

Godišnja znanstvena konferencija COST Akcije FP 0904, Iasi, Rumunjska

Annual scientific conference of COST Action FP 0904, Iasi, Romania

U rumunjskom gradu Iasiju, u Institutu za makromolekularnu kemiju "Petru Poni", od 9. do 11. travnja 2013. održana je treća godišnja znanstvena konferencija COST Akcije FP 0904 pod naslovom *Vrednovanje, prerada i predviđanje ponašanja termo-hidro-mehanički obrađenog drva primjenom eksperimentalnih i numeričkih metoda*.

Glavni cilj savjetovanja u sklopu te COST Akcije bio je pridonijeti boljem razumijevanju mehaničkih i kemijskih transformacija drva tijekom hidrotermičkih (TH) / termo-hidro-mehaničkih (THM) obrada suradnjom znanstvenika s različitih područja znanosti o drvu i poznavanja materijala. Navedena akcija potiče istraživanje i omogućuje suradnju među istraživačkim skupinama iz akademske zajednice i industrije te pomaže u primjeni znanstvenih rezultata u praksi odnosno u industrijskoj proizvodnji, pridonosi poboljšanju procesa, razumijevanju odnosa među parametrima obrade, svojstava materijala i razvoja novih proizvoda.

COST Akcija FP0904 sastoji se od tri radne skupine:

- WG1: Identifikacija kemijske razgradnje drva tijekom hidrotermičke obrade
- WG2: Modeliranje termo-hidro-mehaničkih procesa tijekom obrade drva
- WG3: Inovacije i novi proizvodi termo-hidro-mehaničke obrade.

Tijekom konferencije predstavljeno je trenutačno stanje THM i TH obrade, prikazane su nove analitičke



Slika 1. Institut za makromolekularnu kemiju "Petru Poni"



Slika 2. Usmeno izlaganje Miljenka Klarića, dipl. ing.

metode koje pridonose razumijevanju kemijskih reakcija što se tijekom procesa obrade zbivaju u drvu, iznesena su predviđanja uspješnosti nekog određenog proizvoda na temelju procesnih parametara te su identificirani problemi u prijenosu rezultata laboratorijskih istraživanja u industrijsku proizvodnju, s ciljem boljeg razumijevanja potreba obrade, razvoja novih ideja, novih proizvoda i mogućnosti širenja na nova tržišta. Konferencija je okupila stručnjake i mlade znanstvenike s europskih sveučilišta i iz industrije, kao i iz drugih zemalja.

Na savjetovanju su izloženi sljedeći radovi:

- Carmen-Mihaela Popescu, Maria-Cristina Popescu
Two dimensional correlation spectroscopy applied for evaluation of the structural changes in wood
- Lothar Clauder, Alexander Pfriem
Determination of dimensional stability of thermally modified beech and spruce wood
- Cornelia Vasile, Manuela-Tatiana Nistor, Silvia Florica Patachia
Thermal behaviour of some wood species treated with ionic liquid
- Aniela Garcia Perez, Emilia-Adela Salca, Bobadilla Maldonado, Salim Hiziroglu
Evaluation of surface quality of wood composites as function of weathering
- Daniela Soya, Venetia Sandu, Ioan-Bogdan Bedeleian
The correlation between wood moisture content and air state properties during drying

- Michael Altgen, Jukka Ala-Viikairi, Antti Hukka, Timo Tetri, Holger Militz
Wood anatomical changes on thermally modified surfaces of Norway spruce and Scots pine
- Kevin Candelier, Stephane Dumarcay, Anelie Petrisans, Philippe Gerardin, Mathieu Petrisans
Comparison of chemical composition of heat treated wood cured at a same temperature under different inert atmospheres: nitrogen, vacuum and steam pressure
- David Mannes, Walter Sonderegger, Eberhard Lehmann
On-line monitoring of hygroscopicity and dimensional changes of wood during thermal modification by means of neutron imaging methods
- Dan Ridley-Ellis, Barbara Keating, Carmen-Mihaela Popescu
Comparison of acoustic NDT for assessment of small stiffness changes during low temperature thermal treatment
- Patrick Perre, Joseph Gril
Modelling the isolated and combined effects of chemical modification and hygro-thermo-mechanical loading of wood
- Dominique Derome
The role of water in the HTM behavior of wood
- Susanna Källbom, Magnus Wålinder, Kristoffer Segerholm, Dennis Jones
Physico-chemical characterization of THM modified wood using inverse gas chromatography (IGC)
- Omar Saifouni, Rostand Moutou Pitti, Jean-François Destrebecq, Frédéric Dubois
A pseudoelastic mechanosorptive model for wood material
- Floran Pierre, Giana Almeida, Julien Colin, Patrick Perré
Heat treatment of wood for energy purpose: effect of the treatment intensity on mechanical resilience measured by a new impact device
- Julien Froidevaux, Joseph Gril, Parviz Navi
Strength prediction of mild thermo-hydro treatments and extrapolation for natural ageing
- Rostand Moutou Pitti, Frédéric Dubois, Eric Fournely, Jean-François Destrebecq
Experimental and numerical detections of cracks appear in green wood during drying process
- Jakub Sandak, Anna Sandak, Dusan Pauliny, Maria Paola Riggio, Ilaria Santoni
About some chemical changes to wood due to densification Jakub Sandak, Anna Sandak, Dusan
- Miha Humar, Frederick A. Kamke, Andreja Kutnar
Reducing set recovery of densified wood with heat treatment
- Ghonche Rassam
Prediction and evaluation of mechanical properties of densified Iranian poplar after heat treatment
- Muhammad Muzamal, Anders Rasmuson
Finite element modeling of deformation in fiber bundle during steam explosion of wood
- Charalampos Lykidis, Petros Konstantakos, Stavros Tsalikis
Effects of closed system hydrothermal treatment conditions on colour and hardness of European beech wood
- Kristiina Laine, Lauri Rautkari, Borut Kričej, Matjaž Pavlič, Marko Petrič, Mark Hughes, Andreja Kutnar
Adhesion of polyurethane coating on surface densified Scots pine wood
- Wim Willems, Holger Militz
From chemical process monitoring to direct control of thermally modified wood properties
- Callum Hill, James Ramsay, Lauri Rautkari, Mark Hughes, Kristiina Laine
The Behaviour of Sorption Hysteresis in the Water Vapour Sorption Isotherm of Thermally Modified Wood
- Luigi Todaro, Silvia Ferrari, Paola Cetera, Ottaviano Allegretti, Nicola Moretti, Achille Pellerano
Effect of thermal vacuum treatment on bond shear strength. A comparison among Norway spruce, White ash and Turkey oak wood
- Mohamed Elaieb, Kevin Candelier, Stéphane Dumarcay, Philippe Gerardin, Mathieu Petrisans
Durability and chemical modifications of four Tunisian wood species after heat treatment
- Róbert Németh, László Tolvaj, Miklós Bak, Diána Csordós
Effect of treatment medium on the colour change of heat treated wood during natural weathering
- Jussi Ruponen, Martin Rhême, Silvia Ferrari, Lauri Rautkari, Mark Hughes
Studies on post-welding heat-treated vibrational welded wood
- Jörg Wehsener, Peer Haller, Jens Hartig, Tom-Egmont
Continuous Wood Densification Process of Circular Profiles
- Lars Blomqvist, Jimmy Johansson, Dick Sandberg
Shape stability of THM processed laminated veneer products glued with bio-based adhesive systems
- Nebojša Todorović, Goran Milić, Zdravko Popović
Application of FT-NIR spectroscopy in chemometric modeling of heat-treated beechwood properties
- Miljenko Klarić, Stjepan Pervan, Silvana Prekrat, Aleš Straže, Željko Gorišek
Determination of Thermo-modified Oak Wood Emissivity Properties in the Infrared Spectral Wavelength Range 7.5-13 μm
- Aleš Straže, Željko Gorišek, Stjepan Pervan, Anna Sandak, Jakub Sandak
Characterisation of chemical and physical properties of thermo-modified wood by FT-NIR spectroscopy
- Martin Rhême, John Botsis, Joël Cugnioni, Parviz Navi
Experimental and numerical investigations of mechanical properties of welded joint using the Arcan setup
- Jimmy Johansson, Lars Blomqvist, Dick Sandberg
Challenges using dielectric heating for THM processing of solid wood
- Andreja Kutnar, Robert Widmann, Iris Brémaud
Using Dynamic Mechanical Analysis (DMA) for fundamental understanding of thermo treatments of wood
- Omar Saifouni, Rostand Moutou Pitti, Jean-François Destrebecq, Julien Froidevaux, Parviz Navi

Experimental study of mechanosorptive hygro-lock effect in wood subjected to variable loading and relative humidity

María Inés Placencia Peña, Carmen Mihaela Popescu, Frédéric Pichelin, Antonio Pizzi

Thermal and Analytical Characterization of Welded Beech

Carmen-Mihaela Popescu, Gabriela Lisa, Julien Froidevaux, Parviz Navi, Maria-Cristina Popescu
Thermal behaviours of THM densified wood

Pavlo Bekhta, Stanislaw Prosyk, Tomasz Krystofiak
Surface characteristics of thermo-mechanically densified veneers

Andreja Kutnar

Environmental impact assessment of THM products

Cristoph Manthy, Edeltraut Guenther, Andreas Heiduschke, Peer Haller

Structural, economic and environmental performance of fibre reinforced wood profiles vs. solutions made of steel and concrete

Kristiina Laine, Lauri Rautkari, Mark Hughes

Set-recovery of densified and thermally modified wood under repeated soaking-drying cycles

Andreja Kutnar, Aleš Ugovšek, Frederick A. Kamke, Milan Sernek

Bonding performance of densified VTC beech bonded with liquefied wood

Alexander Pfriem, Mario Zander, Lothar Clauder

Baltic Sea network for efficient and sustainable wood processing based on wood modification processes

Georg Behr, Holger Militz, Frederick A. Kamke, Andreja Kutnar

Fatigue behaviour of VTC and untreated beech wood

Anne Lavalette, Gérard Elbez, Alain Cointe, Régis Pommier, Michel Danis

Gluing ability of Pinus Pinaster depending on its moisture content

Viktor Savov, Julia Mihailova, Cvetelin Evstatiev

Influence of hot-pressing regimes at MDF production

Abdoulaye Samake, Patricio Palmili, Mustapha Taazount, Philippe Audebert, Maxime Audebert, Abdelhamid Bouchaïr

Thermo-Hydric behaviour of dowelled and bolted steel-to-timber connections exposed to fire

Dennis Jones, Edo Kegel

Products meeting Needs: Applying Thermal Modification and Thermo-Hydro Mechanical Processing of Wood to its Fullest Potential

Silvia Ferrari, Luigi Todaro, Ignazia Cuccui, Ottaviano Allegretti, Mario Marra

Preliminary tests of combined steaming and thermal-vacuum treatment on Turkey oak (Quercus cerris L.) wood.

Detalji o Akciji COST FP 0904 nalaze se na web stranici <http://www.cost-fp0904.ahb.bfh.ch/cost/en/home>

Prof. dr. sc. Stjepan Pervan
Miljenko Klarić, dipl. ing.



Slika 3. Sudionici konferencije