

2011 Annual Meeting of the International Academy of Wood Science

Novel Materials from Wood or Cellulose

August 31 to September 2, 2011 – Stockholm/Sweden

PROGRAM

Wednesday, August 31

Industrisalen

08:00 Registration

09:00 Opening: Birgitta Sundblad, President Innventia AB

Chairperson; Lennart Salmén

09:10 Keynote and IAWS Academy Lecture
“Natural cellulose-based hierarchies: concepts for novel materials and added functionality” *Prof. George Jeronimidis*
g.jeronimidis@reading.ac.uk

09:50 “Fiber spinning of cellulose nanowhisker based biocomposites: possibilities and challenges” *Aji P Mathew, Kristiina Oksman*
aji.mathew@ltu.se

10:15 “Regenerated cellulosic fibres for textile applications”
Martin Kihlman, Lars Stigsson, Mats Westin, Ulf Germgård
martin.kihlman@kau.se

10:40 Coffee break

11:10 “Preparation and characterization of bacterial cellulose/chitosan porous scaffolds”
Thi Thi Nge, Masaya Nogi, Hiroyuki Yano, Junju Sugiyama
thithi-nge@eco.sanken.osaka-u.ac.jp

11:35 “Nanofibrous carbon materials with controlled properties synthesized from electrospun Cellulose”
Olga Naboka, K. Rodrigues, A.F. Toomadj, A. Sanz-Velasco, G. Toriz, P. Lundgren, P.Enoksson, P.Gatenholm
naboka@chalmers.se

12:00 Lunch

Chairperson; Uwe Schmitt

13:00 Keynote: “Wood welding and its applications in building and furniture”

Prof. Antonio Pizzi

antonio.pizzi@enstib.uhp-nancy.fr

13:40 “In silico lignocellulosic systems- A first step toward the simulation of plant cell walls”

Landry Charlier, Karim Mazeau

landry.charlier@cermav.cnrs.fr

14:05 “Relationships between biochemistry, modulation of cell wall viscoelastic properties and fracture behavior in woody hemp core by correlation study”

Rahime Bag, Johnny Beaugrand, Patrice Dole, Bernard Kurek

rahime.bag@reims.inra.fr

14:30 Coffee break

15:00 “Lignin for carbon fibres”

Ylva Nordström, Elisabeth Sjöholm, Ida Brodin, Rickard Drougge, Göran Gellerstedt

ylva.nordstrom@innventia.com

15:25 IAWS Ph.D thesis award: “Development of new engineered wood product for structural applications made from trembling aspen and paper birch”

Katherina Beck

Katherina.Beck@klhelement.com

16:00 Poster session

18:15 Walk to the City Hall

19:00 City Hall reception

Thursday, September 1, morning

Industrisalen

Chairperson; Mats Johansson

08:30 **Keynote:”Wood surface photostabilisation and coating performance”**
Prof. Philip Evans
phil.evans@ubc.ca

Industrisalen

09:10 **“Influence of atmospheric pressure plasma on wood surfaces”**
Bernard Riedl, C. Anghel, P. Blanchet, V. Blanchard
Bernard.riedl@sbf.ulaval.ca

09:35 **“Dynamic contact angle measurements as an assessment tool for the weathering of water repellent treated surfaces”**
Christoph Schauwecker, Alan Preston
cschauwecker@viance.net

10:00 **Coffee break**

10:30 **“Accessibility and reactivity of hydroxol groups in wood”**
Roger Rowell
cschauwecker@viance.net

10:55 **“Characteristics of XRD and SEM for photodegradation of dyed veneer in UV-radiation”**
Yi Liu, Jianmin Gao, Hongwu Guo
liuyi.zhongguo@163.com

11:20 **“Modification of solid wood with glutaraldehyde to improve outside weathering performance”**
Carsten Mai, Zefang Xiao, Yanjun Xie
cmai@gwdg.de

12:00 **Lunch**

Styrelserummet

Chairperson; Robert Evans

- 09:10** **“Pulsed plasma polymerization of nanocellulose /maleic anhydride: parameter study to control film microstructure”**
Pieter Samyn, Marie-Pierre Laborie, Aji P. Mathew, Vincent Roucoules, Aissam Airoudj
Pieter.Samyn@fobawi.uni-freiburg.de
- 09:35** **“Cellulose nanocrystals as building blocks for semi-reflective layer and pickering emulsions”**
Bernard Cathala, Isabelle Capron, Céline Moreau, Hervé Bizot
Bernard.Cathala@nantes.inra.fr
- 10:00** **Coffee break**
- 10:30** **“Thermoplastic polyolefin as formaldehyde free binders in highly filled lignocellulosic panel boards”**
Anand R. Sanadi, Daniel F. Caulfield
anrs@life.ku.dk
- 10:55** **“Improving the thermo-mechanical properties of one-component polyurethane adhesives by organic fillers”**
Sebastian Clauss, Peter Niemz
alouys@ethz.ch
- 11:20** **“Water vapour sorption of thermally modified wood - sorption kinetics and cell wall viscoelasticity”**
Callum Hill
c.hill@napier.ac.uk
- 12:00** **Lunch**

Thursday, September 1, afternoon

Industrisalen

Chairperson; Paul Gatenholm

- 13:00** **Keynote: “Potential enzymes in the biorefining of hemicelluloses to value-added materials”**
Prof. Maija Tenkanen
maija.tenkanen@helsinki.fi

Industrisalén

- 13:40** **“In situ polymerization of polyaniline in veneers and the effect on material conductivity, morphology and flame retardance”**
Stacy Trey, Mats Johansson
stacy.trey@sp.se
- 14:05** **“Improving UV-protection of exterior wood by utilizing UV-absorber in combination with epoxy functionalized soybean oil”**
Sara Olsson, Mats Westin, Mats Johansson, Phil Evans, Emma Östmark
sara.olsson@sp.se
- 14:30** **Coffee break**
- 15:00** **“Preparation and characterization of coating systems based on liquefied wood and melamine resins”**
Marko Petrič, Frank Budija, Borut Kričej
marko.petric@bf.uni-lj.si
- 15:25** **”Surface energy characteristics of maple wood particles coated with polystyrene-acrylic acid (PSAA) block copolymer”**
Magnus Wålinder, Douglas J. Gardner
magnus.walinder@byv.kth.se
- 15:50** **“A comparative study of covalent grafting and physical adsorption of PCL onto cellulose”**
Carl Bruce, Simon Utsel, Emma Larsson, Linda Fogelström, Lars Wågberg, Eva Malmström
cbruce@kth.se

Styrelserummet

Chairperson; Frank Beall

- 13:40** **“Development of methodology to predict wood properties of thermally modified wood”**
Holger Miltz, Michael Altgen
hmiltz@gwdg.de
- 14:05** **“Mechanical, physical and chemical properties of wood, heat-treated with the vacuum-press-dewatering method”**
Melanie Wetzig, Tamás Hofmann, Tamás Rétfalvi, Peter Niemz
alouys@ethz.ch
- 14:30** **Coffee break**

- 15:00** **“Influence of pressing time and temperature on the shear strength of lap joints bonded with liquefied wood”**
Ales Ugovsek
ales.ugovsek@bf.uni-lj.si
- 15:25** **“Effect of compressive treatment by steaming on the properties of wood cell walls”**
Yafang Yin, Lars Berglund, Lennart Salmén
yafang@caf.ac.cn
- 15:50** **”Impact of thermo-hydro environment and specific mechanical energy on defibrization using flow modeling and extrusion”**
Johnny Beaugrand, Françoise Berzin
johnny.beaugrand@reims.inra.fr
- 16:15** **End of day**
- 18:00** **Conference dinner in the Swedish archipelago**
Boat goes from Nybrokajen.

Friday, September 2 - Industrisalen

Chairperson; Lars Berglund

- 08:45** **Keynote: “Optically transparent cellulose nanocomposites - the transition of reinforcement from nanofibres to nanostructured fibres”**
Prof. Hiroyuki Yano
yano@rish.kyoto-u.ac.jp
- 09:25** **“Nanofibrillated cellulose for niche applications”**
Tanja Zimmermann, Christian Eyholzer, Thi Thu Thao Ho, Christoph Gebald, Phillippe Tingaut, Pierre-Etienne Bourban
tanja.zimmermann@empa.ch
- 09:50** **“Cellulose-filled wood adhesives”**
Stefan Veigel, Ulrich Müller, Wolfgang Gindl-Altmatter
stefan.veigel@boku.ac.at
- 10:15** **Coffee break**

- 10:45** **“Preparation, characterization and novel properties of thermally responsive cellulose nanocrystals”**
Firas Azzam, Laurent Heux, Jean-Luc Putaux, Bruno Jean
firmas.azzam@cermav.cnrs.fr
- 11:10** **“High performance filters from fibrillated wood fibres for the capture of airborne pathogens”**
Alan Macfarlane, John F. Kadla, Richard J. Kerekes
doctor.alaan@gmail.com
- 11:35** **“Cellulosic nanomaterials with preferred orientation”**
Wolfgang Gindl-Altmutter, Stefan Veigel, Jozef Keckes
wolfgang.gindl@boku.ac.at
- 12:05** **Lunch**
- Chairperson; John Barnett*
- 13:00** **“Towards a better understanding of cellulose swelling and dissolution at the molecular level”**
Tomas Rosenau, Antje Potthast, Kurt Mereiter, Christian Jaeger, Alfred French, Fumiaki Nakatstubo
thomas.rosenau@boku.ac.at
- 13:25** **“Creating an anisotropic cellulose nanowhisker reinforced agarose hydrogel”**
Michaela Eder, Anayancy Osorio-Madrado, Markus Rueggeberg, Jitendra Kumar Pandey, Matt Harrington, Yoshiharu Nishiyam, Jean-Luc Putaux, Cyrille Rochas, Ingo Burgert
michaela.eder@mpikg.mpg.de
- 13:50** **“Novel nanocellulose-based barriers”**
Christian Aulin, Mikael Ankerfors, Tom Lindström
christian.aulin@innventia.com
- 14:15** **“On the porosity and oxygen barrier properties of cellulose nanofibrill-based films”**
Kristin Syverud, Gary Chinga-Carrasco
kristin.syverud@pfi.no
- 14:40** **Ending**
- 14:45** **Coffee break**
- 15:15-17:00** **IAWS Business Meeting**

Poster presentations

Composites

“Mechanical and adhesive properties of polyurethane binders on tall and seed oil base”

Vladimir Yakushin, U. Stirna, I. Sevastyanova, M. Misane
yakushin@edi.lv

“Physical and flexural properties of novel layered composites of lignocellulosic filler/Recycled HDPE”

Abdollah Najafi, Majid Safapour, Moshen Saffari, Mehran Emam
ab_najafi@yahoo.com

“Properties of ethanolamine upgraded wood”

Nejc Thaler, Boštjan Lesar, Franc Pohleven, Miha Humar
nejc.thaler@bf.uni-lj.si

“Preparation and characteristics of biooil-phenol-formaldehyde resin adhesives for wood composites”

Xueyong Ren, Wenliang Wang, Jinsheng Gou, Jianmin Chang
renxy1987@126.com

“Micromechanical and structural characterization of chitosan impregnated radiate pine (*Pinus radiata*) wood”

Friederike Saxe, Adya Singh, Michaela Eder, Tripti Singh, Ingo Burgert
friederike.saxe@mpikg.mpg.de

“Elaboration of design guidelines for all-plywood sandwich panels”

Edgars Labans, Kasoars Kalnins
edgars.labans@rtu.lv

“Biocomposite TPS/PCL reinforced with sisal fibres”

José Manoel Marconcini, Adriana de Campos, L.H.C Mattoso
marconcini@cnpdia.embrapa.br

“Novel resin system for particleboards with low formalhyde content”

Sergej Medved, Nataša Čuk, Matjaž Kunaver
sergej.medved@bf.uni-lj.si

“Applied and structural aspects of lignin in novel wood composites and plywood”

Janis Gravitis, Ramunas Tupciauskas, Janis Abolins
jgravit@edi.lv

Cellulose

“Characteristics of cellulose nanowhiskers extracted from wood from a bioresidue bioethanol production”

Martha A. Herrera, Aji P. Mathew, Kristiina Oksman
martha.herrera@ltu.se

“Cellulose microfibrils and nanofiber produced from cotton bast: isolation and characterization”

Alireza Shakeri, Farshad Miraki
a.shakeri@gu.ac.ir

“Novel methods to introduce functionality to cellulose”

Linda Svensson, Marcus Ruda, Hanna Lönnberg, Paula Martinez
linda.svensson@swetree.com

“Native cellulose nanofibrils decorated with magnetic ferrite nanoparticles - and nanostructured materials thereof”

Sylvain Galland, T. Olsson, Valter Ström, Lars Berglund
galland@kth.se

“Cellulose nanofibrils- defining the process window for electrospinning from ionic liquids”

Erik Perzon, Linda Härdelin, Johannes Thunberg, Bengt Hagström, Gunnar Westman, Paul Gatenholm, Pernilla Walkenström
erik.perzon@swerea.se

“Hemicellulose influence on cellulose supramolecular structure and material properties”

Helena Nilsson
helena.nilsson@innventia.com

“Lab scale preparation of high viscosity viscose at Karlstad University”

Ulf Germgård, Linda Östberg, Helena Håkansson
ulf.germgard@kau.se

“Enzyme activation of pulp and its influence on the gamma number of viscose”

Ulf Germgård, Linda Östberg, Helena Håkansson
ulf.germgard@kau.se

“Adsorption of poly(vinyl alcohol) on nano-fibrillar cellulose and its effects on suspension viscosity”

Lars Järnström, Kristýna Hlisnikovská
Lars.Jarnstrom@kau.se

“Chemo-enzymatic assembly of clickable cellulose surfaces via multivalent polysaccharides”

Chunlin Xu
chunlin@kth.se

Surfaces

“Influence of different wave-lengths artificial light on surface discoloration of dyed veneer”

Yi Liu, Lingmin Shao, Hongwu Guo

liuyi.zhongguo@163.com

“Colour modification of black locust by steaming for getting dark brown colour”

Laszlo Tolvaj, Sándor Molnár, Róbert Nemeth

tolla@fmk.nyme.hu

“The colour change of oil-heat-treated poplar during weathering

Sándor Molnár, Miklós Bak, Róbert Nemeth

smolnar@fmk.nyme.hu

“Increasing the value of underutilized hardwood species through fungal pigmentation (spalting)

Sara C. Robinson, Daniela Tudor, Paul A. Cooper

seri.robinson@utoronto.ca

Effect of Wood Constituents Oxidation on Unsaturated Fatty Acids

Alireza Salehi, Stacy M. Trey, Gunnar Henriksson, Guilhem Pagès, Sergey V.

Dvinskikh, István Furó, Mats Johansson

alism@kth.se

General

“Some remarks about a famous Swedish scientist”

Günter Schultze-Dewitz

“Fourier transform near infrared spectroscopy – a useful method to analyse the molecular structure of polysaccharides”

Karin Fackler, Manfred Schwanninger

k.fackler@tuwien.ac.at

“Determination of the relative pore sizes in wood: Evaluation of variously dried radiate pine”

Warren J. Grigsby, Hank Kroese, Elizabeth Dunningham

warren.grigsby@scionresearch.com

“Impact of spacing on modulus of elasticity and hardness of Jack Pine call walls”

Isabelle Duchesne, Queju Tong, Luciane Paes Torquatos, William Gacitúa Escobar,

Cecilia Bustos, Alexis Achim, Katherine Concha, Alain Cloutier

Isabelle.Duchesne@NRCan-RNCan.gc.ca

“Flexible film based on spruce xylan”

Aase Bodin, Ana Gonçalves, Alfredo Escalante, Agnes Stepan,

Guillermo Toriz, Paul Gatenholm

aase@chalmers.se

“Impact of acid and alkali pretreatment of miscanthus giganteus on cell-wall lignin and hydroxycinnamic acids in relation to degradation by polysaccharide-active enzymes”

Johnny Beaugrand, Nassim Belmokhtar, A. Habrant, N. Lopes Ferreira,
B. Chabbert

johnny.beaugrand@reims.inra.fr

“Surface-initiated ring-opening polymerization from cellulose model surfaces monitored by quartz crystal microbalance”

Linn Carlsson, Simon Utsel, Lars Wågberg, Eva Malmström, Anna Carlmark

linnca@kth.se

“Hydric stress and wood technological properties in *Populus deltoids*, *Dvina* and *Populous x canescens*, I-214 young clones”

Manuela Romagnoli, Alessio Giovannelli, Giovan Battista Goletti,
Stefano Spina

mroma@unitus.it

“Chemical and cryo-methods for assessing hardwood pulp fibre ultrastructure”

Prabashni Lekha, Tamara Bush, Patricia Berjak, Norman Pammenter

plekha@csir.co.za

“Relation between dielectric properties and hemicelluloses variation in a woody lignocellulosic resource, hemp as a case study.

Johnny Beaugrand, Mohamad Eid, Rahime Bag, Bernard Kurek

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