



2nd International Symposium on

Nanotechnology and Occupational Health

October 3-6, 2005

Radisson Hotel Metrodome, Minneapolis, Minnesota

www.cce.umn.edu/nanotechnology



Call for Abstracts and First Announcement

Abstract Deadline: March 31, 2005



Background

Nanotechnologies represent dynamic, revolutionary, cross-cutting fields of advancement that promise great societal and economic benefits. Heralded by some as the next industrial revolution, the ability to engineer matter at near-atomic length scales is forming the basis for truly revolutionary new materials, structures, and devices. At the same time, nanotechnologies present unique challenges to protecting health and the environment. As nanomaterials and devices move from the laboratory through pre-production to full scale commercialization, these technologies will not reach their full potential if associated societal implications are not addressed. The workplace represents a critical interface between people and nanotechnology, and an area where potential impact needs to be understood and managed.

Symposium Objectives

The Second International Symposium on Nanotechnology and Occupational Health will be the premier global meeting of 2005 addressing the potential implications and applications of nanotechnologies in the workplace. Building on the success of the First International Symposium on Nanotechnology and Occupational Health held in the UK in October 2004, it will provide a multi-stakeholder forum for presenting, assimilating, and discussing the latest breakthroughs and activities in addressing nanotechnology and worker safety and health.

Intended Audience

This symposium will be of interest and relevance to researchers, environmental, health, and safety professionals, policy makers, government representatives, and stakeholder representatives involved in the development and implementation of responsible nanotechnology. Abstract submissions are encouraged from individuals and groups with research data, new perspectives, or other information relevant to understanding and addressing the potential implications of nanotechnology in the workplace.

Program Highlights

Keynote Speakers

Three keynote presentations will be given by international experts on nanotechnologies, and will provide delegates with a broader perspective on the technology and society.

The Promise of Nanotechnology, *Dr. Andreas Gutsch*, Head, Creavis Technologies & Innovation, Degussa AG

Nanotechnology and the Fight Against Cancer, *Dr. Gregory Downing*, Director, Office of Technology and Industrial Relations, National Cancer Institute

Nanotechnology and Society, *Dr. Kenneth H. Keller*, Charles M. Denny, Jr. Professor of Science, Technology and Public Policy, Humphrey Institute of Public Affairs, University of Minnesota

Tutorials

The first day of the symposium will be dedicated to tutorials designed to inform delegates in unfamiliar areas and disciplines. Each tutorial will be given at a level suitable for nonexperts in the field.

Basic Nanotechnology, *Professor Mike Roco*, Chair, NNI

Fundamentals of Nanoparticle Aerosol Behavior, *Professor William Hinds*, University of California, Los Angeles

Basic Occupational Safety and Health Practices, *Professor James Vincent*, University of Michigan, Ann Arbor

Production of Aerosol-Based Engineered Nanomaterials, *Professor Pratim Biswas*, Washington University in St. Louis

Production of Liquid-Based Engineered Nanomaterials, *Professor Vicki Colvin*, Rice University

Fundamentals of Nanotoxicology, *Professor Kenneth Donaldson*, University of Edinburgh

Physical and Chemical Characterization of Nanoparticles, *Professor Peter McMurry*, University of Minnesota

Technical Sessions

The second and third day of the symposium will be devoted to platform and poster sessions for submitted abstracts. Submissions are encouraged in the areas outlined in this brochure.

Industry Forum

A forum will be held on the final day of the symposium dedicated to issues of practical interest to the nanotechnology industry at large, including nanomaterials production, polymers, electronics, pharmaceuticals, biologicals, etc. As companies engage in the manufacturing of nanoscale materials, they face immediate challenges in areas of employee safety and health. The forum has been organized to address their specific needs by providing sessions in which ideas and developments can be openly shared.

Sessions comprising the forum will be open to presentations on several key topical areas, including workplace control of exposures, identifying priority substances for monitoring, effectiveness of personal protective equipment, employee safety and health, occupational medical surveillance, regulation of workplace exposures, and identification of critical research needs. Breakout sessions will be arranged to allow for roundtable discussions on current occupational health research, workplace controls, and health services needs in the production and handling of nanoscale materials. Although the focus will be on issues of particular relevance to the nanotechnology industry, participation by all symposium participants is encouraged. Priority will be given to papers presenting new research or practical approaches to evaluating, protecting, and maintaining employee health in companies producing or using nanoscale materials.

Additional Events

Monday Evening

Tuesday Evening

Wednesday Evening

Welcome Reception (hosted by exhibitors)

Symposium Banquet (included in registration fee)

Optional Social Activities

Submitting an Abstract

All presentations must be submitted electronically at www.cce.umn.edu/nanotechnology.
ABSTRACTS ARE DUE MARCH 31, 2005. Abstracts will not be accepted after this date.

1. Prepare an up-to-500-word abstract, in English.
2. Follow the instructions online to submit your abstract.
3. Choose a poster or oral presentation.
4. You will receive an e-mail confirmation immediately following the submission of your abstract.
5. Abstracts will be reviewed by the technical program committee and symposium chairs. All presenting authors will be notified by May 2005. Presenting authors are required to attend the symposium.
6. Accepted abstracts will be printed and distributed to symposium participants.

Topic Areas

Nanomaterials, structures, and devices production, including:

- Aerosol-based Production
- Liquid-based Production
- Carbon Nanotubes
- Fabrication of nanostructured materials, including composites
- Biological delivery devices, pharmaceuticals, and diagnostics

Nanomaterial emission and exposure routes in the workplace, including:

- Process-related emissions and exposures
- Nanomaterial 'dustiness'
- Identification and evaluation of principal routes of exposure (e.g., respiratory, dermal, ingestion)

Exposure monitoring and characterization, including:

- Nanoparticle transport and transformation in gases and liquids
- Nanoparticle sampling in gases and liquids
- Number, surface area, and mass concentration measurements
- Alternative health-relevant exposure metrics
- Personal aerosol exposure measurement
- Skin exposure
- Exposure by ingestion
- Differentiating process-specific exposures from background exposures
- Exposure monitoring and characterization instrumentation
- Workplace exposure characterization and monitoring methods



Nanomaterials and health and safety risk, including:

- Nanomaterial toxicity
- Toxic mechanisms
- Relevant exposure metrics
- Toxicity evaluation strategies
- Biomonitoring
- Medical concerns
- Risk characterization and assessment
- Novel safety risks

Nanomaterial product characterization, including:

- Sampling methods
- Characterization methods and approaches
- Single particle analysis methods
- Characterization needs for toxicology and epidemiology research

Emission control and exposure protection, including:

- Filtration efficiency
- Respirator efficiency
- Dermal protection
- Protective clothing effectiveness
- Application and evaluation of engineering controls
- Process Control

Good working practices, including:

- Current approaches to working with nanomaterials
- Development/application of regulations to engineered nanomaterials
- Strategies for the responsible production and use of nanomaterials
- Application of control banding to nanomaterials in the workplace
- Mechanisms for sharing good working practices
- Application of nanotechnology to ensuring occupational safety and health

Informatics for nanotechnology and nanotoxicology, including:

- Health and toxicity-related terminology and nomenclature
- Strategies for collecting and sharing information
- Database development and other sources of information.

Application of nanotechnology to protect worker health and safety, including:

- Development of novel sensors
- Novel filter materials
- Product substitution

Current nanotechnology and occupational health activities

- Organizations are encouraged to submit short presentations on their current activities addressing the potential impact of nanotechnology on occupational health as part of the Industry Forum.

Developing health policy and regulatory frameworks for nanomaterials

Industry forum

Symposium Cochairs:

David Y.H. Pui, University of Minnesota,
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Andrew Maynard, National Institute for
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Technical Committee

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Organizational Sponsorship Chair

Tai Chan, GM, tai.chan@gm.com

Exhibits Chair

Brian Osmondson, TSI Inc.,
brian.osmondson@tsi.com

Organizational Sponsorship Information

Nanotechnology companies, research institutions, pharmaceutical companies, venture capitalists, and Fortune 500 companies are expected to be organizational sponsors in support of this international symposium. The development of nanotechnologies for specific applications in the marketplace with minimal impact to human health and the environment will be beneficial to all. Contact Tai Chan at tai.chan@gm.com for information on becoming an organization sponsor.

Industrial Hygiene Credit

Application for CM points for the symposium has been made to the American Board of Industrial Hygiene.

Exhibit Information

Companies are encouraged to exhibit at this symposium. Exhibitors will receive a six-foot skirted table to display their company's products or services during the symposium. You may also bring your own 10-foot portable booth to use as a back drop and to display graphic panels. Exhibit hours are: Monday, October 3, 5:00-7:30 p.m. (during the exhibitor's reception); Tuesday, October 4, 9:30 a.m.-5:30 p.m.; Wednesday, October 5, 9:30 a.m.-5:30 p.m.; Thursday, October 6, 9:30 a.m.-2:30 p.m. (this is an optional exhibit session; the day is dedicated to industry).

Cost for a table top exhibit is \$1,100 (U.S.). Each exhibitor will receive one complimentary symposium registration. Space is limited and will be available on a first come basis. To sign up you may register online at www.cce.umn.edu/nanotechnology. To obtain further information for the table top exhibit, please contact Brian Osmondson at brian.osmondson@tsi.com.

Registration

Symposium registrations will be accepted online at www.cce.umn.edu/nanotechnology. Please check the Web site for a complete list of fees and to register online. Space is limited. Early registration is highly recommended. A symposium brochure will be mailed in June.

Travel and Accommodations

You may fly directly to Minneapolis/St. Paul International Airport (MSP). Please contact your local travel agency for airline reservations.

A block of sleeping rooms has been reserved at the Radisson Hotel Metrodome on the Minneapolis campus of the University of Minnesota. Call the hotel directly at 612-379-8888 or 800-822-6757 to make your reservation. You must call by September 2, 2005, to receive the symposium rate of \$110 and to be guaranteed space availability. When you make your reservation be sure to tell the reservationist that you will be attending the "Nanotechnology Symposium" in order to receive the special rate. Reservations made after this date will be accepted on a space and rate available basis.

For more information, please contact

Katie Kjeseth
612-624-3708
conferences5@cce.umn.edu

Dates to Remember

March 31	Abstracts due
May 15	Authors notified of acceptance
June 15	Brochures mailed
August 1	Early registration deadline
October 3-6	Symposium dates

2nd International Symposium on Nanotechnology and Occupational Health Sponsors

The 2nd International Symposium on Nanotechnology and Occupational Health gratefully acknowledges the generous support of the following sponsors and co-sponsors.

Sponsors

National Institute for Occupational Safety and Health (NIOSH)



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