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-ng e@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 Droogge, Göran Gellerstedt
ylva.nordstrom@innventia.com

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
Industrisalen

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 Militz, Michael Altgen*
       hmilitz@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
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<thead>
<tr>
<th>Time</th>
<th>Title and Details</th>
<th>Authors and Contact Information</th>
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<tbody>
<tr>
<td>15:00</td>
<td>“Influence of pressing time and temperature on the shear strength of lap joints bonded with liquefied wood”</td>
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<td>Ales Ugovsek</td>
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<td><a href="mailto:ales.ugovsek@bf.uni-lj.si">ales.ugovsek@bf.uni-lj.si</a></td>
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<tr>
<td>15:25</td>
<td>“Effect of compressive treatment by steaming on the properties of wood cell walls”</td>
<td>Yafang Yin, Lars Berglund, Lennart Salmén</td>
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<td>15:50</td>
<td>“Impact of thermo-hydro environment and specific mechanical energy on defibrization using flow modeling and extrusion”</td>
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<td>Johnny Beaugrand, Francoise Berzin</td>
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<td><a href="mailto:johnny.beaugrand@reims.inra.fr">johnny.beaugrand@reims.inra.fr</a></td>
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<td>16:15</td>
<td>End of day</td>
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<td>18:00</td>
<td>Conference dinner in the Swedish archipelago</td>
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<td>Boat goes from Nybrokajen</td>
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**Friday, September 2 - Industrisalen**

*Chairperson: Lars Berglund*

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<tr>
<th>Time</th>
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<tr>
<td>08:45</td>
<td>Keynote: “Optically transparent cellulose nanocomposites - the transition of reinforcement from nanofibres to nanostructured fibres”</td>
<td>Prof. Hiroyuki Yano</td>
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<td><a href="mailto:yano@rish.kyoto-u.ac.jp">yano@rish.kyoto-u.ac.jp</a></td>
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<tr>
<td>09:25</td>
<td>“Nanofibrillated cellulose for niche applications”</td>
<td>Tanja Zimmermann, Christian Eyholzer, Thi Thu Thao Ho, Christoph Gebald, Phillippe Tingaut, Pierre-Etienne Bourban</td>
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<td><a href="mailto:tanja.zimmermann@empa.ch">tanja.zimmermann@empa.ch</a></td>
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<td>09:50</td>
<td>“Cellulose-filled wood adhesives”</td>
<td>Stefan Veigel, Ulrich Müller, Wolfgang Gindl-Altmutter</td>
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<td><a href="mailto:stefan.veigel@boku.ac.at">stefan.veigel@boku.ac.at</a></td>
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<td>10:15</td>
<td>Coffee break</td>
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<td>Time</td>
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<tr>
<td>10:45</td>
<td>“Preparation, characterization and novel properties of thermally</td>
<td>Firas Azzam, Laurent Heux, Jean-Luc Putaux, Bruno Jean</td>
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<td>responsive cellulose nanocrystals”</td>
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<td>11:10</td>
<td>“High performance filters from fibrillated wood fibres for the</td>
<td>Alan Macfarlane, John F. Kadla, Richard J. Kerekes</td>
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<td>capture of airborne pathogens”</td>
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<td>11:35</td>
<td>“Cellulosic nanomaterials with preferred orientation”</td>
<td>Wolfgang Gindl-Altmutter, Stefan Veigel, Jozef Keckes</td>
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<td>12:05</td>
<td>Lunch</td>
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<td>Chairperson; John Barnett</td>
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<td>13:00</td>
<td>“Towards a better understanding of cellulose swelling and dissolution</td>
<td>Tomas Rosenau, Antje Potthast, Kurt Mereiter, Christian Jaeger, Alford French, Fumiaki</td>
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<td>at the molecular level”</td>
<td>Nakatstubo</td>
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<td>13:25</td>
<td>“Creating an anisotropic cellulose nanowhisker reinforced agarose</td>
<td>Michaela Eder, Anayancy Osorio-Madrazo, Markus Rueggeberg, Jitendra Kumar Pandey, Matt</td>
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<td>hydrogel”</td>
<td>Harrington, Yoshiharu Nishiyam, Jean-Luc Putaux, Cyrille Rochas, Ingo Burgert</td>
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<td>13:50</td>
<td>“Novel nanocellulose-based barriers”</td>
<td>Christian Aulin, Mikael Ankerfors, Tom Lindström</td>
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<td>14:15</td>
<td>“On the porosity and oxygen barrier properties of cellulose</td>
<td>Kristin Syverud, Gary Chinga-Carrasco</td>
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<td>nanofibrill-based films”</td>
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<td>14:40</td>
<td>Ending</td>
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<td>14:45</td>
<td>Coffee break</td>
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<td>15:15</td>
<td>IAWS Business Meeting</td>
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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 formaldehyde 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
“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 microfibers and nanofiber produced from e 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 Martirez
linda.svensson@swetree.com

“Native cellulose nanofibers decorated with magnetic ferrite nanoparticles - and nanostructured materials thereof”
Sylvain Galland, T. Olsson, Valter Ström, Lars Berglund
galland@kth.se

“Cellulose nanofibres- 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 Østberg, Helena Håkansson
ulf.germgard@kau.se

“Enzyme activation of pulp and its influence on the gamma number of viscose”
Ulf Germgård, Linda Østberg, 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
“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 Populis 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
johnny.beaugrand@reims.inra.fr