

PROGRAM

10th European Conference on Wood Modification

Monday 25 April 2022	
8h00-9h00	Registration
9h00-9h15	Welcome and Opening
9h15-10h00	Keynote - Thermal Wood Modification After 20 Years of Commercialization: An Overview and the ThermoWood® Story. <i>Wolfram Scheiding, Jukka Ala-Viikari and Timo Tetri</i>
Session One: Commercial Opportunities for Modified Wood	
10h00- 10h15	Oral 1.1 - Wood Modifications on Poplar: Overview and Development. <i>Xiuping Jiang, Jan Van den Bulcke and Joris Van Acker</i>
10h15- 10h30	Oral 1.2 - Wood Modification With Citric Acid and Sorbitol - A Review and Future Perspectives. <i>Katarzyna Kurkowiak, Lukas Emmerich, Christian Simmering and Holger Militz</i>
10h30 -11h00	Coffee
Session Two: Thermal Modification	
11h00 – 11h15	Oral 2.1 - A Short Review on the Environmental Performance of the Thermally Modified Wood. <i>Kévin Candelier and Janka Dibdiakova</i>
11h15 – 11h30	Oral 2.2 - Mild Pyrolysis of Wood Particle: Treatment Homogeneity on Thick Samples. <i>Daniela Florez-Parra, Antoine Stéphan and Romain Rémond</i>
11h30– 11h45	Oral 2.3 - Absolute and Universal Metric for the Degree of Thermal Conversion of Wood. <i>Wim Willems</i>
11h45– 12h00	Oral 2.4 - Long Term Moisture Content Monitoring of the Façade Made of Thermally Modified Norway Spruce Wood. <i>Miha Humar, Davor Kržišnik and Boštjan Lesar</i>
12h00 - 14h00	Lunch
Session Three: Poster Session 1	
14h00 – 14h05	Introduction to the poster session
14h05 – 14h08	Poster 1.1 - Continuous Densification of Solid Wood - the Band Press Approach. <i>Benedikt Neyses, Alexander Scharf and Dick Sandberg</i>
14h08 – 14h11	Poster 1.2 - Thermomodensification of Beech Wood via Furfurylation Combined with Compression. <i>Jérémie Damay, Bertille Etienney, Prabu Satria Sejati, Firmin Obounou Akong and Philippe Gérardin</i>
14h11 – 14h14	Poster 1.3 - Unsteady Swelling of Beech Wood (<i>Fagus sylvatica</i> L.) During gaseous Ammonia Treatment as a Function of Pressure. <i>Herwig Hackenberg, Mario Zauer, Tobias Dietrich and André Wagenführ</i>

14h14 – 14h17	Poster 1.4 - Impregnation of Wood With a Paraffinic Phase Change Material for Increasing Heat Capacity. Jens U. Hartig, Fabian Hilkert, Jörg Wehsener and Peer Haller
14h17 – 14h20	Poster 1.5 - Effect of Citric Acid on Visual Aspect of <i>Pinus</i> spp. Submitted to Thermo-Mechanical Densification. Matheus Couto Crisóstomo and Cláudio Henrique Soares Del Menezzi
14h20 – 14h23	Poster 1.6 - Fire for Façades - Effect of Modification Method on Surface Properties of Charred Wood. Maija Kymäläinen and Lauri Rautkari
14h23 – 14h26	Poster 1.7 Chemical modification of polyphenolic wood-extract for an access to isocyanate-free polyurethanes-based resin-wood composites. Christine Gérardin-Charbonnier, Firmin Obounou-Akong and Philippe Gérardin
14h26 – 14h29	Poster 1.8 - Laminated Veneer Lumber Made From Cement-Impregnated Veneers. Sebastian Hirschmüller, Andriy Kovryga, Seraphin Unterberger, Harald Larbig, Brendan Marais, Christian Brischke, Jan-Willem van de Kuilen and Adrian Krey
14h29 – 14h32	Poster 1.9 - Bonding Performance of Ciol®-Modified Wood. Karl-Christian Mahnert and Andreas Treu
14h32 – 14h35	Poster 1.10 - Improvement of the Thermal Stability of Wood Through Surface and Modification Treatments. René Herrera, Pedro de Hoyos-Martinez, Jalel Labidi, Anna Sandak and Fatima ChARRIER-El Bouhtoury
14h35 – 14h38	Poster 1.11 - Consolidation of Wood Shavings-Sand Mixtures by Biomineralization. Lisa Bansamir, Fabian Wulf, Tom Brodhagen and Alexander Pfriem
14h38 – 14h41	Poster 1.12 - Penetration of an Acrylic Waterborne Coating Into Plasma Treated Wood. Jure Žigon, Pierre Kibleur, Jan Van den Bulcke, Joris Van Acker, Marko Petrič and Sebastian Dahle
14h41 – 14h44	Poster 1.13 - Thermal Behaviour and Reaction to Fire of Three Various Hardwood Species Mineralized with Calcium Oxalate. Tom Franke and Thomas Volkmer
14h44 – 14h47	Poster 1.14 - Influence of Thermal Modification on the Impregnability of Beech (<i>Fagus sylvatica</i> [L.]) and European Maple (<i>Acer pseudoplatanus</i> [L.]). Tobias Bender, Christoph Munk, Alexander Pfriem, Jérémie Damay, Emmanuel Fredon, Romain Rémond, Pierre Jean Méausoone, Firmin Obounou Akong, Philippe Gérardin and Michael Jousserand
14h47 – 14h50	Poster 1.15- Investigation of a Change in the Hardness Properties of Thermally Modified Beech Wood (<i>Fagus sylvatica</i> L) as a Result of a 6-Week Long-Term Temperature at 120°C and 140°C. Martin Wozniak, Fabian Wulf and Alexander Pfriem
14h50 – 14h53	Poster 1.16 - The Effect of Heat Treatment on Characteristics of Short Rotation Teak. Resa Martha, Efrida Basri, Loedy Setiono, Irmanida Batubara, Istie S. Rahayu, Wayan Darmawan and Philippe Gérardin
14h53 – 14h56	Poster 1.17- Use of DMA to Evaluate the Modification of Tropical Hardwood Timbers by Cashew Nut Shell Liquid (CNSL) resin. Morwenna J. Spear, Md. Ashaduzzaman, Graham A. Ormondroyd and Michael D. Hale
14h56 – 14h59	Poster 1.18 - Moisture Related Properties of Thermomechanical (TM) Treated Black Walnut to Substitute Indian Rosewood in Musical Instruments. Tobias Dietrich, Mario Zauer and André Wagenführ
14h59 – 16h00	Coffee and Poster Viewing

Session Four: Chemical Modification	
16h00 – 16h15	<p>Oral 4.1 - Comparison of Cell Wall Chemistry and Durability of Esterified Wood Using Microscopy-Based Techniques. <i>Lisbeth G. Thygesen, Andreas Treu and Gry Alfredsen</i></p>
16h15 – 16h30	<p>Oral 4.2 - Environmental Performance of combined Treated Wood. <i>Edgars Kuka, Dace Cirule, Ingeborga Andersone and Bruno Andersons</i></p>
16h30 - 16h45	<p>Oral 4.3 - Improvement of Decay and Termite's Durability of Wood Through Combined Treatments Involving Thermal and Mild Chemical Modifications – A Review of Last Research Works of Laboratory. <i>Mahdi Mubarok, Solafa Salman, Holger Miltz, Stéphane Dumarçay, Marie France Thévenon, Kevin Candelier, I Wayan Darmawan, Yusuf Sudo Hadi and Philippe Gérardin</i></p>
16h45 – 17h00	<p>Oral 4.4 - Environmentally Friendly Wood Modification Based on Tannin-Furfuryl Alcohol – Effect on Thermal Stability and Decay Durability of Wood. <i>Mahdi Mubarok, Elham Azadeh, Firmin Obounou Akong, Stéphane Dumarçay, Philippe Gérardin and Christine Charbonnier-Gérardin</i></p>
17h00 – 17h15	<p>Oral 4.5 - Dynamic Moisture Resistance of Chemically-Treated and Heat-Treated Plywood. <i>Fred Kamke, Luis Molina Iribara and Scott Leavengood</i></p>
17h15 – 17h30	<p>Oral 4.6 - Modification of white Spruce to Improve Dimensional Stability of Exterior Wood Cladding. <i>Diane Schorr and Gabrielle Boivin</i></p>
19h30	Gala Dinner

Tuesday 26 April 2022	
8h00 -8h30	Early morning coffee
Session Four: Chemical Modification cont.	
8h30-8h45	Oral 4.7 - Improving Effect of Silica Aerogel on the Dimensional Stability of Wood. Miklós Bak, Ferenc Molnár and Róbert Németh
8h45- 9h00	Oral 4.8 - Understanding the Mode of Action of Sorbitol and Citric Acid (SorCA) in Wood. Katarzyna Kurkowiak, David Hentges, Stéphane Dumarçay, Philippe Gérardin and Holger Militz
9h00 – 9h15	Oral 4.9 - Improving Durability and Dimensional Stability of Beech (<i>Fagus sylvatica</i> L.) LVL by Acetylation With Acetic Anhydride Maik Slabohm, Ferry Bongers and Holger Militz
9h15 – 9h30	Oral 4.10 - Recent Advances in Wood Modification Through the Use of Maleic Anhydride and Sodium Hypophosphite. Injeong Kim, Olov Karlsson, Emil Engelund Thybring, Dick Sandberg and Dennis Jones
9h30 – 9h45	Oral 4.11 - Properties of Beech Wood Improved by Eco-Friendly Treatments. Adèle Chabert, Emmanuel Fredon, Philippe Gérardin and Romain Rémond
9h45 – 10h00	Oral 4.12- Birch Wood Treatment With Modified Phenol-Formaldehyde Pre-Polymers. Juris Grinins, Mairis Iesalnieks, Vladimirs Biziks and Ineta Gritane
10h00 -10h30	Coffee
Session Five : Evaluation of Properties and Performance	
10h30 – 10h45	Oral 5.1 - Growth Behaviour and Wood Degradation of Wood-Destroying Fungi in Chemically Modified Wood. Lukas Emmerich, Sarah Strobusch, Christian Brischke, Susanne Bollmus and Holger Militz
10h45– 11h00	Oral 5.2- Laboratory Evaluation of the Resistance of Furfurylated Wood to Attack by the Marine Wood Boring Crustacean, <i>Limnoria quadripunctata</i> . Lucy S. Martin, Reuben Shipway, Erika Tønnerfors, Mats Westin, Stig Lande and Simon M. Cragg
11h00 – 11h15	Oral 5.3 - Marine Borer Resistance of MMF and DMDHEU Modified Wood - Results From Up to 20 Years of Field Exposure. Mats Westin, Pia Larsson Breliid, Andreas Rapp and Jörg Habicht
11h15 – 11h30	Oral 5.4 - Properties of Crude Tall Oil Impregnated Scots pine Posts After a Nine-Year Soil Contact Test. Manish Pakhrin, Henrik Heräjärvi, Antti Haapala, Hannu Kokko, Juhani Marttila, Veikko Möttönen and Martti Venäläinen
11h30 – 11h45	Oral 5.5 - Performance of Resin-Treated Solid Wood and Laminated Veneer Lumber (LVL) Under Marine Conditions. Lukas Emmerich, Christian Brischke, Sascha Bicke and Holger Militz
11h45 – 12h00	Oral 5.6 - The Effects of Material Fatigue on Differently Modified Woods. Carlo Kupfernagel, Simon Curling, Morwenna Spear and Graham Ormondroyd

12h00 - 12h15	Oral 5.7 - Does Wood Modification Reduce the Overall Carbon Footprint of Wood Over the Whole Lifetime? Callum Hill and Mark Hughes
12h15 – 12h30	Oral 5.8 - Service Properties of Combined Treated Pine. Bruno Andersons, Dace Cirule, Nina Kurnosova, Ingeborga Andersone and Edgars Kuka
12h30 - 13h30	Lunch
Session Six : Poster Session 2	
13h30 – 13h33	Poster 2.1 - Feasibility of Hyperspectral Imaging for Evaluation of Wood Modification Extend. Anna Sandak, Faksawat Poochphajai, Rene Herrera Diaz, Veerapandian Ponnuchamy, Nežka Sajinčič, Oihana Gordobil, Albert Kravos, Richard Acquah and Jakub Sandak
13h33 – 13h36	Poster 2.2 - Hyperspectral Imaging Predicts the Moisture Content Distribution in Acetylated Wood. Muhammad Awais, Michael Altgen, Mikko Mäkelä, Tiina Belt, Lauri Rautkari
13h36 – 13h39	Poster 2.3 - The Influence of Thermal Modification on the Material-Brightness (L*), Documented by in-situ Measurements. Lothar Clauder, Christoph Munk and Alexander Pfriem
13h39 – 13h42	Poster 2.4 - Bending Tests of Delignified and Densified Poplar. Jörg Wehsener, Martina Bremer and Peer Haller
13h42 – 13h45	Poster 2.5 - Improving the Acoustic Properties of Beech Wood by High Pressure Hydrothermal Treatment. Aleš Straže and Ervin Žveplan
13h45 – 13h48	Poster 2.6 - PTFE Wax as an Anti-Fingerprint Additive in Adhesives for HPL, Based on MF Resins: Evaluation by FTIR-ATR Spectroscopy. J. Santos, J. Pereira, N. Paiva, J. Ferra, F. D. Magalhães, J. M. Martins and L. H. de Carvalho
13h48 – 13h51	Poster 2.7 - Furfurylation of Wood From Four Fast-Growing Tropical Wood Species Enhanced Resistance to Subterranean Termite Attack. Yusuf Sudo Hadi, Desy Mulyosari, Elis Nina Herliyana, Gustan Pari, Wa Ode Muliastuty Arsyad, Imam Busyra Abdillah and Philippe Gérardin
13h51 – 13h54	Poster 2.8 – Durability of Heat Treated Massive Poplar Plywood. Bertrand Marcon, Kevin Candelier, Joffrey Viguier, Luc Pignolet, Adelaïde Gartili, Marie-France Thévenon, Robert Collet and Louis Denaud
13h54 – 13h57	Poster 2.9 - Using Pyrolysis-GC/MS to Characterize Chemical Modifications in Wood. David Hentges, Philippe Gérardin and Stéphane Dumarçay
13h57 – 14h00	Poster 2.10 - Thermal Modification of Dry and Green Paulownia Wood From Central Italy Plantations – Effects on Selected Properties. Giacomo Goli, Pasquale Murrone, Giovanni Aminti and Michele Brunetti
14h00 – 14h03	Poster 2.11 - Bonding Properties of Commercial Scale Woven Oil Palm Sandwich Composite Modified With Low Molecular Weight Phenol Formaldehyde. Norul Hisham Hamid, Mohamad Jawaid and Nursyafira Ain Ahmad
14h03 – 14h06	Poster 2.12 - Oleo-Thermo-Chemical Treatment of Wood and Color Change due to Treatment. Behbood Mohebbi and Hamed Kevili

14h06 – 14h09	Poster 2.13 - Impact of Process Duration on Selected Physical Properties of Thermally Modified Eucalyptus Wood. Djeison Cesar Batista, Maximilian Wentzel, Christian Brischke and Holger Militz
14h09 - 14h12	Poster 2.14 - Physical Properties of Hydrothermally Treated Rubberwood (<i>Hevea brasiliensis</i>) in Different Buffered Media. Md. Rowson Ali, Ummi Hani Abdullah, Zaidon Ashaari, and Lee Seng Hua
14h12 - 14h15	Poster 2.15 - Phosphorylation of Kraft Lignin to be Used as a Water-Stable Fire Retardant in Wood. Olov Karlsson, Chia-Feng Lin, Dennis Jones and Dick Sandberg
14h15 - 14h18	Poster 2.16 - Styl+Wood System for the Thermal Modification of Wood. Characterisation of Nine Wood Species Thermal Treated at Different Conditions Erio Briotto, Ottaviano Allegretti , Ignazia Cuccui, Jarno Bontadi, Michele Brunetti, Michela Nocetti, Giovanna Bochicchio, Nasko Terziev
14h18 - 14h21	Poster 2.17 - Influence of Thermal Modification and Subsequent Linseed Oil Impregnation on the Sound Propagation Velocity and Related Acoustic Properties of Various Wood Species. Christoph Munk and Alexander Pfriem
14h21 – 15h00	Coffee and Poster Viewing
Session Seven: Applications of Thermally and Chemically Modified Wood	
15h00 – 15h15	Oral 7.1 - Thermal and Chemical Wood Modification - A combined Approach for Exclusive, High Demanding Performance Products. Giacomo Goli, Federico Negro, Lukas Emmerich and Holger Militz
15h15 – 15h30	Oral 7.3 - Non-Leaching Fire-Retardant Treatment for Spruce Timber. Jussi Ruponen, Mikko Valkonen, Jari Kukkonen and Mark Hughes
15h30 – 15h45	Oral 7.4 - Composite Strategy for Improving Fire-Retardancy of Furfurylated Wood. Chia-feng Lin, Injeong Kim, Olov Karlsson Dennis Jones and Dick Sandberg
15h45 – 16h00	Oral 7.5 - The Embedment Behavior of Acetylated and Unmodified Birch Plywood. Tianxiang Wang, Yue Wang, Roberto Crocetti and Magnus Wålinder
16h00 – 16h15	Oral 7.6 - Phenol Formaldehyde Resin Treatment of End-Grain Cobbles for Flooring and Paving Applications. Morwenna Spear, Dylan Jones, Chris Miles and Graham Ormondroyd
16h15 – 16h30	Oral 7.7 - Properties of Modified Wood With Commercially Available Polyamine/Polyepoxy Resin. Mahdi Mubarak, Frédéric Simon, Stéphane Dumarçay, Christine Gérardin and Philippe Gérardin
16h45 – 17h00	Closure of Conference / ECWM 11 Announcement