

NWBC 2015

6th Nordic Wood Biorefinery Conference

20 – 22 October, 2015

Helsinki, Finland

PROGRAMME

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NWBC 2015

6th Nordic Wood Biorefinery Conference

Helsinki, Finland, October 20 - 22, 2015

NWBC 2015 – Skeleton programme

Monday, October 19, 2015 Conference Reception at 18.00 - 21.00. Venue: VTT, Tietotie 3, Otaniemi, Espoo

Tuesday, October 20, 2015

- 08:00–09:00 Registration and coffee
- 09:00–09:30 Opening
- 09:30–11.00 **Session 1 – Panel Discussion – industry views** (Moderator: John Kettle)
- 11:00–11.30 Poster viewing
- 11:30–12:30 Lunch Break & Poster viewing continuing
- 12:30–14:15 **Session 2 – Policy** (Session Chair: Tuomas Mustonen)
- 14:15–14:45 Coffee Break & Poster viewing
- 14:45–15:35 **Session 3 – National and international activities** (Session Chair: Niklas Garoff)
- 15:35–17:15 **Session 4 – Programmes and Projects to follow in the future** (Session Chair: Niklas von Weymarn)
- 19:00–20:30 **Welcome Reception**, Hosted by the City of Helsinki, City Hall, Pohjoisesplanadi 11–13
Welcoming address by Ms Anni Sinnemäki, Deputy Mayor of the City of Helsinki

Wednesday, October 21, 2015

- 07:30–08:00 Registration
- 08:00–09:45 **Session 5 – Assessments and markets** (Session Chair: Katja Salmenkivi)
- 09:45–10:15 Coffee Break & Poster viewing
- 10:15–12:00 **Session 6 – Pre-treatment/Fractionation** (Session Chair: Matti Siika-aho)
- 12:00–13:00 Lunch Break & Poster viewing
- 13:00–14:15 **Session 7 – Upgrading 1** (Session Chair: Juha Lehtonen)
- 14:15–14:45 Coffee Break & Poster viewing
- 14:45–16:25 **Session 8 – Upgrading 2** (Session Chair: Philip Goodier)
- 16:25–17:40 **Session 9 – DES & IL** (Session Chair: Ivo Aroso)
- 19:00–22:00 **Conference Dinner & Entertainment**, Scandic Marina Congress Center, Fennia I, 2nd floor

Thursday, October 22, 2015

- 08:00–08:30 Registration
- 08:30–09:20 **Session 10 – Textiles** (Session Chair: Ali Harlin)
- 09:20–09:45 Coffee Break & Poster viewing
- 09:45–11:30 **Session 11 – Lignin** (Session Chair: Peter Axegård)
- 11:30–12:30 Lunch Break & Poster viewing
- 12:30–14:15 **Session 12 – Thermochemical biorefinery & products** (Session Chair: Anja Oasmaa)
- 14:15–14:45 Coffee and Poster viewing
- 14:45–15:35 **Session 13 – Biorefinery products – carbon fibres** (Session Chair: Darren Baker)
- 15:35–15:45 **Session 14 – Closing session**

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Tuesday, October 20, 2015

Europaea, Scandic Marina Congress Center

08:00	Registration & Coffee
	Welcoming Address
09:00	<u>Emeli Hytönen</u> <i>Chairman of the NWBC 2015 Organising Committee, VTT, Finland</i>
	Opening Address
09:05	<u>Ilkka Härmälä</u> <i>CEO, Metsä Fibre Oy, Finland</i>
09:30–11:00	Session 1 – Panel discussion – Industry Views Moderator: John Kettle, Finland <u>Ilkka Härmälä</u> , <i>Metsä Fibre Oy</i> ; <u>Duncan Mayes</u> , <i>Stora Enso</i> ; <u>Tuomas Mustonen</u> , <i>Paptic Ltd</i> ; <u>Miika Jokinen</u> , <i>Repolar Pharmaceuticals Oy</i> ; <u>Veli-Matti Vuorenpalo</u> , <i>Kemira Oy</i>
11:00–11:30	Poster viewing
11:30–12:30	Lunch Break and Poster viewing continuing
12:30–14:15	Session 2 – Policy
	Session Chair: Tuomas Mustonen, Finland
12:30	Sustainable Growth from the Bioeconomy – Implementing Finnish Bioeconomy Strategy <u>Mika Aalto</u> <i>The Ministry of Employment and the Economy (MEE), Finland</i>
12:55	New Zealand a Bioeconomy but with no National Strategy: Contrast to Other Nations <u>Florian Graichen</u> <i>New Zealand Forest Research Institute Limited, New Zealand</i>
13:20	Canada’s Forest Innovation Ecosystem – Accomplishments and the Path Forward <u>John Schmidt</u> <i>FPIInnovations, Canada</i>
13:45	Drives for a Swedish Forest Based Bioeconomy <u>Peter Axegård</u> <i>Innventia, Sweden</i>
14:15–14:45	Coffee Break and Poster viewing
14:45–15:35	Session 3 – National and international activities
	Session Chair: Niklas Garoff, Sweden
14:45	AERTOs (Associated European Research and Technology Organisations) Stimulates the Bio-based Economy in Europe <u>Kristiina Kruus</u> <i>VTT Technical Research Centre of Finland Ltd, Finland</i>
15:00	CLICking Bioeconomy and Cleantech into Global Biorefinery Innovations <u>Markku Leskelä</u> <i>CLIC Innovation Oy, Finland</i>
15:20	Biobased Industries Consortium and the BBI PPP <u>Niklas von Weymarn</u> <i>Bio-based Industries Consortium (BIC), Metsä Fibre Oy, Finland</i>

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15:35–17:15	Session 4 – Programmes and Projects to follow in the future
	Session Chair: Niklas von Weymarn, Finland
15:35	Norwegian Biorefinery Laboratory (NorBioLab); Developing the Processes for Tomorrows Biobased Society <u>Karin Øyaas</u> <i>Paper and Fibre Research Institute (PFI), Norway</i>
15:55	Australian Bioprocessing Advanced Manufacturing Initiative (BAMI) <u>Gil Garnier</u> <i>Bioresource Processing Research Institute of Australia (BioPRIA), Monash University, Australia</i>
16:15	Mobile and Flexible Processing of Biomass – EU Project Mobile Flip <u>Tarja Tamminen</u> <i>VTT Technical Research Centre of Finland Ltd, Finland</i>
16:25	REACH Registration of the Biorefinery Products <u>Joonas Alaranta</u> <i>Linnunmaa, Finland</i>
16:35	ACel program: From Pulp Cellulose to Novel Products <u>Anna Suurnäkki</u> <i>VTT Technical Research Centre of Finland Ltd, Finland</i>
16:45	Overview of the project Valchem - Value Added Chemicals Building Blocks and Lignin from Wood <u>Meri Ventola</u> <i>UPM, Finland</i>
16:55	Enzyme development for saccharification of woody biomasses <u>Anne Stenbæk</u> <i>Novozymes A/S, Denmark</i>
17:05	GreenLight – Lignin-based carbon fibre <u>Per Tomani and Birgit Backlund</u> <i>Innventia, Sweden</i>

19:00–20:30	Welcome Reception	City Hall, Pohjoisesplanadi 11–13
	Hosted by the City of Helsinki Welcoming address by Ms Anni Sinnemäki, Deputy Mayor of the City of Helsinki	Dress code: Smart casual

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7:30	Registration
8:00–9:45	Session 5 – Assessments and markets Session Chair: Katja Salmenkivi
8:00	The Role of Brand Owners in Driving Bio-Based Chemicals <u>Katja Salmenkivi</u> <i>Pöyry Management Consulting Oy, Finland</i>
8:25	Synthesis and Verification of Accumulated Experience and Results from Lignocellulosic Ethanol Research <u>Anneli Petersson</u> <i>SP Technical Research Institute of Sweden, Sweden</i>
8:50	Simultaneous Assessment of Technical Performance, Economic Viability and Environmental Footprint of Forest Biorefinery Systems: I-BIOREF Tool <u>Marzouk Benali</u> <i>Natural Resources Canada (NRCan), Canada</i>
9:15	The “Biorefinery Fact Sheet” and its Application to Wood Based Biorefining - Case Studies of IEA Bioenergy Task 42 “Biorefining” <u>Gerfried Jungmeier</u> <i>Joanneum Research, Austria</i>
9:45–10:15	Coffee Break and Poster viewing
10:15–12:00	Session 6 – Pre-treatment/Fractionation Session Chair: Matti Siika-aho, Finland
10:15	Sugars from Biomass – High Cellulose Hydrolysability of Oxygen Alkali Treated Spruce, Beech and Wheat Straw <u>Matti Siika-aho</u> <i>VTT Technical Research Centre of Finland Ltd, Finland</i>
10:40	Organosolv-fractionation of Beech Wood – From Pilot Scale to Industrial Implementation <u>Michael Buchmann</u> <i>Linde AG, Germany</i>
11:05	FPInnovations’ TMP-Bio for Lignocellulosic Biomass: Current State and Scaling Up <u>Changbin Mao</u> <i>FPInnovation, Canada</i>
11:30	Towards A Wood Based Material Biorefinery - A Demonstrator <u>Tuve Mattsson</u> <i>Chalmers University of Technology, Sweden</i>
12:00–13:00	Lunch Break and Poster viewing
13:00–14:15	Session 7 – Upgrading 1 Session Chair: Juha Lehtonen, Finland
13:00	Heterogeneous Catalysis – A Powerful Tool for Upgrading of Forest Biomass to Value Added Products in Novel Biorefineries <u>Juha Lehtonen</u> <i>Aalto University, Finland</i>
13:25	Subcritical Water De-polymerization of Kraft Lignin: a Process for Future Biorefineries. Structural Characterization of Bio-oil and Solids <u>Cecilia Mattsson</u> <i>Chalmers University of Technology, Sweden</i>

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13:50	De-polymerization – An Engineering Approach to Valorization of Lignin for Bio-based Chemicals and Materials <u>Charles Chunbao Xu</u> <i>Western University London, Canada</i>	
14:15–14:45 Coffee Break and Poster viewing		
14:45–16:25 Session 8 – Upgrading 2		
Session Chair: Philip Goodier, United Kingdom		
14:45	Biomass to Lactic Acid and Platform Chemicals – A New Way of Thinking <u>Philip Goodier</u> <i>Plaxica Limited, United Kingdom</i>	
15:10	Sustainable and Economic Separation of Complex Biomass Streams Through Membrane Technology <u>Marjorie Dubreuil</u> <i>VITO, Belgium</i>	
15:35	Chromatographic Separation as Enabling Technology for Concentrated Acid Hydrolysis of Lignocellulose <u>Jari Heinonen</u> <i>Lappeenranta University of Technology, Finland</i>	
16:00	Filtration in Bio-refineries may Imply Challenges: Methodology to understand and Overcome these Challenges <u>Hans Theliander</u> <i>Chalmers University of Technology, Sweden</i>	
16:25–17:40 Session 9 – DES & IL		
Session Chair: Ivo Aroso		
16:25	Fundamental Studies on Natural Deep Eutectic Solvents: Physico-Chemical, Thermal and Rheological Properties <u>Ivo Aroso</u> <i>University of Minho, Portugal</i>	
16:50	Conversion of Wood Biomass into Valuable Components Using A Novel Deep Eutectic Solvent Mixture <u>Lauri Kuutti</u> <i>VTT Technical Research Centre of Finland Ltd, Finland</i>	
17:15	Processing of Lignin and the Removal of Detrimental with Deep Eutectic Solvents <u>Laura Kollau & Dannie van Osch</u> <i>Eindhoven University, The Netherlands</i>	
19:00–22:00	Conference Dinner	Fennia I, Scandic Marina Congress Center
	Conference Dinner and Entertainment	Dress code: Smart casual

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8:00	Registration
8:30–9:20	Session 10 – Textiles Session Chair: Ali Harlin, Finland
8:30	Wood Based Textiles Fibers – Sustainable Solution for Future <u>Ali Harlin</u> <i>VTT Technical Research Centre of Finland Ltd, Finland</i>
8:55	Design Driven Development of Novel Biomaterials from Wood Based Cellulose <u>Anna Suurnäkki</u> <i>VTT Technical Research Centre of Finland Ltd, Finland</i>
9:20–9:45	Coffee Break and Poster viewing
9:45–11:30	Session 11 – Lignin Session Chair: Peter Axegård, Sweden
9:45	Successful Start-up of Lignin Extraction at Stora Enso Sunila Mill <u>Hanna Karlsson</u> <i>Valmet Power AB, Sweden</i> <u>Maria Björk</u> <i>Stora Enso, Sweden</i>
10:10	Sulphur Profile of the LignoForce System™ as Compared to Conventional Lignin Recovery Processes <u>Lamfeddal Kouisni</u> <i>FPIinnovations, Canada</i>
10:35	Lignin Firing in Lime Recovery Kilns <u>Martin Beddows</u> <i>Kiln Flame Systems, United Kingdom</i>
11:00	Lignin Properties for the Biorefinery, and Their Analytical Challenges <u>Anna Jacobs</u> <i>Innventia, Sweden</i>
11:30–12:30	Lunch Break and Poster viewing
12:30–14:15	Session 12 – Thermochemical biorefinery & products Session Chair: Anja Oasmaa, Finland
12:30	High Quality Renewable Diesel Fuel from Forest Industry Residues <u>Ville Vauhkonen</u> <i>UPM, Finland</i>
12:55	The Role of Intermediate Products in Biorefinery Development -Lignin and Pyrolysis Oil as Intermediates for Production of Naphtha Cracker Feed from Forest-Based Raw Materials <u>Marie Anhedén</u> <i>Innventia, Sweden</i>
13:20	Fast Pyrolysis of Biomass into Fuels and Chemicals <u>Anja Oasmaa</u> <i>VTT Technical Research Centre of Finland Ltd, Finland</i>
13:45	Pressurized Entrained Flow Gasification of Pulverized Wood - Experimental Characterization of the Process Performance <u>Fredrik Weiland</u> <i>SP Energy Technology Center, Sweden</i>
14:15–14:45	Coffee and Poster viewing

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14:45–15:35	Session 13 – Biorefinery products – carbon fibres
	Session Chair: Darren Baker, Sweden
	Carbon Fibres from Regenerated Cellulose Fibre Precursors
14:45	<u>Ali Harlin</u> <i>VTT Technical Research Centre of Finland Ltd, Finland</i>
	Opportunities in Lignin Based Carbon Fibre
15:10	<u>Darren A. Baker</u> <i>Innventia, Sweden</i>
15:35–15:45	Session 14 – Closing session
	Summing up
15:35	<u>Eemeli Hytönen</u> <i>VTT Technical Research Centre of Finland Ltd, Finland</i>
	Announcement of the 7th Nordic Wood Biorefinery Conference
15:40	<u>Peter Axegård</u> <i>Innventia, Sweden</i>

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Posters for Tuesday to Thursday

Poster set	
P1	Yellow Birch Transformation into Butanol and Organic Acids in an Integrated Biorefinery Platform <u>Olumoye Ajao</u> <i>Natural Resources Canada, CanmetENERGY, Canada</i>
P2	Kraft Lignin Depolymerisation by Base Catalysed Degradation-Effect of Process Parameters on Conversion Degree, Structural Features of BCD Fractions & Their Chemical Reactivity <u>Detlef Schmiedl</u> <i>Fraunhofer ISE, Germany</i>
P3	Enzymatic Challenges in Modern Biorefineries <u>Matti Heikkilä</u> <i>MetGen Oy, Finland</i>
P4	Extraction, Purification and Characterization of an Industrial Alkaline Lignin: Towards the Development of New Bio-based Aromatic Building from Lignin <u>Olivia Condassamy</u> <i>LCPO (Laboratoire de Chimie des Polymères Organiques), France</i>
P5	Fluidized Bed Fast Pyrolysis and Gasification of Japanese and Australian Woody Biomass <u>Toshinori Kojima</u> <i>Seikei University, Japan</i>
P6	Application of Enzymes in Austrian Pulp and Paper Industry <u>Oskar Haske-Cornelius</u> <i>Institute of Environmental Biotechnology, University of Natural Resources and Life Sciences, Austria</i>
P7	Molecular Weight Measurement of Kraft Lignin by Size Exclusion Chromatography (SEC) in Organic and Aqueous Systems <u>Lamfeddal Kouisni</u> <i>FPIInnovations, Canada</i>
P8	Local Filtration Properties of Microcrystalline Cellulose <u>Jonas Wetterling</u> <i>Chalmers University of Technology, Sweden</i>
P9	Local Filtration Properties of Kraft Lignin: Influence of Lignin-Carbohydrate Complex <u>Julie Durruty</u> <i>Chalmers University of Technology, Sweden</i>
P10	Catalytic Aqueous-phase Reforming of Acetic Acid Solution over Nickel-based Catalysts <u>Irene Coronado</u> <i>VTT Technical Research Centre of Finland Ltd, Finland</i>
P11	Controllable HDO of Lignin Model Compounds via Aqueous Phase Reforming <u>Malte Otromke</u> <i>Fraunhofer ISE, Germany</i>
P12	Bioethanol Production from the Green Alga <i>Ulva Rigida</i> and the Brown Alga <i>Macrocystis Pyrifera</i> <u>Ricardo Pezoa Conte</u> <i>Åbo Akademi, Finland</i>
P13	Deep Eutectic Solvents and Ionic Liquids in Enzymatic Lignocellulose Hydrolysis <u>Ronny Wahlström</u> <i>VTT Technical Research Centre of Finland Ltd, Finland</i>
P14	Chemometric Study on Alkaline Pre-treatments of Wood Chips Prior to Pulping <u>Joni Lehto</u> <i>University of Jyväskylä, Finland</i>

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P15	Improved Ethanol Production from Lignocellulosic Biomass through Membrane Bioreactors <u>Mofoluwake M. Ishola</u> <i>Swedish Centre for Resource Recovery, Sweden</i>
P16	Chemical Pretreatment of Wood Chips: a Comparative Study of Mild Steam Explosion and Hot Water Extraction <u>Joanna Wojtasz</u> <i>Chalmers University of Technology, Sweden</i>
P17	Fast Pyrolysis of Differently-treated Spruce (Picea Abies) Sawdust by Py-GC/MSD <u>Maryam Ghalibaf</u> <i>University of Jyväskylä, Finland</i>
P18	Present Value Flows in Swedish Forest-based Industry <u>Jonas M. Joelsson</u> <i>SP Processum AB, Sweden</i>
P19	Aqueous Phase Oxidative Treatment of Saw Dust <u>Karhan Özdenkci</u> <i>Aalto University, Finland</i>
P20	The Evaluation of Extraction Yield on Black liquor for Korean Native Miscanthus through Soda Pulping Process <u>Se Jin Kim and Byung Hwan Um</u> <i>Hankyung National University, South Korea</i>
P21	Behavior of Wood Powder and Pellets in a Horizontally Rotating Cylinder with Internal Screw Cylinders: Cold Model Experiment <u>Takuya ITO</u> <i>Seikei University, Japan</i>
P22	High-purity Pulp from Paper-grade Pulp by Enzymatic Treatment and Post-extraction in Caustic-borate Solution <u>Terhi Toivari</u> <i>Aalto University, Finland</i>
P23	Lignin Recovery with Acetic Acid <u>Michael Lake</u> <i>TechLake BioSystems and Innovation, United States</i>
P24	Lignin – Evaluation of Properties for Applications <u>Hannah Schweinebarth</u> <i>Innventia, Sweden</i>
P25	Alkaline-catalyzed Modification of Organosolv Lignin: Optimization of Experimental Conditions <u>Marcela Norambuena Céspedes</u> <i>Biotechnology Center at the University of Concepción (CB-UdeC), Chile</i>
P26	Upgrading Birch Kraft Pulp to Dissolving Pulp and Xylo-oligosaccharides by Water Post-hydrolysis <u>Marc Borrega</u> <i>Aalto University, Finland</i>
P27	Acid Precipitation Lignin Removal Processes Integrated into a Kraft Mill <u>Jonas Kihlman</u> <i>Pöyry Sweden AB, Sweden</i>
P28	Deep Eutectic Solvents for Biomass Fractionation <u>Lauri Kuutti</u> <i>VTT Technical Research Centre of Finland Ltd, Finland</i>
P29	Electrochemical Depolymerisation of Lignin in Deep Eutectic Solvent <u>Davide Di Marino</u> <i>RWTH Aachen University, Germany</i>

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P30	Biorefinery concepts integrated to alkaline pulping <u>Hemanathan Kumar</u> <i>University of Jyväskylä, Finland</i>
P31	Low Boiling Ethers as a Solvent for Liquid-liquid Extraction of Furfural from an Aqueous System <u>Mikael Männistö</u> <i>Aalto University, Finland</i>
P32	Supercritical Fluid Chromatography of Lignin-Derived Phenols from Alkaline CuO Oxidation <u>Mingzhe Sun</u> <i>Lund University, Sweden</i>
P33	Increasing Pulp Reactivity and Thermoformability by Combined Ionic Liquid and Enzyme Treatments: Screening of Optimal Ionic Liquid – Enzyme Combinations <u>Ossi Turunen</u> <i>Aalto University, Finland</i>
P34	Estimation of the Deprotonation Degree of Phenolic Groups on Kraft Lignin <u>Tor Sewring</u> <i>Chalmers University of Technology, Sweden</i>
P35	Nano-scale Ceramic Membranes in Separation of Lignin and Monosaccharides from Biorefinery Process Streams <u>Katariina Tirkkonen</u> <i>Lappeenranta University of Technology, Finland</i>
P36	Thermodynamic Analysis of Ionic Liquid Recycling <u>Waqar Ahmad</u> <i>Aalto University, Finland</i>
P37	Europe's First Pilot Facility for Crystalline Nano Cellulose (CNC) <u>Björn Alriksson</u> <i>SP Technical Research Institute of Sweden, Sweden</i>
P38	Low-cost ionic liquids for wood fractionation <u>Agnieszka Brandt-Talbot</u> <i>Imperial College London, United Kingdom</i>
P39	New Biocomposites Based on Straw and Different Binders <u>Jimsheri Aneli</u> <i>Javakhishvili Tbilisi State University, Georgia</i>
P40	Composites On the Basis of Renewable Raw Materials <u>Omari Mukbaniani</u> <i>Javakhishvili Tbilisi State University, Georgia</i>
P41	Development of Enzyme Production Technology for Biorefineries in Trichoderma Reesei <u>Nina Aro</u> <i>VTT Technical Research Centre of Finland Ltd, Finland</i>

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