Editorial

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Biographical notes: Hossein Hosseinkhani received his PhD in Polymer Chemistry in the field of Biomedical Engineering from *Kyoto University*, Japan (1998–2002). He has broad experience in life science and expert in biomaterials, nanotechnology, and stem cells technology for biomedical engineering applications and has been awarded several prestigious fellowships including JSPS Fellowship of Japan (2002–2004) at *Institute for Frontier Medical Sciences*, *Kyoto University Hospital*, ICYS research fellow of Japan (2004–2008) at *Notational Institute for Materials Science*, IRIIMS Research Fellow of Japan at *International Research Institute for Integrated Medical Sciences*, *Tokyo Women's Medical University*, Japan (2008–2009), and Visiting Scientist at Center for Biomedical Engineering, *Massachusetts Institute of Technology* (*MIT*), USA (2007–2009). He has 50 issued Japan and US patents, several US patents pending and has authored over 100 international publications in prestigious journals and over 200 presentations at international conferences till present time. Currently, he is Director of Bioengineering Program and Professor at the Graduate Institute of Biomedical Engineering, *National Taiwan University of Science and Technology* (*Taiwan Tech*). He is also Lecturer of course of Nanotechnology in *Academia Sinica-National Taiwan University* for The Taiwan International Graduate Program (TIGP). His research interests include; nanotechnology, biomaterials, 3D *in vitro* systems.

Kuei-Hsien Chen obtained his MS and PhD from Division of Applied Science, Harvard University in 1989. He worked on chemical vapor deposition of diamond at the R&D Center in General Electric Coorporation till 1992 before he joined Academia Sinica, Taiwan in 1993. In Institute of Atomic and Molecular Sciences, Academia Sinica, he works on the synthesis and application of advanced materials, particularly one-dimentional nanomaterials such as carbon nanotubes, ZnO and GaN nanowires, and their composites. His research interest covers biosensing, fuel cells, electrocatalysis, gas reforming, solar hydrogen generation, and solar cells. He received Academia Sinica Young Scholar Research Award in 2000, NSC Outstanding Research Award in 2005, Outstanding Scholar Awards of the Foundation for the Advancement of Outstanding Scholarship in 2008, and Ho Chin Tui Outstanding Honorary *Award in Materials Science in 2012*. Moreover, the

artworks of his group have been awarded many prizes including the First Prize in Science as Art Contests in AVS-2007 and MRS-2008. He is the author and co-author of more than 350 papers and holds 12 patents.

Nano-science is a part of science that studies small stuff, it's not biology, physics or chemistry, it's all sciences that work with the very small. Nanotechnology is the art and science of making useful stuff that does stuff on the nanometre length scale and includes advances in all industries, including the electronic, chemical, and pharmaceutical. Nanotechnology is the engineering of functional systems at the molecular scale. This covers both current work and concepts that are more advanced. Nanotechnology is sometimes referred to as a general-purpose technology. That's because in its advanced form it will have significant impact on almost all industries and all areas of society. It will offer better built, longer lasting, cleaner, safer, and smarter products for the home, for communications, for medicine, for transportation, for agriculture, and for industry in general. A key understanding of nanotechnology is that it offers not just better products, but a vastly improved manufacturing process. The power of nanotechnology can be encapsulated in an apparently simple device called a personal nanofactory that may sit on your countertop or desktop. Packed with miniature chemical processors, computing, and robotics, it will produce a wide-range of items quickly, cleanly, and inexpensively, building products directly from blueprints. Nowadays, nanotechnology has a great impact on development of wide range area of science and technology including; Information Technology (IT) that provides smaller, faster, more energy efficient and powerful computing and other IT-based systems; energy that provides more efficient and cost effective technologies for energy production such as in solar cells, fuel cells, batteries, and bio fuels; consumer goods that provide foods and beverages for advanced packaging materials, sensors, and lab-on-chips for food quality testing, appliances and textiles that are stain proof, water proof and wrinkle free, household and cosmetics for self-cleaning and scratch free products, paints, and better cosmetics; medicines that provide technology for imaging, cancer treatment, medical tools, drug delivery, diagnostic tests, and drug development [1–7].

This special issue features a selection of 'nanotechnology research in Taiwan, the so called nano-Taiwan. Both contributed and invited papers (all refereed) cover a broad range of topics. We thank all the authors and reviewers for their contributions and efforts. We greatly appreciate the efforts of the invited contributors to the special issue.

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