## Conference Invitation

## **2007** International Conference on Nanotechnology for the Forest Products Industry

13-15, June, 2007 | Knoxville Convention Center Knoxville, Tennessee, USA Presented by:





The 2007 International Conference on Nanotechnology for the Forest Products Industry will provide a phenomenal opportunity for participants to learn about:

The latest applications in nanotechnology-enabled products and materials

Trends in forest products nanotechnology science and engineering

Advancements in nanotechnology from around the world

Emerging ideas and opportunities for nanoinspired materials and products

The impact of health and safety issues on the development of nano-inspired products

Identifying and developing successful collaborative partnerships

### **SPECIAL INVITATION:**

Tour the Center for Nanophase Materials Sciences at Oak Ridge National Laboratory

Thursday, June 14, 2007

Applications for security clearance are due by April 13, 2007. See details inside

## THE INTERNATIONAL CONFERENCE ON NANOTECHNOLOGY FOR THE FOREST PRODUCTS

INDUSTRY was a tremendous success in its inaugural year in 2006. A more-than-expected attendance demonstrated the industry's readiness to take advances in nanotechnology research and application to the next level. This year's conference will be even bigger and better.

Building on last year's success, the 2007 conference features:

- » Keynote presentations by some of the industry's most influential thinkers and practitioners
- » An outstanding, peer-reviewed Technical Program
- » A timely and relevant Health and Safety Panel Discussion
- » Cutting-Edge Research Poster Sessions
- » Working-Lunch Special Interest Group Meetings
- » Incomparable Networking Opportunities with Peers, Suppliers, and Experts
- » A tour of the Center for Nanophase Materials Sciences at Oak Ridge National Laboratory

# **Keynote Presenters**



DR. ALTAF CARIM, PROGRAM MANAGER, OFFICE OF BASIC ENERGY SCIENCES, US DEPARTMENT OF ENERGY (DOE)

#### "The National Nanotechnology Initiative and Department of Energy User Facilities for Nanoscience"

Dr. Tof Carim joined the Office of Basic Energy Sciences at DOE in September 2001 as a Program Manager with primary responsibility for activities in the structure and composition of materials. He currently serves as the DOE Program Manager for five Nanoscale Science Research Center user facilities, representing DOE on and co-chairing the interagency Nanoscale Science, Engineering, and Technology subcommittee of the National Science and Technology Council, and overseeing operations of three electron beam microcharacterization user facilities. Dr. Carim's primary expertise is in microstructural and microchemical characterization of materials, with research contributions in a number of areas.



DR. ANDREW MAYNARD, CHIEF SCIENCE ADVISOR, WOODROW WILSON INTERNATIONAL CENTER FOR SCHOLARS PROJECT FOR EMERGING NANOTECHNOLOGIES

#### "Delivering Safe Nanotechnology Through Science: Challenges and Opportinities"

Dr. Andrew Maynard is the Chief Science Advisor to the Project on Emerging Nanotechnologies—an initiative dedicated to helping business, government and the public anticipate and manage possible health and environmental implications of nanotechnology. His research interest in nanomaterials started in the late 1980's, while working on his doctorate in ultrafine aerosol analysis at the University of Cambridge in the UK. Through his work with the UK Health and Safety Executive, the US National Institute of Occupational Safety and Health and the US National Nanotechnology Initiative, he has led current science-based efforts to understand and manage the potential risks of nanotechnology. Dr. Maynard is considered one of the foremost international experts on addressing possible nanotechnology risks and developing safe nanotechnologies, and brings a much-needed science perspective to a field fraught with uncertainty.



DR. ASHOK MULCHANDANI, DEPARTMENT OF CHEMICAL AND ENVIRONMENTAL ENGINEERING, UNIVERSITY OF CALIFORNIA, RIVERSIDE

## "Biofunctionalized Nanowire Sensors Array for Label-Free Bioaffinity Sensing"

Dr. Ashok Mulchandani is a Professor in the Department of Chemical and Environmental Engineering at the University of California and Fellow of the American Association for Advancement of Science. Prof. Mulchandani's primary areas of research interest include biosensors, bioremediation, biomaterials and bionanotechnology. His research focus in the area of biosensors has been on the development of nanobiosensors for detection of biowarfare and chemical warfare agents for homeland security, detection of cardiac markers and cancer markers for health care, monitoring of viruses, toxins and bacteria in water and food safety and toxic industrial chemicals in the environment.

## Tour The Center For Nanophase Materials Sciences At Oak Ridge National Laboratory

### Thursday, June 14, 2007 – 2:15 p.m. to 6:15 p.m.

The Center for Nanophase Materials Sciences at Oak Ridge National Laboratory is a collaborative nanoscience user research facility for the synthesis, characterization, theory, modeling, simulation, and design of nanoscale materials. It is one of five Nanoscale Science Research Centers currently being established by the Office of Science, U.S. Department of Energy. More information about the site is available at http://cnms.ornl.gov.

There is no fee for the tour. Bus transportation will be provided.

All attendees of the 2007 International Conference on Nanotechnology for the Forest Products Industry are invited to tour the Center for Nanophase Materials Sciences. Interested attendees must register for the tour and submit information to apply for security clearance by April 13, 2007. Security clearance is granted at the discretion of Oak Ridge National Laboratory.

## Registration Instructions (See the registration form in this brochure for details)

- Conference attendees must register for the tour of the Center for Nanophase Materials Sciences at Oak Ridge National Laboratory by April 13, 2007.
- >> The following information is required to apply for security clearance:
  - Full name (first, middle, last)
  - Date of Birth
  - Country of Birth
  - Citizenship
- \* Conference attendees who may be undecided about participating in the tour are encouraged to register in advance and then withdraw the registration at a later date if necessary.

Complete the registration form in this brochure, or go online at www.tappi.org/07NANO to register for the tour of the Center for Nanophase Materials Sciences.



#### **Pub & Poster Sessions**

Learn about cutting edge research and network with peers and researchers at the Pub & Poster Sessions:

5:45p.m - 7:30pm | Wednesday, June 13, 2007

6:15p.m - 8:00pm | Thursday, June 14, 2007

## Health and Safety Panel\* Wednesday, June 13, 2007 \* 9:00 – 10:30 a.m.

With Progress Comes Caution ---Unanswered questions about health and safety issues are standing in the way of rapid and wide-spread pursuit of nanotechnology research and commercial adoption. During the Health and Safety Panel, an expert panel will provide information about the perception and public concern about nanotechnology and discuss the research initiatives that are underway to assess the impact of nanomaterials on humans and the environment.

## Special Interest Group



### Working-Lunch Special Interest Group Meetings

Friday, June 15, 2007, beginning at 12:30 p.m.

## Network with Peers in Areas of Special Interest

Two special interest groups are starting up – one on paper coatings and one on advancing nanotechnology in the forest products industry. Attend the interest group of your choice and join in the dialogue.

## Don't See Your Special Interest Group?

Attend the interest group on advancing nanotechnology in the forest products industry and share your ideas on starting a new special interest group.

Center for Nanophase Materials Sciences at Oak Ridge National Laboratory

## 2007 INTERNATIONAL CONFERENCE ON NANOTECHNOLOGY FOR THE FOREST PRODUCTS INDUSTRY

## 13 – 15 June 2007 | Knoxville, Tennessee, USA | Preliminary Schedule of Events (subject to change)

Wednesday, June 13, 2007				
8:00 a.m. – 8:45 a.m.   Session 1 Conference Keynote: Altaf Carim, Scientific User Facilities Division, Office	of Basic Energy Sciences, U.S. Department of Energy (DOE)			
9:00 a.m. – 10:30 a.m.   Session 2	9:00 a.m. – 10:30 a.m.   Session 3			
Health and Safety Panel Session Chair: Reid Miner Presenters: Nora Savage, Environmental Protection Agency (EPA) Andrew Maynard, Woodrow Wilson International Center for Scholars Project for Emerging Nanotechnologies John Festa, American Forest & Paper Association (AF&PA) Terry Medley, DuPont	Characterization and Measurement of Nanoscale Structures and Properties I Session Chair: Jim Beecher Presenters: K.W. Herwig, Oak Ridge National Laboratory John Simonsen, Oregon State University Lia Stanciu, Purdue University			
10:45 a.m. – 12:15 p.m.   Session 4	10:45 a.m. – 12:15 p.m.   Session 5			
Naturally Occurring Carbohydrate, Cellulose, and Cell Wall Nanostructures Session Chair: Maren Roman Presenters: Rajai Atalla, USDA Forest Products Laboratory Maureen McCann, Purdue University Shi-You Ding, National Renewable Energy Laboratory	Self-Assembly/Biomimicry I Session Chair: Jeff Catchmark Presenters: Jeff Catchmark, Penn State University Xingwu Wang, North Carolina State University Zong-Ming (Max) Cheng, University of Tennessee			
12:30 p.m. – 2:00 p.m.   Lunch, Session 6 Keynote: Andrew Maynard, Scientific Advisor, Woodrow Wilson International Center for Scholars Project for Emerging Nanotechnologies				
2:15 p.m. – 3:45 p.m.   Session 7	2:15 p.m. – 3:45 p.m.   Session 8			
Implications of Nanotechnology in Biorefinery Processes & Products I Session Co-Chairs: Tim Rials and Joe Bozell Presenters: Joe Bozell, University of Tennessee Haiying Liang, Clemson University Nicholas Kotov, University of Michigan	Surface Modification and Characterization Session Chair: Bill Winter Presenters: Bill Winter, SUNY-ESF Yuri Lvov, Louisiana Tech University TBA			
4:00 p.m 5:30 p.m.   Session 9	4:00 p.m 5:30 p.m.   Session 10			
Reinforced and Interfacial Structures I Session Chair: John Simonsen Presenters: Alain Dufresne, EFPG, National Polytechnic Institute of Grenoble (INPG) Paul Gatenholm, Chalmers University of Goteborg Mohini Sain, University of Toronto	Characterization and Measurement of Nanoscale Structures and Properties II Session Chair: Jim Beecher Presenters: Thomas Schoberl, Erich Schmid Institute, Austrian Academy of Sciences Siqun Wang, University of Tennessee Marie-Pierre G. Laborie, Washington State University			

5:45 p.m. - 7:30 p.m. | Session 11

**Conference Reception and Poster Session I** 

#### THURSDAY, JUNE 14, 2007

 8:00 a.m. – 8:45 a.m. | Session 12

 Keynote: Ashok Mulchandani, Department of Chemical and Environmental Engineering, University of California-Riverside

 9:00 a.m. – 10:30 a.m. | Session 13
 9:00 a.m. – 10:30 a.m. | Session 14

 Implications of Nanotechnology in Biorefinery
 Applications Roundtable

Processes & Products II Session Co-Chairs: Tim Rials and Joe Bozell Presenters: Jing Li, NASA Ames Research Center Sunkyu Park, University of Tennessee Debashish Kuila, North Carolina A&T University

#### Applications Roundtable Session Chair: Richard Chapas Presenters: Benny Hallen, IMERYS Martha Collins, Air Products Richard Chapas, Pacific Northwest National Laboratory

10:45 a.m. – 12:15 p.m.   Session 15	10:45 a.m. – 12:15 p.m.   Session 16
Self-Assembly/Biomimicry II	Nanostructure/Nanoscale Optical, Mechanical, Thermal and
Session Chair: Pete Lancaster	Electrical Interactions/Nanosensors
Presenters:	Session Chair: Salman Aziz
Maren Roman, Virginia Tech	Presenters:
Marie-Pierre G. Laborie, Washington State University	Sohail Anwar, Penn State University
Karthik Pillai, Virginia Tech	Gary Baum, Paper Future Technologies LLC
	Amy Wong, Harvard University

12:30 p.m. – 2:00 p.m. -- Lunch, Session 17 Keynote: TBA, from the Center for Nanophase Materials Sciences

2:15 p.m. - 6:15 p.m. | Session 18

#### Tour of the Center for Nanophase Materials Sciences at Oak Ridge National Laboratory

All attendees of the 2007 International Conference on Nanotechnology for the Forest Products Industry are invited to tour the Center for Nanophase Materials Sciences. Interested attendees must register for the tour and submit information to apply for security clearance by April 13, 2007. Security clearance is granted at the discretion of Oak Ridge National Laboratory.

5:45 p.m. - 7:30 p.m. | Session 19

**Conference Reception and Poster Session II** 

#### FRIDAY, JUNE 15, 2007

#### 8:00 a.m. - 8:45 a.m. | Session 20

Keynote: Global Reviews – Asia, Europe (Tom Lindstrom, Alain Dufresne-France), and North America (Joe Wright; Richard Berry, PAPRICAN; Bob Pelton)

Panel Moderator: Joe Wright

Panel Moderator: Joe Wright	
9:00 a.m. – 10:30 a.m.   Session 21	9:00 a.m. – 10:30 a.m.   Session 22
Reinforced and Interfacial Structures II Session Co-Chairs: Sigun Wang and John Simonsen Presenters: Yongsoon Shin, Pacific Northwest National Laboratory TBA	<b>Colloid/Surface Science I</b> Session Chair: Orlando Rojas <b>Presenters:</b> Jeff Hsieh, Georgia Institute of Technology Yong Zou, Georgia Institute of Technology Orlando Rojas, North Carolina State University
10:45 a.m 12:15 p.m.   Session 23	10:45 a.m. – 12:15 p.m.   Session 24
Agenda 2020 – Panel Discussion Panel Moderator: Lori Perrine, AF&PA Panelists: Ted Maher, National Institute of Standards and Technology (NIST – NEP) Edward S. Robinson, SCRA Mike Garner, SRC	Colloid/Surface Science II Session Chair: Orlando Rojas Presenters: Sangyeob Lee, Mississippi State University Lokendra Pal, Western Michigan University Bandaru Romaro, SUNY
12:30 p.m. – 2:30 p.m.   Session 25	12:30 p.m. – 2:30 p.m.   Session 26
Working Lunch Interest Group/ Focus Group I Paper Coatings Session Chair: Tony Lyons Presenters: Margaret Joyce, Western Michigan University Rick Gagnon, DuPont Dan Coughlin, Sappi	Working Lunch Interest Group/ Focus Group II – (National Nanotechnology Initiative NNI) Forest Products Industry Research Priorities Working Group Session Co-Chairs: Phil Jones & Ted Wegner
2:30 p.m.	
Conference Concludes	
2:45 p.m. – 4:30 p.m.	
*Steering Committee Meeting – by invitation only	

### JOIN THESE PRESTIGIOUS ORGANIZATIONS IN SUPPORT OF THIS EVENT:



For information about Sponsorship and Exhibit Opportunities for the 2007 International Conference on Nanotechnology for the Forest Products Industry, contact Shelley Sawyers at ssawyers@tappi.org.

## Forest Products Society 61st International Convention

June 10-13, 2007 Knoxville Convention Center Knoxville, Tennessee, USA

The Forest Products Society 61st International Convention will be held in conjunction with the 2007 International Conference on Nanotechnology for the Forest Products Industry.

Visit www.forestprod.org/confic07.html for more information about the Forest Products Society 61st International Convention.

Forest Products Society members attending both the Forest Products Society 61st International Convention and the 2007 International Conference on Nanotechnology for the Forest Products Industry pay a discounted rate of only \$995. To register for both the FPS and Nanotechnology conferences, please contact Julie Lang at conferences@forestprod.org.

#### Hotel Information:

Hilton Knoxville 501 West Church Avenue Knoxville, Tennessee, United States, 37902 Phone: 1-865-523-2300 Group rate: \$113 + tax

Reservations can be made through the following: Hotel Telephone: 865-251-2578 (8:00 AM – 4:00 PM) US Toll-free Telephone: 800-HILTONS Website: www.hilton.com

\* Reference group code NAN to receive the group rate.

The group room block will be available for reservation at the group rate until Monday, May 21. After this date, rooms will be available at the group rate based upon hotel occupancy. All reservations must be guaranteed by either a credit card or a first night's deposit. Individual guests are free to cancel reservations up to 72 hours of the arrival date without penalty. Cancellations within 72 hours will result in the charge of one night's room and tax, to be charged to the individual. Any guest wishing to depart earlier than the original reservation departure date will incur a penalty of one night's room and tax, also the responsibility of the individual.

#### Airline

Delta is the offcial airline for this event. For special rates, visit www.tappi.org/07NANO and click on the Delta Airlines logo to be directed to the Delta site. A discount will be automatically applied as you finalize your reservation.

## General Information



#### **Ground Transportation**

Car Rental: Special car rental discounts are available through Avis. To check rates and to reserve a vehicle, please call 1-800-331-1600 and refer to Worldwide Discount Number U226699.

#### **REGISTER EARLY and SAVE!**

Conference registration fees are only \$595 for TAPPI members and collaborating partners, and \$895 for non-members, who register by May 21, 2007. Special one-day registration options are also available. See the registration form in this brochure for complete details. Register online at www.tappi.org/07nano. Call 866.850.0999 (toll free US and Canada), or +1.404.760.8177, or email registration at tappi.org, if you require additional information.

## 2007 International Conference on Nanotechnology For The Forest Products Industry

## KNOXVILLE CONVENTION CENTER | KNOXVILLE, TENNESSEE | JUNE 13-15, 2007

GENERAL INFORMATION (PLEASE PRINT OR TYPE)						
Please circle: Mr.	Ms.	Mrs.	Dr.	Sr.	Jr.	Name
TAPPI Member #						Badge Name
Title						Division
Company Name						
Company Address						
City						
Zip/Postal Code			Co	untry		Telephone
Fax			Fm	ail		

Registration	Before May 21	After May 21	Total
Members of TAPPI, PIMA, IAWS, PAPTAC, SAUBR, Appita, INVA, NanoTX'07, and Mississippi State University	US \$595	US \$895	
□ Non-Members	US \$895	US \$1,345	
Speaker full conference	US \$350	US \$350	
□ Speakers - presentation day only	N/C	N/C	
$\Box$ Single day registration (members and non-members)	US \$325	US \$325	
FPS Members Attending only Nanotechnology Conference	US \$595	US \$595	
Attending both FPS and Nanotechnology Conferences	US \$995	US \$995	
Student	US \$100	US \$100	
□ Join TAPPI and Save! (Add applicable GST or HST for Canadian Membership)	US \$164	US \$164	
* To register to attend both the FPS and Nanotechnology conferences, please contact Julie Lang at conferences@forestprod.org.		Total	

☐ Yes, I would like to register for the tour of the Center for Nanophase Materials Sciences at Oak Ridge National Laboratory, Thursday, June 14, 2007 – 2:15 p.m. to 6:15 p.m.

#### **Application for Security Clearance:**

Full name (first, middle, last)	
Please print clearly	
Date of Birth	_ Country of Birth
Citizenship	

(Security clearance is granted at the discretion of Oak Ridge National Laboratory)

#### THREE EASY WAYS TO REGISTER!

- 1) Online: www.tappi.org/07NANO
- 2) Fax: +1.404.240.0998
- 3) Mail: TAPPI Registration Department, 3525 Piedmont Road, Building Five, Suite 300, Atlanta, GA 30305, USA

Inquiries: 866.850.0999 (toll free US and Canada), or +1.404.760.8177, or email registration@tappi.org.

b Do you require special accommodations for handicapped access?

#### **PAYMENT** (All fees are in U.S. Dollars and must accompany registration)

Checks: Please convert to equivalent U.S. Currency. Please mail checks to TAPPI Registration Department, 3525 Piedmont Road, Building Five, Suite 300, Atlanta, GA 30305, USA

	my check for the full a			
□ Please bill	my credit card (Complet	te the following inform	nation)	
Amex	Diner's Club	Discover	□ MasterCard	🗌 Visa
Credit Card #	¥		Ехр	
Signature				

### **CONFERENCE REGISTRATION FORM**

#### 1. WHAT TYPE OF COMPANY DO YOU WORK FOR?

- Pulp and Paper/Paperboard Manufacturing (1)
   Paperboard Packaging Integrated Converting

  - Plant (4AO)
- Paperboard Packaging Independent Converting Plant (4AO)
- Paperboard Packaging Headquarters (4AH)
- Independent Consultant: Engineering, Technical Production or Research (2)
- Manufacturer of Machinery, Equipment,
- Chemicals or Supplies (7)
- Woodlands Operation (3)
- Flexible Packaging Converting ... Flexible Packaging Headquarters (4BH) Flexible Packaging Converting Plant (4BO)
- Other

#### 2. WHAT IS YOUR PRIMARY JOB FUNCTION?

(Please select one letter only from A-J) Please place a check in the box provided next to your job function.

- A 🗌 Librarian Corporate
- Technical/Research D
- Marketing & Sales G В
  - Corporate Management
- E Engineering H Traffic & Shipping Engineering
- C Production
- F
- Purchasing & Stores
   Other Management & Administrative Personnel L.
- Other Е

Ρ

#### 3. WHAT IS YOUR PRIMARY INDUSTRY?

- Pulp Mill Only
- H Technical/R&D Facility/Headquarters
- R Paper/Paperboard Mill Only
- 0 Independent Operations Converting Plant D Integrated Pulp/Paper/Paperboard Mill
- If you find that you have to cancel, your full registration fee will be refunded if TAPPI's Registration department receives written notification, fax acceptable at 404-240-0998 or via email at registration@tappi.org, by May 21, 2007. PLEASE NOTE: There will be a 50% refund for all written cancellations made after May 21, 2007 but no later than 5 business days prior to the start of the conference. Understandably, after this time no refunds can be issued. Substitutions, however, will be accepted any time without a penalty. In the event that this event is cancelled, TAPPI will refund all registration fees. TAPPI's liability is limited solely to the refund of registration fees.

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Date:

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The contact information you provide may be used by TAPPI or its business associates to notify you of items that may be of interest to you. I understand that under certain laws and regulations, TAPPI must have written permission in order to communicate with me via fax or e-mail. I hereby give TAPPI, TAPPI's business associates, the TAPPI Foundation, and TAPPI's Local Sections written permission to communicate with me via:

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Print name as it appears on card

1 Yes