The background features a stylized world map composed of a grid of small dots. Overlaid on the map are several molecular models, each consisting of a central sphere connected to four other spheres by thin lines. The spheres are colored in various shades: orange, green, blue, red, and purple. The text is centered over the map.

# ASIA NANOTECH CAMP 2013

OCTOBER 04<sup>TH</sup> - 11<sup>TH</sup> , 2013  
YASMIN HOTEL- BANTEN INDONESIA

**PROCEEDINGS**

**PROGRAM BOOK**

## WELCOME

I am pleased to welcome you to this Asian Nanotech Camp 2013, held in Indonesia for the first time.

Gathered here today are representatives from many foreign countries, connected to the domain of nanotechnology, science and engineering. Our distinguished speakers come from a variety of backgrounds, bringing with them a wealth of knowledge in the fields of science and entrepreneurship. We are also particularly happy to welcome our young local participants.

The field of nanotechnology is considered to be very important knowledge for the future. We also recognize that its integration and interactions with other fields can greatly improve the products of our research: this is reflected by the center of mobile, micro and nanotechnology, currently run by Prof. David Mendels.

As a very young institution, Surya University strives hard to become a major player in the design, creation and promotion of cutting edge technology. Thus sharing of knowledge and collaboration in research amongst various parties nationwide, region-wide and world-wide become increasingly pivotal in advancing our own capabilities to catch up with the latest knowledge that will help us to continue to develop Indonesia.

After this conference, we hope that each of you will come to realize the interconnectivity amongst us, and the benefits all of us can find in working together in Asia as a whole - particularly as ASEAN comes together. It is our duty to increase and facilitate connections between science and industry, nationally and internationally. The task we will be asking you to perform will address this point in particular. We think it is going to be fun and enlightening.

Prof. Yohanes Surya, PhD

**Programme****Yasmin Hotel, Karawaci****Day 1 - Friday, October 4th 2013**

<b>Time</b>	<b>Activities</b>
06.00 - 08.00	Breakfast
08.00 - 09.00	Free time
09.00 - 10.00	Coffee Break
10.00 - 11.00	Free time
10.00 - 12.00	Free time
12.00 - 13.30	Lunch
13.30 - 14.00	Free time - Registration for Indonesia Participants
14.00 - 15.00	Free time - Registration for Indonesia Participants
15.00 - 16.00	Coffee Break
16.00 - 17.00	Free time
17.00 - 18.00	Free time
18.00 - 20.00	Welcoming Dinner

**Day 2 - Saturday, October 5th 2013****Topic I: Design for Nano**

<b>Time</b>	<b>Activities</b>
06.00 - 08.30	Breakfast
08.45 - 09.45	Opening Ceremony
09.45 - 10.00	Coffee Break
10.00 - 12.00	Lecture 1 - Biocompatible iron oxide magnetic nanoparticles: in vivo pharmacokinetics and magnetic induction hyperthermia properties Prof. Chao-Ming Fu -National Taiwan University, Taiwan
12.00 - 13.30	Lunch
13.30 - 15.00	Lecture 2 - Nano Physics Prof. David Mendels - CMMN, Surya University, Indonesia
15.00 - 15.30	Coffee Break
15.30 - 17.00	Lecture 3 - Bio-inspired Design Prof. Ille Gebeshuber - UKM, Malaysia
18.00 - 20.00	Dinner

**Day 3 - Sunday, October 6th 2013****Topic II: Manufacturing for Nano**

<b>Time</b>	<b>Activities</b>
06.00 - 08.00	Breakfast
08.00 - 10.00	Lecture 4 - Technopreneurship and the role of media in fueling Asian technopreneurs and innovators Sourav Roy - WWF, Singapore

We will also look at some of those materials and systems which truly take outstanding properties when taken down to the nanoscale, and disprove some of the widely accepted fake truths: are carbon nanotubes the strongest material on earth? Can classic mechanics be applied to single layers of atoms? What is the source of the astonishing properties of nanocomposites? Can polymers be stiffer than steel? All these questions go at the deep root of what we can consider as a continuum

### **Lecture 3 - Bio-inspired Design**

Prof. Ille Gebeshuber  
UKM, Malaysia

The lecture will introduce biomimetic nanotechnology, a powerful emerging, potentially disruptive way of doing science and engineering. On rainforest expeditions with her PhD students from Europe and Malaysia from fields such as economics, engineering, biology, the veterinary sciences, physics and the applied as well as the fine arts and collaborators from around the globe Prof. Ille, whose work is based on biomimetics and a deep understanding of trends and developments, has established an interdisciplinary sound basis to unveil the unique wisdom and potential of the largest sustainable system we know, living nature, and what we can learn from it regarding successful addressing of major global challenges. Such challenges are climate change and sustainable development, major changes in biodiversity, supply with clean water for everybody and health problems due to resistant microorganisms. They are interconnected and interdependent, and for a complex system that needs to be addresses by complex minds – for example with good, bioinspired design. The talk will furthermore deal with necessary new ways of teaching, of disseminating and accessing knowledge, of doing engineering and shaping our approaches towards a better, healthy and good way of living, that would not compromise future generations.

### **Lecture 4 - Technopreneurship and the role of media in fueling Asian technopreneurs and innovators**

Sourav Roy  
WWF, Singapore

In the said topic, I would be elucidating the importance of scientific communications, communicating effectively and marketing cutting-edge science and technology besides how to get the media understand your story and share your zeal.

### **Lecture 5 - Synthesis of Hybrid Nanocomposites and Photocatalytic Degradation of Organic Dyes**

Prof. Weon Bae Ko  
Sahmyook University Seoul, Korea

Metal oxide nanoparticles were synthesized by combining a solution containing metal salt in distilled water with a NH<sub>4</sub>OH solution under non-classical condition.

### Prof. David Mendels

Prof. David Mendels is a Physics and Information Technologies professor at Surya University, he was born in 1970 in Lyon, France. His interests span a wide range of domains, from Materials Science through to Mobile Technologies. After graduating from the Swiss Federal Institute of Technology as a Materials Science engineer and further taking a PhD in polymer physics, he spent 7 years in England, where he created the Nanomaterials Metrology laboratory for the National Physical Laboratory. He further went on to create a company, Cognoscens, whose main activity was the development of software for processing nanomaterials and nanotechnology related applications, such as the Nanoimprint Simulation Suite. He also developed a number of utility and early learning apps for iPhone and iPad. He has been with Surya University since 2012, where he is developing new activities at the interfaces of the domains of nanotechnology, microtechnology and mobile devices. He is involved in various strategic, company and standard boards. Prof. Mendels is married with two children, his interests beyond science and technology include Wagner, coffee and cigars.



### Prof. Ille C. Gebeshuber

Prof. Ille C. Gebeshuber is a University Professor of Physics from Austria, Europe. She is expert in Nanotechnology, Biomimetics and Tribology. She was born in 1969 in the small city Kindberg. As a child she discovered that - a natural lefthander - she can write in mirror. She uses this ability to stimulate the right side of her brain and thereby her creativity and crossborder thinking.

This has had major influence on her scholarly development and achievements - unlike most other physicists and engineers her approach to science is wide and holistic, and inherently trans- and interdisciplinary, bridging over to biology, the arts and the social sciences. Since 2009 she has been at the Institute of Microengineering and Nanoelectronics at Universiti Kebangsaan Malaysia. Her permanent position is at the Institute of Applied Physics at the Vienna University of Technology.



Prof. Ille is associate editor of the SAGE Journal of Mechanical Engineering Science, editorial board member of various scientific journals, author of two books on biomimetics and nanotechnology and editor of a book on biomimetics by Springer. She is scientific advisory board member for the Lifeboat Foundation, a US American think tank safeguarding humanity. Prof. Ille C. Gebeshuber serves on various international strategy boards and expert panels. She is reviewer and advisor for agencies, universities, research institutions and public bodies. Prof. Ille is doing extensive public science outreach work and her professional activities are widely covered in the media. She loves to go on rainforest expeditions with her students, who come from different cultures and different fields (Europe & Asia, physics, engineering, biology, veterinary medicine, applied arts, fine arts). Her research interests are located at the interface of biology, engineering and the arts, systems thinking and nanotechnology and aim at addressing global challenges for humankind.

### Sourav Roy

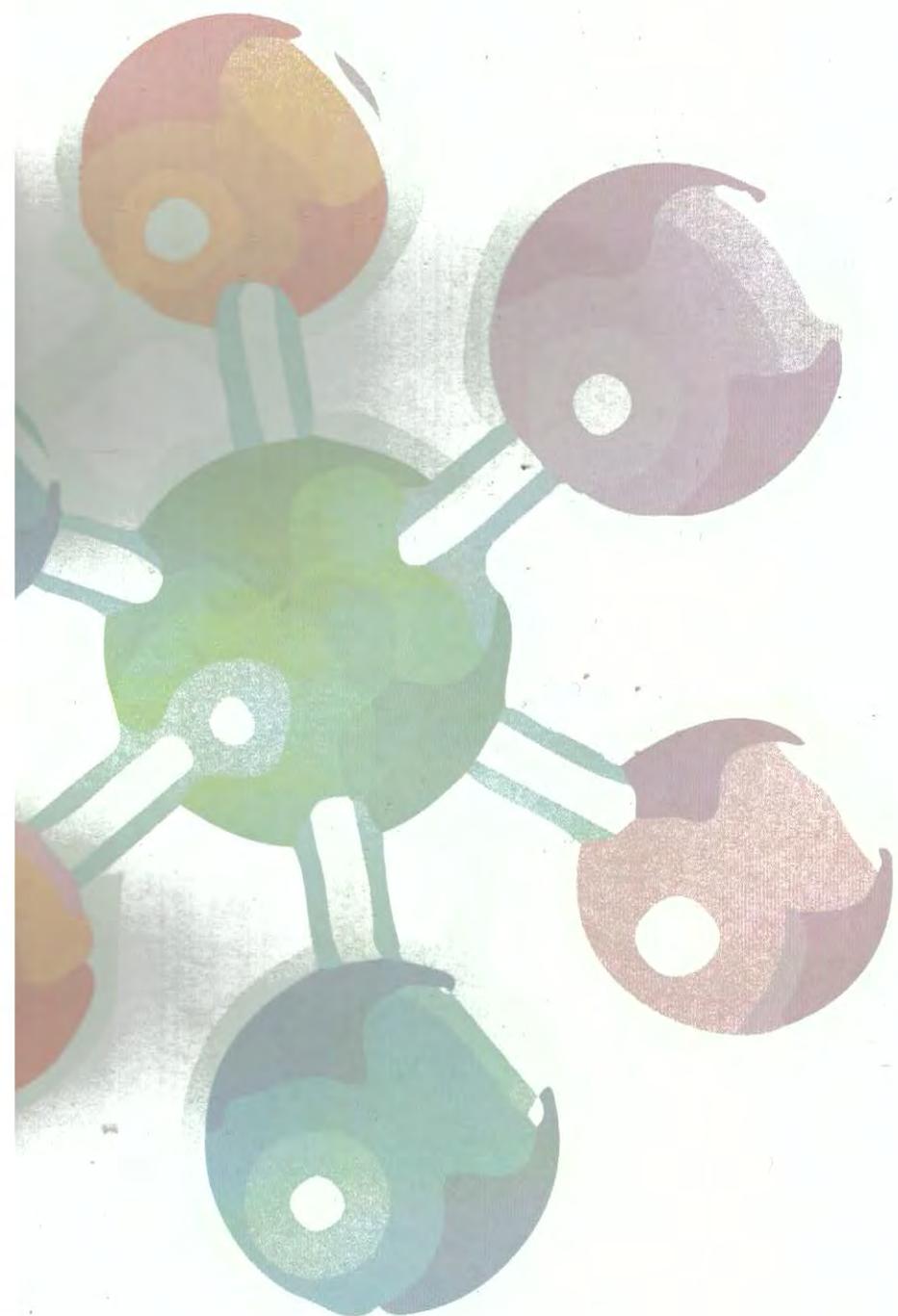
Sourav Roy is a seasoned international journalist. He has worked in the past with The Glasgow Herald, BBC Radio Five Live and BBC Radio Scotland, The United Nations and more recently with Al Jazeera English News Channel and The Huffington Post. He has trained numerous newsroom managers/journalists on social media integration and Asian/ASEAN politicians in integrating social media techniques in electoral communications. Sourav appears regularly as an Asian Affairs Analyst on Al Jazeera English's acclaimed programme, Inside Story, and writes a permanent column from Asia in The Huffington Post. He has recently joined as Director, Communication for WWF in Singapore.



### Prof. Weon Bae Ko

Professor Weon-Bae Ko obtained his B.A. (Chemistry) in 1985 from Sahmyook University and PhD (Chemistry) from Sejong University in 1995. He did his post-doc in nanochemistry in University of California, Davis, U.S.A. in 1999. He is presently a Professor in the Department of Chemistry in Sahmyook University. He is also presently the Chairman of Nano-education Program for K-12 and General Publics in Nano-Korea, the Project Director of Nanoscience Camp in Life, the Chairman of Science in the Rubber Society of Korea, the Director of the Korean Chemical Society and the Korea Carbon Society, as well as the Science Public Information Ambassador of the Korea Science Foundation.



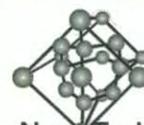


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## **Ille C. Gebeshuber BIOGRAPHY**

Prof. Ille C. Gebeshuber is a University Professor of Physics from Austria, Europe. She is expert in Nanotechnology, Biomimetics and Tribology. She was born in 1969 in the small city Kindberg. As a child she discovered that - a natural lefthander - she can write in mirror. She uses this ability to stimulate the right side of her brain and thereby her creativity and cross-border thinking. This has had major influence on her scholarly development and achievements - unlike most other physicists and engineers her approach to science is wide and holistic, and inherently trans- and interdisciplinary, bridging over to biology, the arts and the social sciences.

Since 2009 she has been at the Institute of Microengineering and Nanoelectronics at Universiti Kebangsaan Malaysia. Her permanent position is at the Institute of Applied Physics at the Vienna University of Technology. Prof. Ille is associate editor of the SAGE Journal of Mechanical Engineering Science, editorial board member of various scientific journals, author of two books on biomimetics and nanotechnology and editor of a book on biomimetics by Springer. She is scientific advisory board member for the Lifeboat Foundation, a US American think tank safeguarding humanity.

Prof. Ille C. Gebeshuber serves on various international strategy boards and expert panels. She is reviewer and advisor for agencies, universities, research institutions and public bodies. Prof. Ille is doing extensive public science outreach work and her professional activities are widely covered in the media. She loves to go on rainforest expeditions with her students, who come from different cultures and different fields (Europe & Asia, physics, engineering, biology, veterinary medicine, applied arts, fine arts). Her research interests are located at the interface of biology, engineering and the arts, systems thinking and nanotechnology and aim at addressing global challenges for humankind.



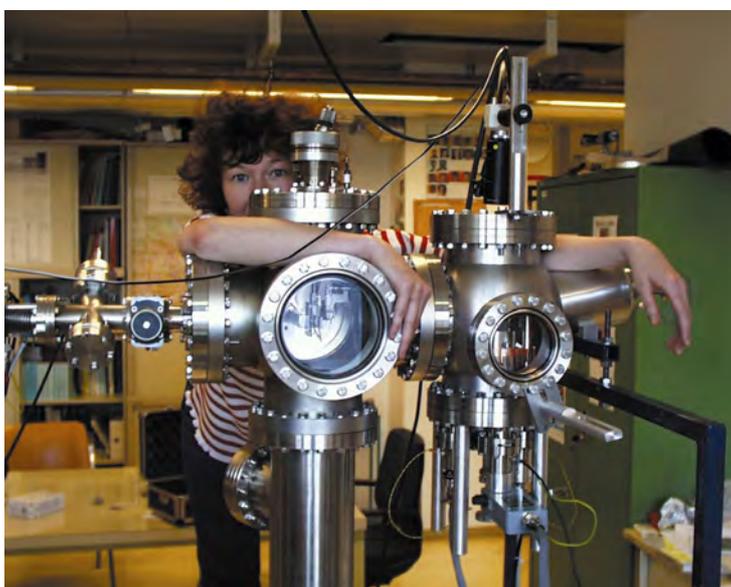
## **Prof. Ille C. Gebeshuber LECTURE: BIOINSPIRED DESIGN**

The lecture will introduce biomimetic nanotechnology, a powerful emerging, potentially disruptive way of doing science and engineering. On rainforest expeditions with her PhD students from Europe and Malaysia from fields such as economics,

Ille C. Gebeshuber, September 2013. Abstract and Biography for an Invited Lecture at the Asia Nanoforum 2013, Surya University, Jakarta, Indonesia.

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See her CV page for downloads of her academic (papers, book chapters, etc.) and science outreach (TV, radio, magazines, etc.) work:

[http://www.iap.tuwien.ac.at/~gebeshuber/CV\\_ICG.HTML](http://www.iap.tuwien.ac.at/~gebeshuber/CV_ICG.HTML)

See <http://www.tinyurl.com/illeted> for her TEDxKL Talk “What is a physicist doing in the jungle? Biomimetics of the rainforest.”