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## Editorial

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**Biographical notes:** Mohamed Bououdina is the Director of the Nanotechnology Centre at the University of Bahrain, Kingdom of Bahrain. He received his PhD in Physics from the Université Joseph Fourier (Grenoble, France). His research interests are in the field of nanoscience and nanotechnology, renewable energy such as hydrogen storage, materials science, biomaterials and neutron diffraction.

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Nanotechnology known as the study, manipulation, design and the engineering of matter at the nanoscale, has emerged as multidisciplinary ‘new’ and diverse science including conventional sciences (physics, chemistry, and biology), engineering (electrical, mechanical, electronics, etc.), medicine, information technology, etc. It is also important to know that nanotechnology and molecular manufacturing have been proposed as the 5th industrial revolution. Nanostructured materials possesses exceptional and unique properties therefore offering potential applications in various domains such as biomedical, energy, computer and information technology, cosmetics, agriculture and food industry, environment, etc. Moreover, advanced materials are amazingly versatile and outperform conventional materials with superior or novel properties. The development of advanced materials can even lead to the design of completely new products and future technologies.

The International Conference in Nanotechnology and Advanced Materials (ICNAM 2009) organised at the University of Bahrain during the period 4–7 May 2009, has invited eight well known and eminent scientists in the field of nanotechnology among them Prof. Peter A. Grünberg, Physics Nobel Laureate in 2007. The number of abstracts presented at the conference reaches over 190 from 24 countries. The conference covered a wide range of topics including nanomaterials, nanotechnology, advanced materials, multiscale modelling in materials science, nanotechnology in educational programs, societal and environmental impacts of nanotechnology and health and safety implications.

This special issue is based on selection of best papers presented during ICNAM 2009. The papers have been reviewed according to the *International Journal of Nanoparticles (IJNP)* requirements.