto Tecnológico de Costa Rica, Costa Rica)
"Wood vinegar from four tropical woods through slow pyrolysis under different temperatures: Yields, chemical composition and biological effects on crops and pests"
- 11:00 - 11:15 **Sonja Geier**, Pascal Wacker (Lucerne University, Switzerland)
"Paving the Way for the Sustainable Use of Wood in Construction - a Governance-orientated and Socio-economic Approach in Switzerland"
- 11:15 - 11:30 Pipiet Larasatie (University of Arkansas at Monticello, USA), Jaana Korhonen (Oak Ridge Institute for Science and Education, USA), **Ana Gutierrez** (University of Arkansas at Monticello, USA)
"Systematic Literature Review on Diversity, Equity, and Inclusion (DEI) Aspects of Forest and Wood Products Workforce"
- 11:30 - 11:45 **Henrik Heräjärvi**, Anu Laakkonen, Joonas Lampela, Mohammad Azarmi (University of Eastern Finland, Finland)
"Sustainable wood-based value chains in Finland: three examples and take-home messages for the Global South countries"
- 11:45 - 12:00 **Hongmei Gu**, William Martin, Macro Lo Ricco, Samuel Glass, McDonald Dwight (US Forest Service, FPL, USA)
"Assessing Total Building Embodied Carbon and Embodied Energy using the Life Cycle Assessment Method for US Government Constructions"
- 12:00 - 12:15 **Ana Slavec**, Lea Primozic, Nežka Sajinčič (InnoRenew CoE & UP, Slovenia)
"Wooden Flooring in Slovenian Bedrooms: Are Consumers Able to Distinguish Between Natural Wood Synthetic Materials?"
- 12:15 - 12:30 **Mateja Erce** (InnoRenew CoE & UP, Slovenia), Michael Burnard (InnoRenew CoE & UP, Slovenia & University of Helsinki, Finland)
"Can Wood Elements in Retirement Homes Improve the Wellbeing of Residents?"
- 12:30 - 13:45 Lunch



Wednesday, July 3

POSITIVE ENVIRONMENTAL CONTRIBUTIONS

Chair: Ben Neyses (Luleå University of Technology, Sweden) & Mariapaola Riggio (Oregon State University, USA)

- 13:45 -14:00 Namhyuck Ahn, **Lech Muszynski**, Mariapaola Riggio, Catarina Pestana (Oregon State University, USA) "**Deconstruction and Reuse as a Circular Approach for Mass Timber Buildings at the End-of-Life: Mitigating Uncertainty in Cost-Benefit Analysis**"
- 14:00 -14:15 **Črtomir Tavzes**, Balázs Dávid, Jaka Gašper Pečnik (InnoRenew CoE & UP, Slovenia), Marica Mikuljan, Daša Majcen, Erwin M. Schau (InnoRenew CoE, Slovenia), Andreja Kutnar (InnoRenew CoE & UP, Slovenia) "**Use of Green Tax Policies for Enhanced Use of Wood and Other Natural Materials from Renewable Sources for Faster Climate Neutrality Transition**"
- 14:15 -14:30 **Mariapaola Riggio**, Nastaran Hasani (Oregon State University, USA) "**Enhancing Architectural Flexibility Through Mass Timber Construction: A Circular Economy Perspective**"
- 14:30 -14:45 **Lukas Sommerauer**, Alexander Petutschnigg, Thomas Schnabel (Salzburg University of Applied Sciences, Austria), Barbara Hinterstoisser (BOKU, Austria) "**Soild State Fermentation of larch (*larix decidua*) bark biomass**"
- 14:45 -15:00 **Lukmanul Hakim Zaini**, Stefan Veigel, Wolfgang Gindl-Altmutter (BOKU, Austria) "**Different Strategies for Utilization of Inner Part of Oil Palm Trunk Waste**"
- 15:00 -15:15 Tolgay Akkurt (Tallinn University of Technology, Estonia), Alexander Scharf (Luleå University of Technology, Sweden), Anti Rohumaa (South Eastern Finland University of Applied Sciences, Finland), **Jaan Kers**, Heikko Kallakas (Tallinn University of Technology, Estonia) "**Use of Low-Quality Wood Species by Densification in Load Bearing Veneer-Based Composites**"
- 15:15 -15:30 Coffee



NOVEL APPLICATIONS OF WOOD IN THE BUILT ENVIRONMENT

Chairs: Bohumil Kasal (Fraunhofer WKI, Germany) & Levente Denes (West Virginia University, USA)

- 15:30 -15:45 **Kai Schubert** (University of Rostock, Germany), Claudia von Laar (Wismar University of Applied Sciences, Germany), Henning Bombeck (University of Rostock, Germany) "**Moisture Protection: An Unnoticed but Essential Basis for Sustainable Timber Construction**"
- 15:45 -16:00 **Matthew Schwarzkopf**, Jaka Gašper Pečnik (InnoRenew CoE & UP, Slovenia) "**Aging of polyurethane adhesive bonds in beech composites**"
- 16:00 -16:15 **Marica Mikuljan**, Tania Langella (InnoRenew CoE, Slovenia), Lei Han, Mariem Zouari (InnoRenew CoE & UP, Slovenia), David DeVallance (Commonwealth University of Pennsylvania, USA) "**Effect of biochar impregnation on wood properties**"
- 16:15 -16:30 **Tomas Pipiska**, David Decky, Marek Nociar, Michal Šulák (Mendel University in Brno, Czech Republic) "**Recycled wood as a replacement for strand-based composites**"
- 16:30 -16:45 **Ritika Malik**, Johannes Konnerth (BOKU, Austria), Hendrikus Van Herwijnen (Wood K plus), Anita Tran (BOKU, Austria) "**Mechanical treatments of Plant Proteins for their Utilization as Wood Adhesives**"
- 16:45 -17:00 **Jaka Gašper Pečnik** (InnoRenew CoE & UP, Slovenia), Marica Mikuljan (InnoRenew CoE, Slovenia), Ievgen Pylypchuk (Stockholm University, Sweden), Grzegorz Kowaluk (Warsaw University of Life Sciences, Poland), Matthew Schwarzkopf (InnoRenew CoE & UP, Slovenia) "**Use of lignin-based adhesive for fibreboard and plywood**"
- 17:00 -17:15 **Levente Denes**, Balazs Bencsik, Jonathan Norris, Curt Hassler, Joseph McNeel (West Virginia University, USA) "**Structural Bonding Performance of Appalachian Hardwoods**"
- 17:15 -17:30 **Gloria Oporto**, Balazs Bencsik, Levente Denes (West Virginia University, USA) "**Unlocking Sustainability and Economic Opportunities Through Hardwood-Centric Cross-Laminated Timber Panels**"
- 17:30 -17:45 **Vanesa Baño**, Uwe Kies (InnovaWood, Belgium) "**Structural timber products with ETA certifications for the construction sector: trends, innovations and research needs**"

Thursday, July 4

7:00 - 8:00 Registration

STATE OF THE ART OF WOOD SCIENCE

Chair: Ilona Peszlen (North Carolina State University, USA) & Ruppert Wimmer (BOKU, Austria)

8:00 - 8:15 **Yonggun Park**, Yeonjung Han, Chang-Deuk Eom (National Institute of Forest Science, South Korea), Hwanmyeong Yeo (Seoul National University, South Korea)
"Correlation Analysis of Mass Loss and Equilibrium Moisture Content for Predicting Properties of Thermally Modified Wood"

8:15 - 8:30 **Ian Morrell** (Oregon State University, USA), Dashiell Fitzgerald (University of Maryland, USA), Arijit Sinha (Oregon State University, USA)
"Time-Dependent Relaxation of Nailed Connections in Mass Timber and Solid-Sawn Timber"

8:30 - 8:45 **Evren Terzi** (Istanbul University-Cerrahpaşa, Turkey), Bilge Coşkuner Filiz (Yildiz Technical University, Turkey), Nisanur Sermin Topal (Istanbul University, Turkey), Melike Gürkan, Yusuf Sahin (Yildiz Technical University, Turkey)
"Paraloid B-72 with Nano-CuB additive as Consolidant for Decayed Wood Objects"

8:45 - 9:00 **Laura Schmidt**, Rory M. Hadden (University of Edinburgh, UK)
"How Much Does the Microstructure of Wood Affect Char Oxidation?"

9:00 - 9:15 **Christoph Preimesberger** (Wood K plus, Austria), Georg Baumgartner (Metadynea Austria GmbH, Austria), Christian Hansmann (Wood K plus, Austria)
"Enhancing Fire Safety in Plywood: Layered Treatment for Improved Flame Retardancy"

9:15 - 9:30 **Oluwatosin Falade**, Benoit Belleville, Barbara Ozarska, Gerd Bossinger (University of Melbourne, Australia)
"Investigating the Role of Genotypes in the Physical and Mechanical Properties of Eucalyptus Pellita and Hybrids"

9:30 - 9:45 **Catherine Kilumets** (Tallinn University of Technology, Estonia), Sally Ralph, Peter Kitin, Carlos Baez, Junyong Zhu, Christopher G. Hunt (USDA Forest Service, FPL, USA), Heikko Kallakas, Jaan Kers (Tallinn University of Technology, Estonia)
"Effect of lignin on veneer densification and set-recovery"

9:45 - 10:00 **Andry Clarel Raobelina**, Ndrianarisoa Manalinarivo (University of Antananarivo, Madagascar), Gérard JaninGérard Janin (INRAE Champenoux, France), Tahiana Ramanananantoandro (University of Antananarivo, Madagascar)
"Using wood colorimetry for the classification of malagasy rosewoods and palisanders"

10:00 - 10:30 Coffee



NEW APPROACHES TO WOOD SECTOR EDUCATION

Chair: Pipiet Larasatie (University of Arkansas at Monticello, USA) & Jeff Morell (Oregon State University, USA)

10:30 - 10:45 **Francesco Negro**, Silvana Calvano, Roberto Zanuttini (University of Torino, Italy)
"How is Wood Culture Addressed in Wood Science Programs?"

10:45 - 11:00 **Tuula Jyske**, Ulla Hemminki-Reijonen, Sasa Tkalcan (University of Helsinki, Finland)
"Virtual Laboratory Platform for Wood Material Studies"

11:00 - 11:15 **Andreja Kutnar** (InnoRenew CoE & UP, Slovenia), Michael Burnard (InnoRenew CoE & UP, Slovenia, University of Helsinki, Finland)
"The New European Bauhaus (NEB) Academy Pioneer Hub for Sustainable Built Environments with Renewable Materials building up NEB Academy Alliance"

11:15 - 11:30 **Gloria Oporto**, James Armstrong, Joseph McNeel (West Virginia University, USA)
"Navigating the Past, Present, and Future of Forestry and Wood Science Education in the United States"

11:30 - 11:45 **Lech Muszynski** (Oregon State University, USA)
"Engaging Artificial Intelligence Content Generators in the Context of a Wood Science and Engineering Graduate Course"

Thursday, July 4

NEW APPROACHES TO WOOD SECTOR EDUCATION

Chair: Pipiet Larasatie (University of Arkansas at Monticello, USA) & Jeff Morell (Oregon State University, USA)

11:45 -12:00 **Lea Primožic**, Andreja Kutnar (InnoRenew CoE & UP, Slovenia)
"Decision Factors of Sustainable Construction Professionals in Slovenia"

12:00 -12:15 **Birger Bartuska**, Virág Csank, Martin Riegler (Wood K plus, Austria)
"Digital Innovation Hub - a Game Changer for Digitalization and Education in the traditional European Timber Industry?"



12:15 -13:45 Lunch

ENVISIONING A FUTURE OF BIOBASED, BIOINSPIRED and ENGINEERED LIVING MATERIALS

Chairs: Anna Sandak (InnoRenew CoE & University of Primorska, Slovenia) & Francesco Negro (University of Torino, Italy)

13:45 -14:00 **Juergen M Lackner**, Dietmar Kopp, Simon Chwatal, Carina Hendler, Reinhard Kaindl, Wolfgang Waldhauser (Joanneum Research Forschungsgesellschaft mbH, Austria), Andreas Hinterer, Maximillian Stummer (INO GmbH, Austria), Christoph Jocham, Herfried Lammer (WOOD K plus, Austria)
"Next Generation of Sustainability for Nature-based Materials – Functionalization of Wood and Wood-/ Bio-based Materials by innovative industrially-scaled Atmospheric Pressure Plasma Deposition to replace technical, petroleum-based Polymers"

14:00 -14:15 **Alex Berg**, Niels Müller (University of Concepcion, Chile), Felipe Guzmán (Celulosa Arauco y Constitución, Chile)
"New Industrial Applications of Macro and Nanocellulose Fibers"

14:15 -14:30 **Valentino Cristini**, Jan Baar, Michal Tomšovský, Martin Brabec, Radim Rousek (Mendel University in Brno, Czech Republic)
"Comparative Analysis of Mycelium and Mycelium-based Wood Composites: Properties Across Fungal Species"

14:30 -14:45 **Oliver Vay**, Florian Lauberger (Wood K plus, Austria), Jitka Effenberger, Jasmin Steinberg (Johannes Kepler University Linz, Austria), Cornelia Rieder-Gradinger (Wood K plus, Austria)
"Cross-Sector Utilization of Mushroom Cultivation Residuals for the Production of Adhesive free Insulation Material"

14:45 -15:00 **Anna Sandak** (InnoRenew CoE & UP, Slovenia), Faksawat Poohphajai (InnoRenew CoE & UP, Slovenia, Aalto University, Finland), Ana Gubensek, Karen Butina Ogorelec (InnoRenew CoE & UP, Slovenia), Anja Cernosa, Wojciech Pajerski, Valentina Hribljan (InnoRenew CoE, Slovenia)
"A Prospect of Engineered Living Materials in the Building Sector"

15:00 -15:15 Alex Mary, Pierre Blanchet, **Véronic Landry** (Université Laval, Canada)
"Bio-Innovation in Wood Bonding: Upcycling Proteins from byproducts as a Renewable Polyol Substitute"

15:15 -15:30 **Byung-Dae Park**, Saman Ghahri, Eko Wibowo (Kyungpook National University, South Korea)
"Cross-linking and Characterization of Kraft Lignin for Bio-Based Wood Adhesives"

15:30 -15:45 **Faksawat Poohphajai** (InnoRenew CoE & UP, Slovenia, Aalto University, Finland), Ana Gubensek, Karen Butina Ogorelec (InnoRenew CoE & UP, Slovenia), Anja Cernosa (InnoRenew CoE, Slovenia), Jakub Sandak, Anna Sandak (InnoRenew CoE & UP, Slovenia)
"In-service performance of untreated and Biofinish coated Scots pine (*Pinus sylvestris* L.)"



15:45 -16:15 Coffee



SWST 67th International Convention

June 30 – July 6, 2024 | Portorož, Slovenia



Advancing Regenerative Sustainability with Wood Science



Thursday, July 4

16:15 -17:30

AWARDS & BUSINESS MEETING

20:00 -22:30

BANQUET - HISTRION CHURCH PLAZA

Friday, July 5

Convention Tour - Separate Price

08:00 -13:00

EXECUTIVE BOARD MEETING

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pohištvene industrije



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