

Preface

The **International Conference on Innovations, Physical Studies and Digitalization in Mining Engineering 2021 (IPDME 2021)** was held in St Petersburg, Russia, on April 22-23, 2021.

This book contains the selected papers presented at the international scientific conference on International Conference on Innovations, Physical Studies and Digitalization in Mining Engineering. Within the conference framework in Saint-Petersburg Mining University, special sessions were held on novel materials for mining tools and equipment, materials study and engineering, mineralogy, and ore treatment. More than six dozen researchers participated in the discussion, and those who presented the most current and intriguing research were invited to publish their manuscripts in the volume. All included reviewed papers cover various topics within the field of materials science and present valuable research results.

The conference was initially held as the “Mining Machinery” session of the International Conference on Innovations in Transport and Mechanical Engineering. In 2016, the International Conference on Innovations in Transport and Mechanical Engineering committee decided to hold the session on the Mining machinery as a separate event. The first conference on Innovations and Prospects of Development of Mining Machinery and Electrical Engineering was held in 2017. Today IPDME is the significant annual event for participants from Russia and surrounding states that covers such topics of materials science as:

- Methods of analysis and testing materials;
- Constructional steels for tools and machinery;
- Novel composite materials in mining engineering;
- Methods of stiffening alloys and materials;
- Technologies of ore minerals processing;
- Mining mineralogy and oryctognosy;
- Technologies of ore preservation and storing.

This year, the two-day conference brought together specialists from different countries and organizations. It provided an excellent opportunity to exchange knowledge and initiate online discussions on the topics of interest to the conference participants.

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