



Book Launch Seminar of “Emerging Nanotechnology Power – Overview on Nanotechnology Applications in Energy, Healthcare & ICT Development in the Asia Pacific Region” by Dr. Lerwen Liu

Abstract:

Nanotechnology is going to revolutionize the way we make things and transform the way we live. It is able to transform multiple industries including aerospace, agriculture, automotive, chemical, energy and environment, food, information and communication, medicine and health care, security and transportation. Nanotechnology offers so many possibilities such as providing cheap and clean energy; clean water; lighter and stronger materials; faster, more powerful and energy efficient computers; an exponential increase in information storage capacity; lotus-like self cleaning surfaces; the reduction or elimination of pollution; and early detection and treatment for cancer and other diseases. Dr Lerwen Liu provided an overview on Nanotechnology impact in Energy & Environment, Health Care and Information Communication Technology (ICT). Asia is one of the fastest growing regions in nanotechnology R&D and commercialization. She also shared her insight on Nanotechnology development in terms of policy & funding, infrastructure, R & D & commercialization, education and risk management in the Asia Pacific in the last 10 years since the announcement of the US National Nanotechnology Initiative (NNI).

Happening full-house in ISEAS on 29th July 2009, a book launch seminar of “Emerging Nanotechnology Power – Overview on Nanotechnology Application in Energy, Healthcare & ICT Development in the Asia Pacific Region” was successfully organized by NanoGlobe Pte Ltd, Institute of Southeast Asian Studies (ISEAS), and World Scientific Publishing Co. Pte Ltd, attended by over 100 participants. The seminar was delivered by Dr. Lerwen Liu to promote her recent book titled “Emerging Nanotechnology Power: Nanotechnology R&D and Business Trends in the Asia Pacific Rim”. Dr. Liu is an Asia-based nanotechnology expert specializing in the government and corporate strategic services to policy makers and corporate executives. She has been actively building nanotechnology networks with the government agencies, R&D institutions and industries across the world and especially promoting nanotechnology policy and cooperation in the Asia region. She is the director and founder of NanoGlobe Pte Ltd, a consulting company specializes in micro and nanotechnology strategy, business development, and incubation in Asia. And she believes that nanotechnology is going to revolutionize the way we make things and transform the way we live.



Lerwen delivered her seminar in two parts; the first part was to introduce the concept of nanotechnology & its useful applications in daily lives and the second part to share her insights on nanotechnology strategy development and competitive analysis in AP region in the last 10 years. She stimulated active interaction from the audience to share their experiences in nanotechnology, including policy, research and commercialization.

The concept of nanotechnology was introduced by taking some examples of mm-size objects such as ant scaling down all the way to nanometer-size, which is one billionth of a meter, such as carbon nanotubes (CNTs) or DNA. Further, a video courtesy of IMRE on the CNT growth was displayed and the evolution of nano-component to final product was illustrated such as silver nanoparticles that were dispersed in a network mesh for making transparent conductive layer that can be applied for touch panel screen. As Lerwen moved on to the useful applications of nanotechnology, she cited a few examples in a house exteriorly and interiorly, car transportation, lifestyle, biomedical and clean environment such as the use of nanoparticles to enhance the efficiency of solar cells/panels, to improve the properties of wall paints and fabrics to become self-cleaning, anti-mould and anti-stain, to improve the properties of mirrors and glasses to become anti-reflective and anti-fog, to improve the fuel efficiency of a car through lightweight frames, low rolling-resistance tires, and LED/OLED lightings. In addition, the use of nanostructured material can better control the drug release in the human body as well as the use of CNT to assist the targeting of drug delivery.

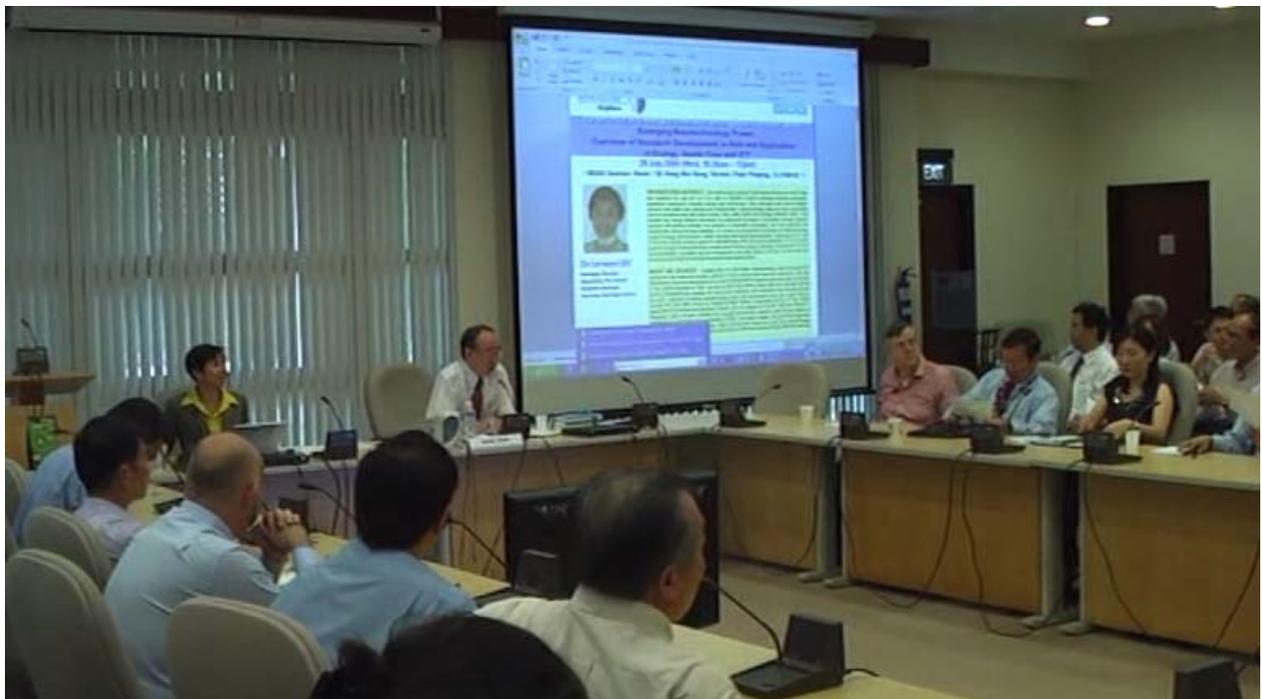
Highlighted achievements in nanotechnology from home-grown companies include the success of Pasture Nanotechnology in getting the FDA approval and selling their NT-V and N95 masks to combat the spread of H1N1 and H5N1 viruses through the use of nanoparticles, and another success story of BioNano International Singapore Pte Ltd in developing their water treatment plants in China through the use of nanobubbles.

The second part of the seminar was focused on the evolution of nanotechnology national initiative (NNI) and the nanotechnology activities going on since then in Asia Pacific region. NNI in the region was all started from the first move of Japan setting up Atom Technology Program (ATP) for USD 250 million in 1992. One initiative example highlighted in the seminar was the setting up of RUSNANO – the Russian Corporation of Nanotechnologies in 2007 to enable the government policy in nanotechnology.

The seminar was ended with some highlights on the activities of the region in nanotechnology national investment and public funding, nanotechnology education and outreach as well as nanotechnology standardization and risk management. Apparently, Asia as a whole has spent the highest

nanotechnology public funding ahead of Europe and United States over the years of 2003 - 2007, and individually Japan seemed to spend the most for its nanotechnology investment among the rest of the countries in the region or even in the world (as compared to Germany and United States). Besides being impressive in communicating and educating nanotechnology to the society, Japan and Taiwan have spent notable efforts in addressing the standardization and risk issues in nanotechnology, while Singapore has started to be more involved in the nanotechnology risk management by going to introduce nanotoxicity initiative later in this year.

Overall, Lerwen's vivid and interactive presentation allowed the audience to learn the exciting nanotechnology applications today, which any layman can relate to.



Opening of the book launch seminar



Dr. Lerwen Liu speaking about nanotechnology application for textile based on the Lotus Effect



The audience of the book launch seminar