Nanotech Europe 2009: Nanotechnology Conference and Exhibition

Abstract

Nanotech Europe 2009 attracted many participants including researchers, policymakers, industrialists, and investors to get together discussing a common topic: Nanotechnology in the areas ranging from technical, safety to investment issues. Big players (Bayer, FIAT, Nokia, etc) as well as startups (IZON Science, MagForce, Tethis, Imina Technologies, etc) participated in presenting their research activities, achievements, and products. Transportation is one important application where nanotechnology can play a significant role. Material is one important part of nanotechnology to enable product improvement and enhancement. In this article, we share our insights and learning obtained from the event.

Nanotech Europe 2009, the Europe's largest annual nanotechnology conference and exhibition, was successfully held on September 28 – 30, 2009 in Berlin, Germany. Spinverse Oy, a Finnish consulting company specialized in emerging technology commercialization, was the lead organizer of the event. Nanotech Europe 2009 is meant as a meeting place for the global nanotechnology community including researchers, industry, policymakers, and investors. The conference attracted over 700 participants from 50 countries with topics spanned from Safety, Photonics, Materials, Health & Bio, Electronics, Energy, Nanoelectromechanical systems (NEMS), Instrumentation and Investment. All exhibition booths were sold out with 64 companies participated. The exhibition was crowded with mostly European startups/SMEs doing either instrumentation/equipment or nanomaterials synthesis/production for various applications.

Dr. Stefan Kienzle from Daimler AG, Germany, one of the conference opening session speakers, delivered an overview about nanotechnology for automotive applications. Future vehicles shall be fuel efficient and emission reduced with economical technical solutions. Daimler acknowledged the significant role of nanotechnology to help around the vehicles to improve functionalities, to support the key elements of Daimler's R&D strategy. Nevertheless, Dr. Kienzle emphasized the need of standardization, quality assurance, economics, efficiency, stable competitive supply chain, and safety for further successful usage of nanotechnology in automotive industry.

Not only Daimler, FIAT also acknowledged the need of nanotechnology for future vehicles. There exist Micro and Nanotechnology Department in the Research Centre of FIAT (CRF – Centro Ricerche FIAT), which studies many application developments such as lightweight smart components (lighting, displays), multifunctional materials, and energy recovery/generation and storage. FIAT recognized the

need of collaboration and joint efforts at all levels (materials, processes and assembling) to speed up the development of high performance devices at reasonable costs. They are part of EUMINAfab, European Infrastructure for Micro and Nanofabrication, together with other nine partners from 8 countries in total.

Another interesting talk was delivered by Dr. Peter Krueger, the Head of Bayer Working Group Nanotechnology and the Coordinator for activities in Innovation Alliance CNT (Inno.CNT). Inno.CNT is a research alliance involving around 80 reputable partners (including Bayer MaterialScience AG) from science and industry as part of the German government's high-tech strategy. It has budget of 80 million euros for its 18 interlinked projects, covering a large number of technology options for transportation. Indeed, transportation has been identified to be one very important application of nanotechnology, especially carbon nanotube (CNT) and its composite materials.

Nokia is currently working at developing a mobile bio-sensor that can be used to understand how healthy the phone user is or to find out if they have been exposed to infectious disease. This project combines the knowledge of nanotechnology, biotechnology, and cognitive science and machine learning into an intelligent sensors, devices, applications and services. Their approaches are through nanostructures such as functionalized nanowires, new material such as graphene nanoribbon, and nanoscale 3D structures.

In summary, various companies, organizations, and universities from all over the world took part in presenting their research development and achievements. Besides technical sharing, investment and public funding were also part of the program with organizations such as BASF Venture Capital, RUSNANO, BioBay as well as representatives from many countries such as China, Russia, France, Finland, UK, South Africa, and Singapore (representing the Asia region) took part in presenting their mission, priorities, activities, and projects in nanotechnology. The conference and exhibition were very helpful pools of information to find out the state-of-the-art nanotechnology issues especially in Europe.

Audience of the opening session of Nanotech Europe 2009

Opening presentation by Dr. Stefan Kienzie from Daimler AG, Germany: *Nanotechnology for Automotive Applications*

Cocktail and networking time on the first day of Nanotech Europe 2009