



Salzburg University
of Applied Sciences

COST Action FP1407 3rd Conference:
“Wood modification research and applications”
co-organized with
the Society of Wood Science and Technology &
the European Conference of Wood modification



SOCIETY OF
WOOD SCIENCE &
TECHNOLOGY

Wednesday, September 13th, 2017

18:00-21:00: Welcome evening. “Drinks and Blues”, with live music featuring Doug Gardner and Rupert Wimmer. (Room: Mensa)

Thursday, September 14th, 2017

8:30: **Registration**

8:50-9:05: Room E.17. Welcome to Kuchl: **Alexander Petutschnigg & Gianluca Tondi**

9:05-9:10: Room E.17. Welcome from COST action chair: **Andreja Kutnar**

9:10-9:15: Room E.17. Welcome from the ECWM chair: **Holger Militz**

Keynote session Room E.17		Chairs: A. Kutnar, R. Wimmer
9:15	New strategies for modifying wood with biopolymers	W. Grigsby
9:45	Advanced analysis tools and programs to accelerate the adoption of more natural structures	C. G. Hunt, J. Jakes, C. Frihart
10:15	Presentation of SWST and its presence in Europe	V. L. Herian
10:30	Presentation of "ForestValue"	M. Greimel

10:45-11:15: **Coffee break**

ECWM Session: Novel wood modification technologies Room E.17		Chairs: H. Militz, I. Burawska
11:15	Effects of methyl methacrylate impregnation on physical properties of timber	S. Curling, M. Spear, R. Gibson, G. Ormondroyd
11:28	Catalytically induced <i>in situ</i> polymerisation of ethylene in the hierarchical porous wood structure	J. Gurr, G.A. Luinstra, A. Krause
11:40	Modified wood with lactic acid oligomers: Assessment of performance	C. Grosse, M. Noël, MF. Thévenon, P. Gérardin
11:53	Improvement of beech wood properties through chemical modification with bio-sourced polyesters	C. L’Hostis, E. Fredon, MF. Thévenon, P. Gérardin
12:05	Laminated veneer lumber (LVL) made of beech wood veneers modified with lignin-phenol formaldehyde solutions	M. Fleckenstein, V. Biziks, C. Mai, H. Militz

12:18	Ionic liquid pre-treatment to reduce the elastic spring-back and set-recovery of surface densified Scots pine	B. Neyses , D. Sandberg
12:30	Humidity optimization considerations for thermal wood modification	W. Willems

12:45-14:15: **Lunch break** at Mensa

Session 2 : Characterisation of modified wood Room E.17		Chairs: J. Sandak, A. Rozanska
14:15	Exploration of hypothesis that limitation of fungal oxidant diffusion underlies decay resistance in acetylated wood	C. Hunt , S. Lacher, K. Hirth, L. Lorenz, K. Hammel, C. Houtman, E. Englund Thybring, S. Zelinka
14:23	Dimensional stable and durable laminated veneer lumber (LVL) from European beech (<i>Fagus sylvatica</i>) by impregnation with low molecular weight phenolic resin	S. Bicke , V. Biziks, H. Militz
14:40	Fixing tannin in wood: Characterization of the treated wood	L. Sommerauer, D. Bartosch, R. Waschak, A. Oberle, MF. Thevenon, G. Tondi
14:53	Assessment of chemical fingerprint of modified wood	J. Sandak , A. Sandak, O. Allegretti, I. Cuccui
15:05	Wood modification method efficiency evaluation by cyclic hydrothermal treatment	A. Morozovs , A. Keke, L. Fiser, U. Spulle
15:18	Machinability of thermally modified wood assessed with a new objective method	G. Goli , J. Sandak, A. Sandak, P. Cetera, L. Todaro
15:30	Microscopic investigation of acetylated hornbeam and densified beech	R. Rousek , F. Fodor

15:45-16:15: **Coffee break**

Session 3 : Innovative use of wood modification processes Room E.17		L. Ross Gobakken, W. Grigsby
16:15	Modification of the particleboard core layer by non-wood lignocellulosic raw materials	R. Réh
16:28	The use of novel modified wood fiber for manufacturing structural wood plastic composite timber for an innovative marine application	D. J. Gardner , Y. Han, D. Mayes, J. Pynnonen, S. Ruell
16:40	Sawdust-based activated carbon for wastewater treatment from textile industry	B. Bestani , N. Benderdouche
16:53	Sustainable use of <i>Eucalyptus globulus</i> residues for polyurethane foam production	A.P. Fernandes, J. Ferreira, I. Domingos, J. Labidi, L. Cruz-Lopes, B. Esteves
17:05	Mechanochemo modification of cellulose powders	M. Wolcott , M. Azadfar, L. Huang, J. Wang
17:18	Using pre-stressed or non-pre-stressed curved members of concentrically composited laminated timber in structures of non-controllable environment	T. Teppand

17:30: **Close of the first day**

17:30-19:00: **Core group meeting (Room E.17 or 2.16)**

19:00: **Bus transfer to dinner from Campus Kuchl (Main entrance) to Sternbräu (Griesgasse 23), Salzburg centre**

19:30: **Conference dinner**

Friday, September 15th, 2017

Short term scientific mission session Room E.17		Chair: M. Schwarzkopf
9:00	Micro-distribution of epoxidized oils in wood	G. Kose Demirel, A. Temiz , E. D. Gezer
9:07	Enhancement of coatings for wooden claddings via plasma pre-treatment and environmental impact	J. Žigon , M. Petrič, S. Dahle
9:15	Understanding of the effect of natural saltwater treatment on durability, fibers densification and chemical modification of palm wood	M. T. Elaieb, A. Namsi, K. Candelier
9:22	The effect of wood drying and heat modification on some physical and mechanical properties of radiata pine (results from STSM 35419)	R. Herrera , J. Labidi, R. Llano-Ponte, R. Ananias
9:30	Approach for cascading – Analysis of the application potential of different tree materials with antimicrobial properties	K. Wagner , C. Roth, G. Oosting, M. Musso, A. Petutschnigg, T. Schnabel
9:37	Analysis of fracture toughness in Mode II on modified wood	M. Redon , V. Sebera, M. Brabec, D. Decky, P. Čermák, J. Milch, J. Tippner
9:45	Environmental profiles of alternative tannin extraction scenarios	T. Ding, S. Bianchi, C. Ganne-Chédeville, P. Kilpeläinen, A. Haapala, T. Räty
9:52	Review of biogenic carbon in carbon footprint of modified wood	L.G.F. Tellnes , C. Ganne-Chédeville, A. Dias, F. Dolezal, C. Hill, E. Zea Escamilla
10:00	Advanced understanding of the structural influences of bio-based lignocellulosic materials - Future industrial applications in high added value wood modification products	G. Schmidt , J. Gurr, O. Mertens, M. Nopens

Poster Session Room E.17 (Posters are in Room E.15)		Chairs: D. Sandberg, L.G.F. Tellnes
10:10	Thermo-mechanical treatment of flooring elements	I. Burawska , P. Boruszewski
10:12	Improvement of wood heat treatment via an acoustic field	E. A. Silveira , A. Pétrissans, A. Caldeira - Pires, M. V. Girão, B. Colin, P. Rousset, M. Pétrissans
10:14	Surface modification of solid wood by charring	M. Kymäläinen , S. Hautamäki, K. Lillqvist, K. Segerholm, L. Rautkari
10:16	Development of UV – colour modification of wood surface	P. Daniel , V. Kotradyová,

		R. Tiño , V. Dvonka
10:18	Wood modification by alkali-activated composition coatings for fire protection	D. Vaičiukynienė , R. Bistrickaitė, A. Kielė
10:20	Wood modification with n-methylol compounds – effects of modification agent and process conditions	L. Emmerich , S. Bollmus, H. Militz
10:22	Prediction of mass loss dynamics during wood thermal modification under industrial conditions	B-J. Lin , E. Silveira, B. Colin, A. Pétrissans, W-H. Chen, P. Rousset, M. Pétrissans
10:24	Mechanical properties of densified and thermally modified timber	J. Wehsener , C. Brischke, L.Meyer-Veltrup, P. Haller
10:26	The ability to layered wood composites pressing time modification	A. Gumowska , G. Kowaluk, E. Robles
10:28	Investigation of periodical effect on modified woods outdoor colour change	M. Bak , R. Németh
10:30	Nanoscale mechanical properties of wood: effects of heat treatment	S. Saleh , M. Wentzel, H. Militz, C. Volkert
10:32	Color and wettability changes of heat-treated wood finished with UV-rad cured coating after artificial weathering	E. Robles , R. Herrera, J. Sandak, J. Labidi
10:34	Surface behaviour of poplar and spruce wood after immersion in extractives solution achieved from thermally treated Hungarian oak	P. Cetera , L. Todaro, T. Meints, W. Gindl-Altmutter
10:36	Studies of the gluability of the pine wood veneers after TM modification with the use of PVAC adhesives	A. Bernaczyk, T. Krystofiak , B. Lis
10:38	Impact of selected modification systems on elasto-mechanical properties of wood	S. Bollmus , C. Leitch, H. Militz
10:40	Investigation of tropical wood modification under hydro-mechanical loadings with digital image correlation and X-ray microtomography	R. Moutou Pitti , S-E. Hamdi, B. Odounga, M. C. Teguedi
10:42	Acoustic emission technique to monitor real-time wood fracture properties in room temperature	M. Diakhate, R. Moutou Pitti , N. Angellier, E. Bastidas-Arteaga, S.-E. Hamdi
10:44	Performance of 3-layer composites with densified surface layers of Nothofagus species of Southern Patagonian forests	M.Schwarzkopf , M. Burnard, G.Martínez Pastur, L. Monelos, A. Kutnar
10:46	The activity of moulds on wood surfaces modified with laser	L. Reinprecht ,Z. Vidholdová
10:48	Do extractive compounds of thermally modified woods play an important role in the decay and termites resistances of these modified materials? A preliminary study.	K. Candelier , MF. Thévenon, R. Collet, P. Gérardin, S. Dumarçay
10:50	In-situ SEM / TEM fracture tests on (modified) tracheids of pine late-wood	M-C. Maaß , M. Wentzel, H. Militz, C. Volkert ¹
10:52	Traditional wood finishing substances and their influence on surface roughness	A. Rozanska , P. Kieblesz
10:54	Biobased phenolic resins for wood protection against fire	P.L. de Hoyos Martínez , F. Charrier El-Bouhtoury, J. Labidi
10:56	The activity of bacteria on surfaces of wooden composites painted with acrylate coating with addition of silver nanoparticles	J. Iždinský , L. Reinprecht, E. Nosál, Z. Vidholdová, J. Krokošová
10:58	Hydrophobicity of ε-caprolactone-modified wood materials	Z. Candan , M. Yildirim, A. Satir, M. A. Ermeýdan, O. Gonultas

11:00	Natural adhesives from liquefied wood based resins and their applications	M. H. Alma , T. Salan
11:02	Bio-based foams from renewable and sustainable polyols obtained via liquefaction of wood and other lignocellulosics	T. Salan , M. H. Alma
11:04	Analysis on the quality of vegetable charcoal derived from Sapucaia's endocarp (<i>Iecythis pisonis</i>)	R.S. de Araújo , W.S. L. da Costa, T.dos Santos Farias, A. R. Souza Reis, S.H.F. da Silva, P. S. B. dos Santos
11:06	Spectroscopic characterisation of bio-based filaments for the fused deposition modeling proceeding	S. Kain , M. Musso, A. Petutschnigg

11:10-11:50: **Coffee break**

Session 4 : Modified wood in sustainable built environment Room E.17		Chairs: C. Hill, F. Dolezal
11:50	Common themes in wood modification and environmental impact assessment of wood	M. Burnard , M. Posavčević, E. Kegel ³
12:03	Carbon sequestration in the built environment – the role of harvested wood products	C. Hill
12:15	Comparative assessment of carbon uptake and release of wooden and concrete building materials	F. Dolezal , P. Boogman
12:27	Performance of thermally modified radiata pine facade, gallery and decking in a passive house in Spain after six years exposure. Research and applications in a real case.	D. Lorenzo , A. Lozano, J. Benito, M. Touza, J. Fernández-Golfín ⁵
12:40	Architects' perception of modified wood: a parallel study in selected countries in Europe and selected regions in USA	M. Kitek Kuzman , E. Haviarov, D. Sandberg

12:55-14:00: **Lunch**

14:00- 15:00: **Working group meeting (WG1: Room E17, WG2: Room 1.11, WG3: Room 2.08,**

WG4: Room 2.15)

15:00- 15:15: Room E.17. **Reports of WG leaders and conference conclusions**

15:15- 15:45: **Coffee break**

15:45- 17:00: Room E.17. **Management committee meeting**