

Proceedings of
“Applications of Physics in Mechanical
and Material Engineering”
(APMME 2023)

Częstochowa, Poland,
June 29, 2023

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Main Topics:

- Physical and chemical properties of materials
- Condensed matter physics
- Applied physics
- Vibrations and stability in physical systems
- Modelling of structural materials
- Modelling and simulation, structural optimization
- Methods and systems in machine design
- Theoretical and applied mathematics and physics in engineering
- Experimental mechanics and numerical validation
- Machine dynamics and multibody systems simulations

Preface

The works included in this special issue were presented during the fourth edition of the international scientific conference “Application of Physics in Mechanical and Materials Engineering” — APMME 2023. This conference took place on June 29, 2023 in Częstochowa. The conference was organized, as usual, by the Department of Mechanics and Fundamentals of Machine Design at the Faculty of Mechanical Engineering and Computer Science at the Czestochowa University of Technology. This year, the scientific meeting of APMME was held in conjunction with the International Exhibition of Innovation — IEI 2023. The honorary patronage over the conference and exhibition was taken by the Rector of the Czestochowa University of Technology, Professor Norbert Szczygiol.

On behalf of the Scientific and Organizational Committee of the APMME 2023 conference, we would like to thank the Rector of the Czestochowa University of Technology for his honorary patronage over the conference. We would also like to thank the Dean of the Faculty, Professor Małgorzata Klimek, for significant help in organizing the conference. Our warm words of thanks go to all participants who kindly responded to the invitation of the Organizing Committee of the APMME 2023 conference. We would like to express our special thanks to the keynote and invited speakers.

The APMME conference has been an international conference for two years and has become a permanent fixture in the calendar of important conferences in our country. During the meeting, participants from Poland and abroad could present and discuss the latest achievements in the field of broadly understood applications of physics in mechanical and materials engineering. Over seventy participants from Poland, Bulgaria, Canada, China, Czech Republic, India, Malaysia, Romania, Taiwan, and Turkey have registered for the APMME 2023 conference. Participants presented their works at plenary sessions and in a poster session. The conference papers submitted to the Scientific Committee were reviewed and sent for approval to the Publishing Team of *Acta Physica Polonica A*.

The Guest Editors would like to thank the Editorial Staff for their effort and help in preparing this issue.

Wojciech Sochacki
Marcin Nabiałek
Sebastian Garus
Paweł Kwiaton

Guest Editors