

TOPICAL ISSUES OF RESOURCE-SAVING TECHNOLOGIES IN MINERAL MINING AND PROCESSING

Multi-authored monograph

**TOPICAL ISSUES OF RESOURCE-
SAVING TECHNOLOGIES IN
MINERAL MINING AND
PROCESSING**

Multi-authored monograph

UNIVERSITAS Publishing
Petroşani, 2018

UDK 622.002

Recommended for publication by the Academic Board of the SIHE "Kryvyi Rih National University", Minutes №9, 29.05.2018

Reviewers: **Roland Moraru**, Ph.D.Habil.Eng., Professor,
Research Vice-Rector University of Petroşani, Romania;

Oleksii I. Voloshyn, Corresponding Member of National Academy of Sciences of Ukraine, Doctor of Science (Engineering), Professor, Deputy Director of the N.S. Polyakov Institute of Geotechnical Mechanics of NAS of Ukraine;

Ivan N. Stolpovskikh, Doctor of Science (Engineering), Professor, SATBAEV UNIVERSITETY, Republic of Kazakhstan

Topical issues of resource-saving technologies in mineral mining and processing. Multi-authored monograph. – Petroşani, Romania: UNIVERSITAS Publishing, 2018. – 270 p.

ISBN 978-973-741-585-1

The multi-authored monograph deals with urgent problems of introducing resource-saving technologies of mineral mining and processing and finds ways to solve them.

The book is intended for a broad mining audience of scholars, practitioners, postgraduates and students.

UDK 622.002

The materials of the multi-authored monograph are in the authors' edition. References are obligatory in case of full or partial reproduction of the monograph content. All rights are reserved by the monograph contributors including their scientific achievements and statements.

ISBN 978-973-741-585-1

© Composite author, 2018

Table of contents

Preface	5
Aben K.K., Yussupov K.A., Aben E.Kh.	
Development of resource-saving technology for mining of reserves below the pit bottom.....	6
Kalinchenko E.V., Stupnik N.I., Kalinichenko V.A.	
Substantiation of stable crown shapes in iron ore mining	27
Mykhailenko O., Shchokin V., Shchokina O.	
Adaptive control of the ore crushing process in cone crushers based on nonlinear predictive model	39
Malanchuk E.Z., Malanchuk Z.R., Korniyenko V.Ya.	
Efficiency of using magnetic separation for the processing of metal-containing basalt raw materials	65
Mladetskyi I.K., Kuvaiev V.M., Berezniak O.O.	
Demagnetization of fine ferromagnetic materials	90
Sviatkina O.Yu., Tarasova H.V., Netyaga O.B.	
Development of methods for preparing fly ash for separation by activation	111
Sholokh M.V.	
Optimization of preparedness for extraction of balance-industrial mineral reserves.....	133
Zakusylo R., Romanchenko A., Kravets V.	
Innovative technology of manufacturing charges for splitting of block stone at places of blasting works.....	166
Sobolev V.V., Bilan N.V., Molchanov A.N.	
Electrically stimulated phase transformations in bituminous coals.....	186

Sofiysky K.K., Stasevich R.K., Tyshchenko A.V.	
Ensuring safety and protection of resource-saving trigeneration of coal deposits gases of mine and metallurgical production	212
Konoval V.N., Kratkovsky I.L., Ishchenko K.S.	
Resource-saving methods of polymineral rocks explosive destruction	229
Kobylianskyi B.B., Mnukhin A.G., Zalyzhna G.V.	
Improvement of personnel protection equipment in blasting operations in underground mine workings	250