Editorial

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Biographical notes: Le Van Hong received his MSc in Physics from Jagiellonski University, Cracow, Poland, in 1973. From 1974 to 1981 he worked at the Institute of Physics, Vietnam Academy of Natural Sciences. In 1985, he received his PhD from the Institute of Physics, Polish Academy of Science, Warsaw, Poland. After that, he returned to Hanoi and worked as a Senior Researcher at the Institute of Physics, which has been renamed the "Institute of Materials Science" since 1993. During the 1990s, he was a Postdoctoral Researcher at the City University of New York, USA, and Chalmers University, Sweden. In 1999 and 2001, he was a Visiting Professor at Tokyo Institute of Technology and Paris Sud University. Since 1991, his researches focused on the High-Tc superconductors, CMR, GMR, DMS and multiferroics materials. He is currently a Professor, Senior Leading Researcher, and Director of the Division for Electronic Materials, Institute of Materials Science, VAST. He is an Editor and Assistant to the Editor-in-Chief of the "*Communications in Physics*", the Vietnamese Physics Journal in English. He has authored more than 70 articles in international journals. He was awarded the National Prize on Science and Technology in 2005. He is the supervisor of 8 defended PhD theses in Physics and Materials Science.

Dear reader of this issue,

I introduce to you a general view of the research developing in the field of Nanomaterials, Nanotechnology and the collection of original papers representative of the research performed in Vietnam in the field of Nanotechnology and Nanomaterials. Researches in this field are carried out in several laboratories in Vietnam in last two decades, and cover the areas of Nanofabrication technologies, Nanomaterials and their applications. Major Nanofabrication facilities exist in Hanoi, Ho Chi Minh City and Hue at Institute of Materials Science, National Academy of Science and Technology, Vietnam National University, Hanoi University of Science and Technology (HUST), Ho Chi Minh City Institute of Physics and Hue National University.

The year 1987 become a milestone in developing the nanomaterials and nanotechnology of the Vietnamese Materials Science Society when at the opening ceremony of the third Conference of Solid State Physics held in Do Son, Hai Phong, Professor Academician Nguyen Van Hieu in name of President of Vietnamese Physical Society made a call for developing nanoscience, nanomaterials and nanotechnology to all its members. After this event, nanomaterials and nanotechnology researches intensively

developed in laboratories of the universities and scientific research centres in Vietnam. Some primary results of the study focused in nanomaterials and nanotechnology have been presented at the International and National Workshops and more frequently appeared after the call from of Mr. President. The first International workshop on NanoPhysics and Nanotechnology, IWONN'01 was held in Hanoi in 2001. This workshop attracted many overseas scientists and Vietnamese researchers to attend and it has been organised yearly up to now. Since 2008, the workshop has a new name "the International Workshop on Nanotechnology and Application" (IWNA) and is held every year in Hanoi and Vung Tau in shifts. Hanoi is a city founded thousands of years BC. Hanoi was founded as a capital of Vietnam in 1010 when the first King of Ly dynasty moved from Hoa Lu, Ninh Binh, 100 km from Hanoi in the south. In 2010 Hanoi celebrated its Millennium jubilee. It is an important event for all Vietnamese, wherever they lives in the world. To the scientific workers who teach at universities or study at scientific research centres, we would like to have our contribution as a small present to this event and then this special issue is devoted to Hanoi on the occasion of its Millennium jubilee. In this issue, we report novel results of studies of developing nanotechnology in manufacturing various kinds of nanomaterials, such as magnetic Fe_3O_4 nanoparticles and its containing magnetic liquid, Au and Ag-based metallic nanoparticles, transition metal-based nanomaterials and multishell CdSe quantum dots. Especially an attempt to use ultrasound in manufacturing TiO_2 nanotubes is also reported for first time. This issue also report results of the application researches in drinking water purification, cancer therapy by magnetic hyperthermia using Fe_3O_4 magnetic liquid and oxide-based gas sensors, etc.

It is noted that the papers included in this volume represent only part of the research carried out in Vietnam in the field of Nanotechnology and Nanomaterials. The full spectrum of this area could not be covered due to space limitations.

All the results contributed in this issue were done under financial supports of the National Foundation for Science and Technology Development (NAFOSTED) of Vietnam, the Graduate Educational Program of the Ministry of Education and Training, and basic research projects of the scientific research centres, National Key-Laboratories and universities in Vietnam. In framework of these programmes, many graduate students have been trained, many scientific reports published in the international journals, and many PhD theses performed with the excellent grade. We would like to express our gratitude to the NAFOSTED of Vietnam, to the Ministry of Education and Training, to all the scientific research centres and universities that financially supported.

We also would like to express our gratitude to the Editorial Board of the *International Journal of Nanotechnology* and especially to Professor Lionel Vayssieres, The Editor-in-Chief of the IJNT, for his invitation to host this issue.

Finally, the guest editor would like to thank all authors for their contributions in this issue.