NUS Nanoscience & Nanotechnology Initiative (NUSNNI)

Nanomanufacturing of Innovative Products

Speaker: Professor Richard A Williams,
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Venue: Lecture Theatre 6, Blk E4, Faculty of Engineering, NUS
Date: 16th March 2006 (Thursday)
Time: 2.30pm – 3.30pm

Abstract:

Keywords: Innovation, scale-up, thermal nanofluids, sports equipment

The talk considers the dilemma of how new nano-enabled functional materials that are discovered in a laboratory can be manufactured, on a large scale, for use by consumers. Examples of the bottleneck between "discovery" and "industrial manufacture" (at an acceptable cost) are explored.

Based on work in progress at the University of Leeds Nanomanufacturing Institute (a multidisciplinary programme of fundamental and applied research work www.leeds.ac.uk/nmi), two case studies on nanomanufacturing are discussed:

1. Development of thermal nanofluids for innovative heat transfer applications.

2. Pressed polymer-nanoparticle composite materials used in the production of sports goods.

The future success of delivering new products to society in the short and long term will require new methods of research and collaboration. An example of attempts to link to the research community with the supply chain through web-based signposting and open innovation training will be described (www.nanofactory.org).

Biography:

Richard A Williams FREng is a graduate of Imperial College of Science Technology and Medicine and is Anglo American plc Professor of Mineral and Process Engineering at University of Leeds, where he also hold the post of Pro Vice Chancellor for Enterprise and Knowledge Transfer. He has research expertise in particle technology, colloid science, nanotechnology, manufacturing methods and innovation methodologies. The work has resulted in several innovations in the consumer products market recognised by several medals including (Isambard Kingdom Brunel; Royal Academy of Engineering Silver Medal and Beilby Gold Medal and Premium) and spin out companies involving emulsion processing, consumer and pharmaceutical delivery systems, in-process measurement, nanofluids and advance software simulation. He is Vice President of The Royal Academy of Engineering.

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