## **Preface**

This volume contains peer-reviewed papers presented at the 9<sup>th</sup> International Conference on Materials Science (ICMS2020) held at Ulaanbaatar, Mongolia, September 10-12, 2020. The conference was organized by the National University of Mongolia, Mongolian Physical Society, Institute of Physical Material Science, SB RAS, Russia, and Inner Mongolia Normal University, China.

The conference's main objective was to bring together scientists from around the world who are working in the field of materials science to exchange ideas, recent research advancements in this area and offer a platform for the initiation of future scientific cooperation between international scientists.

This edition focuses on studying the structure, properties, and applications of new materials and methods of materials characterization. All papers were reviewed by two or three members of the e scientific board of the conference and by external reviewers.

We want to express our special thanks to sponsors of this conference, reviewers of papers, and conference participants for making this conference successful.

Finally, we would like to thank the Trans Tech Publishing Ltd Scientific Team for helping us publish this issue.

## Editor

Prof. Dr. Jav Davaasambuu Laser Research Center National University of Mongolia

Institute of Physics and Technology Mongolian Academy of Sciences Mongolia

## **Scientific Committee**

- Prof. J. Davaasambuu (National University of Mongolia, Mongolia)
- Prof. B. Narsu (Inner Mongolia Normal University, China)
- Prof. O. Tegus (Inner Mongolia Normal University, China)
- Prof. Altan Bolag (Inner Mongolia Normal University, China)
- Prof. B. Battsengel (German-Mongolian Institute of Technology, Mongolia)
- Acad. D. Sangaa (Mongolian Academy of Sciences, Mongolia)
- Dr. P. Altantsog (Mongolian Academy of Sciences, Mongolia)
- Acad. J. Temuujin (Mongolian Academy of Sciences, Mongolia)
- Acad. O. Penyazkov (A.V.Lykov Institute of Heat and Mass Transfer, Belarus)
- Prof. U. Pietsch (University of Siegen, Germany)
- Prof. P. Daniel (Le-Mans University, France)
- Prof. S. Bardakhanov (Institute of Theoretical and Applied Mechanics, SB RAS, Russia)
- Prof. A. Nomoev (Institute of Physical Material Science, SB RAS, Russia)
- Dr. V. Koledov (IRE, Russian Academy of Sciences, Russia)

## **Organizers**

Mongolian Physical Society, Mongolia

National University of Mongolia, Mongolia

Institute of Physics and Technology, Mongolian Academy of Sciences, Mongolia

Inner Mongolia Normal University, China

Institute of Physical Material Science of Siberian Branch of Russian Academy of Sciences, Russia

Buryat State University, Russia

German-Mongolian Institute for Resources and Technology