

Preface

The International Conference for young scientists “High Technology: Research and Applications 2014” (HTRA 2014) was held at Tomsk Polytechnic University, Tomsk, Russia on March 26-28, 2014. The goal of the conference was the development of cooperation between young researchers in the field of engineering sciences and high technology application.

A number of research projects developed by students and postgraduates were presented at the conference. These are topical projects on the development of novel materials and coatings for multiple applications, technology for the production and use of nanomaterials, the achievements of modern optics and laser technology. More than 250 young researchers from Russia and abroad participated in the conference. Conference focused on modern technology and the advances in science and technology based on an interdisciplinary approach to problem solving. The famous scientists and the heads of leading scientific schools shared their experience in industrial implementation of their research results, as well as the creation of small innovative enterprises.

More than 200 participants attended and presented their papers in conference sessions which covered the topics such as:

- 1 - Electric Discharge and Beam-Plasma Technologies
- 2 - Advanced Materials and Nanotechnology
- 3 - Optical Technology
- 4 - Chemistry. Chemical Engineering
- 5 - Reliability in Mechanical Engineering and Mechanical Engineering Technology
- 6 - Simulation of Physical and Chemical Processes in Modern Technology

The Conference gave the opportunity for all participants to exchange the last ideas and experience, to establish business contacts and to meet a further partner for joint project, to discuss perspectives and ways of cooperation.

The Organizing Committee of HTRA 2014

Committees

Program Committee:

General Chair: Prof. Pestryakov A.N., Vice-Rector for Research and Innovations, Tomsk Polytechnic University (TPU), Russia

Co-Chair: Prof. Lopatin V.V., Tomsk Polytechnic University, RAN, Russia

Panin V.E. – Prof., academician, Tomsk Polytechnic University, Russia

Kovalchuk B.M. – Prof., academician, Institute of High Current Electronics, SB RAN, Russia

Psakhie S.G. – Prof., Director of Institute of Strength Physics and Materials Science, SB RAN, Russia

Kupchishin A.I. – Prof., academician, International Higher Education Academy of Sciences, Kazkhstan

Ki-Whan Chi – Prof., University of Ulsan, South Korea

Peter Metz – Prof., Dresden University of Technology, Germany

Yan Sha – Dr., Institute of Heavy Ion Physics, Peking University, China

Uglov V.V. – Prof., Belarusian State University, Belarus

Zhdankin V.V. – Prof., University of Minnesota Duluth, USA

Sveshnikov V.K. – Prof., Russian Academy of Electrotechnical Sciences, Russia

Gorkunov E.S. – Prof., academician, director of Institute of Engineering Science, UB RAN

Gordienko A.I. – Prof., academician, director of Physical-technical Institute, NAS, Belarus

Kulsentov Zh.O. – Rector's Advisor of the D. Serikbayev East Kazakhstan state technical university, Ph.D., Professor, Kazakhstan

Popov Valentin – Prof. Dr., Technical University of Berlin, Germany

Organizing Committee:

Organizing Chair: Yakovlev A.N., Director of Institute of High Technology Physics, Tomsk Polytechnic University, Russia

Conference Chair: Martyushev N.V., Ph.D., Tomsk Polytechnic University, Russia

Remnev G.E. – Prof., Dr., Tomsk Polytechnic University, Russia

Pogrebenkov V.M. – Prof., Dr., Tomsk Polytechnic University, Russia

Efremenkov A.B. – Director of Yurga Institute of Technology, TPU Affiliate, Russia

Filimonov V.D. – Prof., Dr., Tomsk Polytechnic University, Russia

Lisitsyn V.M. – Prof., Dr., Tomsk Polytechnic University, Russia

Khasanov O.L. – Prof., Dr., Tomsk Polytechnic University, Russia

Knyazeva A.G. – Prof., Dr., Tomsk Polytechnic University, Russia

Kostikov K.S. – Deputy director of Institute of High Technology Physics, Tomsk Polytechnic University, Russia

Bogdan A.M. – Expert, Institute of High Technology Physics, Tomsk Polytechnic University, Russia

Godymchuk A.Yu. – Ph.D., Tomsk Polytechnic University, Russia

Trusova M.E. – Ph.D., Tomsk Polytechnic University, Russia

Sorokova S.N. – Ph.D., Tomsk Polytechnic University, Russia