



You are invited to participate in the

Nanotechnology Workshop

for the Forest Products Industry

October 17-19, 2004

The National Conference Center
18980 Upper Belmont Place
Lansdowne, VA 20176



Participants will work together to develop a roadmap for federal agencies in support of nanotechnology research.

This workshop aims to:

- Develop a vision for nanotechnology in the Forest Products Industry
- Develop a roadmap for nanotechnology in the Forest Products Industry (identify potential applications and uses, identify knowledge gaps and the research needed)
- Interest federal funding entities in nanotechnology for the Forest Products Industry
- Foster cooperation and collaboration among industry, academia, and government to fill knowledge gaps

A G E N D A

Sunday, October 17

Arrive pm
5:30 Dinner followed by
introductory speaker

Monday, October 18

8:00 Plenary lecture on the
vision of nanotechnology
(three speakers)
10:30 Break
10:45 Breakout groups meet
12:30 Lunch
1:30 Continue breakout groups
3:30 Break

3:45 Presentation of breakout
group outputs/
Plenary session
5:30 Finish
7:00 Dinner with after dinner
speaker

Tuesday, October 19

8:00 Breakout groups meet
10:30 Presentation of breakout
group final proposals/
Plenary session
12:30 Lunch
1:30 Depart

Sponsored by USDA Forest Service Forest Products Laboratory, the American Forest and Paper Association, and the Technical Association of the Pulp and Paper Industry.

Breakout session topics

1. Polymer Composites and Nano-reinforced Materials—Reinforcement of polymeric materials with nanoscale filler is of interest given the large surface area afforded by these materials as well as the unique properties that may be available. Dramatic increases in strength properties are routinely achieved at very low levels of addition; however, very little work has explored the structure-property relationships in detail. Additionally, other performance properties like permeability and diffusion are likely to be influenced by filler characteristics and offer significant advantages over conventional systems.
2. Self-Assembly and Biomimetics—There remains considerable interest in using natural material systems as the source of inspiration in developing unique polymer composites. New approaches to biomimicry and new methods to direct assemble of isolated molecules to more directly reflect bio-composite systems is needed.
3. Cell Wall Nanostructure—New information and insight on the nano-scale order of the lignocellulosic cell wall is needed to advance the opportunities to control the structure, primarily through genetic manipulation of the biosynthetic process.
4. Nanotechnology in Sensors, Processing and Process Control—Access to information could be greatly expanded through the availability of non-obtrusive sensors afforded by their small size and potential affordability. These sensors might be used to monitor behavior during processing, or to provide data on performance and environmental conditions during service.
5. Analytical Methods for Nanostructure Characterization—New analytical methods are needed to better define the structure and properties of components at the nano-scale, particularly in complex systems based on lignocellulosic materials.

Nanotechnology Workshop — October 17-19, 2004 —

_____ I will be attending the workshop and staying at the National Conference Center (Cost \$445.00)

_____ I will be attending the workshop daily (Cost \$150.00)

___ Dr. ___ Mr. ___ Mrs. ___ Ms. ___ Other

NAME (please print) _____

PREFERRED FIRST NAME (for name tag) _____

JOB TITLE _____

AFFILIATION _____
(Company/Organization/University)

STREET ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE _____ FAX _____

EMAIL ADDRESS _____

Each participant will be assigned a breakout group for the duration of the workshop. Please indicate your breakout session interest in order of preference, 1 through 5 (#1 being your first choice).

_____ Polymer Composites and Nano-reinforced Materials

_____ Self-Assembly and Biomimetics

_____ Cell Wall Nanostructure

_____ Nanotechnology in sensors, processing, and process control

_____ Analytical Methods for Nanostructure Characterization

_____ **I require special accommodations for handicapped access.**

Registration information

Please contact the National Conference Center (800-640-2684) to sign up for the workshop and reserve a hotel room if necessary. A block of rooms is being held until September 13th, 2004. The National Conference Center is located 12 miles from Dulles International Airport and shuttle service is available for \$15 each way.

Workshop fees Collected by National Conference Center (*see mailing address, reverse side*)

Overnight guests \$445.00
(*includes workshop participation; lodging on Sunday and Monday evenings; dinner on Sunday evening; all meals on Monday; and breakfast and lunch on Tuesday.*)

Day guests: \$150.00
(*includes workshop participation; dinner on Sunday evening; lunch and dinner on Monday; and lunch on Tuesday.*)

Please complete this form and return by **September 3, 2004** via fax (608-231-9567) or mail to Jane Kohlman, USDA Forest Products Laboratory, One Gifford Pinchot Drive, Madison, WI 53726

