



# **Reviews on Advanced Materials Science**

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Workshop on Nano-Design, Technology,  
Computer Simulations**

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**Reviews on Advanced Materials Science** provides an international medium for the publication of reviews, topical issues and international conference proceedings in the area of theoretical and experimental study of advanced materials. Focuses are placed on, but not limited to nanostructured materials, semiconductors and materials for hydrogen economy. We encourage prospective authors to correspond with the Editor-in-Chief before submitting a review article. Proposals should include an outline with key citations. All papers submitted will be rigorously peer-reviewed prior to publication. **Reviews on Advanced Materials Science** is published in both paper and electronic versions.

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## PREFACE

The Eleventh International Workshop on NanoDesign, Technology and Computer Simulations (NDTCS-2007) took place 17-21 September 2007 in Bayreuth (Germany). Roughly 35 scientists and graduate students attended representing Austria, Belarus, Brazil, France, Germany, Poland, Russia, Turkey, and USA. The workshop incorporated a set of all-union specialized symposia that were established by St. Petersburg State Polytechnical University. The previous nine workshops took place in St. Petersburg (Russia) and had the name Nondestructive Testing and Computer Simulations in Science and Engineering. These conferences have created strong base for the wide 'cross-links' between the different fields of science that allows consider important, common problems from different angles.

However, the focus of investigations is tending to move with the passage of time gradually towards Nanoscience and Nanotechnology, this new active area of research. To support this tendency, it was decided at the Tenth International Workshop (NDTCS-2006) which took place 5-8 July 2006 in Olsztyn (Poland) to change the name, but to conserve the abbreviation which became a brand of those annual workshops. The current name "International Workshop on NanoDesign, Technology and Computer Simulations" reflects better the profile of the conference.

Since Nanoscience and Nanotechnology play active role in modern industry, the eleventh workshop has focused on the quest for improved technology, specifically, progress in nanodesign and technology (NDT) and computer simulations (CSs). These two distinct areas now have much in common and make the quest for improved technology easier. Today, due to the great improvements in experimental and computational methods, it is possible to solve a variety of complex practical problems accurately and efficiently. The wide participation of scientists from Central and Eastern Europe provided useful insight into the beneficial ideas generated in the many geographically diverse scientific schools.

The contributions to the workshop program were organized into five oral/poster sessions:

1. Electronic, Atomic, and Molecular Dynamics
2. Biological Systems
3. Laser, Optical, X-Ray, and Related Technologies
4. Nano, Micro, and Macro Mechanics
5. Computer Technologies

Papers at the workshop discussed these topics, with particular emphasis on the application of advanced theories, experimental techniques, and computational methods. The basic idea was to offer new approaches in many areas, from nano- to macroscale science and technology. Invited tutorial lectures preceded the special sessions.

This issue of Reviews on Advanced Materials Science (RAMS) Journal contains the selected papers presented at the Workshop. The issue will be of interest to researchers and graduate students in the field of physics and mechanics of materials.

The scientific exchange continued informally during a series of social events, which included a sightseeing tour 21 September to Bamberg, world cultural heritage.

Financial support of the workshop from Bayerische Hochschulkontaktstelle für das östliche Europa is highly appreciated.

The next Twelfth International Workshop on NanoDesign, Technology and Computer Simulations (NDTCS-2008) is planned for 23-29 June 2008 in Minsk (Belarus).

Alexander I. Melker  
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