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

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

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Abstract. The overview describes the main directions and results of the II International Conference on Advanced Technologies in Aerospace, Mechanical and Automation Engineering - MIST: Aerospace-2019 held in Krasnoyarsk in November 18-21, 2019. It gives the details about the participants and the proceedings.

The Volume contains Proceedings of the II International Conference on Advanced Technologies in Aerospace, Mechanical and Automation Engineering - MIST: Aerospace-II which was held in Krasnoyarsk, Russian Federation in November 18-21, 2019. Additionally, this volume includes the best reports accepted and presented at the 8-th International Workshop on Mathematical Models and their Applications (IWMMA-2019), which took place at the Krasnoyarsk Science and Technology City Hall in in the framework of the Conference.

The purpose of the Conference 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, economics and organization of mechanical engineering production, automation engineering for industry 4.0, etc. IWMMA-2019 provided an international forum for the presentation of original results in mathematical modelling for software- and hardware applications in various fields of engineering, natural sciences, cybernetics, computer science, etc.

The Conference 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 main partner organisations in preparing and organising the Workshop in Krasnoyarsk as well as of the previous scientific events [1-4] were: JSC “Central Construction Bureau “Geophysics”, JSC “ISS-Reshetnev Company”, Siberian Federal University, Institute of Informatics and Telecommunications of Reshetnev University, Krasnoyarsk Scientific Centre of the Siberian Branch of the Russian Academy of Sciences.

The Program Committee and Editorial Board included prominent professors and scientists from the Russian and International Union of Scientific and Engineering Associations, Russian Academy of Sciences, University of Maribor (Slovenia), Chinese-Ukrainian University (China), Ruhr University in Bochum (Germany), Siberian Federal University (Russia), Reshetnev Siberian State University of Science and Technology (Russia), Voronezh State Technical University (Russia) as well as specialists from Russian and foreign leading industrial enterprises.



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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 Conference 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 Conference was very tight, there were very vivid discussions among the participants.

The international scope of the Conference was confirmed by the participation of representatives from 11 countries besides Russia (Uzbekistan, Azerbaijan, Finland, France, Austria, Kazakhstan, Vietnam, China, Tajikistan, USA, Slovenia).

The participants represented more than 130 Russian and foreign universities and organisations:

Almetyevsk State Oil Institute, Tatarstan
 Altai state University, Barnaul, Russia
 Bashkir State Agrarian University
 Bauman Moscow State Technical University, Moscow, Russia
 Branch of the Ufa State Petroleum Technological University in Sterlitamak
 Bratsk State University, Bratsk, Russia
 Bryansk State Technical University, Bryansk, Russia
 Chechen State University, Grozny, Russia
 Chuvash State Agricultural Academy,
 Chuvash State University named after I.N. Ulyanov, Chuvash State Pedagogical University named after I.Ya.Yakovlev, Cheboksary, Russia
 Don State Technical University in Taganrog, Russia
 ES-PAS Ltd., Moscow;
 Far Eastern Federal University, Vladivostok;
 Gubkin Russian State University of Oil and Gas (National Research University I.M. Gubkin Russian State University of Oil and Gas, Moscow, Russia
 Institute of Biophysics FRC KSC SB RAS, Krasnoyarsk
 Institute of Ecology and Geography, JSC "Information satellite system" academician M.F. Reshetnev", Zheleznogorsk, Krasnoyarsk region, Russia
 JSC "Russian space systems", Moscow, Russian Federation
 JSC «Technomash»,
 JSC OKB planet
 Katanov State University of Khakassia, Abakan, Russia
 Kazan National Research Technical University named after A.N. Tupolev – KAI, Kazan, Republic of Tatarstan
 Kazan State Power Engineering University, Kazan, Russian Federation

KB of BMSTU, Kaluga, Russia
 Komsomolsk-on-Amur State University, Komsomolsk-on-Amur, Russian Federation
 Krasnoyarsk Scientific Center SB RAS, Institute of Biophysics SB RAS, Krasnoyarsk, Siberian Federal University,
 Krasnoyarsk State Medical University named after Professor V.F. Voyno-Yasenetsky
 Kurgan State University, Kurgan, Russia
 Matrosov Institute for System Dynamics and Control Theory of SB RAS, Irkutsk,
 Melentiev Energy System Institute, Irkutsk, MIREA – Russian Technological University
 Moscow Aviation Institute (National Research University)
 Nizhny Novgorod State Engineering and Economic University, Knyaginino, Russia
 Norilsk State Industrial Institute, Norilsk;
 Novosibirsk State Technical University, Novosibirsk, Russia
 Omsk State Technical University
 Orel State University named after I.S. Turgenev, Orel, Russian Federation
 Orenburg State University
 Penza State Technological University, Penza, Russia
 People's Friendship University of Russia, Moscow, Russia
 Petrozavodsk State University, Petrozavodsk, Russia
 Platov South-Russian State Polytechnic University (NPI)
 Reshetnev Siberian State University of Science and Technology, Krasnoyarsk
 RTU MIREA – Russian Technological University,
 Rubtsovsk Institute (branch) Altai state university, Rubtsovsk, Russia
 Ryazan State University named for S. Yesenin

Saint Petersburg National Research University of Information Technologies, Mechanics and Optics, Saint Petersburg;
 Saint-Petersburg State University of Aerospace Instrumentation
 Sevastopol State University, Sevastopol; Russia
 Siberian Federal University, Krasnoyarsk, Russia
 Siberian Fire and Rescue Academy of the Ministry of Emergency Situations of Russia, Zheleznogorsk, Russia
 Siberian State Industrial University, Novokuznetsk, Russia;
 Smolensk State Agricultural Academy, Smolensk; Financial University under the Government of the Russian Federation;
 Russian State University for the Humanities; State University of Management, Moscow.
 Southern Federal University, Rostov-on-Don, Russian Federation
 Sukachev Institute of Forest FRC KSC SB RAS

Togliatti State University, Togliatti, Russia
 Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia
 Trapeznikov Institute of Control Sciences RAS, Moscow, Russia
 Ufa State Petroleum Technological University, Ufa, Russia
 Ulyanovsk state technical University
 Ural Federal University, Ekaterinburg, Russia
 Ural State Forest Engineering University, Ekaterinburg, Russia
 Vladimir State University named after Alexander and Nikolay Stoletovs, Vladimir, Russia
 Vladivostok Branch of the Russian Customs Academy, Vladivostok;
 Volgograd State Agricultural University,
 Volgograd State Technical University,
 Volgograd State Medical University,
 Volgograd, Russia
 Voronezh institute of high technologies;
 Voronezh state technical university
 Vyatka State Agricultural Academy, Kirov

A wide range of fundamental and applied problems in various production and technological systems has undergone consideration during the meeting. The programme of the Conference included the following 5 sections:

- Aerospace Engineering;
- Mechanical Engineering and Industry;
- Mathematical Models and their Applications (IWMMA-2019);
- 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 350 reports were submitted to the Organizing Committee of the 2-nd International Conference “Advanced Technologies in Aerospace, Mechanical and Automation Engineering - MIST: Aerospace-II” and IWMMA-2019. 233 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 Conference and 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 Conference 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 Conference, and therefore this Volume provides an excellent overview of the main topics of our Conference.

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The organizational Committee of MIST: Aerospace-II Conference Committee highly appreciate the contribution of Professor Oleg Kravets (Voronezh State Technical University, Russia) for cooperation in organization of our Conference. We are grateful to scientists and professors of Siberian Federal University, Saint Petersburg State University of Aerospace Instrumentation, Institute of Computational Modeling of Siberian Branch of Russian Academy of Sciences and Reshetnev Siberian State University for active participation in the Conference.

On behalf of the conference committee and organizers, I would like to thank all the authors who contributed to this Volume as well as to the reviewers, speakers and all the conference participants for their support to MIST: Aerospace-II.

We express gratitude to IOP Publishing for an opportunity to publish the Proceedings of the Conference to provide open access and to make them available for worldwide recognition.

References

- [1] Kovalev I V *et al.* 2018 *IOP Conf. Ser.: Mater. Sci. Eng.* **450** 011001
- [2] Kovalev I V *et al.* 2019 *IOP Conf. Ser.: Earth and Environ. Sci.* **315** 011001
- [3] Kovalev I V *et al.* 2019 *IOP Conf. Ser.: Mater. Sci. Eng.* **450** 011001
- [4] Kovalev I V *et al.* 2019 *J. Phys.: Conf. Ser.* **1399** 011001