

Preface

International conference “Urgent problems of up-to-date mechanical engineering” took place at Yurga Institute of Technology of National Research Tomsk Polytechnic University on December 11-12, 2014. The Proceedings contain the selected scientific reports submitted to the Conference.

The scientific reports published in these Proceedings have been revised and approved by the editorial team of the Conference. All of the reports exhibit clear, concise, and precise expositions that appeal to a broad international readership interested in mechanical engineering, welding, metallurgy, material science, computer-aided manufacturing. The reports present original ideas or results of general significance supported by clear reasoning and compelling evidence, and employ methods, theories and practices relevant to the research. The authors state clearly the questions and the significance of their research to theory and practice, describe how the research contributes to new knowledge; and provide tables and figures that meaningfully add to the narrative.

Organizing Committee of the Conference thank all the participants of the Conference for their fruitful work and personal contribution to the development of these Conference Proceedings.

*Dmitry A. Chinakhov, PhD,
Conference Convenor,
Vice-Chancellor, Yurga Institute of Technology
of National Research Tomsk Polytechnic University*

PROGRAM COMMITTEE

- Dyachenko A.N. – Chair of the Committee, Vice-Rector for Research and Innovations of TPU, Doctor of Engineering, associate professor, Tomsk, Russia
- Yefremkov A.B. – Co-Chair of the Committee, UTI TPU Chancellor, Candidate of Engineering, associate professor, Yurga, Russia
- Galevsky G.V. – Chancellor of Metallurgy and Materials Science Institute SibSIU, Doctor of Engineering, professor, Novokuznetsk, Russia
- Panin S.V. – Vice Chancellor for Research, Institute of Strength Physics and Materials Science of the Siberian Branch of the Russian Academy of Sciences, Doctor of Engineering, professor, Tomsk, Russia
- Liu Guangxun – Director Senior Engineer, AVIC Beijing Institute Of Aeronautical Materials, Beijing, China
- Bely A.V. – Deputy Director for Science of Institute of Physics and Technology, National Academy of Sciences, Republic of Belarus, corresponding member of the National Academy of Sciences, Republic of Belarus, Doctor of Engineering, professor, Minsk, Belarus
- Skakov M.K. – Head of Applied Physics Department of WKSTU named after D. Serikbayev, Doctor of Physics, professor, Ust-Kamenogorsk, Kazakhstan
- Ovcharenko V.E. – Director of the Laboratory of Composite Materials of ISPMS SB RAS, Doctor of Engineering, professor, Tomsk, Russia
- Aksenov V.V. – Senior Research Officer of the Institute of Coal of SB RAS, Doctor of Engineering, professor, Kemerovo, Russia
- Momot M.V. – Director of Open Joint Stock Business Incubator “Yurga – Technologies – Innovations”, Candidate of Engineering, Yurga, Russia

ORGANIZING COMMITTEE

- Chinakhov D.A. – Chair, Deputy Vice-Chancellor on Science, UTI TPU, Candidate of Engineering, associate professor, Yurga, Russia
- Valuev D.V. – Head of Education and Research Laboratory, UTI TPU, Candidate of Engineering, associate professor, Yurga, Russia
- Zernin E.A. – Head of Welding Production Department at UTI TPU, Candidate of Engineering, associate professor, Yurga, Russia
- Mokhovikov A.A. – Head of Engineering Department at UTI TPU, Candidate of Engineering, associate professor, Yurga, Russia
- Grishagin V.M. – Director of Life Safety and Physical Education Department at UTI TPU, Candidate of Engineering, associate professor, Yurga, Russia
- Saprykin A.A. – Head of Department of Ferrous Metals Metallurgy, Candidate of Engineering, UTI TPU Yurga, Russia
- Matyushev N.V. – Associate professor of Department of Material Science and Process Metallurgy of Tomsk Polytechnic University, Candidate of Engineering, Tomsk, Russia
- Pashkov E.N. – Associate professor of Department of Theoretical and Applied Mechanics of Tomsk Polytechnic University, Candidate of Engineering, associate professor, Tomsk, Russia
- Fisochenko E.G. – The Conference Secretary, Yurga, Russia