

57th SWST International Convention
7th Wood Structure and Properties Conference
6th European Hardwood Conference



Sustainable Resources and Technology for Forest Products

June 23–27, 2014

Technical University in Zvolen, Zvolen, Slovakia

Session Co-Chairs: Douglas Gardner, University of Maine, USA and Jozef Kúdela, Technical University in Zvolen, Slovakia

Poster Setup: 14:00 to 15:00 • **Poster Session with Cash Bar and Student Poster Competition:** 15:00 to 18:00



Title of Presentation

Authors and Affiliations

Low Formaldehyde-Emitting Wood Composites by Nanotechnology

Turgay Akbulut and Zeki Candan, Istanbul University, Turkey

The Effects of Bark on Fuel Characteristics of Some Evergreen Mediterranean Hardwood Species

Ioannis Barboutis, Aristotle University of Thessaloniki, Greece; Charalampos Lykidis, Hellenic Agricultural Organization "Demeter"

Predicting the Compression Strength Parallel to Grain of Heat Treated Wood Using Artificial Neural Networks: A Preliminary Study

Bogdan Bedelea, Cristina Olarescu, and Mihaela Campean, Transilvania University of Brasov, Romania

Life-Cycle Inventory Analysis of Cellulosic Fiberboard Production in North America

Hongmei Gu, US Forest Service Forest Products Laboratory, USA

Lathe Check Characteristics of Fast Growing Sengon Veneers and Their LVL Glue-Bond and Bending Strength

Wayan Darmawan, Dodi Nandika, Yusram Massijaya, Abigael Kabe, Irsan Alipraja, Istie Rahayu, Bogor Agricultural University, Indonesia; Barbara Ozarska, University of Melbourne, Australia

User-chair Interaction Analysis of Different Age Groups

Levente Dénes, University of West Hungary, Hungary

Use of Non-treated and Thermally-treated Biomass Media in Livestock Heavy-use Areas to Reduce the Environmental Impacts of Agriculture

David DeVallance, West Virginia University, USA; Joshua Faulkner, University of Vermont Center for Sustainable Agriculture, USA; and Tom Basden, West Virginia University Extension, USA

Surface Treatment, Layer Thickness and Surface Performance Relations of Wood Materials

Tuncer Dilik, Istanbul University, Turkey

Wood Anatomy of Naturally Grown Philippine Teak (*Tectona philippinensis* Benth. & Hook. f)

Arsenio Ella, Emmanuel P. Domingo, and Florena B. Samiano, Forest Products Research and Development Institute, Philippines

Relations Between Varnish Type and Color Changes of Wood Material

Emine Seda Erdinler, Istanbul University, Turkey

Classicistic Furniture in Slovakia

Luboš Gajdoš, Roman Nôta, Juraj Veselovský, Igor Želtvay, Technical University in Zvolen, Slovakia

Comparing the Efficiency of Selected Methods of Logging Residue Chipping for the Energy Purposes

Tomasz Gałęzia, Pomorze Forest Inspectorate, State Forests National Forest Holding, Poland

Poster Session



Title of Presentation

Authors and Affiliations

Woods and Wood through the Ages of Western Culture – our Wooden Heritage

Peder Gjerdrum, Norwegian Forest and Landscape Institute, Norway

FTIR-Study of Thermally Treated Beech Wood

Galina A. Gorbacheva and Victor G. Sanaev, Moscow State Forest University, Russia; Anatoly V. Bazhenov, Institute of Solid State Physics of the RAS, Russia; Ivica Suchanova, Technical University in Zvolen, Slovakia

US Forest Sector Innovation During the Great Recession

Eric Hansen, Oregon State University, USA

Assessing Durability of Laminated Bamboo Lumber

Byrne Miyamoto and Arijit Sinha, Oregon State University, USA

New Approach to Sustainability Education for Study Abroad Programs

Eva Haviarova, Purdue University, USA and Henry J. Quesada-Pineda, Virginia Tech, USA

Furniture Design and Product Development Principles Considering End-of-Life Options and Design for Environment Strategies

Eva Haviarova, Mesut Uysal, Carl A. Eckelman, Purdue University, USA

Wood-Plastic Composite Made from Eastern Redcedar

Salim Hiziroglu, Oklahoma State University, USA

Transverse Isotropic Material Thermal Properties Measurement

Richard Hřčka, Pavol Halachan, Marián Babiak and Rastislav Lagaňa, Technical University in Zvolen, Slovakia; Jan Tippner, Eva Troppová, and Miroslav Trcala, Mendel University in Brno, Czech Republic

Morphological Changes on Spruce Wood Surface during Accelerated Aging

Pavel Ihracký and Josef Kúdela, Technical University in Zvolen, Slovakia

Chinese Historical Furniture

Marián Ihring, René Bad'ura, Juraj Veselovský, Technical University in Zvolen, Slovakia

Investigation of The Effect of Resin Consumption on The Properties of Particleboard Made Using Cotton Stalks

Abolfazl Kargarfard, Iran Research Institute of Forests & Rangelands, Iran; Ahmad Jahan-Latibari, Islamic Azad University, Iran

Investigation on the Influence of Nano-clay Addition on Mechanical Properties of Soy Straw-polypropylene Composite

Abolfazl Kargarfard, Iran Research Institute of Forests & Rangelands, Iran; Ahmad Jahan-Latibari, Islamic Azad University, Iran

Effect of Wood Chemical Composition on Physical Properties of Biocomposites

Alperen Kaymakci, Istanbul University, Turkey

Improvement of Accuracy of Portable CT by Considering Penetrating Depth in Wood

Chul-Ki Kim, Seoul National University, Korea

Insecticidal Effect of Essential Oils from *Abies Holophylla Maxim* and its Chemical Constituents against *Dermatophagoides Farinae*

Seon-Hong Kim, Ga-Hee Ryu, and Su-Yeon Lee, Seoul National University, Korea; Mi-Jin Park, Korea Forest Research Institute, Korea; In-Gyu Choi, Seoul National University, Korea

Abrasion, Surface Treatment and Glossiness Relations of Wood Material

Kucuk Huseyin Koc, Istanbul University, Turkey

Poster Session

Title of Presentation	Authors and Affiliations
Bio-friendly Systems for Finishing of Wooden Windows Elements	Tomasz Krystofiak, Stanislaw Proszyk and Barbara Lis, Poznan University of Life Sciences, Poland
Sorption Properties of Viscoelastic Thermal Compressed (VTC) wood	Andreja Kutnar, University of Primorska, Slovenia; Frederick A Kamke, Oregon State University, USA; Emil Engelund Thybring, ETH Zurich EMPA, Switzerland
Effect of Microfibrillated Cellulose Content on the Bonding Performance of Urea-formaldehyde Resin	Jin Heon Kwon and Seung-Hwan Lee, Kangwon National University, Korea; Nadir Ayilimis, Istanbul University, Turkey; Tae Hyung Han, Kangwon National University, Korea
The Application of Canola Straw In the Reduction of the Particleboard Density	Ahmad Jahan Latibari and Hanieh Ghasemi, Islamic Azad University, Iran; Abolfazl Kargarfard, Institute of Forests and Rangeland, Iran
Biotransformation of Geraniol by <i>Polyporus brumalis</i>	Su-yeon Lee, Chang-Young Hong, Seon-Hong Kim, In-Gyu Choi; Seoul National University, Korea
Dimensional Responses of Wood Subjected to Cyclic Temperature Changes	Erni Ma, Beijing Forestry University, China
Spectrophotometric Analysis of the Accelerated Aged Wood Treated with Transparent Coatings for Exterior Constructions	Miroslava Mamoňová and Ladislav Reinprecht, Technical University in Zvolen, Slovakia
A Comparison of Latewood Measurements in Suppressed Douglas-fir	Carl Morrow and Thomas M. Gorman, University of Idaho, USA; David E. Kretschmann, USDA Forest Service, Forest Products Laboratory, USA
Pre-treatment of Surface of Old Wood Construction Elements with Dry Ice	Leoš Mrenica, Technical University in Zvolen, Slovakia; Šmíra, P., Thermo Sanace Ltd., Czech Republic; Ihracký, P., Technical University in Zvolen, Slovakia; Nasswetrová, A., Thermo Sanace Ltd., Czech Republic; and Kúdela, J., Technical University in Zvolen, Slovakia
Silanes Adhesion Promoters Applied in Furniture Industry	Monika Muszynska, Tomasz Krystofiak, Stanislaw Proszyk, and Barbara Lis, Poznan University of Life Sciences, Poland
Premature Failure of Creosote Treated Electricity Transmission Wood Poles in Zambia	Elisha Ncube, Copperbelt University, Zambia
Rococo Furniture in Slovakia	Roman Nôta, Juraj Veselovský, Igor Želtvay, L'uboš Gajdoš, Technical University in Zvolen, Slovakia
Mechano-sorptive Creep in Reinforced Sitka Spruce	Conan O'Ceallaigh, Annette Harte, and Karol Sikora, National University of Ireland, Ireland; Daniel McPolin, Queens University Belfast, Ireland
Compressive Strength of Cross-laminated Timber Panel	Jung-Kwon Oh, Jung-Pyo Hong, and Jun-Jae Lee, Seoul National University, Korea
Accelerated Leaching Test for Estimating Service Life of Preservative Treated Wood in Retaining Wall	Sung-Jun Pang, Seoul National University, Korea
Log Homes Mitigate the Global Warming	Zoltán Pásztor, University of West Hungary, Hungary
Case Study: "Exports of U.S. Hardwood Products: Increasing Performance in Asia and Western Europe"	Henry Quesada-Pineda, Edgar Arias, Robert Smith, Virginia Tech, USA

Poster Session



Title of Presentation	Authors and Affiliations
Effect the Indentation of the Annual Growth Rings in Norway Spruce (<i>Picea Abies L.</i>) on the Shear Strength - Preliminary Study	Vladimír Račko and Ol'ga Mišíková, and Blažej Seman Technical University in Zvolen, Slovakia
Improvement of Properties of Selected Woods using Different Modification Techniques	Peter Rademacher, Mendel University in Brno, Czech Republic; Ditriech Meier, Thünen Institute of Wood Research, Germany; Petr Pařil, Jan Baar, Pavel Sáblík, Petr Čermák, and Radim Rousek, Mendel University in Brno, Czech Republic
CO₂ Balance of Wood Wall Constructions Compared to Other Types of Wall	Péter Rébék-Nagy and Zoltán Pásztor, University of West Hungary, Hungary
Non-Wood Lignocellulosic Composites	Roman Réh, Technical University in Zvolen, Slovakia; Marius C. Barbu, Salzburg University of Applied Sciences, Austria; and Ayfer D. Çavdar, Karadeniz Technical University, Turkey
Errors of Sampling Based Moisture Content Measurement of Wood	Ildikó Ronyecz, Kristóf Mohácsi, and Zoltán Pásztor, University of West Hungary, Hungary
Quantitative Analysis of the Micromechanical Load Transfer in Wood-Adhesive Bond Interphases	Matthew Schwarzkopf and Lech Muszynski, Oregon State University, USA
FE model of Oriented Strand Board Made By Two Different Geometry Generation Techniques	Václav Sebera, Jan Tippner, Peter Rademacher, and Rupert Wimmer, Mendel University in Brno, Czech Republic
Aluminium Laminated Wood Composites: Optimal Manufactured Parameters	Franz Segovia, Pierre Blanchet, Costel Barbuta, and Robert Beaugard, Université Laval, Canada
Development of Ready-to-Assemble Furniture Constructions	Milan Simek, Mendel University, Czech Republic
Assessment of Drying Quality and Accuracy of Wood Processing	Nikolay Skuratov, Moscow State Forest University, Russia
Mitigation of End Shakes on Oak Saw Timber as a Result of Storage by Applying Environmentally-friendly Methods	Péter Szeles, Szabolcs Komán, and Sándor Fehér; University of West Hungary, Hungary
Activation of Wood Surfaces With Atmospheric Plasma Treatment	Radovan Tiňo, Zuzana Repanova, and Michal Jablonsky, Slovak University of Technology, Slovakia
Probabilistic Numerical Analysis of Quasi-stationary Thermal Measurement of Medium Density Fiberboard	Jan Tippner, Mendel University in Brno, Czech Republic
Integrating the Surface Treatment of Monocotyledons into Particleboard Production Process to Provide a Substitute Raw Material	Johann Trischler, Linnæus University, Sweden; Dick Sandberg, Luleå University of Technology, Sweden
Thermal Conductivity and Water Vapor Transmission Properties of Wood-based Fiberboards	Eva Troppová, Mendel University, Czech Republic
Interconnection of Strength, Porosity and Microstructure of Hardwood	Inna Varivodina, Nikolai Kosichenko and Tamara Starodubtseva, Voronezh State Academy of Forestry and Technologies, Russia
Cross Industry Innovation Process to Identify "New" Technologies for Mechanical Wood Disintegration	Oliver Vay, Kompetenzzentrum Holz GmbH, Austria; Johannes Konnerth, Alfred Teischinger, and Ulrich Müller, BOKU - University of Natural Resources and Life Sciences - Vienna, Austria
Baroque Furniture in Slovakia	Juraj Veselovský, Igor Želtvay, Ľuboš Gajdoš, Roman Nôta, Technical University in Zvolen, Slovakia

Poster Session



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Authors and Affiliations

Renaissance Furniture in Slovakia

Juraj Veselovský, Ľuboš Gajdoš, Roman Nôta, Igor Želtvay,
Technical University in Zvolen, Slovakia

Acoustic Sorting Models for Improved Log Segregation

Xiping Wang, Steve Verrill, Eini Lowell, Robert J. Ross and Vicki L. Herian,
US Forest Products Laboratory, USA

**Heart Rots Detection on the Basis of Sonic Velocity Based on
Transducer's Angles Orientation**

Kyaw Ko Win, Seoul National University, Korea

**Analysis of High Frequency Dielectric Curing of Phenol-Resorcinol
Formaldehyde Resin used for Manufacturing Larch Glulam**

Sang-Yun Yang, Seoul National University, Korea

Analysis of Laminar Yield for Manufacturing Cross Laminated Timber

Hwanmyeong Yeo, Yeonjung Han, Yoon-Seong Chang, Sang-Yun Yang,
Chul-Ki Kim, Gi-Young Jeong, Jun-Jae Lee, Seoul National University, Korea;
Hwanmyeong Yeo, Yeonjung Han, Yoon-Seong Chang, Sang-Yun Yang, and
Chul-Ki Kim, Seoul National University; Gi-Young Jeong, Chunnam National
University; Jun-Jae Lee, Seoul National University

**Half-Life and Carbon Stock of Harvested Wood Products (HWP)
Produced by Domestic Trees in Korea**

Hwanmyeong Yeo, Yoon-Seong Chang, and Jun-Ho Park, Seoul National
University, Korea; Whi-Lim Son, Joo-Saeng Park, and Moon-Jae Park,
Korea Forest Research Institute, Korea

**Wood Quality of Black Walnut Grown in Reclaimed Surface Mine in the
Czech Republic**

Ales Zeidler, Vlastimil Boruvka, Guillermo Garcia Mayoral,
Czech University of Life Sciences Prague, Czech Republic

Student Poster Competition



Title of Presentation

Life Cycle Assessment of Exported Torrefied Wood Pellets (TOP) from Maine to the European Union

Authors and Affiliations

Melanie Blumentritt, Sasha Howes and Stephen M. Shaler, University of Maine, USA

Changes in the Anatomy of Exposed Roots of Some Hardwood Species

Bryan Dick, North Carolina State University, USA

Thermo-mechanical Properties of Genetically Modified *Populus trichocarpa*

Charles Edmunds, North Carolina State University, USA

Rheometer Method to Determine Factors Influencing Sticking Behaviour of Aminoplastic Resins

Alexandra Himsel, Kompetenzzentrum Holz GmbH, Austria; Ulrich Müller, BOKU – University of Natural Resources and Applied Life Science, Austria; Hendrikus W. G. van Herwijnen, Kompetenzzentrum Holz GmbH, Austria

Study of Mechanical Properties of Composites Based on TEMPO-oxidized Cellulose Gel and Silica Nanoparticles

Chloé Maury and Khalil Jradi, Université du Québec à Trois-Rivières, Canada; Claude Daneault, Canada Research Chair in Value-added Paper, Canada

Comparing Mechanical and Chemical Properties of Young Transgenic Black Cottonwood Trees Modified for Reduction of Specific Genes in Lignin Biosynthesis

Zachary Miller, North Carolina State University, USA

Novel Imaging and 3D rendering Techniques to Visualise Spiral Grain in *Pinus radiata*

Jimmy Thomas, The Rubber Board and University of Canterbury, New Zealand; David Anthony Collings, University of Canterbury, New Zealand