



As of 9 April, 2013
Technical Program
Subject to Change.

Monday, 24 June 2013 - Stockholm, Sweden

18:00 – 18:30 Sing-Sing, Lindstedtsvägen 30, KTH Campus

Session a: Speaker/Session Chair Meeting Reception

18:30 – 19:30 Sing-Sing, Lindstedtsvägen 30, KTH Campus

Session b: Welcome Reception

Tuesday, 25 June 2013

F1/F2 Conference Rooms, Lindstedtsvägen 22, KTH Campus, Stockholm, Sweden

8:00 – 8:45

Session 1: Welcome & Keynote Presentation

- Welcome & Introductions: Conference Chairs
- Keynote Speaker: **David Lazarevic**, *Division of Environmental Strategies Research and the Division of Industrial Ecology, KTH*, “Life Cycle Considerations of Nanomaterials: Possibilities for Evaluating the Environmental Impact Renewable Nanomaterials”

Session Chair: **Bruce Lyne**, Royal Institute of Technology

<p>9:00 – 10:30 F1</p> <p><u>Session 2:</u> CN Processing</p> <p>Session Chair: Alan Rudie, US Forest Products Laboratory</p> <ul style="list-style-type: none"> • High CNC Yield with Zero Cellulose Loss: Recovering Cellulosic Solid Residue (CSR) from CNC Production Waste Stream to Produce Strong and Optically Transparent Film, Junyong Zhu, <i>US Forest Products Laboratory</i> • Energy Efficient Manufacture of Microfibrillated 	<p>9:00 – 10:30 F2</p> <p><u>Session 3:</u> Self and Directed Assembly of Nanocellulose</p> <p>Session Chair: Eero Kontturi, Aalto University</p> <ul style="list-style-type: none"> • Tailoring of Supramolecular Interactions in Nanocellulose Systems for New Functions, Olli Ikkala, <i>Aalto University</i> • Nanoparticles and Nanostructures from Direct- and Self- Assembly of Components Cleaved from Fiber Cell Walls, Orlando Rojas, <i>North Carolina</i>
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<p>Cellulose by Attachment of Carboxymethyl Cellulose, Mikael Ankerfors, <i>Innventia AB</i></p> <ul style="list-style-type: none"> • Correlations Between Pulp Composition and Efficiency of M/NFC Production, Michel Petit-Conil, <i>FCBA</i> • Water Redispersable Dried Nanofibrillated Cellulose, Julien Bras, <i>Grenoble INP Pagora - LGP2 (FSCN)</i> 	<p><i>State & Aalto University</i></p> <ul style="list-style-type: none"> • Pattern Production in Iridescent Cellulose Nanocrystal Films, Stephanie Beck, <i>FPIInnovations</i> • 2-Dimensional Nanoscale Structures from Cellulosic Materials, Eero Kontturi, <i>Aalto University</i>
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10:30 – 11:00 BREAK

<p>11:00 – 12:30 F1</p> <p>Session 4: CNC Composite Processing</p> <p>Session Chair: Hamdy Kahlil, Woodbridge Group</p> <ul style="list-style-type: none"> • Fabrication of Polyolefin / Nanocrystalline Cellulose Composites by Conventional Extrusion and by Water-Assisted Extrusion, Karen Stoeffler, <i>National Research Council Canada</i> • Synthesis and Characterization of NCC-Reinforced Polyacrylamide Nanocomposite Hydrogels, Wadood Hamad, <i>CelluForce</i> • Cellulose Nanocrystal Reinforced Cementitious Materials-Jeffrey P. Youngblood, <i>Purdue University</i> • Nano Crystalline Cellulose Composite Foams From Renewable Resources, Shaul Lapidot, <i>Melodea Ltd</i> 	<p>11:00 – 12:30 F2</p> <p>Session 5: Surface Modification and Responsive Materials</p> <p>Session Chair: Ted Wegner, US Forest Products Laboratory</p> <ul style="list-style-type: none"> • Surface Assembly of Chemically Reactive Polysaccharides on Nanocellulose, Janne Laine, <i>Aalto University</i> • Surface Modified Cellulose Nanocrystals for Use as in Durable Good Applications, Dylan Boday, <i>IBM Materials Engineering</i> • Responsive Cellulose Nanocrystals: A One-Step, Water-Based Polymerization Method, Emily Cranston, <i>McMaster University</i> • Towards a Green Chemistry for Surface Functionalization of Cellulose Nanocrystals: the Case of Aroma Grafting Compounds, Etzael Espino Perez, <i>Grenoble INP Pagora-PGP2 (FSCN)</i>
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12:45 – 13:45 Lunch in Student Union (k rhuset)

Session 6: Keynote Presentation

Keynote Speaker: **Arthur Carty**, *Executive Director & Research Professor in the Department of Chemistry, Waterloo Institute for Nanotechnology, Univ. of Waterloo , and Special Advisor to the President on Intl. Science and Technology Collaboration*,
 “Small World, Large Impact: Driving a Materials Revolution through Nanotechnology”

Session Chair: **Robert Moon**, US Forest Products Laboratory

<p>14:00 – 15:30 F1</p> <p>Session 7: CNF Composite Processing</p> <p>Session Chair: Alain Dufresne, Grenoble</p>	<p>14:00 – 15:30 F2</p> <p>Session 8: Nanocellulose-Organic/Inorganic Hybrids</p>
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<p>Institute of Technology</p> <ul style="list-style-type: none"> • Membranes from Renewable Resources for Water-Purification, Andreas Mautner, <i>Imperial College London</i> • Super-Strong Soy Protein/Nanocellulose Composite Aerogels, Julio Arboleda, <i>North Carolina State University</i> • Hemicellulose Acetates as Matrix/Binder for Nanofibrillated Cellulose Reinforced Composites, Agnes Stepan, <i>Chalmers University of Technology</i> • Hydrophobic Nanofibrillated Cellulose-Based Nanopaper Through a Mild Chemical Functionalization Approach, Houssine Sehaqui, <i>EMPA</i> 	<p>Session Chair: Marie-Pierre Laborie, <i>University of Freiburg</i></p> <ul style="list-style-type: none"> • Magnetic Cellulose Nanocrystal Hybrid, Tiina Nypelö, <i>North Carolina State University</i> • ZnO-Bacterial Cellulose Nanocrystal Composite and its Potential as Energy Harvesting Material, Levente Csoka, <i>University of West Hungary</i> • Atomic Layer Deposition on Cellulose Nanocrystal Aerogels, John Simonsen, <i>Oregon State University</i>
<p>15:30 – 16:00 BREAK</p>	
<p>16:00 – 17:30 F1</p> <p>Session 9: CN Composite Interfaces</p> <p>Session Chair: Wadood Hamad, <i>CelluForce</i></p> <ul style="list-style-type: none"> • Interface/Interphase Measurements of Cellulose Nanofiber-Based Nanocomposites, Jeffrey Gilman, <i>NIST</i> • Structure Properties and Interface in Polystyrene Nanocomposites Based on Cellulose Nanocrystals with Physical and Chemical Modifications from Non-Covalent and Covalent PEG Compatibilization, Ning Lin, <i>Grenoble Institute of Technology (Grenoble INP)-Pagora</i> • Development of Pigmented Composites on the Basis of Nano- and Micro-Fibrillated Cellulose, Michel Schenker, <i>Omya Development AG</i> • Utilising the Potential of Bacterial Cellulose in Composite Materials, Alexander Bismarck, <i>Imperial College London</i> 	<p>16:00 – 17:30 F2</p> <p>Session 10: Assembly in Suspension and Rheology</p> <p>Session Chair: Yaman Boluk, <i>University of Alberta</i></p> <ul style="list-style-type: none"> • The Rheological Properties Nanofibrillated Cellulose at Moderate Solids, Douglas Bousfield, <i>University of Maine</i> • Nanofibrillar Cellulose - The link Between Rheology and Stabilising Effect, Antti Laukkanen, <i>UPM Corporation</i>, Martina Lille and Pirkko Forsell, <i>VTT Technical Research Centre of Finland</i> • Rheological Properties of Suspensions of Nanocrystalline Cellulose in Polymer Solutions, Liyan Zhao, <i>Alberta Innovates Technology Futures</i> • Hybrid Polymer-Nanocrystalline Cellulose (NCC) Suspensions as Smart Materials-Yaman Boluk, <i>University of Alberta</i>

17:30 – 19:30 Sing-Sing, Lindstedtsvägen 30, KTH Campus

Session 11: Conference Reception, Poster Session and Exhibitor Displays

Session chair: **Martti Toivakka**, Abo Akademi University

**Over 50 posters will be presented at the Conference.
Please see full listing below (last page)**



Wednesday, 26 June 2013

F1/F2 Conference Rooms, Lindstedtsvägen 22, KTH Campus, Stockholm, Sweden

8:00 – 8:45 **F1**

Session 12: Keynote Presentation

Keynote Speaker: **Katja Salmenkivi**, *Pöyry Management Consulting*, “Towards High-Value Applications of Nanocellulose: A Player and Patent Landscape Approach”

Session Chair: **Ulla Forsström**, VTT Technical Research Centre of Finland

<p>9:00 – 10:30 F1</p> <p>Session 13: CNF</p> <p>Session Chair: Jouni Paltakari, Aalto University</p> <ul style="list-style-type: none"> • Processability of Nanocelluloses, Ari Jäsberg, <i>VTT Technical Research Centre of Finland</i> • Potential of Micro Fibrillar Cellulose in Water-Laid and Foam-Laid Papers, Jani Lehmonen, <i>VTT Technical Research Centre of Finland</i> • Structural Change in Nanofibrillated Cellulose Mat by Grinding, Dewatering, and Drying Conditions, Kyujeong Sim, <i>Seoul National University</i> 	<p>9:00 – 10:30 F2</p> <p>Session 14: CN Composites</p> <p>Session Chair: Johan Foster, University of Fribourg</p> <ul style="list-style-type: none"> • Thermal Behavior of Cellulose Nanocrystal Films, Jeffrey Youngblood, <i>Purdue University</i> • Effect of Temperature and Humidity on Mechanical Properties of Cellulose Nano-Crystals Films, Siqun Wang, <i>University of Tennessee</i> • Thermo-Sensitive Ultrathin Nanocomposite Films Manufactured with Cellulose Nanowhiskers and Maleic Anhydride Plasma Polymerization, Michel Brioude, <i>University of Freiburg</i> • Biomimetic Nanocomposites Through Self-Assembly of Nanofibrillated Cellulose and Water-Soluble Polysaccharides, Monika Österberg, <i>Aalto University</i>
<p>10:30 – 11:00 BREAK</p>	
<p>11:00 – 12:30 F1</p> <p>Session 15: CNF</p> <p>Session Chair: Sean Ireland, Verso Paper Corp.</p> <ul style="list-style-type: none"> • MFC Labelling, Retention and Distribution in Paper, Juha Salmela, <i>VTT Technical Research Centre of Finland</i> • The Effects of Nanocelluloses on Flocculation and Retention of Papermaking Fillers, Markus 	<p>11:00 – 12:30 F2</p> <p>Session 16: CNF Barrier</p> <p>Session Chair: Julien Bras, <i>Grenoble INP Pagora - LGP2 (FSCN)</i></p> <ul style="list-style-type: none"> • Use of cellulose Microfibrils in the Development of Barrier Materials – Benefits and Challenges, Céline Guézennec, <i>Centre Technique du Papier</i> • Green Barrier Coating and Film of Microfibrillated



<p>Korhonen, Aalto University</p> <ul style="list-style-type: none"> • Pre-Flocculation of GCC and Clay onto Nano-/Microfibrillated Cellulose as Compound to Improve the Strength Properties of Highly Filled Graphical Papers, Tiemo Arndt, Papiertechnische Stiftung (Heidenau) • Binding Fillers for Paper Applications Using Nanoscale Calcium Silicate Hydrate Coating and Nanofibrillated Cellulose, Katariina Torvinen, VTT Technical Research Centre of Finland 	<p>Cellulose (MFC) and Its Composites, Yulin Deng, Georgia Institute of Technology</p> <ul style="list-style-type: none"> • Nanocellulose Films and Coatings with Tunable Oxygen and Water Vapor Permeability for Use in Renewable Packaging Solutions, Christian Aulin, Innventia AB
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12:45 – 13:45 **Lunch in Student Union (k rhuset)**

Session 17: Keynote Presentation

Keynote Speaker: **Martha Marrapese, Keller and Heckman, USA** “Key Considerations for Successful Technology Transfer of Nanocellulose”

Session Chair: World Nieh, US Forest Service

<p>14:00 – 15:30 F1</p> <p>Session 18: Packaging</p> <p>Session Chair: Tamal Ghosh, Pepsico Advanced Research</p> <ul style="list-style-type: none"> • Nanofibrillated Cellulose/ Layered Silicates Composite Films for Barrier Applications, Tanja Zimmermann, EMPA • Fungal Chitin – Promising Renewable Nanomaterial for Future, Wan Mohd Fazli Wan Nawawi, Polymer and Composite Group, Imperial College London • Improving THE Barrier Properties of Poly(Lactic Acid) Bottle by APPLYing LbL-technique, Katalin Halasz, University of West Hungary 	<p>14:00 – 15:30 F2</p> <p>Session 19: Safety 1</p> <p>Session Chair: JoAnne Shatkin, CLF Ventures</p> <ul style="list-style-type: none"> • Environmental Health and Safety Studies Associated with the Demonstration Scale Production of NanoCrystalline Cellulose (NCCTM) at the CelluForce plant in Windsor, Quebec, Brian O'Connor, FPIInnovations • Amount, Characteristics and Toxicity of Nano-Scale Cellulose Fibrils, Heli Kangas, VTT Technical Research Centre of Finland • Verifying the Biocompatibility of Cellulose Nanofibril Structures as a First Step to Develop Filters for Air-Borne Nano-Particles, Kristin Syverud, Paper and Fibre Research Institute • Biodistribution of Poly (Lactic-Co-Glycolic) Acid (PLGA) and PLGA/Chitosan Nanoparticles in F344 Rats Orally Exposed to Nanoparticles for Seven Days, Cristina Sabliov, Louisiana State Univ. and LSU AgCenter
<p>15:30 – 16:00 BREAK</p>	
<p>16:00 – 17:30 F1</p> <p>Session 20: CN Modeling</p> <p>Session Co-Chairs: Stan Stoyanov and Andriy</p>	<p>16:00 – 17:30 F2</p> <p>Session 21: Safety 2</p> <p>Session Chair: Brian O'Connor, FPIInnovations</p>

<p>Kovalenko, National Institute of Nanotechnology</p> <ul style="list-style-type: none"> • Molecular Mechanisms of the Axial Stiffness of Cellulose Nanocrystals, Malin Wohlerl, <i>Wallenberg Wood Science Center</i> • Multiscale Modeling for Rational Design of Nanocrystalline Cellulose Based Nanocomposites, Foams, Drug Carriers, and Security Inks, Andriy Kovalenko, <i>National Institute for Nanotechnology</i> • Multiscale Modeling of Solvation Structure and Thermodynamics of Cellulose Nanocrystals in Solution: Dispersion, Functionalization, Sergey Gusarov, <i>National Institute for Nanotechnology</i> • Micro-Rheology of Nanocellulose Suspensions with Smoothed Particle Hydrodynamics Simulation, Jukka Ketoja, <i>VTT Technical Research Centre of Finland</i> 	<ul style="list-style-type: none"> • Consumer, Health and Safety perspectives: Recent results related to nanofibrillar cellulose, Juulia Rouhiainen, <i>Poyry Management Consulting Oy</i> • Different products – common concerns? Negotiating nanosafety, Petrus Kautto, <i>Finnish Environment Institute</i> • Sustainability Assessment of Nanocellulose and Its Applications: A Critical Review and a Proposal of an Integrated Methodology, Marco Cinelli, <i>University of Warwick</i> • Incorporating Life Cycle Thinking into Risk Assessment for Nanoscale Materials: Case Study of Nanocellulose, Jo Anne Shatkin, <i>CLF Ventures Inc</i>
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18:30 – 22:00

Session 22: Conference Dinner at the Vasa Museum

Thursday, 27 June 2013

F1/F2 Conference Rooms, Lindstedtsvägen 22, KTH Campus, Stockholm, Sweden

8:00 – 8:45 **F1**

Session 23: Keynote Presentation

Keynote Speaker: **Tom van Teunenbroek**, *Ministry of Infrastructure and Environment (Netherlands)*, “NANoREG: A Common European Approach to the Regulatory Testing of Nanomaterials”

Session Chair: **Juulia Rouhiainen**, *Poyry Management Consulting Oy*

<p>9:00 – 10:30 F1</p> <p>Session 24: Nanotech Coatings 1</p> <p>Session Chair: Pia Qvintus, <i>VTT</i></p> <ul style="list-style-type: none"> • Functional Thin Coatings for Paper by Foam Coating, Karita Kinnunen, <i>VTT Technical Research Centre of Finland</i> • Roll-to-Roll Atomic Layer Deposition for Flexible Substrates, Kimmo Lahtinen, <i>Lappeenranta Univ. of Technology</i> • The Properties of Paper Coating Layers That Contain Nanofibrillated Cellulose, Douglas 	<p>9:00 – 10:30 F2</p> <p>Session 25: Novel Medical Applications</p> <p>Session Chair: Orlando Rojas, <i>North Carolina State University & Aalto University</i></p> <ul style="list-style-type: none"> • Surface Functionalized Nanofibrillar Cellulose (NFC) Film as a Platform for Immunoassays and Diagnostics, Ilari Filpponen, <i>Aalto University</i> • Nanoemulsion Based-Biopolymers for Oral Delivery of Insulin-Barbara Azevedo Abrahim-Vieira, <i>Faculty of Pharmacy of University of Coimbra</i> • Cellulose Nanoparticle Based Ester Prodrugs for
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2013 TAPPI INTERNATIONAL CONFERENCE ON
Nanotechnology for Renewable Materials
24-27 June 2013
 KTH Royal Institute of Technology • Stockholm, Sweden 

<p>Bousfield, University of Maine</p> <ul style="list-style-type: none"> Meeting the Challenge of Replacing High Cost White Top Liner: Designing the High Bright Nanotechnology Solution, Catherine Ridgway, <i>Omya Development AG</i> 	<p>Potential Colon-specific Drug Delivery: Synthesis, Physicochemical Characterization and Drug Release Studies, Yuvraj Negi, <i>IIT Roorkee</i></p> <ul style="list-style-type: none"> Nanofibrillated Cellulose as Carrier for Short Peptides Assemblies for Human IgG Detection and Affinity Separation, Yanxia zhang, <i>North Carolina State University</i>
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10:30 – 11:00 BREAK

<p>11:00 – 12:30 F1</p> <p>Session 26: Nanotech Coatings 2</p> <p>Session Chair: Douglas Bousfield, University of Maine</p> <ul style="list-style-type: none"> Multifunctional Nanoparticle Coatings on Cellulose Based Substrates Using Liquid Flame Spray (LFS) Technique, Mikko Tuominen, <i>Tampere University of Technology</i> Wear Resistance of LFS-Nanoparticle Coated Paper, Milena Stepien, <i>Abo Akademi University</i> Cellulose Nanofibers: A Suitable Additive to Improve the Performance of Wood Coatings? Stefan Veigel, <i>University of Natural Resources and Life Sciences</i> 	<p>11:00 – 12:30 F2</p> <p>Session 27: Standards Characterization</p> <p>Session Chair: Emily Cranston, McMaster University</p> <ul style="list-style-type: none"> Viscosity Measurement – A Valuable Tool for Routine Quality Control of Fibril Cellulose, Asko Sneek, <i>VTT Technical Research Centre of Finland</i> Fractional Analysis and Characterization of Microfibrillated Cellulose, Ossi Laitinen, <i>University of Oulu</i> Surface Ionic Charge on Cellulose Nanocrystals, Derek Gray, <i>McGill University, Department of Chemistry</i> Surface Modification of Cellulose Nanowhiskers, Wim Thielemans, <i>University of Nottingham</i>
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12:45 – 13:45 Lunch On Own

<p>14:00 – 16:00 F2</p> <p>Session 29: Standardization Workshop</p> <p>Session Chair: World Nieh, US Forest Service</p>
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16:00 – ADJOURN

- 16:00 – 17:00 Post-Meeting Steering Committee Meeting
- Review/Critique of 2013 Conference and Planning for 2014–Steering Committee

Thank you to the volunteers for all of your hard work in putting the conference technical program together. We look forward to seeing you at the 2013 TAPPI Nanotechnology Conference!



Conference Co-Chairs:

Ulla Forsström VTT Technical Research Centre of Finland
 Bruce Lyne, Royal Institute of Technology
 Phil Jones, IMERYS

Theme Leaders:

Robert Moon, USDA Forest Service
 Orlando Rojas, North Carolina State & Aalto University
 Ulla Forsström, VTT Technical Research Centre of Finland
 Martti Toivakka, Abo Akademi University
 Juulia Rouhiainen, Poyry Management Consulting Oy
 World Nieh, USDA Forest Service

POSTERS

Effect of Annealing on the Structural, Magnetic and Magnetocaloric Effect in Ni ₄₉ Mn ₃₈ Sn ₁₃ Ribbons Heusler Alloy.- Mst Nazmunnahar , <i>University of Basque Country(UPV/EHU)</i>
Nanoemulsion Based-Biopolymers for Oral Delivery of Insulin- Barbara Azevedo Abraham-Vieira , <i>Faculty of Pharmacy of University of Coimbra</i>
Influence of Chemical Grafting of NFC on Antibacterial Activity- Seema SAINI , <i>Grenoble INP Pagora - LGP2</i>
Immobilization of Amino-Containing Functionalities onto the External Surface of MCM-41- Nadiia V. Roik , <i>Chuiko Institute of Surface Chemistry of NAS of Ukraine</i>
Production of Oxygen Scavenging Board Containing Enzymes Coupled to Nanoparticles- Kristin Johansson , <i>Karlstad University</i>
Sustainable corrosion protection by superhydrophobic AKD based coatings in different wetting states- Agne Swerin , <i>SP Chemistry</i>
Preparation of Chitin Nanofibers and Nanocomposite from Shrimp Shell Wastage- Subir Kumar Biswas , <i>Asian Institute of Technology</i>
Size and Flow Properties Control of Nanofibrillated Cellulose from Date Palm Tree by Control TEMPO-Mediated Oxidation Time- Karima Ben Hamou , <i>International School of Paper, Print Media and Biomaterials</i>
Use of Different Quality of MFC for Producing Controlled Release Films- Nathalie Lavoine , <i>Grenoble INP Pagora - LGP2</i>
Effect of Nano Particle Size Zinc Oxide Coating on Optical Properties and Printing Characteristics of Paper- Dharm Dutt , <i>IIT Roorkee</i>
Current Understanding and Critical Gaps in Environmental, Health and Safety Issues for Nanomaterials- Juulia Rouhiainen , <i>Poyry Management Consulting Oy</i>
Influence of Poly(Vinyl Alcohol) on Suspensions of Nanofibrillated Cellulose and Subsequent Spray Drying-



Lars M. Järnström & Dr. Henrik Ullsten, Karlstad University
Reinforcing Nanocellulose Isolated from Banana Rachis and Corn Husk- Robin Zuluaga Gallego, Pontificia Bolivariana University
Hydrophobization of Cellulosic Substrates by Creating Surface Nanostructures Using Enzymatic Methods- Oriol Cusola, Universitat Politècnica de Catalunya UPC-BarcelonaTech
A Biotechnological Approach to Produce High Cellulose-Content NFC from Alkaline Pulps- Facundo Beltramino, Universitat Politècnica De Catalunya
Effect of Enzyme Concoctions on Deinking Efficiency and its Relationship with Nano-Variations on Fiber Surface Roughness- Dharm Dutt, IIT Roorkee
AFM Imaging and Analysis of CNF Reinforced Films Under Strain- Stefan Pinkl, BOKU Vienna
Exploring the Bleaching Possibilities of Dissolving Grade-Pulps by Means of Enzymatic Treatments- Elisabet Quintana, Universitat Politècnica De Catalunya
Comparative Study of Obtaining Cellulose Nanofibers from Curaua Fibers by Enzymatic and Acid Hydrolysis- Ana Carolina Correa, Embrapa Instrumentation
Thermal Properties and Antioxidant Potential Evaluation of Dioxane Lignin Nanoparticles: Matrix Material for Controlled Release of Agrochemicals.- Srinivasa Rao Yearla, University of Hyderabad, Kollipara Padmasree, Department of Biotechnology, School of Life Sciences, University of Hyderabad
Mechanical Properties of High Yield Pulp Handsheets, as Affected by Blends of Nano-Ligno Cellulose, Sinke Osong, Mid Sweden University, Fibre Science and Communication Network (FSCN)
Scope of Zinc Oxide Nanoparticle Coating in Library and Information Science for Preservation of Paper Based Resources.- Suchismita Majumdar Mandal, Sir Gurudas Mahavidyalaya
Swelling Behavior of Wood Pulp Fibres in an Acidic Ionic Liquid (IL)/ Water Systems- Jia Mao, University of Freiburg
Optimization of the Production of Cellulose Nanowhiskers from Wood Pulp Fibers by Mean of an Ionic Liquid/Water System- Jia Mao, University of Freiburg
Investigation of Different Post Treatments of Nanocrystalline Cellulose in Order to Obtain Narrowly Dispersed Rods- Raphael Bardet, Grenoble INP Pagora - LGP2
Influence of residual Lignin and Specific Surface Area of Nanocellulose Fillers on Urea-Formaldehyde Bonding of Wood- Heiko Winter, University of Freiburg
Silver Nanoparticles on Glass and Paperboard Substrate for Surface-Enhanced Raman Scattering (SERS) Sensing- Jarkko J Saarinen, Abo Akademi University
Novel Materials Based on Nanocellulose- Marcus Ruda, SweTree Technologies AB, Asa Ek, Cellutech
Organosolv Pulping of Norway Spruce for Nanocellulose Production: Kinetic and Mechanistic Study- Hatem Abushammala, University of Freiburg
Tailoring the Mechanical Properties of Tannin-Based Foams with Natural Additives- Ricarda Boehm, University of Freiburg / Freiburg Materials Research Center



Chitosan Derivatives Nanoparticles for Removal of Toxic Metal Ions from Industrial Wastewater- Julius Ratumo Toeri , <i>University of Freiburg</i>
Antifungal Properties of Copper-Carbon Core-Shell Nanoparticles against Forest Pathogens- Yadong Qi , <i>Southern University</i>
Nanotechnology and Implications in Sustainable Development- - Arezki Benfdila , <i>University M. Mammeri Tizi-Ouzou</i>
Nanolayer Characterization of Materials using Electron Spectroscopy for Chemical Analysis (ESCA)- Vijay Kumar Kaushik , <i>Parul Institute of Engineering and Technology</i>
Surface and Total Charge Density of Functionalized Nanofibrillar Cellulose Dispersions- Karoliina Junka , <i>Aalto University</i>
Improved Bleachability of Bagasse and Cotton Stalk - Zenat Adeeb Nagieb , <i>National Research Center</i>
Molecular Junction- Shu Han Hsu , <i>National Device Laboratory</i>
Reinforcement of Wet Milled Jute Nanofibrils in Poly Lactic Acid (PLA) Films- Vijaykumar Baheti PhD Student , <i>Technical University of Liberec</i>
Mechanical Properties of NFC Suspension and Wet NFC Sheet- Ryu Jaeho , <i>Seoul National University, South Korea</i>
Multifunctional Bamboo Rayon-Copper Nanoparticles Composite Fabric Using Grafting as a Tool- Javed N. Sheikh , <i>Institute of Chemical Technology</i>
Surface Modification of Nanocrystalline Cellulose (NCC) by aQuaternary Ammonium Salt- Alireza Kaborani , <i>Universite Laval</i>
Microfibrillated Cellulose (MFC) from Triodia Pungens, an Australian Native Grass- Nasim Amiralian , <i>University of Queensland</i>
Microwave-Assisted Upgrading of Bio-Oil Produced from Renewable Resources Using Nanostructured Zeolite Catalyst- Dorin Boldor <i>LSU and LSU AgCenter</i>
Nanotechnologies for Renewable Materials – Industrial Innovation, Patents and Standardisation- David Carlander , <i>Nanotechnology Industries Association</i>
Poly-Flavonoids Derivatives as Potential Sustainable bio-Based Building Blocks- Danny E. Garcia-Marrero , <i>University of Freiburg</i>
Self-Assembly of Cellulose Fibrils/SiO ₂ Nanoparticles During Synthesis by Gluconacetobacter Bacteria- Robin Zuluaga Gallego , <i>Pontificia Bolivariana University</i>
Rheology of Coating Suspensions and Possibilities for Predicting the Final Dry Structure of Coated Layers- Yana Petkova , <i>Karlstad University</i>
Processing of Nanocomposites Containing Cellulose Nanocrystals, Johan Foster , <i>University of Fribourg</i>
Role of Ligno-Hemicellulosic Matrix Composition in Plant Biomass Recalcitrance: Investigation by the 3D-RISM-KH Molecular Theory of Solvation- Stanislov Stoyanov , <i>National Institute for Nanotechnology</i>
Characteristics of Cellulose Nanocrystals and Their Reinforcement of Polyvinyl Alcohol-Based



Nanocomposites- Byung-Dae Park , <i>Kyungpook National University</i>
New Route for Preparation of Aerogels from Hemicelluloses- Abdul Ghafar , <i>University of Helsinki</i>
Structural Lithium Ion Battery Electrolytes Reinforced by NFC-Aerogels- Markus Willgert , <i>KTH Royal Institute of Technology</i>
Nanostructured Biocomposite Materials of Poly(ϵ -caprolactone) and High Surface Area Nanopaper- Assya Boujemaoui , <i>KTH Royal Institute of Technology</i>
Physical Tuning of Cellulose-Polymer Interactions Utilizing Cationic Block Copolymers Based on PCL and Quaternized PDMAEMA- Carl Bruce , <i>KTH Royal Institute of Technology</i>
Wood Hydrolysate - Montmorillonite Barriers for Food Packaging Applications Under High Humidity Conditions- Anas Ibn Yaich , <i>KTH Royal Institute of Technology</i>