



Lignin Workshop 2025: “Lignin to X - Challenges and Potential”

Åbo Akademi University (ÅAU), Finland
Aurum Argentum, Henrikinkatu 2, Turku, Finland
20th – 21st of August, 2025

Programme

20.8.2025 Wednesday

8:00-8:30 Coffee and Registration, Poster setup

8:30-10:00 Chair: **Chunlin Xu**

- **Patrik Henelius**, Vice Rector of Åbo Akademi University (ÅAU), Opening
- **Chunlin Xu**, Introduction (Host, CIMANET, projects)
- **Orlando Rojas**, University of British Columbia (UBC)
“Bio-based Colloids from Lignin: Structure, Assembly, and Emerging Applications”
- **Lari Vähäsalo**, CH Bioforce
“BLN process to create new horizons for lignin”
- **Virpi Puhakka**, Valmet
“Introduction to Beyond Circularity”

10:00-10:30 Coffee break

10:30-12:30 Chair: **Patrik Eklund**

- **Joseph Samec**, Stockholm University
“Reaction mechanisms in catalytic lignin depolymerization reactions”
- **Gyu Leem**, State University of New York College of Environmental Science and Forestry (SUNY ESF)
“Solar light-induced selective cleavage of C-C/C-O bonds in lignin at room temperature”
- Flash presentations
 - **Sanja Vucetic**, ÅAU, *“Aromatic platforms from industrial lignins for high-value materials production”*
 - **Sari Rautiainen**, VTT, *“Tunable catalytic depolymerisation of lignin into monomers and oligomers”*
 - **Ruijie Wu**, ÅAU, *“in situ reactive fractionation of lignocellulosic biomass to produce high reactive lignin”*
 - **Jiayun Xu**, ÅAU, *“Revealing the properties of spruce lignin during different biomass fractionation processes”*



- **Marzieh Bagheri**, Aalto University, *“From Biomass to Platform Chemical: Advancing Lignin Valorization”*
- **Hao Zhang**, ÅAU, *“Lignin-derived hard carbon as an anode in Sodium-ion batteries”*

12:30-13:30 Lunch

13:30-15:00 Chair: **Henrik Grénman**

- **Monika Österberg**, Aalto University
“Lignin nanoparticles and other ways of tuning lignin properties for applications”
- **Narayanan Rajagopalan**, Technical University of Denmark (DTU)
“Epoxy based Anticorrosive Coatings with Lignin-derived particles”
- **Liyang Liu**, Chalmers University of Technology
“Unlocking the potential of Kraft lignin for polymeric materials”

15:00-15:30 Coffee break

15:30-17:30 Chair: **Timo Leskinen**

- **Sanna Valkonen**, UPM
“Lignin valorisation”
- **Johan Gising**, AB Karl Hedin Bio Innovation
“Tailor-made lignins from one-step biomass fractionation”
- **Maria Björk**, Stora Enso
“From research to industrialization”
- Industrial panel discussion
Johan Gising, BioInnov; **Hanna Karlsson**, Valmet; **Gerd Unkelbach**, UPM; **Lari Vähäsalo**, CH-Bioforce; moderator: **Timo Leskinen**, University of Helsinki
- Flash presentations
 - **Nele Dammann**, DTU, *“Reactive Lignin-based Pigments for Anticorrosive Coatings”*
 - **Dumindu Peththa Wadu**, ÅAU, *“Lignin utilization for biobased wood adhesives”*
 - **Fika Andriani**, KTH, *“Tailoring Lignin for Thermoset Applications: A Comparative Study of Carboxymethylation and Oxidative Carboxylation”*

17:30-18:30 Poster session and refreshments

19:00-22:30 Dinner at *Grädda (Piispankatu 15, 20500 Turku)*



21.8.2025 Thursday

8:30-9:00 Morning Coffee

9:00-10:30 (90 mins) Chair: **Tiina Nypelö**

- **Thomas Rosenau**, University of Natural Resources and Applied Life Sciences Vienna (BOKU)
“Problems and open questions in lignin analysis and structure”
- **Anna Happonen**, Natural Resources Institute Finland (Luke)
“Lignin biosynthesis – a seed for novel ideas”
- **Martin Lawoko**, KTH Royal Institute of Technology
“Lignin Populations and Linkage Sequences: Deeper Insights into Molecular Structure”

10:30-11:00 coffee break

11:00-13:00 (120 mins) Chair: **Henrik Grénman**

- Flash presentations
 - **Teddie Strandberg**, ÅAU, *“The challenges of DOSY measurements of lignin”*
 - **Rupali Bhadane**, ÅAU, *“Linkage Profiling of Spruce Sawdust-Derived Lignins via HSQC NMR: Alkaline versus Ethanol Extraction”*
 - **Wangfang Deng**, ÅAU, *“Lignocellulose Nanofibrils as Sustainable Emulsion Stabilizers”*
 - **Liqiu Hu**, ÅAU, *“in situ polymerization of lignin in cellulose nanofibrils dispersion for barrier packaging application”*
 - **Raul Rinkel**, Fibenol, *“Tailoring industrial lignin properties via process control”*
 - **Marie Alopaeus**, ÅAU, *“Lignin derivatives in polylactic acid composites towards sustainable materials”*
- Poster session

13:00-14:00 lunch

14:00-15:40 (100 mins) Chair: **Patrik Eklund**

- **Pedro Fardim**, KU Leuven
“Lignin valorisation using hydrotropes: Coatings and emulsions”
- **Giada Lo Re**, Chalmers University of Technology
“Lignin modification via reactive extrusion”
- **Timo Leskinen**, University of Helsinki
“Scoping of chemistries for strongly sustainable lignin materials”
- **Chunlin Xu**, Concluding remarks

15:40 end of the programme

15:40-16:30 Lab tour in groups