Overview of the International Workshop “Advanced Technologies in Aerospace, Mechanical and Automation Engineering – MIST: Aerospace”

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Abstract. The overview describes the main directions and results of the International Workshop MIST: Aerospace-2018 held in Krasnoyarsk in October 20, 2018. It gives the details about the participants and the proceedings.

The Volume contains Proceedings of the International Workshop “Advanced Technologies in Aerospace, Mechanical and Automation Engineering - MIST: Aerospace” which was held in Krasnoyarsk, Russian Federation in October 20, 2018 within the framework of the IX International Multidisciplinary Scientific and Research Conference “Modern Issues in Science and Technology” (Sochi, Russia, October 20-28, 2018).

The purpose of the Workshop is to share the results and prospects of the achievements in using advanced scientific, innovative and information technologies in aerospace industry, mechanical engineering and automation.

The Workshop was jointly organised by the International and Russian Union of Scientific and Engineering Associations (Moscow, Russia), Krasnoyarsk Regional Union of Scientific and Engineering Associations and Krasnoyarsk Science and Technology City Hall.

The Program Committee and Editorial Board included prominent professors and scientists from the Russian Academy of Sciences, University of Maribor (Slovenia), Xingtai University (China), Ruhr University in Bochum (Germany), Siberian Federal University (Russia), Reshetnev Siberian State University of Science and Technology (Russia) as well as specialists from Russian and foreign leading industrial enterprises.

The event has offered a platform for bringing together students, postdocs, innovative academics and industrial experts to exchange their ideas and contribute new engineering approaches to research mechanical and automation processes in various technological and information systems.

The program of the Workshop consisted of keynote and plenary talks and numerous presentations (figure 1). The Workshop provided the premier interdisciplinary and multidisciplinary forum for researchers, practitioners and educators to present and discuss the most recent innovations, trends, concerns, practical challenges encountered and the solutions adopted in the fields of aerospace technologies, materials sciences, mechanical engineering, cybernetics, data protection, ecological and power engineering, etc. Although the schedule of the Workshop was very tight, there were very vivid discussions among the participants.
Figure 1. Plenary talks and sections.
The participants represented more than 80 Russian and foreign universities and organisations:

Academy of FGS of Russia
Altay State Technical University
ANO CPE MOMENTUM, Moscow
Astrakhan State Technical University
Bauman Moscow State Technical University
Belgorod State Technological University named after V.G. Shoukhov
Bratsk State University
Bryansk State Engineering Technological University
Bryansk State Technical University
Building Management - 33, Moscow
Chuvash State Agricultural Academy, Cheboksary
GmbH Anvilex, Dresden, Deutschland
Gubkin Russian State University of Oil and Gas, Moscow
Igor Sikorsky Kyiv Polytechnic Institute, Kyiv, Ukraine
InfoCom-S, LLC, Stavropol, Russia
Institute of Biophysics, Federal Research Center “Krasnoyarsk Science Center, Siberian Branch of the Russian Academy of Science
Irkutsk State Transport University
Joint-stock company «Research and Production Enterprise «Radar mm», Saint Petersburg
JSC “Central Construction Bureau “Geofizika”, Krasnoyarsk
JSC “Academician M F Reshetnev Information satellite systems”, Zheleznogorsk, Russia
Kaluga branch of Bauman Moscow State Technical University
Katanov Khakass State University, Abakan
Kazan National Research Technical University named after A.N. Tupolev – KAI, Kazan, Republic of Tatarstan
Khakas Technical Institute of Siberian Federal University, Abakan
Korolev Samara National Research University
Krasnoyarsk Science and Technology City Hall of the Russian Union of Scientific and Engineering Associations
Krasnoyarsk State Agrarian University
Kuban State Technological University, Krasnodar
KURS, Ltd
Main Military Clinical Hospital named after N.N. Burdenko, Moscow
Marshall of the Soviet Union S.M. Budenny
Military academy of communication, Saint Petersburg
Mechanical Engineering Research Institute of the Russian Academy of Science, Moscow
Michigan-Dearborn University, Detroit, USA
South Ural State University, Chelyabinsk
Moscow Aviation Institute (National Research University)

Moscow Institute of Physics and Technology (State University), Dolgoprudny
Moscow State Technological University Stankin
National Medical Research Center for Transplantology and Artificial Organs named after V.I. Shumakov, Moscow
National Research Perm Polytechnic University
National Research Tomsk State University,
Nizhny Novgorod state engineering and economic university, Knyaginino, Nizhny Novgorod Region
North-Caucasus Federal University, Stavropol
Novocherkassk engineering-ameliorative institute named after A. K. Kortunov of Don State agrarian university
Oles Honchar Dniprohutvocused National University, Dniprohutvocused, Ukraine
Omsk state technical university
Orel State University
Penza State University
Perm Military Institute of National Guard Troops of the Russian Federation
Perm State Agro-Technological University named after academicians D N Prianishnikov Russian Presidential Academy of National Economy and Public Administration. Perm branch, Perm
Peter the Great St. Petersburg Polytechnic University, St. Petersburg
Reshetnev Siberian State University of Science and Technology, Krasnoyarsk
RiK-Energo ltd, Ekaterinburg and Chelyabinsk
Rubtsovsk Industrial Institute (Branch) of Polzunov Altai State Technical University
Russian Presidential Academy of National Economy and Public Administration. Perm branch, Perm
Saint Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences, St. Petersburg
Saint Petersburg National Research University of Information Technologies, Mechanics and Optics University (ITMO), Saint Petersburg
Saint Petersburg Polytechnic University
Saint Petersburg State Forest Technical University
Saint Petersburg State University of Aerospace Instrumentation
Saint Petersburg University of Management Technologies and Economics
Samara National Research University
Samara Scientific Center of the Russian Academy of Sciences
SDE II, Microsoft, Snoqualmie, Washington, USA
Siberian federal university, Krasnoyarsk
South Ural State Agrarian University, Troitsk
South Ural State University, Chelyabinsk
A wide range of fundamental and applied problems in various production and technological systems has undergone consideration during the meeting. The programme of the Workshop included the following 6 sections:

- Aerospace Engineering.
- Mechanical Engineering and Industry.
- Data Protection in Automation Systems.
- Section 4: Cybernetics, Automation and Information Technologies.
- Ecology and Ecological Engineering.
- Power Engineering.

All participants were invited to present their papers in this Volume and all submitted manuscripts went through the independent peer review process. We are very grateful to all reviewers from Russia, China, USA, Slovenia, Germany and Republic of Kazakhstan for their time and highly professional comments. We deeply believe that their reviews gave opportunity to improve the scientific quality of the presented papers which may be useful for academic, scientific and industrial partners.

More than 200 reports were submitted to the Organizing Committee. 152 reports were selected for inclusion into this Volume after the review process. All the papers were subjected to rigorous peer-review by conference committee members and international reviewers. The papers were selected based on their quality and relevance to the Workshop directions. The proceedings present to the readers the recent advances in the field of aerospace engineering, mechanical engineering and industry, materials science, data protection in automation systems, cybernetics, information technologies, ecological engineering and power engineering. These papers reflect modern engineering approaches in all Workshop directions.

We chose the IOP Conference Series: Materials Science and Engineering to provide all contributors with the opportunity to publish their papers in an international, peer-reviewed journal. This is understood and appreciated by all the participants of our Workshop, and therefore this Volume provides an excellent overview of the main topics of our Workshop.

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Krasnoyarsk, October 20, 2018