

Preface

Since 1995 the Siberian State Industrial University has been organizing an international scientific conference *Knowledge-based technologies in development and utilization of mineral resources* which is devoted to the issues of critical technologies in exploration, development of mineral deposits and their extraction, search for original knowledge-based directions of mining production diversification providing a comprehensive extraction of mineral resources, their deep processing and use. The conference is held annually within the framework of the International Specialized Exhibition of Mining Technologies *Russian Coal and Mining*.

In 2017 the conference was held from 6 to 9 June and was dedicated to the 400th anniversary of the city of Novokuznetsk. The conference was organized by Siberian State Industrial University (Novokuznetsk, Russia), Federal Research Center for Coal and Coal Chemistry of the Siberian Branch of the Russian Academy of Sciences (Kemerovo, Russia), National Mine Rescue Center (Novokuznetsk, Russia), the University of Science and technology Liaoning (Anshan, China), Expo center “Kuzbass Fair” (Novokuznetsk, Russia). The event was actively supported by the Administration of Kemerovo Region and Novokuznetsk, the Russian Foundation for Basic Research.

The conference is a recognized scientific and practical forum for professional discussion of problems related to the state and prospects for the development of new technologies, machinery and equipment that ensure the rational use of mineral resources, industrial and environmental safety of mining enterprises. The event was attended by scientists and specialists from different institutions, companies and coal mining enterprises from Russia, Germany, India, Italy, the Donetsk People’s Republic. Active participation of PhD students and young scientists is particularly noteworthy.

More than 100 papers were presented at the conference by authors and research teams. The present issue of *IOP Conference Series: Earth and Environmental Science* contains 45 specially selected research papers covering the following topics: knowledge-based technologies for the development of mineral deposits, geomechanical and gas-dynamic processes in the integrated development of underground resources, innovative solutions for improvement of the technical level of mining equipment production, automation of control systems in mining, new directions for energy supply and energy saving at mining enterprises, provision of industrial and environmental safety in mining, deep processing of coal and coal products.

The Organizing Committee would like to thank the Russian Foundation for Basic Research for its financial support (project No. 17-05-20150). We also appreciate contribution of all conference participants into development of mining science and practice.

Vice-chair of the Organizing Committee
and Editor-in-chief
Prof. Dr. Viktor Fryanov

