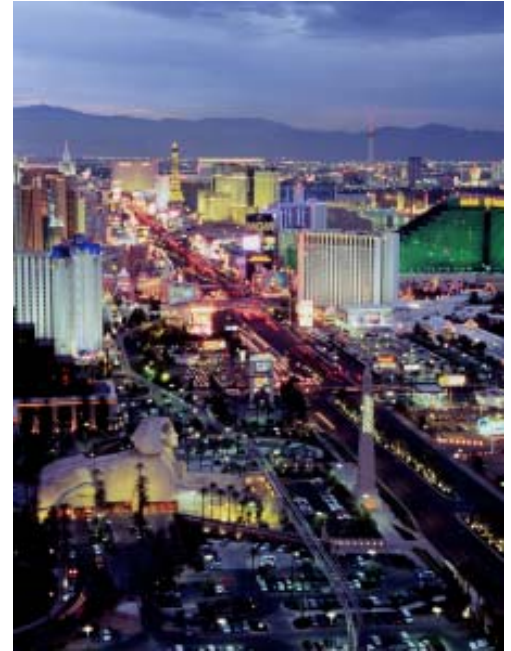




2nd Annual ENGINEERED FINE PARTICLE APPLICATIONS Conference

October 18-20, 2006

Tuscany Suites & Casino
Las Vegas, Nevada



IMI's **2nd Engineered Particle Applications Conference** is dedicated to exploring the technology developments, market trends and needs for products enabled by engineered fine particles. While nanoscale science and technology has potential to provide significant societal benefits in the long run, rapidly growing development and commercialization of products enabled by engineered particles is under way today in a wide range of industries. This first of its kind conference, initiated in 2005, will provide emphasis on improved manufacturing processes and integration techniques and introduce participants to the near and mid-term opportunities for development of viable products in energy, electronics, chemicals industry, consumer products and other industries. During the three-day meeting, experts from industry, government, academia and investment community will present current market trends and opportunities and provide key insights into the future trends and challenges.

IMI's **2nd Engineered Particle Applications Conference** will be a worldwide meeting place for who's who in the rapidly evolving engineered fine particles field; a field that is already changing the design, manufacture and functionality of many products. It will allow presenters, attendees and exhibitors to meet, learn and promote their technologies, vision, products and services. The conference will be a meeting place for particle producers, equipment developers, materials developers, processing experts and end users, i.e. all industry sectors with commercial interest in the advancement of engineered fine particle technology in the global economy.

Participants will jointly address the challenges and opportunities associated with implementation of engineered fine particles into new applications and the need to innovate commercially viable solutions. Conference presentations will also address production and processing technologies; R&D and commercialization of emerging applications, markets and implementation issues.

Conference Displays & Suppliers' Forum

IMI's **2nd Annual Engineered Fine Particle Applications Conference** provides the opportunity to have a free display space to exhibit your products, technology or services. Each conference registrant also has the opportunity to give a commercial 5-minute Suppliers' Forum presentation.

To reserve your complimentary display space and Suppliers' Forum presentation slot, please register online and check off the box indicating your participation OR complete the registration form above and fax to +1-207-235-2226 OR send an email to al@imiconf.com

CONFERENCE CHAIRMAN

Miodrag Oljaca, Cabot Corporation

CONFERENCE SPEAKERS

Dr. Peter Alberius, YKI
Mark Bunger, Lux Research
Joseph Cross, Nanophase Technologies
Dr. Jeffrey T. DePinto, Air Products
Pete Devlin, DOE
Stan Farnsworth, NovaCentrix
Dr. Guoyi Fu, Lyondell Chemical
Dr. Shingo Futamura, Goodyear
Dr. David Ghosh, NRC
Peter Gray, NanoCerox
Dr. Thomas R. Hockswender, PPG
Dr. Nobi Kambe, NanoGram Corporation
Dr. Yakov Kutsovsky, Cabot Corporation
Dr. Fritz Naumann, BASF
Dr. Barry Park, Oxonica
Dr. Rose Ann Schulz, National Starch & Chemical
Dr. Jo Anne Shatkin, Cadmus Group
Dr. Jan Sumerel, Fujifilm Dimatix
Geoffrey Varga, Degussa
Dr. Alan W. Weimer, Univ. Of Colorado & ALD NanoSolutions

To Register Online

Visit IMI Web Site
www.imiconf.com

2nd Engineered Fine Particle Applications Conference

Tuscany Suites & Casino
Las Vegas, Nevada

October 18-20, 2006

Wednesday, October 18, 2006

11:00 a.m. Registration
1:30 p.m. Opening Session

Markets, Trends & Implementation

WELCOME AND INTRODUCTIONS

Alvin G. Keene, President, Information Management Institute, Inc., Carrabassett Valley, Maine

Conference Chairman: Miodrag Oljaca, Technology Application Manager, Cabot Corporation, Albuquerque, New Mexico

NANOTECHNOLOGY: FROM STRATEGY DEVELOPMENT TO BUILDING CAPABILITIES TO LAUNCH OF A NEW BUSINESS

Dr. Jeffrey T. Depinto, Global Business Development Manager, Nanomaterials, Air Products and Chemicals, Inc., Allentown, Pennsylvania

- Development Of A Strategy Around Nanotechnology
- Building Specific Capabilities
 - Through Internal Development
 - Through External Partnerships
- Launching New Business Leveraging Unique Dispersion Technology
- Specific Applications & Key Role Of Dispersion Technology In Enabling Commercialization

NANOMATERIALS: CURRENT AND EMERGING MARKET APPLICATIONS

Joseph Cross, President & CEO, Nanophase Technologies, Romeoville, Illinois

- Global Market Growth Estimates
- Adoption Rates
- NanoEngineered Products
- Current & Emerging Markets
- Value Pricing & Costs

NANOSTRUCTURE MATERIALS DEVELOPMENT AT THE ACADEMIC - INDUSTRIAL INTERFACE

Dr. Peter Alberius, Section Manager, The Materials and Coatings Section, YKI, Institute for Surface Chemistry, Stockholm, Sweden

- Introduction to YKI, Institute for Surface Chemistry
- Scaling Up The Production Of Nanostructured Materials
- Applications & Opportunities

**For Latest Program Updates
&
To Register Online**
Visit IMI Web Sites
www.imiconf.com
&
www.imieurope.com

10,000 FOOT VIEW OF CURRENT NANOTECHNOLOGY RISK, HEALTH, SAFETY AND ENVIRONMENTAL ISSUES

Dr. Jo Anne Shatkin, Principal, The Cadmus Group, Inc., Watertown, Massachusetts

- Significant Investment In Nanotechnology Has Brought New Focus On Environmental & Biological Aspects Of Engineered Particles
- Complex Issues Are Raised By Unique Aspects Of Nanoscale Materials That Present Challenges From Scientific & Regulatory Perspectives
- Current Technical, Regulatory & Societal Aspects Of Engineered Particles At The Nanoscale & Their Applications
- Developments In Risk Assessment & Nanotoxicology
- Overview & Status Of US & International Regulatory Efforts
- Non-Governmental Efforts To Address The Broader Public Concerns

DOE HYDROGEN PROGRAM'S MANUFACTURING R&D INITIATIVE

Pete Devlin, Technology Development Manager, DOE Office of Hydrogen, Fuel Cells and Infrastructure Technologies, Washington, DC

- High Volume Manufacturing Processes for PEM Fuel Cells
- Hydrogen Production Equipment
- On-Board Storage Systems

6:00 p.m. Reception in Exhibit Area

Thursday, October 19, 2006

7:30 a.m. Continental Breakfast

8:30 a.m. Session 2

Technologies & Materials

FINE PARTICLE DISPERSIONS AND FORMULATIONS FOR MULTI-FUNCTIONAL COATINGS & POLYMER FILMS

Geoffrey Varga, Director, Degussa Advanced Nanomaterials, Hanau, Germany

- Effective Dispersion Of Particles For Transparent Applications
- Formulation Development: Moving Forward In The Value Chain
- UV, IR, Anti-Static & Mechanical Performance In Applications
- Enhancing The Value Proposition Through Multi-Functionality

TITLE TO BE ANNOUNCED

Dr. Fritz Naeuman, Catalysts Global Business Management, BASF, Ludwigshafen, Germany

ENGINEERED MATERIALS DESIGNED FOR ELECTRONIC, THERMAL AND CATALYTIC APPLICATIONS

Dr. Yakov Kutsovsky, Vice President R & D, Cabot Corporation, Billerica, Massachusetts

- Tailoring Of Particle's Electrical, Optical & Catalytic Properties To Meet Application Needs
- Improving Performance: From Particles To Layers And Final Products

CHALLENGES IN FINE PARTICLE DISPERSION FOR ELECTRONIC APPLICATIONS

Dr. Rose Ann Schultz, Divisional VP Technology, Electronic Materials Division, National Starch & Chemical Co., Billerica, Massachusetts

- Electronic Materials Require Adequate Dispersion Through Manufacturing, Packaging & Shipping, Storage, Dispensing & Application And Processing & Curing To Create The Final Electronic Property
- That Which Makes A Good Dispersion May Be Detrimental To Achieving Desired Final Performance & Nanoparticles Can Aggravate The Situation
- Consideration From A Material Physics Perspective Must Be Given To All Possible Interactions At The Multitude Of Interfaces Plus The Physical Effects Of Shear & Other Process Conditions
- A Multi-Disciplinary Scientific Approach Is Required To Reach Full Resolution
- Collaborative Partnerships Can Be An Ideal Way To Make Significant Progress

FUNCTIONALIZATION OF ULTRAFINE PARTICLES USING ATOMIC LAYER DEPOSITION (PARTICLE ALD™)

Alan (Al) W. Weimer, Co-Founder & Chairman of Scientific Board, ALD NanoSolutions, Inc., Broomfield, Colorado & Professor of Chemical and Biological Engineering, University of Colorado, Boulder, Colorado

- Particle ALD™: Method To Functionalize Ultrafine Particles By Placing Nearly Perfect Inorganic Nanofilms On Inorganic & Organic Primary Substrate Particles
- Review Of ALD Self-Limiting Sequential Surface Chemistry
- How Particle ALD™ Is Scaled Up Using Fluidized Bed Reactors
- Advantages of ALD Over CVD With Example Of Reduced Cost
- Applications Examples: Sunscreen Nanomaterials & Novel Quantum Tunneling Electrical Surge Suppression Devices

12:30 p.m. Lunch

Development & Commercialization

NANOMATERIALS IN ENERGY: DOES THE US NEED A "MANHATTAN PROJECT" TO SOLVE ITS GROWING ENERGY WOES?

Mark Bunger, Senior Analyst, Lux Research Inc., San Francisco, California

- What Can Currently Available Technologies Accomplish?
- Is A Large Centralized Program Needed?

APPLICATION OF NANOTECHNOLOGY FOR FUEL CELLS

Dr. David Ghosh, NRC – Institute for Fuel Cell Innovation, Vancouver, British Columbia, Canada

- Nanotechnology Offers Possibilities To Increase Fuel Cell Conversion Efficiencies Within The Ranges Of Catalysts, Membranes & Hydrogen Storage
- Developments In The Polymer Electrolyte Membrane (PEM): Pt Nanoparticle Synthesis; Ordered Intermediate Intermetallic Phase PtBi₂ Nanoparticle Catalyst & Electrolyte Can Be Improved By Nanoparticles
- For Solid Oxide Fuel Cells (SOFC) – Ceramic Nanopowders Are Synthesized & Used For Production Of Solid Electrolyte Membranes With Improved Ionic Conductivity & Better Thermal Stability
- Successful Demonstration That NRC Cathode & Anode Nanomaterials Will Solve Classic "Materials Mismatch" Problem
- Nanotechnologies In Fuel Cell Sensors Have Advantages Of Minimizing Power & Cost Requirements
- Sensor Programs: Metal Oxide Semiconductor Sensors; Nanowire Resistive Sensors & Sensor Platforms To Facilitate Multigas Sensing

NANOSILVER: TWO DIVERSE APPLICATIONS FOR ONE NANOPOWDER

Stan Farnsworth, Life Sciences Program Director, Antimicrobial Programs, NovaCentrix, Austin, Texas

- Two Diverse Applications For Nanosilver: Electrically Conductive Inks & Antimicrobial Products
- Overview Of Relevant Technologies
- Commercialization Challenges Associated With Each Application

NOVEL NANOMATERIALS FOR KEY APPLICATIONS IN ENERGY AND PERSONAL CARE

Dr Barry Park, Chief Operating Officer, Oxonica Ltd., Kidlington, UK

- Envirox™: A Cerium Oxide Based Diesel Fuel Additive
- Optisol™: A Modified Titanium Dioxide For Use As UV Absorber In Cosmetics

SUPPLIERS' FORUM: 5-Minute Presentations Related To Engineered Fine Particle Technology and Applications, Product or Service Capabilities. The Suppliers' Forum is open to all Conference Registrants

6:00 p.m. Reception in Exhibit Area

Friday, October 20, 2006

7:30 a.m. Continental Breakfast

8:30 a.m. Session 4

Development & Commercialization (cont.)

REFRACTIVE-INDEX ENGINEERED NANOCOMPOSITES FOR EFFICIENT LIGHT MANAGEMENT

Dr. Nobi Kambe, VP & CTO, Founder, NanoGram Corporation, Milpitas, California

- Commercialization Of Nanoparticles Requires Market-Driven Approach & Precise Control Of Properties
- Development Of New Class Of Inorganic Nanoparticles-Polymer Composites For Efficient Light Management
- Applications In Photonic Devices Such As High Brightness White-LED & Flat Panel Displays
- Examples Of High-Index-Polymer (HIP™) – Fine Tuning Of Refractive Index Through Linear Combination Of Index For Nanoparticles & Polymer Matrix
- Technical Challenges Are How To Achieve
 - High Level Of Uniformity In Nanoparticle Size & Shape
 - Extreme Level Of Nanoparticle Dispersion In Solvent That Allows High Loading Of Pre-Formed Nanoparticles Into A Polymer While Maintaining Required Optical Transparency
- Laser-Pyrolysis-Based Nano-Manufacture Process & Subsequent Surface Engineering Show Pathway To Enormous Range Of Photonic Application Products

IMPORTANT ROLE OF FILLER PARTICLES & POLYMERS FOR TIRE PERFORMANCE OF TREAD COMPOUNDS

Dr. Shingo Futamura, Senior R&D Associate, Material Development, The Goodyear Tire & Rubber Company, Akron, Ohio, USA

- Tire Performance Such As Rolling Resistance, Traction & Wear Resistance Varies Significantly With Type & Amount Of Filler Particles & Polymer Used In Tread Compounds
- Silica Filler Outperforms Carbon Black In Combined Tire Performance
- However, Silica Also Creates New Challenges In Manufacturing Such As Poor Processability, Volatile Emissions & High Compound Cost
- Problems Are Addressed By Development Of New Coupling Agents, Processing Aids, Silica-Carbon Black Hybrid Fillers, Etc.
- Further Advancements In Silica/New Filler Technologies Are Forthcoming

ENGINEERED NANOPARTICLES THAT PLAY WITH LIGHT

Peter Gray, President & Chief Operating Officer, NanoCerox Inc., Ann Arbor, Michigan

- Technical Challenges That Must Be Overcome To Achieve Useful Optical Properties Begin With Nanoparticle Stoichiometry, Ultra-High Purity & Crystalline Phase
- Processes Must Be Developed To Disperse "Fluffy" Nanoparticles In Order To Fabricate Coatings Or Dense Ceramics
- Light Management Products Have Been Developed That Cover The Spectrum, From UV To Mid-IR
- Case Study: Development Of A Polycrystalline Faraday Rotator With High Verdet Constant

STRATEGIES FOR COMMERCIALIZATION OF NANOTECHNOLOGY IN MATERIALS SCIENCE

Dr. Thomas R. Hockswender, PPG Industries, Allison Park, Pennsylvania

ULTRAFINE TiO₂ FOR CATALYSIS AND PHOTOCATALYSIS

Dr. Guoyi Fu, Senior Research Scientist, Lyondell Chemical, Glen Burnie, Maryland

- Ultrafine TiO₂ Characteristics: Electronic Structure, Optical Properties, Particle Morphology & Surface Chemistry
- Production Technologies: Gas Phase Synthesis, Spray Pyrolysis, Hydrolytic Precipitation, Sol-Gel Particle Processing And Hydrothermal Precipitation & Crystallization
- Applications in Environmental Catalysis: Selective Catalytic Reduction of NO_x, Volatile Organic Compounds Abatement, Diesel Oxidation Catalyst & Misc. CO/HC Oxidations
- Photocatalysis: Air & Water Depollution, Nanoparticle Product Development For Transparent Coatings, Self Cleaning Surface Coatings & Visible Light Photocatalysts

INK JET PRINTING POLYMER-LOADED INKS: GETTING NON-NEWTONIAN FLUIDS TO BEHAVE

Dr. Jan Sumerel, Manager, Biomedical Sciences, Materials Deposition Division, Fujifilm Dimatix, Santa Clara, California

- Simple Systems For R & D
- Technical Advances In Drop Size & Line Width
- Polymer Loading
- Ink Jet Printing Fluorophores, Fluorescent Nanoparticles & Nanospheres, Fluorescent Proteins and Bacteria

1:00 p.m.

Adjournment

Don't Miss IMI's Other Fall 2006 Programs

Other IMI Programs at Tuscany Suites Las Vegas, NV

2nd Ink Jet Technology Integration Symposium
October 9-10, 2006

5th Annual Printable Electronics and Displays Conference & Trade Fair
October 11-13, 2006

Paper-Like Displays Course
October 15-16, 2006

3rd Paper-Like Displays Conference
October 16-18, 2006

IMI Europe Programs with photokina at Koelnmesse, Cologne, Germany Picture-Taking with Mobile Imaging Devices

September 28, 2006

Picture-Making with Mobile Imaging Devices

September 28, 2006

IMI Europe Programs at Fira Palace Hotel in Barcelona, Spain

Ink Jet Academy: Theory of Ink Jet Technology

October 23-24, 2006

UV Ink Jet Printing Course

October 23-24, 2006

14th Annual European Ink Jet Printing Conference

October 25-27, 2006

REGISTRATION INFORMATION: 2nd Annual Engineered Fine Particle Applications Conference



Registration Fees: \$1095 per registrant
\$995 for each additional registrant from same company when registered as a group

The registration fee includes attendance at all sessions, all scheduled program functions and the program reference binder/CD. Cancellations will receive a 100% refund if made 72 hours prior to the start of the program. Substitutions may be made at any time. Cancellations made less than 72 hours prior to the start of the program will be charged a \$300 cancellation fee, but will receive a copy of the conference binder/CD.

To register, submit the registration form with payment to Susan Meldrum, Conference Administrator, Information Management Institute, Inc., 1106 Valley Crossing, Carrabassett Valley, ME 04947 USA. You may reserve space by calling +1-207-235-2225, sending a fax to +1-207-235-2226 or by sending an email message to imi@imiconf.com or visiting our web site www.imiconf.com

REGISTRATION FORM

- 2nd Annual Engineered Fine Particle Applications Conference**
October 18-20, 2006

- Check here to reserve a free display space and a 5-minute Suppliers' Forum presentation.**

NAME _____
JOB TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ STATE _____ ZIP _____
COUNTRY _____
PHONE _____ FAX: _____
EMAIL _____

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TUSCANY SUITES RESERVATION INFORMATION

IMI's Fall 2006 programs are being held at Tuscany Suites & Casino, Las Vegas, Nevada. Hotel reservations are the responsibility of each meeting registrant. To receive the special meeting rate of \$89 (\$109 for Friday & Saturday nights) for single or double occupancy – **YOU MUST Reference "IMI Fall" Group Code 1175FN when making your reservations. Early booking is advised** as the reduced rate is guaranteed only until September 8, 2006. Phone +1-877-887-2261 or +1-702-8933 to make hotel reservations.

The Tuscany Suites & Casino is a totally suite property conveniently located just off the Las Vegas Strip on 27 acres of plush landscape, pools and gardens. Just a short taxi ride from the McCarran International Airport, the Tuscany Suites & Casino offers spacious guest suites featuring many deluxe amenities - all in a lovely setting to provide a great sense of relaxation and privacy.

Recreational amenities at the Tuscany Suites & Casino include a lagoon style pool, fitness center and casino. The Tuscany Suites & Casino plus the Las Vegas area provide an excellent opportunity to extend your visit into a memorable vacation experience. Dress for this program will be casual.

All checks should be in U.S. dollars drawn on a U.S. bank and made payable to Information Management Institute, Inc. An invoice with bank transfer details for IMI's U.S. or European bank account will be provided upon request.



Photo Credit: Las Vegas News Bureau

EXHIBIT OPPORTUNITY – FREE DISPLAYS

Product demonstrations/displays are **COMPLIMENTARY** for both conference speakers and registrants. Contact Al Keene al@imiconf.com at IMI for more information.