Overview of II International Conference on Advances in Material Science and Technology - CAMSTech-2021

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Abstract. The overview describes the main directions and results of the II International Conference “CAMSTech-2020” held in Krasnoyarsk in July 29-31, 2021. It gives the details about the participants and the proceedings. The purpose of the conference is to share the experience of leading experts in the application of innovative technologies, information management systems in industrial production, in the fields of aerospace, energy and chemical engineering, materials science and design of new materials, as well as engineering and automation of technological processes.

We are pleased to present this issue of IOP Conference Series: Materials Science and Engineering (MSE) for the selected revised papers presented in the II International Conference on Advances in Material Science and Technology - CAMSTech-2021, held on July 29-31, 2021, at the Krasnoyarsk Science and Technology City Hall (Russia). The purpose of the Conference is to share the experience of leading experts in the application of innovative technologies, mathematical methods and information management systems in industrial production, in the fields of aerospace, energy and chemical engineering, materials science and design of new materials, as well as engineering and automation of technological processes, etc.

CAMSTech-2021 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 Conference in Krasnoyarsk as well as of the previous scientific events [1-13] were: Siberian Federal University, JSC “Academician M F Reshetnev Information Satellite Systems” and Krasnoyarsk Scientific Centre of the Siberian Branch of the Russian Academy of Sciences.

Tashkent Institute of Irrigation and Agricultural Mechanization Engineers (Tashkent, Uzbekistan) and Bukhara Engineering Technological Institute (Bukhara, Uzbekistan) are international partner universities of the Conference.

The papers of this volume are related to the following themes:
• Material science and innovative technology;
• Mechanical engineering and automation of technological processes for Industry 4.0;
• Cybernetics, economics and organization of mechanical engineering production;
• Reliability and data protection in automated technological systems;
• Energy, chemical technologies and ecological engineering.

The Program Committee and Editorial Board included prominent professors and scientists from the Russian Academy of Sciences, Amity University (India), Republican Centre for Space Communications and Electromagnetic Compatibility of Radio-Electronic Devices (Kazakhstan), Bukhara Engineering Technological Institute and Tashkent Institute of Irrigation and Agricultural Mechanization Engineers (Uzbekistan), Siberian Federal University (Russia), Voronezh State Technical University (Russia), Bialystok University of Technology and West Pomeranian University of Technology (Poland) as well as specialists from Russian and foreign leading industrial enterprises (Appendix 1).

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 technological and automation processes in various production systems. Great interest was aroused by the section about material science and innovative technology and the section about energy, chemical technologies and ecological engineering.

The participants from Russia represented universities, scientific institutes and industrial enterprises from more than 20 regions:

• Bauman Moscow State Technical University;
• Blagonravov Institute of Mechanical Engineering, Russian Academy of Sciences, Moscow;
• Kant Baltic Federal University, Kaliningrad;
• Institute of Technical Chemistry, Branch of the Perm Federal Research Center, Ural Branch, Russian Academy of Sciences, Perm;
• Kaliningrad State Technical University;
• Baltic State Fishing Fleet Academy, Kaliningrad;
• Kazan National Research Technological University;
• Krasnoyarsk State Agrarian University;
• Kuzbass State Technical University named after T.F. Gorbachev in Novokuzensk;
• Mechanical Engineering Research Institute of the Russian Academy of Sciences, Moscow;
• Reshetnev Siberian State University of Science and Technology, Krasnoyarsk;
• Samara National Research University;
• Samara Scientific Center of the Russian Academy of Sciences;
• Sankt-Petersburg State University of Aerospace Instrumentation;
• Siberian Federal University, Krasnoyarsk;
• Togliatti State University;
• Tomsk State University of Control Systems and Radioelectronics;
• Ufa State Petroleum Technological University, Branch in Sterlitamak;
• Ufa State Petroleum Technological University;
• Ural engineering center, Chelyabinsk;
• Voronezh State Technical University;
• Voronezh State University of Forestry and Technologies named after G.F. Morozov;
• GAZ METALLOKOMPLEKT LLC, Taganrog;
• Royal Carbon LLC, Kemerovo.

Foreign participants represented universities and scientific organizations from Ukraine - Innovative Initiative LLC, Alchevsk; Uzbekistan - Physical-Technical Institute RPA "Physics-Sun" AS RUz,
Tashkent, Gulistan State University, Gulistan city; Kazakhstan - Serpin Consult Group, Almaty and Republican Centre for Space Communications and Electromagnetic Compatibility of Radio-Electronic Devices, Nur-Sultan; China - China Aviation Industry General Aircraft Zhejiang Institute Co., Ltd.

The Conference provided the premier interdisciplinary and multidisciplinary forum for researchers, practitioners and educators to present and discuss the most recent innovations, mathematical methods, practical challenges encountered and the solutions adopted in the fields of materials sciences, mechanical, chemical, ecological and power engineering, aerospace technologies, cybernetics, reliability and data protection in automation systems, etc.

Although the schedule of the Conference was very tight, there were very vivid discussions among the participants. The program of the Conference consisted of keynote and plenary talks and numerous presentations.

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, Poland, India, Kazakhstan and Uzbekistan 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.

Each paper has been peer reviewed by the reviewers specialized in the related field. All papers that have been selected and accepted for publication reflect modern engineering approaches in all Conference directions, broaden the researches of the previous CAMSTech Conference [9]. We hope that you enjoy the reading of the papers.

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.

Acknowledgements

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We are grateful to scientists and professors of Siberian Federal University, Reshetnev Siberian State University of Science and Technology, Institute of Computational Modeling of Siberian Branch of Russian Academy of Sciences, Ufa State Petroleum Technological University, Sankt-Petersburg State University of Aerospace Instrumentation, Samara National Research University and Kazan National Research Technological University for active participation in the Conference.

On behalf of the Conference Committee and organizers, we 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 CAMSTech-2021.

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.

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Appendix 1

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