

## Preface

The Fifteenth International Workshop on Nano-Design, Technology and Computer Simulations (NDTCS-2013) took place on 11-15 June 2013 in Minsk, Belarus. The workshop NDTCS-2013 was organized jointly by Belarusian State University of Informatics and Radioelectronics and the St. Petersburg Academy of Sciences on Strength Problems (Russia). All sessions took place in University buildings. Seventy four scientists and graduate students attended the workshop representing Belarus, France, Lithuania, Poland, and Russia.

The Fifteenth Workshop was focused on the synthesis, properties and applications of novel materials, and modern computational methods for their structure and property investigations. New experimental and theoretical results were presented by world leading specialists. Invited tutorial lectures preceded the special sessions. The contributions to the workshop program were organized into three oral/poster sessions:

- Synthesis, Structure and Properties of Nanomaterials (graphene, fullerenes, nanotubes, nanoparticles, composites, etc.)
- Applications of Nanomaterials (electronics, mechanics, biology, etc.)
- Molecular Dynamics and DFT simulations

Workshop NDTCS-2013 is a continuation of the previous workshops, which were held in:

- 1997-2005, St. Petersburg (Russia)
- 2006, Olsztyn (Poland)
- 2007, Bayreuth (Germany)
- 2008, Minsk (Belarus)
- 2009, Vilnius (Lithuania)
- 2011, Espoo (Finland)

The first nine workshops, which took place in Russia, had the name “Nondestructive Testing and Computer Simulations in Science and Engineering.” In due course, the focus of the meetings gradually moved towards Nanoscience and Nanotechnology, so at the Tenth International Workshop (NDTCS-2006) it was decided to conserve the abbreviation, which became a brand, but to change the name. The following workshops (2007-2013) had the new name “International Workshop on New Approaches to High-Tech: Nano-Design, Technology and Computer Simulations” what reflects better their profile.

All the contributions to the Workshops were published in English.

- Proceedings of St. Petersburg Academy of Sciences on Strength Problems (SPAS), vols. 2-11 (1998–2007);
- Proceedings of NDTCS, vols. 12–13, 15 (2008, 2009, 2013);
- Proceedings of the International Society for Optical Engineering (SPIE), vols. 3345, 3687, 4064, 4348, 4627, 5127, 5400, 5831, 6253, 6597, 7377 (1998–2008);
- Modelling and Computer Simulation in Materials Science and Engineering, vol. 6, No 4 (1998);
- Reviews on Advanced Materials Science, vol. 20, Nos. 1–2 (2009);
- Materials Physics and Mechanics, vol. 9, Nos. 1-3 (2010), vol. 13. Nos. 1-2 (2012).

This issue of Materials Physics and Mechanics Journal contains the selected papers presented at the Workshop. All the papers presented here have been peer-reviewed prior to publication. The issue will be of interest to researchers and graduate students in the field of nanotechnology, physics, chemistry, and mechanics.

The scientific discussions continued informally with a series of social events, including the welcome party and visit to National Academic Bolshoi Opera and Ballet Theatre of the Republic of Belarus (Gioachino Rossini “The Barber of Seville”, production conductor Gianluca Marciano, Italy).

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