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## Editorial

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**Biographical notes:** Chien Mau Dang received his MSc and PhD in Materials Science from the National Polytechnic Institute in Grenoble (Grenoble INP), France in 1991 and 1994. In 1996 and 2007, he received his Master in Management from the University Pierre Mendès France and the Diploma of Habilitation for Research Direction (DHDR) in Materials and Process Engineering from the Grenoble INP. From 1996 to 2004, he was Head of Department of Materials Science Fundamentals, Vice-Dean of Faculty of Material Technology, HCM City University of Technology. Since 2005, he has been an Associate Professor. In 2004, he created the Laboratory for Nanotechnology which was upgraded to the Institute for Nanotechnology (INT) – VNUHCM in 2016. He has been Director since then. He is a member of several national level research bodies and councils. He has authored or co-authored more than 70 publications in peer-reviewed international journals (among of them 35 ISI and 10 Scopus papers) and eight patents.

Robert Baptist is Research Director at the Department of Technology of the Alternative Energies and Atomic Energy Commission (CEA) and is part of the CEA-LETI management team. He obtained his Doctorate degree from the University of Grenoble in 1982. He is author or co-author of 60 publications and 15 patents in physics and microelectronics, either basic or applied research. He was in charge of the CEA transverse program on nanoscience and nanotechnology (ChimTronique) from 2002 to 2008. He has participated in or led many European projects and was Editor of the editorial lines ‘Nanoscience and Nanotechnology’ and ‘Electronic Engineering’ within ISTE/Wiley Editions and is Scientific Director for the MINATEC Nanolab project, Grenoble.

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## 1 Introduction

Dear reader of this issue,

It is our great pleasure to bring you here a set of 15 selected key papers from the *6th International Workshop on Nanotechnology and Applications (IWNA)* held from 8th to 11th November 2017 in Phan Thiet, Vietnam. This conference is coorganised by the Institute for Nanotechnology, Vietnam National University – Ho Chi Minh City, Vietnam and MINATEC, France, every two years in order to bring together all researchers in the field of nanotechnology from Vietnam and abroad.

The selected papers reflect the most prominent research done in Vietnam, in Asia and through collaborations with international partners in the wide spectrum of nanotechnology. The papers cover advances in micro and nanotechnology. They range from *Fundamentals of Nanotechnology*, *Nanofabrication Techniques*, *Nanomaterials and Nanodevices*, to *Applications of Micro-Nanotechnology*.

Two papers cover **fundamental issues** in anodes material of lithium-ion batteries and simulation of inkjet printing process for physical parameter investigation of a droplet. **Nano fabrication techniques** for fabrication and synthesis of spiral trench with smooth sidewall, triangular silver nanoplates, iron cerium oxide nanoparticles are the topics of three papers.

Six papers involved different kinds of **nanomaterials and nanodevices** including  $\text{LiFe}_{1-x}\text{Ni}_x\text{PO}_4$  and  $\text{LiFe}_{1-x}\text{Ni}_x\text{PO}_4/\text{graphene}$  composite,  $\text{LiNi}_{1-x}\text{Co}_x\text{O}_2$  cathode materials for lithium-ion batteries,  $\text{Y}_2\text{O}_3:\text{Eu}^{3+}$  nanoflakes for security labels printing application, core-shell structure poly(lactic acid)/chitosan nanoparticles loading the nifedipine drug, nanorod, nanoparticle and nanocube of ceria used as supports for NiO catalysts for bireforming of  $\text{CH}_4$ , poly(vinylidene difluoride) thin film coated on a 3D helical spring.

Four papers on **applications of micro-nanotechnology** describe the potential applications of nanodevices especially in health and environment. These papers presented an impedance sensor integrated on stepping dielectrophoresis manipulation platform for A549 cancer cell detection, a paper-based microchannel for microfluidic paper-based analytical devices ( $\mu\text{PADs}$ ) applications, a valveless microfluidic pump fabricated by additive fabrication technology, and electrochemical sensor chips to measure multiple parameters of water including DO, pH and ORP with low cost and simple operation.

This selection reflects the quality of research mostly performed in Vietnam but also in several countries from Asia in micro and nanotechnology. This highlights the internationalisation of the IWNA conference. In the IWNA spirit of application of nanotechnology to real life, the results presented potential applications related to health, environment, energy and people's safety.

We would like to express our gratitude to the Editorial Board of the *International Journal of Nanotechnology (IJNT)* and especially to Dr. Lionel Vayssieres, the Editor-in-Chief of the IJNT, for his kind invitation to publish these contributions.

The Guest Editors would finally like to extend their thanks to all authors who contributed to this special issue.