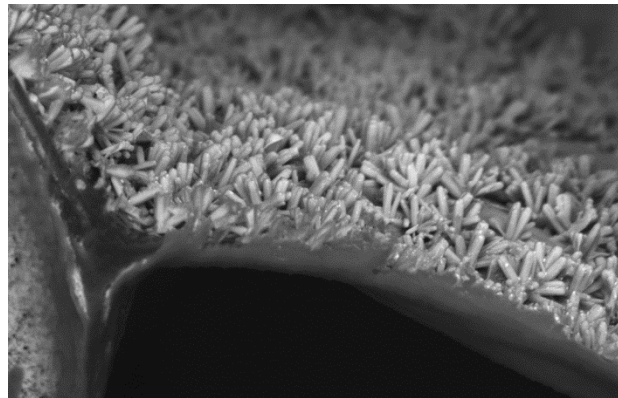


Wood Nanotechnology Conference 2018

Congressi Stefano Franscini (CSF)
Monte Verità, Ascona, Ticino, Switzerland

Sep 2nd to Sep 5th, 2018



Organizers

Lars Berglund & Ingo Burgert

Conference Program & Book of Abstracts

Conference sponsors:



ETH zürich

Program: Wood Nanotechnology Conference 2018

Sunday, September 2nd

- 17:00 Welcome reception
19:00 Dinner

Monday, September 3rd

- 08:45 Welcome
- 09:00 - 10:35 Session 1**
- 09:00 - 09:45 Hiroyuki Yano (keynote)
Tree's feelings - Development in bio-based materials inspired by nano- to micro-structures in plants
- 09:45 - 10:10 Kai Zhang
Chemical modifications of wood-derived polysaccharides for functional materials
- 10:10 - 10:35 Erik Jungstedt, Lars Berglund, Sören Östlund
In-plane elastic behaviour of transparent wood measured with digital image correlation
- 10:35 - 11:00 Coffee break**
- 11:00 - 12:35 Session 2**
- 11:00 - 11:45 Lennart Salmén (keynote)
The ultrastructural arrangement of the wood cell wall - do we have the full knowledge?
- 11:45 - 12:10 Maria Adobes-Vidal, Marion Frey, Tobias Keplinger
Challenges and potential of nanomechanical characterization of plant cell walls by Atomic Force Microscopy
- 12:10 - 12:35 Claudia Gusenbauer, Jérôme Colson, Tiina Nypelö, Etienne Cabane, Johannes Konnerth
Chemical Force Microscopy for characterising functionalised renewable materials
- 12:35 - 14:00 Lunch**
- 14:00 - 15:35 Session 3**
- 14:00 - 14:45 Notburga Gierlinger (keynote)
Following molecules in context with micro- and nanostructure and their changes upon laser irradiation

14:45 - 15:10	Agne Swerin <i>Liquid super repellence – non-wetting forces and coatings on wood</i>
15:10 - 15:35	Nina Forsman, Monika Österberg <i>Biomimetic breathable and hydrophobic cellulosic materials</i>
15:35 - 16:00	Coffee break
16:00 - 18:00	Session 4
16:00 - 16:45	Vivian Merk (keynote) <i>Mineralized wood: Hierarchical architecture and function</i>
16:45 - 17:10	Huizhang Guo, Ingo Burgert <i>Functions dictated by the surface structure of wood</i>
17:10 - 18:00	5 min poster presentations Johanna Gaitán-Alvarez, Roger Moya, Alexander Berrocal <i>Mineralization in situs of tropical hardwood species: calcium carbonate formation in vessels, ray and fiber</i> Chunhua Zhang, Takeshi Fujiwara, Miho Kojima, Youki Suzuki, Tsutomu Ikeda, Satoshi Kubo, Eiji Togawa, Kyoko Katsumata, Yuji Matsumoto, Kouta Ogura, Yoko Okahisa, Michiko Shimizu, Takashi Endo, Noriko Hayashi <i>Wood property analysis and evaluation of Japanese cedar as a raw material for cellulose nanofibers</i> Kai Li, Shennan Wang, Salla Koskela, Xuan Yang, Lars A. Berglund, Qi Zhou <i>Amine-functionalized wood templates for biodiagnostics</i> Shennan Wang, Kai Li, Lars A. Berglund, Qi Zhou <i>Structure and mechanical characterization of wood template/gelatin double-network hydrogel</i> Hui Chen, Yuanyuan Li, Lars Berglund, Max Yan <i>Modified Beer-Lambert law for highly scattering transparent wood</i> Salimeh Saleh, Holger Militz, Cynthia A. Volkert <i>Dynamic mechanical analysis of wood cell walls at the microscale and nanoscale</i> Mona-Christin Maaß, Holger Militz, Cynthia Volkert <i>Nanoscale toughening mechanism in the cell walls of wood</i> Haiyan Yin, Maziar Sedighi Moghaddam, Agne Swerin <i>Superamphiphobic wood surfaces based on silicone nanofilaments</i> A. Wadenspanner, G. Ehmcke, K. Richter <i>Raman analysis of furfuryl alcohol modified Radiata pine (Pinus radiata)</i>
19:00	Dinner
20:30 - 22:00	Poster Session

Tuesday, September 4th

09:00 - 10:35 Session 5

09:00 - 09:45 Liangbing Hu (keynote)
Nanocellulose for nanotechnologies

09:45 - 10:10 Yuanyuan Li, Qiliang Fu, Shun Yu, Elena Vasileva, Sergei Popov, Max Yan, Ilya Sychugov, Lars Berglund
Wood nanostructure control for multi-functional transparent wood

10:10 - 10:35 Céline Montanari, Yuanyuan Li, Lars Berglund
On the use of transparent wood for latent heat energy storage

10:35 - 11:00 Coffee break

11:00 - 12:35 Session 6

11:00 - 11:45 Cordt Zollfrank (keynote)
Structural and functional materials from wood

11:45 - 12:10 Marion Frey, Giulia Biffi, Meri Zirkelbach, Tobias Keplinger, Ingo Burgert
Densified functional cellulose materials – high performance materials based on the renewable resource wood

12:10 - 12:35 Mátyás Báder, Róbert Németh
Micromechanical characterisation of longitudinally compressed wood, the effects of relaxation

12:35 - 14:00 Lunch

14:00 - 15:35 Session 7

14:00 - 14:45 Tanja Zimmermann (keynote)
Cellulose nanofibers as building blocks for functional materials

14:45 - 15:10 Chuanshuang Hu, Lida Xing, Jin Gu, Weiwei Zhang
Cellulose I and II nanocrystals produced by sulphuric acid hydrolysis of Tetra pak cellulose I

15:10 - 15:35 Jingbo Shi, Stavros Avramidis
Molecular simulation of wood cell wall architecture and water sorptive behavior

15:35 - 16:00 Coffee break

16:00 - 17:35 Session 8

16:00 - 16:45 Oskar Paris (keynote)
Water sorption induced deformation of wood-inspired nanoporous materials probed by small-angle scattering

16:45 - 17:10 Hao Guan, Zhiyong Cheng, Lizhuo Kong, Xiaoqing Wang
Sustainable, mechanically durable, hydrophobic wood sponges for selective oil/water separation

17:10 - 17:35 Selin Vitas, Renato Figi, Nico Reichholf, Paul Beckmann, Tobias Keplinger, Ingo Burgert, Etienne Cabane
Chemical modification of wood cross-sections for water purification

19:00

Conference Dinner

We thank company Schilliger Holz AG for a generous donation



Wednesday, September 5th

09:00 - 10:35 Session 9

09:00 - 09:45 Holger Militz (keynote)
Wood modification - from laboratory to practical applications

09:45 - 10:10 Miklós Bak, Ferenc Molnár, Róbert Németh
Dimensional stabilization of wood by using silica nanoparticles

10:10 - 10:35 Kunkun Tu, Yaru Wang, Tobias Keplinger, Ingo Burgert
Formation of MOFs within porous wood supports for CO₂ capture

10:35 - 11:00 Coffee break

11:00 - 12:35 Session 10

11:00 - 11:45 Qi Zhou (keynote)
Chemical modification of wood template for functional materials

11:45 - 12:10 Yaru Wang, Wenqing Yan, Marion Frey, Tian Tian, Marta Vidiella del Blanco, Mark Schubert, Etienne Cabane
Tuning the wettability of wood surfaces using nanotech approaches

12:10 - 12:35 Hamid R. Taghiyari, Olaf Schmidt, Ayoub Esmailpour, Vahid Hassani, Abolfazl Soltani, Hamed Gholipour
Heat-transfer improvement in wood composites using sepiolite

12:35 - 12:50 CSF Award ceremony

12:50 - 13:00 Closing remarks, end of the conference