

Preface

The XII International Conference “Prospects of Fundamental Sciences Development” (PFSD-2015) was jointly organized by Tomsk Polytechnic University, Tomsk State University, Tomsk State University of Architecture and Building, and Tomsk State University of Control Systems and Radioelectronics in April 21-24, 2015, Tomsk, Russia.

The conference gathered young researchers, post-doc and students, and experienced researchers working in materials science, physical chemistry, nanotechnologies, radiation techniques, construction engineering, mathematical modeling, and information technologies in order to facilitate aggregation and sharing interests and results for a better collaboration and activity visibility.

The topics of the Conference were: (1) Physics: accelerator physics, condensed state physics, surface physics, the physical basis of radiation, electric discharge and plasma technologies, hydrogen energy, geophysics; (2) Chemistry: solid state chemistry, novel materials, physical-chemical methods in ecology, petroleum chemistry, and ecology, organic synthesis, biotechnology, catalysis; (3) Mathematics: mathematical modeling and data analysis, mathematical methods in physics, chemistry, biophysics, biology, economics, ecobiology, medicine, psychology, mathematical logic and applications, computational mathematics, differential equations; (4) Biology and Medicine: physiology, zoology, cytology, genetics, botany, medication, modern biotechnologies, soil science, biochemistry, pathology, systematic biology, bioinformatics, cellular and molecular biology, bio- and medical materials, diagnostics and visualization in medicine, medical prognosis; (5) Nanomaterials and Nanotechnology: nanomaterials synthesis, physical, chemical and biological properties of the nanoparticles, and methods of diagnosis and research of nanomaterials, metal-, plastic, carbon and composite nanomaterials, application of nanomaterials; (6) Technology: architecture and construction, electrical engineering, optics, geo-engineering, mechanics; and (7) Information Technologies and Electronics: intellectual control systems, automated information processing systems; information security; radar, radio communications, radiometry; microwave electronics, optoelectronics and photonics; intellectual power electronics.

We want to thank the Organizing Committee and the Universities supporting the conference, and everyone who contributed to the organization of this meeting, for their contribution towards the conference and for their contributions to this proceeding.

Editors:

Prof. Irina Kurzina, Tomsk State University, Russia

Dr. Anna Godymchuk, Tomsk Polytechnic University, Russia