

Proceedings of
“Applications of Physics in Mechanical
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Marcin Nabiałek
Bartłomiej Jeż
Piotr Gębara
Katarzyna Błoch

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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 articles included in this special issue were presented during the fifth edition of the international scientific conference “Applications of Physics in Mechanical and Materials Engineering” — APMME 2024. This conference was held on October 18, 2024 in Częstochowa. This time, the conference was organized by the Department of Physics of the Faculty of Production Engineering and Materials Technology of the Czestochowa University of Technology. The honorary patronage over the conference was assumed by the Rector of the Czestochowa University of Technology, Professor Marek Warzecha. On behalf of the Scientific and Organizing Committee of the APMME 2024 conference, we would like to thank the Rector of the Czestochowa University of Technology for the honorary patronage over the conference. We would also like to thank the Dean of the Faculty of Production Engineering and Materials Technology, Professor Sebastian Mróz, for his help in organizing the conference. We would also like to express our heartfelt thanks to all participants who responded to the invitation of the Organizing Committee of the APMME 2024 conference.

The APMME conference has been an international conference for three years and has become a permanent fixture in the calendar of important conferences in Poland. During the meeting, participants from Poland and abroad were able to present and discuss the latest achievements in the field of broadly understood applications of physics in mechanical and materials engineering. Over fifty participants from Poland, Bulgaria, Hungary, Ukraine, the Czech Republic, India, Malaysia, Romania and Turkey registered for the APMME 2024 conference. Participants presented their work in plenary sessions and in the poster session. Conference papers submitted to the Scientific Committee were reviewed and sent for approval of the Editor-in-Chief of *Acta Physica Polonica A*.

The guest editors would like to thank the Editorial Team for their efforts and help in preparing this issue.

Marcin Nabiałek
Bartłomiej Jeż
Piotr Gębara
Katarzyna Błoch
Guest Editors