

# Nano Bio Clean Tech™

## The 5th International Congress of Nano-Bio Clean Tech 2008

October 27-30, 2008 • San Francisco Airport Marriott Hotel  
San Francisco, CA USA

# 2008



### “Accelerating Commercialization in Nano Bio & Clean Tech”



International Association  
of Nanotechnology  
[ianano.org](http://ianano.org)



[cleantechinstitute.org](http://cleantechinstitute.org)



[cinano.com](http://cinano.com)



Glen Research Center



MTI Partners Inc



# Welcome



## The 5th International Congress of Nanotechnology & Clean Tech 2008

October 27-30, 2008 • San Francisco Airport Marriott Hotel

**“Accelerating Commercialization in Nano Bio & Clean Tech”**

<http://www.ianano.org>

### Nanotechnology Congress 2008

#### Conference Topics:

- Nanomaterials
- Nanodevices
- Nanoelectronics
- Nanobiotechnology
- Nanomedicine
- Nano Drug Delivery Systems
- Nanotechnology in Semiconductor Industry
- Nanotechnology in Biopharmaceutical Industry
- Nanotechnology in Energy Industry
- Nano Tools
- Medical Imaging
- Nano Manufacturing
- Nanoparticles Toxicology
- Societal & Environmental Impacts
- Health Safety Implications
- Intellectual Property and Technology Transfer
- Investment Opportunities for Start-up Ventures

### Nanotechnology Congress 2008

#### Conference Topics:

- Cleantech Business
- Biofuels
- Photovoltaic
- Electric Car
- Sustainable Energy Public Policy
- Climate Change Protection
- Cities Mayor Global Warming Solutions
- Nano Battery Storage Systems
- Nanostructured Solar Cell Manufacturing
- Intellectual Property
- Commercialization
- Venture capital investment



### International Association Of Nanotechnology

The International Association of Nanotechnology is a non-profit organization with the goals to foster scientific research and business development in the areas of nanoscience and nanotechnology for the benefits of society. The Association fosters friendship, equality and cooperation amongst its members around the world.

Under the provisions of a \$1.5 million high growth jobs training grant from the federal US government, the Association is able to offer several programs that address the need for workforce training in the nanotechnology and clean tech sectors.

To join the Association, please visit our web site: [www.ianano.org](http://www.ianano.org)



### Letter from the Conference Chair

Dear Colleague,

Welcome to the 5th International Congress of Nanotechnology & Clean Tech 2008.

This year's program features a wide spectrum of inter-related topics in the merging field of nano bio and clean tech. In addition to keynotes, invited lectures, breakout scientific sessions and roundtable business discussions, the Congress highlights several forums focusing on the latest development in Nanomaterials Stewardship Initiative, NanoSafety Consortium, Climate Change Protection, Thin Film Photovoltaics, Emerging Nano Bio Clean Tech Companies, and Vneture Capital Investment Forum.

The nano bio and clean technologies are becoming increasingly important to the continued growth and welfare of the global economy. On an annualized basis, the federal government of the United States earmarks \$1.5 billion to the development and enrichment of nanotechnology. Within the past year, the European Union has committed more than \$2 billion a year to the development of nanotechnology-related projects; other countries have invested a significant R&D budget towards nanotechnology research.

While nanotechnology continues to fill the gap between concept and reality, clean tech has also emerged as the third largest venture investment, with more than \$3 Billion has been invested in start-up in the USA over the past 12 months. More companies and organizations are focusing on the demand for technologies that protect the climate, provide power and offer more efficient means of storing energy. In many cases, nanotechnology is the engine that drives the advancement of clean tech.

The program has been designed to help you to gain insights into some of the latest scientific breakthroughs and exciting business opportunities as well as to present to you challenges facing the emerging industries which require international collaboration.

I would like to thank our volunteers, and many of our colleagues who have done so much to make this year's conference successful.

I look forward to meeting each one of you in San Francisco. I hope you enjoy this beautiful city and find the program, papers, and workshops stimulating and valuable.

With warmest regards,

Lloyd L. Tran  
President, International Association of Nanotechnology  
Director, Clean Tech Institute  
San Jose, California, USA

# Program At-A-Glance



## Monday October 27, 2008 (DRAFT)

8:30 AM - 2:00 PM	Workshop Registration
10:00 AM - 5:00 PM	Exhibitor Registration
9:00 AM - 5:30 PM	<b>Pre-Conference Workshops</b>
9:00 AM - 10:30AM	Workshop 1: Nanotech & Clean Tech: an industry overview
10:45AM - 12:15PM	Workshop 2: Nanofabrication: Principles and Applications
1:30 PM - 3:00 PM	Workshop 3: (Concurrent workshop) Introduction to Carbon Nanotubes Workshop 4: (Concurrent workshop) Nano Thin Film Photovoltaics
3:15 PM - 5:30 PM	Workshop 5: (Concurrent workshop) Nanobiotechnology & Tissue Engineering
1:30 PM-5:30 PM	<b>Nanomaterials Stewardship - A Stakeholder's Workshop</b>

## Wednesday October 29, 2008 (DRAFT)

7:30 AM - 4:00 PM	Registration
7:30 AM - 8:30 AM	Breakfast
8:30 AM - 12:00 PM	<b>General Sessions</b> Welcoming Remarks from the Program Chair Keynotes Invited Lectures Panel Discussion
10:00 AM- 5:00 PM	Exhibit
12:00 PM - 1:30 PM	Lunch Poster Presentations
1:30 PM - 5:00 PM	<b>Breakout Sessions</b> Track A: NanoToxicology Track B: Nanoparticles Track C: Biofuels Track D: Nanoscale Photovoltaics

## Tuesday October 28, 2008 (DRAFT)

7:30 AM - 4:00 PM	Registration
7:30 AM - 8:30 AM	Breakfast
9:00 AM - 12:00 PM	<b>General Sessions</b> Welcoming Remarks from the Program Chair Keynotes Invited Lectures Climate Change Protection- Mayor Forum
10:00 AM- 6:00 PM	Exhibit Poster Presentations
12:15 PM - 1:30 PM	Lunch
1:30 PM - 5:00 PM	<b>Breakout Sessions</b> Track A: Nanomaterials Track B: NanoCharacterization Track C: NanoBiotechnology Track D: Clean Tech & Climate Change Solutions Track E: Intellectual Property
1:30 PM-5:00 PM	Poster Presentations Reception

## Thursday October 30, 2008 (DRAFT)

7:30 AM - 4:00 PM	Registration
7:30 AM - 8:30 AM	Breakfast
8:30 AM - 12:00 PM	<b>General Sessions</b> Welcoming Remarks from the Program Chair Keynote Invited Lectures
10:00 AM- 2:00 PM	Exhibi
12:15 PM - 1:30 PM	Lunch
12:00 PM- 4:00 PM	Job Fair
1:30 PM - 5:00 PM	<b>Breakout Sessions</b> Track A: Nanostructures Track B: Medical Imaging & Diagnostics Track C: Nanoscale Photovoltaics Track D: Emerging Tech Investment Forum
5:00 PM- 6:00 PM	Congress Discussion Meeting Adjourned

## SPONSORED BY

Clean Tech Institute provides expert management consulting services on strategic planning, corporate development, business positioning, and capital funding assistance in the emerging clean tech industry. In partnership with the International Association of Nanotechnology, the Institute provides workforce training as well as facilitating the deployment and use of clean tech solutions by business, government, universities and other institutions.



<http://cleantechinstitute.org/>

# Conference Schedule



## Monday October 27, 2008 (DRAFT)

8:00 AM - 10:00 AM	Workshop Registration
10:00 AM - 5:00 PM	Exhibitor Registration
10:00 AM - 5:00 PM	Conference Registration
	PRE-CONFERENCE WORKSHOPS (90 min)
9:00 AM - 10:30AM	Workshop 1: <b>Nanotech &amp; Clean Tech: an industry overview</b> <b>Lloyd L. Tran</b> Director, California Institute of Nanotechnology, USA
10:45 AM - 12:15 PM	Workshop 2: <b>Nanofabrication: Principles and Applications</b> <b>Mahmadur Rahman</b> Associate Professor, Santa Clara University
12:15 PM - 1:30 PM	Lunch on your own
1:30 PM - 3:00 PM	Workshop 3: (Concurrent workshop) <b>Introduction to Carbon Nanotubes</b> <b>Cattien Nguyen</b> Senior Scientist, NASA Ames Research Center, USA
3:15 PM - 5:30 PM	Workshop 4: (Concurrent workshop) <b>Nanobiotechnology &amp; Tissue Engineering</b> <b>Thomas Webster</b> Associate Professor, Brown University, USA
1:30 PM - 3:00 PM	Workshop 5: (Concurrent workshop) <b>Nano Thin Film Photovoltaics</b> <b>William Kao</b> Assistant Professor, California Institute of Nanotechnology, USA
3:15 PM - 5:30 PM	Workshop 6: (Concurrent workshop) <b>Biofuels</b> (TBA)
1:30 - 5:00 PM	<b>Nanomaterials Stewardship - A Stakeholder's Workshop</b> (Concurrent workshop) <b>Jeff Wong</b> Chief Scientist, California Environmental Protection Agency <b>Jim Alwood</b> U.S. Environmental Protection Agency

## Tuesday October 28, 2008 (DRAFT)

7:30 AM - 12:00 PM	Registration
7:30 AM - 8:45 AM	Breakfast
	Registration
	<b>General Session</b>
9:00 AM - 9:30 AM	Opening Remarks from <b>Lloyd L. Tran</b> , Presient International Association of Nanotechnology; Director, California Institute of Nanotechnology.
9:30 AM - 9:45 AM	Welcome Remarks from Honorable Senator <b>Richard Polanco</b> (retired) Former Senate Majority Leader State of California
9:45 AM - 10:00 AM	Welcome Remarks from <b>Lt. Governor John Garamendi</b> State of California
10:00 AM -10:30 AM	<b>Chih-Ming Ho</b> Director, Institute for Cell Mimetic Space Explora- tion
10:30 AM - 10:45 AM	Coffee Break
10:45 AM - 11:15 AM	<b>Timothy Sands</b> Director, Birck Nanotechnology Center, Purdue University
11:15 AM - 12:15 PM	<b>Climate Change Protection- Mayor Forum</b> <b>Panel Discussion with cities mayors</b>
11:15 AM - 12:15 PM	Lunch
	<b>Breakout Sessions</b>
	<u>Track A : NanoMaterials</u>
1:30 PM - 2:00 PM	<b>H. A. Zambrano<sup>1</sup>, J. H. Walther<sup>1,2</sup>, P. Koumoutsakos<sup>2</sup>, I. F. Sbalzarini<sup>3</sup></b> <sup>1</sup> Technical University of Denmark, Denmark <sup>2</sup> Chair of Computational Science, ETH Zurich, Switzerland <sup>3</sup> Chair of Computational Science and Swiss Institute of Bioinformatics, ETH Zurich, Switzerland <i>"Thermophoretic motion of water nanodroplets confined inside carbon nanotubes"</i>
2:00 PM - 2:30 PM	<b>Qing-Hua Xu</b> National Unversity of Singapore, Singapore <i>"Fluorescence Enhancement of Fluorescein Isothiocyanate by Silver Nanoparticles"</i>
2:30 PM - 3:00 PM	<b>Yuliang Li</b> Institute of Chemistry, Chinese Academy of Sciences, P.R. China <i>"Gold Nanoparticle-Based Optical Sensing of Cu(II) Ions"</i>
3:00 PM - 3:15 PM	Coffee Break

# Conference Schedule



3:15 PM - 3:45 PM

**Sangyeob Lee<sup>1</sup>, Jinshu Shi<sup>2</sup>, Sheldon Q. Shi<sup>3</sup> and H. Michael Barnes<sup>4</sup>**  
Dept. Forest Products, Mississippi State University, USA  
*"Inorganic Nanoparticles Impregnated Kenfa Fibers as Reinforcement for Polymer Matrix Composites in the Automobile Application"*

3:45 PM - 4:15 PM

**Tran Hoang Hai, Phan Nha Truc, Doan Thi Kim Dung, Le Hong Phuc**  
Ho Chi Minh City Institute of Physics, Vietnam  
*"Immobilizing and characterization of trypsin on magnetic nanoparticles coated chitosan"*

3:45 PM - 4:15 PM

**Anthony Wagner**  
Clean Technologies International Corp., USA  
*"A novel new carbon nano material made into threads"*

4:15 PM - 4:45 PM

**Elnaz Yaghini<sup>1</sup>, Alexander M Seifalian<sup>2</sup>, Alexander J MacRobert<sup>1</sup>**  
1 National Medical Laser Centre (NMLC), UCL Medical School, University College, London, UK  
2 Biomaterial and Tissue Engineering Centre, Academic Division of Surgical and Interventional Science, University College, London, UK  
*"Measurement-layer Separation of Nanorod Assembly Multi-layer Structure for Ways Nanorod-Characteristic Measurement Method, Simulation & Application Possibility"*

4:15 PM - 4:45 PM

**Veronica Kim, Young Baek Kim**  
Plainsborough West HS, USA  
PaiChai Univerisity, South Korea  
*"Photo-induced Translational Motions of Small Particles with Various Potential Applications"*

4:45 PM - 5:15 PM

**Farbod Khoshnoud<sup>1, 2</sup>, Clarence W. de Silva<sup>1</sup>**  
1 Industrial Automation Laboratory, University of British Columbia, Canada  
2 SOFTEK Services, Ltd., Canada  
*"An Embedded Nano-electromechanical Capacitive Sensor Based on Carbon Nanotubes for Vibration Monitoring"*

1:30 PM - 2:00 PM

## Track C: NanoBio & NanoMedicine

**Victor Morozov**  
National Center for Biodefense and Infectious Diseases (NCBDID), George Mason University, USA  
Institute of Theoretical and Experimental Biophysics, Russian Academy of Sciences, Russia  
*"New Electro spray based technology for manufacturing nano-aerosols, free nanomats and nanofilters for collection of bio-aerosol"*

5:15 PM - 5:45 PM

**Teena James<sup>1</sup>, Manu Sebastian Mannoor<sup>1</sup>, Dentocho V. Ivanov<sup>1</sup>, Bill Braunlin<sup>2</sup> & Les Beadling<sup>2</sup>**  
1 Microelectronics Research Center, New Jersey Institute of Technology, USA  
2 Rational Affinity Devices LLC, USA  
*"Ultra Sensitive Debye Capacitive Sensor with Nanoscale Electrode Spacing for Label-free Nucleic Acid Analysis"*

2:00 PM - 2:30 PM

**Rodion Belosludov**  
Tohoku University, Japan  
*"Ab initio Study on the Quantum Dot Organic Ligand Interface: Effect of Core Structure on Cytotoxicity"*

1:30 PM - 2:00 PM

## Track B: NanoCharacterization

**T. Nogami, M. Hashimoto, K. Tsukagoshi**  
Doshisha University, Japan  
*"Microship Capillary Electrophoresis with chemiluminescence detection for separation and determination of trace amounts of metal ions"*

2:30 PM - 3:00 PM

**Baiju G. Nair, Saino H. Varghese, Remya Nair, T. Maekawa, Y. Yoshida, D. Sakthi Kumar**  
Bio Nano Electronics Research Center, Graduate School of Interdisciplinary New Science, Toyo University, Japan  
*"A bio polymer developed from poly ethylene glycol - An effective material to modify the surface of the nano drugs"*

2:00 PM - 2:30 PM

**P. Lemoine**  
University of Ulster, Ireland  
*"Characterisation of periodic nanostructures for nano bio-application"*

3:00 PM - 3:15 PM

Coffee Break

2:30 PM - 3:00 PM

**P. Zhdan**  
University of Surrey, United Kingdom  
*"Nanoscale surface SPM characterization in ambient environment of nanomaterials and "industrial" samples with unlimited size and thickness: some problems and solutions"*

3:15 PM - 3:45 PM

**Jason Sakamoto**  
The Alliance for NanoHealth, USA  
*"Silicon Biomedical nano-devices for early detection and drug delivery for cancer and other clinical applications"*

3:00 PM - 3:15 PM

Coffee Break

3:45 PM - 4:15 PM

**Janne Nikkinen**  
Center for Social Ethics, University of Helsinki, Finland  
*"Socio-Ethical Analysis of the Use of Quantum Dots in Nanomedicine"*

3:15 PM - 3:45 PM

**Weixuan Jing<sup>1</sup>, Ruxu Du<sup>1</sup>, Zhuangde Jiang<sup>2</sup>**  
1 The Institute of Precision Engineering at the Chinese University of Hong Kong, Hong Kong, PR China  
2 State Key Laboratory for Manufacturing Systems Engineering at Xi'an Jiaotong University, Xi'an, PR China  
*"Characterization of Au Ring Microelectrodes with Cyclic Voltammetry and AC Impedance Spectroscopy"*

4:15 PM - 4:45 PM

**Lucia G. Delogu<sup>1</sup>, Nunzio Bottini<sup>1</sup>, Massimo Bottini<sup>2</sup>**  
1 Institute for Genetic Medicine, Keck School of Medicine, University of Southern California, USA  
2 Burnham Institute for Medical Research, USA  
*"Enhanced Learning and Psychomotor Effects of Microhydrin, a Nano Particulate Antioxidant Supplement, in Young and Aging Rats"*

# Conference Schedule



The Conference Schedule may be subject to changes

## Wednesday October 29, 2008 (DRAFT)

Track D: Renewable Energy & Climate Change		Track E: Intellectual Property		General Session	
1:30 PM - 2:00 PM	Rama Venkatasubramanian RTI International "Nanoscale Thermoelectric Materials for Energy Efficiency"	1:30 PM - 5:00 PM	<b>Peter Skiff</b> Buchanan Ingersoll & Rooney "Intellectual Property"	7:30 AM - 12:00 PM	Registration
2:00 PM - 2:30 PM	Gerald Braun California Energy Commission (CEC) Public Interest Energy Research (PIER) Renewable Energy Technologies Program Area, University of California, USA	2:00 PM - 2:30 PM	<b>James Wood</b> Reed Smith LLP, USA "The impact of litigation on nanotechnology and how to minimized the risk"	7:30 AM - 8:45 AM	Breakfast
2:30 PM - 3:00 PM	Kent Prentice Nordic Wind Power	2:30 PM - 3:00 PM	<b>David Walker</b> Enable IPC, USA "Intellectual Property and Technology Transfer"	9:00 AM - 9:15 AM	<b>General Session</b> Welcoming Remarks from <b>Lloyd L. Tran</b> , President International Association of Nanotechnology; Director, California Institute of Nanotechnology.
3:00 PM - 3:15 PM	Coffee Break	3:00 PM - 3:15 PM	Coffee Break	9:15 AM - 9:45 AM	<b>Michael Tseng</b> Professor of Anatomical Sciences and Neurobiology, University of Louisville, USA
3:15 PM - 5:30 PM	Panel Discussion  Margaret Taylor Goldman School of Public Policy, University of California, Berkeley, USA  Mike Hess Mariah Power, USA Others to be announced	3:15 PM - 3:45 PM	<b>Sam Nguyen</b> Foley & Lardner LLP, USA "Clean Tech Patents with Demonstrated Commercial Value: An Analysis of the Characteristics of Licensed Clean Tech Patents from Publicly Announced Commercialization Deals"	9:45 AM - 10:15 AM	<b>John McDevitt</b> Professor of Chemistry & Biochemistry, University of Texas at Austin Chief Technologist, LabNow Corp  Coffee Breaks
		3:45 PM - 4:15 PM	<b>Joseph Kovarik</b> Sheridan Ross PC, USA "Mediation of Patent Disputes: "You can't shake hands with a clenched fist"	10:15 AM-10:30 AM	<u>Panel Discussion</u>
		4:15 PM - 4:30 PM	<b>Paul Thomas</b> Fredrickson & Byron, USA "Brand development and protectability"	10:30 AM - 12:15PM	<b>Martha Symko-Davies</b> Research Senior Scientist, NREL
		4:30 PM - 5:00 PM	<b>Michelle Hedges</b> Attorney at Law		<b>Scott Livingston</b> Livingston Group of Companies, USA "Institutional investment trends in nanotechnology"
					<b>Kate Gordon</b> Apollo Alliance, USA "The New Apollo Program - A Federal Investment Strategy for the New Clean Energy Economy"
					<b>Bob Rudd</b> Sustainable Energy Partners, USA
					<b>Eric Wesoff</b> Greentech Media, USA
					<b>Breakout Sessions</b>
					<u>Track A: NanoToxicology</u>
				1:30 PM - 2:00 PM	<b>Jeff Wong</b> Department of Toxic Substances Control, California Environmental Protection Agency
				2:00 PM - 2:30 PM	<b>Jim Alwood</b> Department of Toxic Substances Control, California Environmental Protection Agency
				2:30 PM - 3:00 PM	<b>Arezoo Campbell<sup>1</sup>, Flemming R. Cassee<sup>2</sup>, Miriam E. Gerlofs-Nijland<sup>2</sup></b> <sup>1</sup> Western University of Health Sciences, USA <sup>2</sup> Centre for Environmental Health Research, National Institute for Public Health and the Environment, The Netherlands "Brain Regions show Variation in response after exposure to diesel engine exhaust"

# Conference Schedule



The Conference Schedule may be subject to changes

3:00 PM - 3:15 PM

Coffee Break

3:15 PM - 3:45 PM

**Mary Jane Cunningham<sup>1</sup>, Linda Bockoven<sup>2</sup>, Mrinal Shah<sup>3</sup>, and Carolina Lema<sup>4</sup>**

<sup>1</sup>Integrated Laboratory Systems, Inc., USA

<sup>2</sup>Lone Star College-Montgomery, USA

<sup>3</sup>Rensselaer Polytechnic Institute, Center of Biotechnology & Interdisciplinary Studies, USA

<sup>4</sup>University of Texas at El Paso, USA

*"mRNA, miRNA and Protein Expression Profiling: Tools to Predict Toxicity of Nanomaterials?"*

3:45 PM - 4:15 PM

**Golrokh Malih<sup>1</sup>, Azam Bakhtiarian<sup>2</sup>**

School of Medicine, Washington University in St.

Louis, School of Medicine, Tehran University of Medical Sciences

*"The Role of Lysophosphatidic Acid-Induced Stimulation of a Calcium-dependent K<sup>+</sup> Channel on BAVSM Cells and their possible involvement in Atherosclerosis Prevention"*

4:15 PM - 4:30 PM

**Arthur Zucker**

Ohio University, USA

*"New and Old in Nanoscience"*

4:30 PM - 5:00 PM

**Danial Shahmirzadi<sup>1</sup>, Adam Hsieh<sup>2</sup>, Henry W. Haslach<sup>1</sup>**

Orthopaedic Mechanobiology Laboratory

<sup>1</sup> Dept. of Mechanical Engineering, University of Maryland, USA

<sup>2</sup> Dept. of Bioengineering, University of Maryland, USA

*"Quantifying Microscale Solid Area via Macroscale Measurements of Soft Tissues: Application to Elastin Fibers in Arterial Tissue"*

## TRACK B: Nanoparticles

1:30 PM - 2:00 PM

**Sheng-Chiang Lee, Randall D. Peters**

Mercer University, USA

*"Novel Nano-Positioning Sensor with Un-limited Dynamic Range for Nano-Fabrication Process and Scanning Probe Microscopy"*

2:00 PM - 2:30 PM

**Arthur Chait**

EoPlex Technologies, Inc

*"Bridging the Gap Between Macro and Micro Devices for Manufacture of Portable Fuel Cells and Energy Harvesters With High Volume Print Forming HVPF"*

2:30 PM - 3:00 PM

**Rahme Kamil, Sistach St, phanie, Marty Jean-Daniel, De Viguerie Nancy, Mingotaud Christophe, Gauffre Fabienne**

Laboratoire des IMRCP, Universit, de Toulouse, France

*"Amphiphilic Stabilizers for Water-soluble Nanoparticles"*

3:00 PM - 3:15 PM

Coffee Break

3:15 PM - 3:45 PM

**Ramin Sattari, Csaba L szl  Sajti, Niko B.,rsch, Jurij Jakobi, Stephan Barcikowski**

Laser Zentrum Hannover Membership Corporation, Germany

*"Continuous Production of Ceramic Nanoparticles by Laser Ablation in Liquid Media"*

3:45 PM- 4:15 PM

**Jasmine A. Jacob<sup>1</sup>, Sergej Naumov<sup>2</sup>, Nandita**

**Biswas<sup>1</sup>, Tulsi Mukherjee<sup>1</sup> and Sudhir Kapoor<sup>1</sup>**

Radiation & Photochemistry Division, Bhabha Atomic Research Centre, India

Leibniz-Institut fOrOberfl.,chenmodifizierung, Germany

*"Synthesis of Silver Nanoparticles: Experimental and Theoretical Simulations"*

4:15 PM- 4:45 PM

**Tran Hoang Hai, Ly Thi My Huong, Le Khanh Vinh,**

**Le Hong Phuc, Doan Thi Kim Dung, Bui Duc Long**

Ho Chi Minh City Institute of Physics, Vietnam

*"Studying Arsenic Absorbability of magnetic nanoparticles Fe<sub>3</sub>O<sub>4</sub> With Oleate Coating"*

## TRACK C : Biofuels & Water Resources

1:30 PM - 2:00 PM

**Ganapthy Arumugam**

Enhanced Biofuels & Technologies India PVT Ltd.,

India *"Production of Non Edible Feed Stock from Jatropha and Micro algae and aviation Biofuels"*

2:00 PM - 2:30 PM

**Josef Schroder \*\*\***

Chemspeed Technologies, USA

*"Accelerating Sample Preparation in the Biofuel R&B by automated High Output Technologies"*

2:30 PM - 3:00 PM

**S.A. Shah, R. Saunders, R. Clarke, C. E. Davies, R. Y. G. Davies**

University of the West Indies, Trinidad & Tobago W.I.

*"The decontamination of E. Coli infected water using a reactor containing a special membrane of Titanium Dioxide nanoparticles"*

3:00 PM - 3:15 PM

Coffee Break

3:15 PM - 3:45 PM

**D.M.A. Alrousan, P.S.M. Dunlop, P.Fernandez, J.A. Byrne**

University of Ulster, Ireland

*"Solar Photocatalytic disinfection of water for use in developing countries"*

3:45 - 5:00 PM

**Panel Discussion**

## Track D: Nanoscale Photovoltaics

1:30 PM-2:00 PM

**Peggy Hock**

United Solar Ovanic, LLC, USA

2:00 PM- 2:30 PM

**Michael Cumbo**

NanoGram Solar, USA

2:30 PM- 3:00 PM

**Mike Casterline**

SolarCity, USA

3:00 PM- 3:15 PM

Coffee Break

**Alex van der Beek**

Solarbotanic, Latvia

3:15 PM- 3:45 PM

**Panel Discussion**

# Conference Schedule



The Conference Schedule may be subject to changes

## Thursday October 30, 2008 (DRAFT)

7:30 AM - 12:00 PM

Registration

7:30 AM - 8:45 AM

Breakfast

9:00 AM - 9:15 AM

Welcoming remarks from Conference Chair  
**Lloyd L. Tran**, President  
International Association of Nanotechnology;  
Director, California Institute of Nanotechnology.

9:15 AM - 9:45 AM

**Guozhong Cao**  
Professor of Materials Science and Engineering,  
University of Washington

9:45 AM - 10:15 AM

**Tinh Nguyen**  
National Institute of Standards and Technology, USA  
*"Degradation and Nanoparticle Release of Polymer  
Nanocomposites Exposed to Solar UV Radiation"*

10:15 AM-10:30 PM

Coffee Break

10:15 AM - 10:45 AM

**Dennis Discher**  
Professor, Chemical & Biomolecular, Mechanical, and  
Bio- Engineering  
University of Pennsylvania, USA

10:45 AM - 12:00 PM

**Panel Discussion**

**Mark Bunger**  
Director of Research, LUX Research

**Nitin Parekh**  
VP, Business Development  
Palo Alto Research Center

(Others to be announced)

TRACK A: NanoStructures

1:30 PM - 2:00 PM

**Benoit Simard**  
National Research Council Canada, Canada  
*"Single-walled carbon nanotube-based high perfor-  
mance materials"*

2:00 PM - 2:30 PM

**Nandan Erathodiyil, Hongwei Gu, Yu Han,  
Su Seong Lee and Jackie Y. Ying**  
Institute of Bioengineering and Nanotechnology,  
Singapore  
*"Metal Nanostructures as Advanced Catalysts for  
Hydrogenations"*

2:30 PM - 3:00 PM

**I. Mende, H. Way**  
NETZSCH-Feinmahltechnik GmbH, Bavaria  
NETZSCH Fine Particle Technology, LLC., USA  
*"Manufacturing of Particles in the Nanometer Size  
Range"*

3:00 PM - 3:15 PM

Coffee Break

3:15 PM - 3:45 PM

**Wuzong Zhou**  
University of St Andrews  
*"Formation Mechanism of Anodic Titanium Oxide  
Nanotubes"*

3:45 PM - 4:15 PM

**Maribel Guzman<sup>1</sup>, Jean Dille<sup>2</sup>, St.phane Godet<sup>2</sup>**  
<sup>1</sup> Pontificia Universidad Catolica del Peru, PERU  
<sup>2</sup> Universit, Libre de Bruxelles, BELGIUM  
*"Synthesis of silver nanoparticles by chemical reduc-  
tion method and their antibacterial activity"*

1:30 PM - 2:00 PM

**Krassen Dimitrov**  
Australian Institute for Bioengineering and Nanotech-  
nology, Australia  
*"Nano-barcoding of Single Molecules for Biomedical  
Applications"*

2:00 PM - 2:30 PM

**Barbara Blasiak<sup>1,4</sup>, Ulrike Trojahn<sup>2,3</sup>, Abedelnasser  
Abulrob<sup>8,9</sup>, Zhijun Zhang<sup>4</sup>, Teodor Veres<sup>4,5</sup>, Celine  
Desvaux<sup>4</sup>, Umar Iqbal<sup>9</sup>, Maureen O'Connor<sup>2,3</sup>,  
Garnette  
Sutherland<sup>1</sup>, Boguslaw Tomanek<sup>1,6,7</sup>**  
<sup>1</sup>Department of Clinical Neurosciences, University of  
Calgary, Canada  
<sup>2</sup>Biotechnology Research Institute, National Research  
Council of Canada, Canada,  
<sup>3</sup>McGill University, Canada  
<sup>4</sup>Functional Nanomaterials Group, Industrial Materi-  
als Institute, National Research Council of Canada,  
Canada  
<sup>5</sup>INRS - Energie et mat,riauX Institut national de  
recherche scientifique  
<sup>6</sup>Institute of Nuclear Physics, Polish Academy of Sci-  
ences, Poland  
<sup>7</sup>Institute for Biodiagnostics (West), National Research  
Council Canada  
<sup>8</sup>Institute of Biological Sciences, National Research  
Council Canada, Canada  
<sup>9</sup>Faculty of Medicine, University of Ottawa, Canada  
*"A magnetic resonance study of Fe<sub>3</sub>O<sub>4</sub> and FeCo core  
nanoparticles for molecular MR imaging"*

2:30 PM - 3:00 PM

**David.C. Kennedy, Lilin Tay, Yanouchka Rouleau and  
John. P. Pezacki**  
Steacie Institute for Molecular Sciences, National  
Research Council, Canada  
*"Design of Nanoparticle-based Contrast Agents for  
Live Cell Imaging of Cell Surface Receptors"*

3:00 PM - 3:15 PM

Coffee Break

3:15 PM - 3:45 PM.

**Shu Wang**  
Key Laboratory of Organic Solids, Institute of Chemis-  
try, Chinese Academy of Sciences, China  
*"Fluorescent Assays for DNA Methylation and SNP with  
Conjugated Polyelectrolytes"*

3:45 PM - 4:15 PM

**Pompi Hazarika and David A. Russell**  
School of Chemical Sciences & Pharmacy, University  
of East Anglia, UK  
*"Detection of Drugs and Metabolites in Latent Finger-  
prints using Antibody-Magnetic Particle Conjugates"*

4:15 PM- 5:15 PM

**T.Y. Yin, L.S. Ling, M. Nazlan Mohd Muhid,  
H. Hamdan**  
Universiti Teknologi Malaysia, Malaysia  
*"Nanostructured Couples Semiconductor Photocata-  
lyst"*

# Conference Schedule



The Conference Schedule may be subject to changes

## TRACK C: Nanoscale Photovoltaics

1:30 PM - 2:00 PM

**Kee S. Moon, Sam Kassegne, Khaled Morsi, Jingang Yi, Asfaw Beyene**

Department of Mechanical Engineering, College of Engineering, San Diego State University, USA  
*"Low-cost Polymeric and Carbon-based Photovoltaic cells for Clean-Energy Applications"*

2:00 PM - 2:30 PM

**Joe Raguso**

Intrinsic Materials Ltd, United Kingdom  
*"Nanomaterials for thin film silicon photovoltaics, air filtration and other cleantech applications"*

2:30 PM - 3:00 PM

**Xiaojuan Fan<sup>1</sup>, Honghan Fei<sup>2</sup>, David Rogow<sup>2</sup>, Scott R. J. Oliver<sup>2</sup>, Thomas Wilson<sup>1</sup>, Huong Nguyen<sup>1</sup>, and Michael Norton<sup>3</sup>**

<sup>1</sup> Department of Physics and Physical Science, Marshall University, USA  
<sup>2</sup> Department of Chemistry and Biochemistry, University of California, Santa Cruz, USA  
<sup>3</sup> Department of Chemistry, Marshall University, USA  
*"Porous Nanocrystalline TiO<sub>2</sub> Electrodes for Dye-Sensitized Solar Cells"*

3:00 PM - 3:15 PM

Coffee Break

3:15 PM - 3:45 PM

**Hatice Sengul, Thomas L. Theis**

Institute for Environmental Science and Policy, University of Illinois at Chicago, USA  
*"Environmental tradeoffs of nanophotovoltaics: A life cycle analysis of quantum dot PV modules"*

3:45 PM - 5:00 PM

**Panel Discussion**

1:30 PM - 5:00 PM

## TRACK D: Emerging Investment Forum

**(Company presentation will be announced)**

5:15 PM - 6:30 PM

Congress Discussion

6:00 PM

Congress Adjourned





## Poster Presenters (DRAFT)

### **New approaches for fabrication of 2D magnetophotonic crystals: structural and optical properties**

S.M. Baek<sup>1</sup>, M.E. Dokukin<sup>1</sup>, A.V. Baryshev<sup>1</sup>, K. Yayoi<sup>2</sup>, J. Kim<sup>1</sup>, H. Uchida<sup>1</sup>, M. Inoue<sup>1</sup>

<sup>1</sup> Toyohashi University of Technology, Toyohashi 441-8580, Japan

<sup>2</sup> Ibaraki National College of Technology, Hitachinaka 312-8508, Japan

### **Molecular Level Description of Thermodynamics Properties of Hydrogen Clathrate Hydrate: Theoretical Aspects of Hydrogen Storage Application**

Rodion Belosludov

Institute for Materials Research, Tohoku University, Sendai, Japan

### **Effect of processing parameters on nylon 6.6 nano-fibers and their morphology**

Mohammad M Chowdhury,

Heriot-Watt University Edinburgh, United Kingdom

### **In Vitro Studies Concerning the Use of Elastic Vesicles for Drosipirenone Transdermal Delivery**

Cristina Dinu - Pirvu<sup>1</sup>, Alina Ortan<sup>2</sup>, Cristina Hlevca<sup>3</sup>

<sup>1</sup> University of Medicine and Pharmacy, "Carol Davila", Str. Traian Vuia nr 6, sect 2, Bucharest, Romania

<sup>2</sup> University of Agricultural Sciences and Veterinary Medicine, B-dul Marasti nr. 59 sector1, Bucharest, Romania

<sup>3</sup> National Institute for Chemical Pharmaceutical Research and Development, Soseaua Vitan nr 112, sector 3, Bucharest, Romania

### **Water-soluble ZnO nanoparticles**

Rubio Garcia Javier<sup>1,2</sup>, Kahn Myrtil<sup>1</sup> Chaudret Bruno<sup>1</sup>, Mingotaud Christophe<sup>2</sup>, Gauffre Fabienne<sup>2</sup>

<sup>1</sup> Laboratoire de Chimie de Coordination, 205 rte de Narbonne, 31000 Toulouse, France

<sup>2</sup> Laboratoire des IMRCP, Université de Toulouse, 118 rte de Narbonne, 31000 Toulouse, France

### **Tamm states at interfaces in one-dimensional magnetophotonic structures**

T. Goto,<sup>1</sup> A.V. Dorofeenko,<sup>2</sup> A.M. Merzlikin,<sup>2</sup> A.V. Baryshev,<sup>1</sup> A.P. Vinogradov,<sup>2</sup>

M. Inoue,<sup>1</sup> A.A. Lisiansky,<sup>3</sup> A.B. Granovsky<sup>4</sup>

<sup>1</sup> Toyohashi University of Technology, Toyohashi 441-8580, Japan

<sup>2</sup> Institute for Theoretical and Applied Electromagnetics, Moscow 125412, Russia

<sup>3</sup> Queens College of the City University of New York, Flushing, NY 11367, USA

<sup>4</sup> Moscow State University, Moscow 119992, Russia

### **In vivo Consequences of Nanoparticles-induced Magnetic Field in C. elegans-Reduction of Mobility and Elevation of Apoptosis**

G.S. Huang, H.M. Chen, Y.C. Chen, and L.K. Yeh

Institute of Nanotechnology, National Chiao Tung University, Hsinchu, Taiwan, ROC,

### **Nanovaccine- assessment for the properties of gold nanoparticles as immunogenic carrier to elicit focused antibody responses against synthetic peptides**

G. Steven Huang, Yu-Shiun Chen, and Wei-Shi Lin

Institute of Nanotechnology, National Chiao Tung University, 1001 University Road, EE137, Hsinchu 300, Taiwan, ROC.

### **Nanolandscapes Differentiate Cancer Stages: Cytoskeleton Organization and Focal Adhesions**

Y. F. Huang<sup>1</sup>, G. S., Huang<sup>2</sup>, Y. C., Hung<sup>1</sup>, H. A., Pan<sup>2</sup>, and S. M., Dai<sup>2</sup>

<sup>1</sup> Department of Obstetrics and Gynecology, China Medical University, Taichung, Taiwan

<sup>2</sup> Institute of Nanotechnology, National Chiao Tung University, Hsinchu, Taiwan, ROC;

### **Electro-optical Effect in Polymer Dispersed Liquid Crystal Based on Liquid Crystal-Montmorillonite-Clay Nanocomposite**

Eun Hwa Jung<sup>2</sup>, Ju Yeon Woo<sup>1</sup>, Young Keun Jeong<sup>2</sup>, Byung Kyu Kim<sup>1,x</sup>

<sup>1</sup>, x Department of Polymer Science and Engineering, Pusan National University, Busan 609-735, Korea,

<sup>2</sup> National Core Research Center for Hybrid Materials Solution, Pusan National University, Busan, 609-735,

### **Analysis of a Carbon Nanotube-based Nano-electromechanical Vibration Sensor Using Finite Element Modeling**

Farbod Khoshnoud<sup>1,2</sup> and Clarence W. de Silva<sup>1</sup>

<sup>1</sup> Industrial Automation Laboratory, Department of Mechanical Engineering, The University of British Columbia, Vancouver, BC, Canada

<sup>2</sup> SOFTEK Services Ltd., 275 - 13500 Maycrest Way, Richmond, BC, Canada V6V 2N8

### **Comparing the Influence of Additives on Reaction Sintering, Microstructure and Properties of solid- state and Sol\_Gel-Driven Aluminum Titanate in Aqueous Solution**

Maryam Khosravi Saghezchi, Mahila Biazar Markie, Reza Ajami, Hossein Sarpoolaky

K.n.Toosi University of Technology, No58, 7th, Sarjangaldari St, Khosrramshahr St, Zanjan, Iran

### **Oxidation behavior of oxynitrided Ti-6Al-4V alloys between 400 and 800oC in air**

Chan-Woo Kim, & Dong-Bok LEE

School of Advanced Materials Science & Engineering, Sungkyunkwan University, South Korea

### **Study on the Photocatalytic Behavior for the Hetero-junction of Nanocrystalline TiO<sub>2</sub>-Phosphors**

Jin-Ho Yoon, Chang-Woo Ham and Jung-Sik Kim

Department of Materials Science and Engineering, The University of Seoul, Seoul, 130-743 Korea

### **Application of Ultrasound to the Biodiesel Production from Jatropha Seed Oil (Jatropha Curcas)**

Le Viet Hai, Nguyen Mong Hoang, Nguyen Thanh Tien, Tran Thi

Phuong Thao, Nguyen Thi Phuong Thoa

Vietnam National University - Ho Chi Minh City

227 Nguyen Van Cu Street, District 5, Ho Chi Minh City, Vietnam

### **Current Research and Development of Biodiesel in Vietnam**

Le Viet Hai, Nguyen Thi Phuong Thoa

Vietnam National University - Ho Chi Minh City

227 Nguyen Van Cu Street, District 5, Ho Chi Minh City, Vietnam

### **Nanotechnology Based Antimicrobial Surfaces**

Sang Beom Lee, Joseph DiMauro Jr, Alan Rae

NanoDynamics Life Sciences, 100 Technology Drive, Suite 420, Pittsburgh, PA 15219

### **Fabrication and tribological behavior of metal nanohoneycomb structure**

Sangmin Lee<sup>1</sup>, Seonghan Kim<sup>2</sup>, Woonbong Hwang<sup>3</sup>

<sup>1</sup> Dept. of Mechanical Engineering, POSTECH, Republic of Korea

# Poster Presentation

## Poster Presenters (continued)

2 Electrophotography System R&D Group, Samsung Electronics, Republic of Korea,

3 Dept. of Mechanical Engineering, POSTECH, Republic of Korea

Measurement-layer Separation of Nanorod Assembly Multi-layer Structure for Easy Nanorod-Characteristic Measurement Method, Simulation And Application Possibility

Myoung-Kun Leem<sup>1</sup>, Chang-Man Kim<sup>1</sup>, Jin-Uk Park<sup>1</sup>, Kyu-Jin Kim<sup>1</sup> and Shin-Won Kang<sup>2</sup>

<sup>1</sup>Department of Electronic Engineering, Kyungpook National University, 1370 Sankyuk-dong, Bukgu, Daegu, Korea

<sup>2</sup>School of Electrical Engineering and Computer Science, Kyungpook National University, 1370 Sankyuk-dong, Bukgu, Daegu, Korea

### Disordered nanocrystalline zinc ferrite appearing as magnetic semiconductor and magneto-optical material

Shinichiro Mito, Jooyoung Kim, Hironaga Uchida, Mitsuteru Inoue Toyohashi University of Technology, Tempaku, Toyohashi, Aichi 441-8580, Japan

### Bus Moved by Ethanol- BEST Project

José Roberto Moreira<sup>1</sup>, Sílvia Velázquez<sup>1,2</sup>, Sandra Apolinario<sup>1</sup>, Euler Hoffman Melo<sup>1,2</sup>, Paulo Henrique Elmadjian<sup>1,2</sup>

<sup>1</sup>CENBIO – Brazilian Reference Center on Biobass, Av. Prof. Luciano Gualberto, 1289 São Paulo – SP Cep: 05508-010, Brazil,

<sup>2</sup>Mackenzie Presbyterian University, Rua da Consolação, 930 – São Paulo, Brazil

### Survey on Sugarcane Biomass Residues Aiming the Production of Ethanol via Enzymatic Hydrolysis Technology

Suani T. Coelho, Patrícia Guardabassi, Beatriz A. Lora, Alia Rached, M Beatriz Monteiro, Renata Grisoli, Jose Moreira

Brazilian Reference Center on Biomass - CENBIO, Avenida Prof. Luciano Gualberto, 1289, Cidade Universitária. São Paulo – SP, Brazil.

### Effects of Electrolyte Additives on the Open-circuit Voltage of Dye-Sensitized Solar Cells

Nguyen Thai Hoang<sup>1</sup>, Nguyen Thi Phuong Thoa<sup>1</sup>, Torben Lund<sup>2</sup>

<sup>1</sup>Vietnam National University – Ho Chi Minh City

227 Nguyen Van Cu Street, District 5, Ho Chi Minh City, Vietnam

<sup>2</sup>Roskilde University, 4000 Roskilde, Denmark

### Actuation and Inherent-Sensing of Modified Carbon Nanomaterials (CNMs)/ Conductive Polymer Nanocomposites by Electro-Micromechanical Techniques

Jung-Hoon Jang<sup>1</sup>, Zuo-Jia Wang<sup>1</sup>, Sung-Ju Kim<sup>1</sup>, Joung-Man Park<sup>1,2</sup>, K. Lawrence DeVries<sup>2</sup>

<sup>1</sup>School of Materials Science and Engineering, Engineering Research Institute

Gyeongsang National University, Jinju 660-701, KOREA

<sup>2</sup>Department of Mechanical Engineering, University of Utah, Salt Lake City, Utah 84112:

### Statistical Approach in Drug Discovery and Development

Krishna Patel

Shri Sarvajanik Pharmacy College

### Stakeholder Perceptions of the Benefits, Risk, and Potential Regulation of Nanoscale Technologies

Mark Philbrick

Terra Consulting, San Ramon, CA, USA

### Polymorphous silicon thin films for applications in photovoltaic devices, obtained by plasma enhanced chemical vapor deposition

A. Remolina<sup>1</sup>, G. Santana<sup>1</sup>, B. M. Monroy<sup>1</sup>, A. López-Suárez<sup>2</sup>, M. F. García-Sánchez<sup>1</sup>, A. Ponce<sup>3</sup> and A. Ortiz<sup>1</sup>.

<sup>1</sup> Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de México. A.P. 70-360, Coyoacán 04510, México, D.F.

<sup>2</sup> Instituto de Física, Universidad Nacional Autónoma de México, Ap. Postal 20-364, México, D.F. 01000, México.

<sup>3</sup> Centro de Investigación en Química Aplicada, Saltillo, Coahuila, México.

### Size and Shape-Dependent Uptake of Polymeric Nanoparticles by Macrophages

Gaurav Sharma, David T. Valenta, Hui Xie, Sheryl Harvey and Jeffrey W. Smith

Program for Excellence in Nanotechnology, Burnham Institute for Medical Research, 10901 N. Torrey Pines Road, La Jolla, CA 92037 USA,

### Effects of Silica on Multiplexed Holographic Polymer Dispersed Liquid Crystal

Ka Ram Sun, Joo Yeon Woo, Byung Kyu Kim

Department of Polymer Science and Engineering, Pusan National University, Busan 609-735, Korea

### Mechanisms of Nanostructures Synthesis in the Polymeric Matrix Nanoreactors Using Wastes of Metallurgical and Polymeric Composites Plants

Vera Trineeva

Institute of Applied Mechanics, Ural Division, Russia Academy of Sciences

### Nanobio computing – Synthesis of a nanonio computer using DNA and nanorobots

G. Vaidyanathan<sup>1</sup> and T. Annamalai<sup>2</sup> and B. Ravi Kiran<sup>3</sup>

<sup>1</sup>UG Student 3rd Electronics and Communication Engineering

<sup>2,3</sup>UG Student 3rd Information Technology

<sup>1</sup>Vickram College of Engineering, Sreenivasa Gardens, Madurai-Sivagangai Highway, Enathi, Tamil Nadu-630561, India

<sup>2,3</sup>Velammal Engineering College, Velammal Nagar, Chennai, Tamil Nadu, India.

### Poly(aryl ester)/poly(benzyl ether) dendrimers with fullerene C60 as the core: structure-properties relations

Natalia Yevlampieva<sup>1</sup>, Nikolai Beljaev<sup>1</sup>, and Robert Deschenaux<sup>2</sup>

<sup>1</sup>V.A. Fock Institute of Physics, St. Petersburg State University, 198504 St. Petersburg, Russia

<sup>2</sup>Institut de Chimie, Université de Neuchâtel, 2009 Neuchâtel, Switzerland

### Ultra-high-resolution characterisation of nanostructured magnetic materials and magnetic nanoparticles by High-Vacuum Magnetic Force Microscopy with External Magnetic Field: challenges, hopes and limitations.

Peter Zhdan & Niyaz Nurgazizov

Faculty of Engineering and Physical Sciences, University of Surrey, Guildford, Surrey, GU2 7XH, United Kingdom