Editorial

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Biographical notes: Jae-Chul Pyun is an Associate Professor of the Department of Materials Science and Engineering at Yonsei University, Seoul, Korea. He received his BS and MS in Chemistry from Seoul National University, Seoul, Korea. He received his Dr.rer.nat degree in Chemistry from Saarland University/Fraunhofer Institute for Biomedical Engineering (FhG-IBMT), Saarbruecken, Germany in 2001. He had worked in KIST Europe fGmbH, Saarbruecken, Germany as a team leader during 2001–2007. He joined Yonsei University as an Assistant Professor in 2007. His interest has been focused on the development of biosensors based on tailored bio- and nanomaterials for medical diagnosis.

Jin-Woo Park is an Associate Professor of the Department of Materials Science and Engineering at Yonsei University, Seoul, Korea. She received her BS in Metallurgical Engineering from Yonsei University, Seoul, Korea, in 1996. She completed her PhD in Materials Science and Engineering at Massachusetts Institute of Technology (MIT), in the USA, under supervision of Prof. Thomas W. Eagar in 2002. From 2002 to 2003, she was double-appointed as a post-doctoral research associate and a research Assistant Professor in Oak Ridge National Laboratory and University of Tennessee, respectively. She also had worked for Samsung Electro-Mechanics in Suwon, Korea, as a principal engineer from 2004 to 2006. She came back to Yonsei University as an assistant professor in 2007. Her major field of research is interfacial engineering in dissimilar materials joints ranging from nano- to macro-scales.

Nowadays, nanotechnology has become one of the core technologies which have a great impact on the rapid development in fundamental scientific research as well as engineering manufacturing. Such a rapid development of nanotechnology has shifted the paradigm for the lives of common individuals. Considering the rapid development of modern nanotechnology, it is highly required that nanotechnology should provide the basis for the innovative development of defence technology.

Defense Nano Technology Application Center (DNTAC) was established in July, 2008 by support from Ministry of Defense, Korea. The aim of DNTAC is to develop new defence nanotechnology for future weapon systems, including future soldier systems, nano robots, stealth, nano detection sensors and nano injection systems of medicine. To fulfil such an aim, the fundamental concept for DNTAC is

'*Dynamic Nanotechnology*' which can effectively combine dynamics for fundamental nanotechnology and dynamics for weapon system advancement. DNTAC consists of five main research areas:

- Nano materials for energy absorption including nano bullet-proof textile, transparent bullet-proof materials, light-weight high strength metallic materials and stealth materials
- Nano functional materials including nano polymer technology, hydrogen storage technology, fuel cell technology and solar cell technology
- Quantum nano devices including infrared detection device, quantum nano device and light emitting/through able nano device
- Nano-bio chemistry including reactive nano particles, nano sensor, nano drug transfer and functional nano fibre
- Nano materials for high temperature including heat resistant metallic materials, ceramic insulating materials and nano magnetic materials.

This special issue of the *International Journal of Nanotechnology* is devoted to present the current status of nanotechnology in DNTAC. This special issue contains 19 papers based on the presentation at "*2nd DNTAC International Symposium on Nano Technology*" which was held on 20 July, 2012, at Yonsei University, Korea, organiser was Prof. Do Hyang Kim, Dept. of Materials Science and Engineering, Yonsei University Director, Defense Nano Technology Application Center Director, Center for Noncrystalline Materials. We hope this special issue can effectively reflect the recent research activities on nanotechnology in DNTAC and to contribute to the advancement of nanotechnology particularly for defence, and the formation of research and communication networks for further development of exciting new nanotechnologies.