



2010 International
Conference on

**NANOTECHNOLOGY
FOR THE FOREST
PRODUCTS INDUSTRY**

GROW BIG

A graphic with the text "GROW BIG" in bold, white, sans-serif font. To the right of the text are green leaves and branches, set against a bright green background.

September 27 – 29, 2010 • DIPOLI Congress Centre • Espoo, Finland

www.tappi.org/10nano

Getting Down to Business with Nanotech Products



For the first time, this annual meeting will be held outside of North America. Join industry experts, scientists, health and safety specialists, legal and government policy makers, and leading researchers from multiple disciplines to discover how nanotechnology can shape the next generation of value-added forest products.

Presentations at this year's conference will focus on several key thematic areas:



Nanocellulosics and Nanocomposites

Production and modification of nanocellulosics is important for producing composites materials based on the novel nanomaterials from forest. The attendees will learn how the nanocellulose are separated from wood and other natural sources and how chemical modifications will affect the processing as well as size etc of these materials. The characterization and properties on nanocellulosics and nanocomposites are also emphasized.

Wood Products and Nanotechnology

Nanotechnology is one of the key components in the development of improved and advanced wood products. Nanomaterials are currently exploited in developing the advanced wood preservation tools against microbiological attack, in improving the moisture repellency properties of wood, in fire proofing, and in improving the mechanical properties of wood material.

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Consumer Perception/Governmental Regulation and Nanotechnology

Consumer perception influences market adoption and regulatory governance. Considerable attention among governmental and non-governmental organizations internationally is focused on the adequacy of existing regulatory regimes for managing potential health and environmental risks of emerging nanotechnologies, and the needs for adequate oversight. This session addresses key aspects of the environmental, societal, and legal aspects of nanotechnology and the externalities that influence successful adoption.

Biorefinery Concept in Nanocellulose Manufacturing

Combined production of nano-cellulose with bio-refineries like ethanol conversion provides new avenues towards efficient and sustainable technologies, where raw-material aspects and fractionation plays important role.

Organized Structures, Thin Films and Interfacial Assemblies

Cellulose nanomaterials show unique possibilities to alter or regulate surface properties, such as interfacial energies, molecular assemblies and composition. In these sessions the production of regular constructs, the modification of adhesion, colloidal stabilization, and friction, among others, will be highlighted.

Computer Modeling

Attendees will learn how multiscale and multi-physics modeling methods are employed for prediction of cellulose nanoparticle properties in solvents and electrolytes, understanding of self-assembly preferences, and design of biocomposites, gelators and specialized paper.

Nanotech Coatings and New Nano-Enabled Functionalities

Coatings are the usual entry point for cost effective new nano-enabled materials and processes leading to new products or cost reductions. You will learn how to apply nanocellulose and see how they are being considered in diverse applications around the world. Novel nano-minerals and formulations will also be a key theme. Typical applications range from reduced linting, higher strength, barrier, printed electronics to controlled surface functions.

Market Opportunities for Forest Based Nanomaterials

Nanotechnology is opening up a tremendous catalogue of new opportunities for functionalizing paper and packaging. New products can be expected that have exceptional strength and barrier properties, novel optical and electronic characteristics, sensor and analytical functionalities, and capabilities for controlled release of gasses and liquids.

Product Demonstrations and Poster Sessions

Directly learn and discuss the latest research results with poster presenters from all over the world. Students will compete for the best poster awards.

Updates from EU Nanoclusters and Publicly Funded Forest-Based Nanotech Centers in North America

This session will consist of presentations on publically funded nanotechnology R&D programs in the EU, Canada and the US followed by an interactive and open discussion. Presenters will give attendees an understanding of the overall goals and objectives of publicly-funded nanotechnology.

Prior to the Nanotechnology Conference plan to attend the **FREE Functional Materials Workshop being held at VTT on Friday, 24 September.**

http://www.vtt.fi/files/mail/2010_18/