

Preface

Mining is an essential activity to extract natural resources to cater to the needs and wants of a burgeoning global population. Safety, the upgrading and implementation of new and novel mining methods, and cost-effectiveness are crucial aspects of the success of mining. Recently, there has been a push towards “social responsibility in mining.”

This edited book is a collection of research-driven chapters contributed by international mining scholars and reviewed by subject specialists in mining technology. Chapters address such topics as:

- sonic drilling with the use of a cavitation hydraulic vibrator in Ukraine
- quality assessment of rock bolts from Poland
- research findings from block cave mine ventilation in South Dakota, USA
- the application of a hybrid tool for spatial and spectral feature extraction, as used in Quebec, Canada
- integrating the safety management of tailings dams to the ISO model and the global industry standard on tailing management from Brazil
- monitoring radon in underground mines in South Dakota, USA
- development of a microwave, radar-based surveillance system in selected mining areas in Dhanbad, India

This book draws examples of best practices in mining from many different countries. The demonstrated technologies and case studies can be utilized widely across the globe. The adoption of modern perspectives and continuous upgrading of techniques in mining technology is crucial for the safety of mine workers, local communities, and the economic and political viability of mining in the 21st century.

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