

# Preface

2012 International Conference on Nanotechnology Technology and Advanced Materials (ICNTAM 2012) is to be held on April 12-13, 2012, Hong Kong.

Nanotechnology is the study of manipulating matter on an atomic and molecular scale. Nanotechnology entails the application of fields of science as diverse as surface science, organic chemistry, molecular biology, semiconductor physics, microfabrication, etc. There is much debate on the future implications of nanotechnology. Nanotechnology may be able to create many new materials and devices with a vast range of applications, such as in medicine, electronics, biomaterials and energy production. On the other hand, nanotechnology raises many of the same issues as any new technology, including concerns about the toxicity and environmental impact of nanomaterials, and their potential effects on global economics, as well as speculation about various doomsday scenarios. These concerns have led to a debate among advocacy groups and governments on whether special regulation of nanotechnology is warranted.

Materials science is an interdisciplinary field applying the properties of matter to various areas of science and engineering. This scientific field investigates the relationship between the structure of materials at atomic or molecular scales and their macroscopic properties. It incorporates elements of applied physics and chemistry. With significant media attention focused on nanoscience and nanotechnology in recent years, materials science has been propelled to the forefront at many universities.

Manufacturing is the use of machines, tools and labor to produce goods for use or sale. The term may refer to a range of human activity, from handicraft to high tech, but is most commonly applied to industrial production, in which raw materials are transformed into finished goods on a large scale. Modern manufacturing includes all intermediate processes required for the production and integration of a product's components.

2012 International Conference on Nanotechnology Technology and Advanced Materials (ICNTAM 2012) is a very nice platform for sharing experiences, innovative ideas and research results focused on the progress of applied mechanics and mechanical engineering. The aim of the conference is to assemble all the professionals such as leading researchers, engineers, scientists, and students under one roof. The volume can be divided into three sections on the basis of the classification of manuscripts considered. The first section deals with Nanotechnology Technology. The second consists of material science. The final covers the use of manufacture technology. Therefore, I believe the book will be useful for the readers in the related fields.

The organizers are grateful to the sponsors, the refereeing committee and the many willing helpers who assisted with the logistical arrangements and running the meeting.

Guohui Yang, International Materials Science Society, Hong Kong

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