

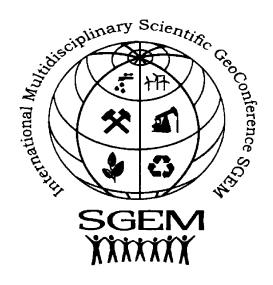
CONFERENCE PROCEEDINGS
VOLUME 17

Science and Technologies in Geology, Exploration and Mining Issue 13

EXPLORATION AND MINING

17th INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC GEOCONFERENCE S G E M 2 0 1 7

CONFERENCE PROCEEDINGS VOLUME 17



SCIENCE AND TECHNOLOGIES IN GEOLOGY,
EXPLORATION AND MINING
ISSUE 13

		EX	KP)	LC	R	A]	ΓI¢	ON	I A	N	D	M]	IN	IN	G			
_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	

29 June - 5 July, 2017 Albena, Bulgaria DISCLAIMER

This book contains abstracts and complete papers approved by the Conference Review

Committee. Authors are responsible for the content and accuracy.

Opinions expressed may not necessarily reflect the position of the International

Scientific Council of SGEM.

Information in the SGEM 2017 Conference Proceedings is subject to change without

notice. No part of this book may be reproduced or transmitted in any form or by any

means, electronic or mechanical, for any purpose, without the express written

permission of the International Scientific Council of SGEM.

Copyright © SGEM2017

All Rights Reserved by the International Multidisciplinary Scientific GeoConferences SGEM

Published by STEF92 Technology Ltd., 51 "Alexander Malinov" Blvd., 1712 Sofia, Bulgaria

Total print: 5000

ISBN 978-619-7105-00-1

ISSN 1314-2704

DOI: 10.5593/sgem2017/13

INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC GEOCONFERENCE SGEM

Secretariat Bureau

E-mail: sgem@sgem.org | URL: www.sgem.org

ORGANIZERS AND SCIENTIFIC PARTNERS

- THE CZECH ACADEMY OF SCIENCES
- LATVIAN ACADEMY OF SCIENCES
- POLISH ACADEMY OF SCIENCES
- RUSSIAN ACADEMY OF SCIENCES
- SERBIAN ACADEMY OF SCIENCES AND ARTS
- SLOVAK ACADEMY OF SCIENCES
- NATIONAL ACADEMY OF SCIENCES OF UKRAINE
- INSTITUTE OF WATER PROBLEM AND HYDROPOWER OF NAS KR
- NATIONAL ACADEMY OF SCIENCES OF ARMENIA
- SCIENCE COUNCIL OF JAPAN
- THE WORLD ACADEMY OF SCIENCES (TWAS)
- EUROPEAN ACADEMY OF SCIENCES, ARTS AND LETTERS
- ACADEMY OF SCIENCES OF MOLDOVA
- MONTENEGRIN ACADEMY OF SCIENCES AND ARTS
- CROATIAN ACADEMY OF SCIENCES AND ARTS, CROATIA
- GEORGIAN NATIONAL ACADEMY OF SCIENCES
- ACADEMY OF FINE ARTS AND DESIGN IN BRATISLAVA
- TURKISH ACADEMY OF SCIENCES
- NIZHNY NOVGOROD STATE UNIVERSITY OF ARCHITECTURE AND CIVIL ENGINEERING, RUSSIAN FEDERATION
- BULGARIAN ACADEMY OF SCIENCES
- BULGARIAN INDUSTRIAL ASSOCIATION
- BULGARIAN MINISTRY OF ENVIRONMENT AND WATER

INTERNATIONAL SCIENTIFIC COMMITTEE

Science and Technologies in Geology, Exploration and Mining

- PROF. JEAN-PIERRE BURG, SWITZERLAND
- ACAD. DMITRY Y. PUSHCHAROVSKY, RUSSIA
- PROF. YEVGENY KONTAR, USA
- PROF HELMUT WEISSERT, SWITZERLAND
- PROF. KOEN BINNEMANS, BELGIUM
- PROF. PROSUN BHATTACHARYA FIL. DR., SWEDEN

- PROF. DR UNSAL YALCIN, GERMANY
- PROF. VLADICA CVETKOVIC, SERBIA
- PROF NIKOLAY I. LEONYUK, RUSSIA
- PROF. DR RADOSLAV NAKOV, BULGARIA
- PROF. DR ZDENEK KALAB, CZECH REPUBLIC
- PROF. DSC JORDAN MARINSKI, BULGARIA
- PROF. VICTOR ARAD, ROMANIA
- PROF. YURY STEPIN, RUSSIA
- PROF. DR SNEZANA KOMATINA PETROVIC, SERBIA
- PROF. KUVVET ATAKAN, NORWAY
- PROF. K.N. MILOVIDOV, RUSSIA
- PROF. RODNEY STEVENS, SWEDEN
- ASSOC. PROF. GERARDO BRANCUCCI, ITALY
- ING. SLAVOMIR HREDZAK, PHD, SLOVAKIA
- DR. DIEGO PERUGINI

CONFERENCE PROCEEDINGS CONTENTS

SECTION EXPLORATION AND MINING

1. 3D MAGNETIC INVERSION WITH SPARSENESS CONSTRAINTS BASED ON RESIDUAL NODE SUSCEPTIBILITY, Chunxiao Xiu, Xiaohong Meng, Sheng Zhang, Xingdong Zhang, China University of Geosciences, China
2. 3D MODELING METHODS IN PLANNING OF TECHNOLOGICAL PROCESSES IN QUARRY, Peter Janic, Technical University of Kosice - Faculty BERG, Slovakia
3. ABOUT THE VARIATION OF META-SILTSTONE DEFORMATION-STRENGTH PROPERTIES UNDER THE DIFFERENT SCALES, Dr. Pavel Tsoi, Dr. Olga Usoltseva, Eng. Olga Persidskaya, Lead Eng. Vladimir Semenov, Eng. Boris Sivolap, Institute of Mining Siberian Branch Russian Academy of Science, Russia19
4. ADVERSE SUBSIDENCE IN MINING AREAS – RECLAMATION OPTIONS, Ing. Andrea Mokrosova, Ing. Tomas Kral, PhD., Ing. Aneta Landecka, Ing. Vaclav Zubicek, Ph.D, Ing. Tomas Siroky, VSB-TU Ostrava, Czech Republic
5. ALGORITHM AND SOFTWARE DEVELOPMENT FOR OPTIMAL MANAGEMENT OF METHANE DRAINAGE SYSTEM AT LUPENI COLLIERY, Gabriel Bujor Babut, Roland Iosif Moraru, University of Petrosani, Romania
6. AN IMPROVEMENT ON THE IMPACT RESISTANCE TESTS FOR EXPLOSION-PROOF ELECTRICAL EQUIPMENT, Vlad-Mihai Pasculescu, Nicolae-Ioan Vlasin, Marius Cornel Suvar, Gheorghe-Daniel Florea, Emilian Ghicioi, National Institute for Research and Development in Mine Safety and Protection to Explosion - INSEMEX, Romania
7. AN INNOVATIVE SYSTEM TO TEST COMPONENTS OF MINING MACHINERY CONTROL HYDRAULICS, Dawid Szurgacz, Jaroslaw Brodny CENTRUM HYDRAULIKI DOH Sp. z o.o., Poland
8. ANALYSIS OF DEGRADED AREAS FOR REDEVELOPMENT – CASE STUDY, Krzysztof Michalski, Jacek Sitko, Silesian University of Technology, Poland
9. ANALYSIS OF IMPACT OF OHS TRAINING QUALITY ON KNOWLEDGE OF WORKERS IN MINING COMPANIES IN THE FIELD OF OCCUPATIONAL SAFETY, Dorota Palka, Patrycja Habek, Silesian University of Technology, Poland

10. ANALYSIS OF INFLUENCE OF THE AIR CONDITIONING ON THE AIR PARAMETERS IN UNDERGROUND MINE WORKINGS, Jaroslaw Brodny, Magdalena Tutak, Silesian University of Technology, Poland
11. ANALYSIS OF ORGANIZATIONAL CULTURE AND IMPACT OF DECISION RESULTS ON THE EFFICIENCY OF LARGE ENERGY ENTERPRISES, Buse Florian, Mangu Sorin-Iuliu, Buse Gheorghe-Florin, Tiuzbaian Ioan-Nicolae, University of Petrosani, Romania
12. ANALYSIS OF STRESS STATE IN SLOPE WALL TO EXPLOITATION IN CETATE QUARRY - ROSIA MONTANA, Mihaela Toderas, University of Petrosani, Romania
13. APPLICATION OF CHOSEN ELEMENTS FROM JAPANESE PRODUCTION AND MAINTENANCE MANAGEMENT PHILOSOPHIES IN POLISH COAL MINES, PhD Student, MSc. Kinga Stecula, PhD Eng. Magdalena Tutak, Assoc. Prof. DSc. Eng. with habilitation Jaroslaw Brodny, Silesian University of Technology, Poland
14. BASIC CHARACTERISTICS OF FANS USED IN UNDERGROUND SPACES, Ing. Tomas Kral, Ing. Andrea Mokrosova, doc. Pavel Zapletal, PhD.,Ing. Aneta Landecka, Ing. Tomas Siroky, VSB-TU Ostrava, Czech Republic
15. BLASTING PARAMETERS ALTERNATE SELECTION AS A TOOL FOR ELASTIC WAVE EFFECT AMPLIFICATION AT POTENTIALLY INSTABLE LOCATIONS WITHIN MAIN ROOF STRATA, Witold Pytel, Piotr Mertuszka, KGHM Cuprum Ltd, Poland
16. CLASSIFICATION AND ASSESSMENT OF ABANDONED MINING WASTE FACILITIES IN THE CZECH REPUBLIC, RNDr. Miroslav Raus, RNDr. Vit Strupl, RNDr. Vladimir Zyval, Geo Vision, Czech Republic
7. COMPARISON OF PUNCTURE RESISTANCE TEST RESULTS FOR DIFFERENT CONVEYOR BELT DESIGNS, Assoc. Prof. Dr. Eng. Miroslaw Bajda, Wroclaw University of Technology, Poland
8. CONSIDERATIONS ON THE IGNITION SENSITIVITY OF EXPLOSIVE FIREDAMP MINES ATMOSPHERES, Marius Darie, Dragos Fotau, Sorin Burian, Ciberiu Csaszar, Cosmin Ioan Colda, National Institute for Research and Development Mine Safety and Protection to Explosion - INSEMEX, Romania
9. CONSTRUCTIVE IMPROVEMENTS OF CABLE TENSIONING MECHANISM FOR DEC DEVICES, Assoc.Prof.Dr.Eng. Dumitrescu Iosif, Lecturer Dr.Eng. Cozma Bogdan-Zeno, Assist.Dr.Eng. Itu Razvan-Bogdan, University of etrosani, Romania

20. CONTINUOUS TRANSPORTATION SYSTEM MODELLING IN ONE OF UNDERGROUND MINES FOR THE PURPOSE OF ORE FLOW SIMULATION, Leszek Jurdziak, Witold Kawalec, Robert Krol, Wroclaw University of Science and Technology, Poland
21. CONTRIBUTION TO THE ISSUES OF THE MINE GAS METHANE OUTPUT IN THE OSTRAVA-KARVINA COALFIELD, Martin Stolarik, Miroslav Pinka, Radovan Kukutsch, VSB-Technical University of Ostrava, Czech Republic157
22. CORRELATION BETWEEN THE LENGTH OF WAITING TIME AFTER GROUP BLASTING AND ROCK-BURST PREVENTION EFFECTIVENESS—CASE STUDY FROM A POLISH COPPER MINE, Anna Gogolewska, Natalia Tomczak, Wrocław University of Science and Technology, Poland
23. COST MANAGEMENT OF MINING PROJECT LIFE CYCLE, Oksana Marinina, Marina Nevskaya, Mining University of Saint Petersburg, Russia
24. DEGRADATION OF THE STATE OF A BALL TRACK AT THE ZP 6600, Ing. Pavel Schmidt, Ing. Vlastimil Moni, Ph.D., Ing. Petr Klouda, Ing. Lubomir Donat, Brown Coal Research Institute j.s.c., Czech Republic
25. DESIGN AND TEST RESULT OF THE NEW SOLUTION HYDRAULIC ROOF SUPPORT FOR LOW SEAMS, Krauze Krzysztof, Stopka Grzegorz, Raczka Waldemar, AGH University of Science and Technology, Poland
26. DESIGN CHANGE FUNCTION OF ROTARY TABLE OF A MACHINE TOOL, Ing. Martin Prochazka, Assoc. prof. Ing. Jiri Fries, Ph.D., Mgr. Ivana Onderkova, Ph.D., VSB-Technical University of Ostrava, Czech Republic
27. DESIGN OF A FEEDING STATION IN ECOLOGICAL TRANSPORTATION SYSTEM OF RAW MATERIALS, Vieroslav Molnar, Vincent Buchala, Technical University of Kosice, Slovakia
28. DESIGN OF AN ACTUATOR AND A CRANE CRAB FRAME FOR A DOUBLE-GIRDER CRANE IN THE MINING COMPANY, Vieroslav Molnar, Frantisek Ragan, Technical University of Kosice, Slovakia
29. DESIGN OF TECHNOLOGY FOR MACHINING OF THIN-WALLED HOUSE FOR CARRIER PIPE CONVEYOR DRIVE ROLLER., Peter Michalik, Jozef Zajac, Zuzana Mitalova, Jana Fabianova, Technical University Kosice, Slovakia221
30. DEVELOPMENT AND VALIDATION OF A NEW CONSTRUCTION OF IMITATOR OF MINE INSULATING SELF-RESCUER, Assist. Prof. Sergei Karpov, Assist. Prof. Alexey Glebov, Assist. Prof. Denis Dedov, Prof. Mikhail Krasnyanskiy, Assist. Prof. Sergei Alexeev, Tambov State Technical University, Russia

31. DEVELOPMENT OF A MODEL OF FIRE PROPAGATION FOR THE IMPLEMENTATION IN ADAPTIVE TRAINING SIMULATORS, ass. Prof. Denis Dedov, Prof. Mikhail Krasnyanskiy, ass. Prof. Sergey Karpov, Artyom Obukhov, Aleksey Arkhipov, Tambov State Technical University, Russia241
32. DEVELOPMENT OF AN EXPRESS-METHOD TO CONTROL DAMAGES IN UNDERGROUND MINING EXCAVATIONS UNDER ROCKBURST HAZARDOUS CONDITIONS, Anatolii Kozyrev, Konstantin Konstantinov, Mining Institute of the Kola Science Centre of the Russian Academy of Sciences, Russia253
33. DIAGNOSTIC PARAMETERS EXTRACTION FOR TECHNICAL CONDITION ASSESSMENT OF SPLICES IN STEEL CORD CONVEYOR BELTS, Tomasz Kozlowski, Ryszard Blazej, Grzegorz Zak, Radoslaw Zimroz, Leszek Jurdziak, Wrocław University of Science and Technology, Poland
34. DIRECTIONAL HYDRAULIC FRACTURING BASED ON TENSILE LOADING, Dr.Sci. Sergey Serdyukov, Ph.D. Andrey Patutin, Ph.D. St. Leonid Rybalkin, Mr. Arkadii Drobchik, Ph.D. Tatyana Shilova, Institute of Mining Siberian Branch Russian Academy of Science, Russia
35. DYNAMIC AND DURABILITY TESTS OF DRILLING RIG FOR NARROW VEIN DEPOSITS, Pawel Mendyka M.Sc., Krzysztof Kotwica Ph.D., Piotr Gospodarczyk Ph.D., Grzegorz Stopka Ph.D., AGH University of Science and Technology, Poland
36. ECONOMIC ANALYSIS OF STEEL CORD CONVEYOR BELTS REPLACEMENT STRATEGY IN ORDER TO UNDERTAKE PROFITABLE REFURBISHMENT OF WORN OUT BELTS, Leszek Jurdziak and Ryszard Blazej, Wrocław University of Science and Technology, Poland
37. EFFECTIVENESS OF GASEOUS CONTAMINANTS REMOVAL IN A REACTIVE DEPOSIT IN THE EVENT OF EMERGENCY DURING AN UCG EXPERIMENT., Aleksandra Tokarz, Jacek Grabowski, Dariusz Nowak, GIG, Poland
38. EFFICIENCY OF DUST SUPPRESSION IN OPERATION OF OPEN PIT MINES DURING WINTER PERIOD, A.F. Galkin, A.V. Dormidontov, E.P. Obozhina, Saint Petersburg State Mineral Resources University Gorny, Russia299
39. EFFICIENT APPLICATION OF STRIPPING SCHEMES FOR MINERAL DEPOSITS: CONVENTIONAL AND ADVANCED TRANSPORTATION OF ORE IN DEPENDENCE OF ANNUAL PRODUCTIVE CAPACITY OF UNDERGROUND MINES, Evgenii Gromov, Oleg Belogorodtsev, Mining Institute of the Kola Science Centre of the Russian Academy of Sciences, Russia

40. ENGINEERING-GEOLOGICAL AND GEOECOLOGICAL SUBSTANTIATION OF MINING SAFETY AT A UNIQUE DEPOSIT OF HIGH GRADE IRON ORES (KURSK MAGNETIC ANOMALY, RUSSIA), Prof. Dr. Regina E. Dashko, Assist. Prof. Dr. Ivan V. Alekseev, Mining University of Saint Petersburg, Russia
41. EVALUATION OF MINE SUPPORT STRESS STATE ON BASE OF CONVERGENCE MEASUREMENT DATA, Petr Deev, Andrew Sammal, Sergey Antziferov, Tula State University, Russia
42. NUMERICAL CALCULATION ASSESSMENT OF THE PARAMETERS OF ANCHORED SUPPORTS USED FOR THE CONSOLIDATION OR ROCKS SURROUNDING UNDERGROUND EXCAVATIONS, Veres Ioel Samuel, Radu Mihai Sorin, Ghimisi Stefan Sorinel, Plesea Valeriu, University of Petrosani, Romania 327
43. FIRST ROMANIAN COMPUTATIONAL SIMULATION OF AIR-METHANE MIXTURE EXPLOSION, Nicolae-Ioan Vlasin, Vlad-Mihai Pasculescu, Marius Cornel Suvar, Daniel Florea, Emeric Chiuzan, National Institute for Research and Development in Mine Safety and Protection to Explosion - INSEMEX, Romania335
44. FORECAST TRENDS AND NEW POSSIBILITIES OF USING SOME OF SELECTED EARTH RESOURCES, M.Sc. Jan Kosco, PhD., Assoc. Prof. M.Sc. Peter Taus, PhD., M.Sc. Martin Beer, Assoc. Prof. M.Sc. Radim Rybar, PhD., Assoc. Prof. M.Sc. Dusan Kudelas, Technical University of Kosice, Slovakia
45. FUNCTIONAL ANALYSIS OF INDUSTRIAL VENTILATION INSTALLATIONS, Ion Gherghe, Irina Nalboc, Constantin Lupu, Florin Radoi, Emeric Chiuzan, National Institute for Research and Development in Mine Safety and Protection to Explosion - INSEMEX, Romania
46. GENERATING KNOWLEDGE ABOUT THE DOWNTIME OF THE MACHINES IN THE EXAMPLE OF MINING ENTERPRISE, PhD Student, MSc. Kinga Stecula, Assoc. Prof. DSc. Eng. with habilitation Jaroslaw Brodny, Silesian University of Technology, Poland
47. GEOMECHANICAL ASPECTS OF LARGE-SCALE MINING AT THE KHIBINY CONTIGUOUS APATITE DEPOSITS, A.A. Kozyrev, I. E. Semenova, Mining Institute of the Kola Science Centre of the Russian Academy of Sciences, Russia
48. GEOTHERMAL CONVERSION OF ORGANIC MATTER IN THE CARBONACEOUS MEDIUM OF THE PRESENCE OF HOMOGENEOUS OXIDATION CATALYSTS, Postgraduate Alfiya I. Lakhova, Dr. Sergey A. Sitnov, Dr. Bahman Tohidi, Assoc. Prof. Sergey M. Petrov, Kazan (Volga Region) Federal University, Russia

49. IDENTIFICATION OF HYDROTHERMAL ALTERATION ZONES IS GRANITIC AREAS USING MAGNETIC SUSCEPTIBILITY. AN EXAMPLE IN NW PORTUGAL, A. Goncalves, H. Sant Ovaia, F. Noronha, University of Portugal
50. IDENTIFICATION OF LOADING PARAMETERS FOR BELL CONVEYORS OPERATING IN KGHM'S MINES, Leszek Jurdziak, Witold Kawalec, Damian Kaszuba, Robert Krol, Wrocław Universit of Science and Technology, Poland
51. IMPACT OF THE PACE AND ADVANCE OF EXPLOITATION ON TH SEISMIC HAZARD- CASE STUDY FROM A POLISH COPPER MINE, And Gogolewska, Jakub Jakubiak, Wroclaw University of Science and Technology, Poland
52. IMPLEMENTATION OF INNOVATIVE PROJECT FOR MONITORING AND RECORDING OF DISTRIBUTION OF EXPLOSIVE MATERIALS I BITUMINOUS COAL MINE, Midor Katarzyna, Silesian University of Technolog Poland
53. IMPROVEMENT OF A MINING TECHNOLOGY FOR NEAR OPEN-PI RESERVES EXCAVATION IN THE NORTHERN CONDITIONS, Sergi Lukichev, Oleg Belogorodtsev, Pavel Amosov, Mining Institute of the Kola Science Centre of the Russian Academy of Sciences, Russia
54. IMPROVEMENT OF PROJECT DECISIONS EFFICIENCY AND COSTOPTIMIZATION AT THE MINE ENGINEERING STAGE OF RECLAMATION IN THE CONTEXT OF OPEN PIT ORE MINING, Marinin Mikhail, Marinin Oksana, Saint-Petersburg Mining University, Russia
55. IMPROVEMENT OF THE WORK SAFETY MANAGEMENT SYSTEM IN HARD COAL MINING WITH SPECIAL REFERENCE TO THE PROBLEM OF WORKERS PARTICIPATION, PhD Anna Gembalska-Kwiecien, Silesian University of Technology, Poland
56. INFLUENCE OF AUXILIARY VENTILATION DEVICES ON A DISTRIBUTION OF METHANE CONCENTRATION AT THE CROSSING OF LONGWALL AND VENTILATION ROADWAY, Magdalena Tutak, Jaroslav Brodny, Silesian University of Technology, Poland
57. INFLUENCE OF PHYSICAL—MECHANICAL AND TECHNOLOGICAL CHARACTERISTICS OF COAL AND OVERBURDEN ROCKS ON THI EXCAVATION PROCESS, Lazar Maria, Andras Iosif, Faur Florin, Andras Andrei University of Petrosani, Romania

58. INTEGRATED ISSUES OF MINERAL DEPOSIT DEVELOPMENT FOR THE BENEFIT OF THE RUSSIAN ARCTIC ZONE PROGRESS, Nikolay Melnikov, Evgeniy Gromov, Sergey Gusak, Mikhail Khokhulya, Svetlana Mesyats, Mining Institute of the Kola Science Centre of the Russian Academy of Sciences, Russia
59. INTEGRATED RESEARCH INTO FEATURES OF PHYSICAL FIELDS IN MODEL GEOMEDIUM WITH DISCONTINUITY GENERATED UNDER EXTERNAL STRESSES, Dr. Olga Usoltseva, Dr. Vladimir Vostrikov, Dr. Pavel Tsoi, Lead Eng. Vladimir Semenov, Institute of Mining Siberian Branch Russian Academy of Science, Russia
60. JUSTIFICATION OF PARAMETERS OF BUILDING INCLINED TRENCHES USING BELT CONVEYORS, Anatoly Dryzhenko, Alexander Shustov, Serik Moldabayev, Kazakh National Research Technical University named after K. Satpayev, Kazakhstan
61. TALC-BEARING ROCKS OF KARELIA, THEIR PROPERTIES AND POSSIBLE APPLICATIONS (EXEMPLIFIED BY KALLIEVO-MURENNANVAARA DEPOSIT, V.P. Ilyina, P.V. Frolov, E.E. Klimovskaya, S.G. Tkacheva, V.A. Shekov, Institute of geology of KarRC RAS, Russia
62. LABORATORY STAND TESTS OF MINING ASYMMETRICAL DISC TOOLS, Pawel Mendyka M.Sc., AGH University of Science and Technology, Poland487
63. LABORATORY TESTS OF CONVEYOR BELT PARAMETERS AFFECTING ITS LIFETIME, Assoc. Prof. Dr. Eng. Miroslaw Bajda, Wrocław University of Science and Technology, Poland
64. LOCAL AREA EDGE MONITORING OF THE NYURBINSKY OPEN-PIT MINE, Shubin G.V., Zarovnyayev B.N., Vasilyev I.V., Kurilko A.S., North-East Federal University, Russia
65. LOW AND HIGH SULPHIDATION EPITHERMAL GOLD DEPOSITS IN SARDINIA, ITALY, Dr. Sandro Fadda, Dr. Maddalena Fiori, Dr. Ing. Carlo Matzuzzi, Italian National Council Researches, CNR, Italy
66. MANAGEMENT RESERVES OF MINING OPERATIONS MODE IN OPEN PIT MINING OF STEEPLY DIPPING MINERAL OCCURENCES, Serik Moldabayev, Zhanat Sultanbekova, Ayan Toktarov, Kazakh National Research Technical University named after K. Satpayev, Kazakhstan
67. MATHEMATICAL MODELS OF POWERED ROOF SUPPORT INTERACTION WITH SURROUNDING ROCKS, Andrei Andras, Iosif Andras, Ovidiu-Bogdan Tomus, University of Petrosani, Romania

68. MATHEMATICAL MODELS USED TO DETERMINE THE STRAIN OF EXPERIMENTAL WORKS JIU VALLEY MINING BASIN, PhD Student eng. Cristian Radeanu, PhD Student Larisa Chindris, Ph.D., Prof. Dan Paul Stefanescuu Ph.D., Lecturer Ladislau Radermacher Ph.D., PhD Students eng. Cristian Popa, University of Petrosani, Romania
69. METHOD OF AUTOMATED DETECTION OF SEISMICALLY ACTIVE ZONES WITHIN THE MINE FIELD BY THE DATA OF INDUCED SEISMICITY, Dr. Vladimir Vostrikov, Post drad. Elena Sedletskaya, Chinakal Institute of Mining Siberian Branch, Russian Academy of Sciences, Russia543
70. METHODICAL APPROACHES FOR FEASIBILITY STUDY OF POTENTIAL DEVELOPMENT OF ARCTIC MINERAL DEPOSITS, Prof. Nikolai Melnikov, Leading engineer Asia Giliarova, Dr. Anatolii Kalashnik, Dr. Oleg Churkin, Mining Institute of the Kola Science Centre of the Russian Academy of Sciences, Russia
71. MODERNIZATION OF ESRC – 1400 EXCAVATOR BUCKETS WITH THE HELP OF CAD/CAE SOFTWARE, Assoc.Prof.Dr.Eng. Dumitrescu Iosif, Lecturer Dr.Eng. Cozma Bogdan-Zeno, Lecturer Dr.Eng. Urdea Gheorghe-Bogdan, University of Petrosani, Romania
72. MONITORING SYSTEM OF ROCKBOLTING INTERACTION IN ROCK MASS CONDUCT UNDER SEISMIC ACTIVITY IN UNDEGROUND MINES, Madziarz Maciej, KGHM Cuprum Ltd, Poland
73. NEW SOLUTIONS OF MINING TOOLS FOR HARD ROCK MINING, Krzysztof Kotwica, Pawel Mendyka, AGH University of Science and Technology, Poland
74. NEW TRENDS TO OPTIMIZE THE OPERATING PARAMETERS OF VERTICAL TRANSPORT INSTALLATIONS, Florin Popescu, Ovidiu Bogdan Formus, Ildiko Kertesz, University of Petrosani, Romania
75. NUMERICAL MODELLING OF BLIND EXCAVATION VENTILATION FAKING INTO ACCOUNT FAILURE ZONE, Sergei Kozyrev, Pavel Amosov, Mining Institute of the Kola Science Centre of the Russian Academy of Sciences, Russia
6. OPEN PIT MINING TECHNOLOGY OF STEEPLY DIPPING MINERAL OCCURENCES BY STEEPLY INCLINED SUBLAYERS, Anatoly Dryzhenko, Serik Moldabayev, Alexander Shustov, Andrey Adamchuk, Nurzhigit Sarybayev, Kazakh National Research Technical University named after K. Satpayev, Kazakhstan 599
7. OPTIMIZATION OF GEOMETRIC AND STRENGTH PARAMETERS OF SEETH FOR BUCKET WHEEL EXCAVATOR IN VIEW TO INCREASING THE CUTTING EFFICIENCY, Iosif Andras, Andrei Andras, Ovidiu-Bogdan Tomus, Iniversity of Petrosani, Romania

78. OPTIMIZATION OF THE ROD EYE FOR A TILTING PLATFORM, Ing. Tomas Hapla, Assoc. prof. Ing. Jiri Fries, Ph.D., Ing. Lukas Rudolf, VSB-Technical University of Ostrava, Czech Republic
79. OPTIMIZING OF COSTS AND REVENUES ON STONE AND COAL QUARRIES, Ing. Beata Gibesova, Ph.D, Ing. Vaclav Zubick, Ph.D, Ing. Kamila Dobesova Doc. Dana Vrublova, Ph.D, Ing. Jaroslav Mudrunka, VSB-Technical University of Ostrava, Czech Republic
80. OPTIMIZING RELATIONSHIPS BETWEEN COSTS AND REVENUES ON QUARRIES IN THE CZECH REPUBLIC, Ing. Hummel Martin, Ph.D., Mgr. Hummelova Ilona, Ing. Repka Vlastimil Ph.D., Ing. Gibesova Beata Ph.D., Nabelkova Liliana, VSB-Technical University of Ostrava, Czech Republic
81. OVERVIEW OF THE UNWANTED EFFECTS OF UNMINEABLE ROCK FORMATIONS ON THE MINING SYSTEM OF BUCKET WHEEL EXCAVATOR DURING THE EXCAVATION PROCESS, Andrei Andras, Florin Faur, Mircea Ristei, University of Petrosani, Romania
82. PARTIAL REPLACEMENTS OF CONBEYOR BELT LOOP ANALYSIS WITH REGARD TO ITS RELIABILITY, Assist. Prof. Dr Eng. Miroslaw Bajda, Assist. Prof. Dr Eng. Ryszard Blazej, Associate Prof. Dr Eng. Leszek Jurdziak, Wrocław University of Technology, Poland
83. PARTICULARITIES OF DESTRUCTION OF OUT-CONTOUR ROCK MASS ASSOCIATED WITH BLASTING THE SYSTEM OF BOREHOLE CHARGES, Sergei Kozyrev, Igor Alenichev, Viktor Kamyansky, Mining Institute of the Kola Science Centre of the Russian Academy of Sciences, Russia
84. POSSIBILITY FOR APPLICATION OF COMBINED METHODS OF MINING IN COAL MINES OF SERBIA, Mr. sc. Sasa Ognjanovic, Mr. sc. Drasko Markovic, Assoc. Prof. Dr. Rade Tokalic, Prof. Dr. Nebojsa Vidanovic, University of Belgrade Faculty of Mining and Geology, Serbia
85. PROBLEMS OF CULVERTS ON MINING SUBSIDENCE AREAS, Dr. Leopold Hudecek, Dr. Jan Petru, Assoc. Prof. Vladislav Krivda, VSB-Technical University of Ostrava, Czech Republic
86. PRODUCTION OF CHEMICAL EMISSIONS OF BLACK-COAL MINE AND THEIR INFLUENCE ON THE PUBLIC HEALTH IN THE CONDITIONS OF THE OSTRAVA INDUSTRIAL REGION, Stanislav Bartusek, Alexander Skacel, VSB-Technical University of Ostrava, Czech Republic
87. PROSPECTIVE SOLVING OF A VENTILATION NETWORK USING 3D CANVENT SOFTWARE, Marius Simion Morar, Doru Cioclea, Gabriel Dragos Vasilescu, Nicolae Ianc, Cristian Cioara, National Institute for Research and Development in Mine Safety and Protection to Explosion - INSEMEX, Romania687

88 PROVISION OF POSSIBILITY OF CONSTRUCTING CONVEYOR HOIS IN A STATIONARY POSITION DURING DEVELOPEMNT OF A WORKIN ZONE ON STEEP PIT EDGES OF AN OPEN-PIT MINE, Serik Moldabaye Zhanat Sultanbekova, Ayan Toktarov, Nurzhigit Sarybayev, Kazakh National Researd Technical University named after K. Satpayev, Kazakhstan
89. PSYCHOLOGICAL TRAINING MODEL FOR INTERVENTION AN RESCUE PERSONNEL, Izabella Kovacs, Marius Kovacs, Artur George Gama Daniel Pupazan, Cosmin Ilie, National Institute for Research and Development in Mir Safety and Protection to Explosion - INSEMEX, Romania
90. RADIOLOGICAL IMPACT ASSESSMENT OF URANIUM MINE DEPOSIT Ahmet Erdal Osmanlioglu, Deniz Adiguzel, Serkan Tuylu, Atac Bascetin, Istanbu University, Turkey
91. RECLAMATION IN THE ERVĚNICE AREA WITH THE USE O SECONDARY ENERGY PRODUCTS, Ing. Kamila Dobesova, Ing. Beata Gibesova Ph.D, Doc. Milan Mikolas, Ph.D, Ing. Zdenek Hruzek, VSB-Technical University of Ostrava, Czech Republic
92. RECOVERY AND RECYCLING OF CRITICAL METALS - A STRATEGIC PRIORITY FOR EUROPEAN UNION, Alina Butu, Marian Butu, Gina Fidle Steliana Rodino, National Institute of Research and Development for Biologica Sciences, Romania
93. REDEVELOPMENT AND SUBSEQUENT RECLAMATION OF TRACHYANDEZIT (LATIT) MINE (TEPHRITE) IN BRANANY LOCATION Ing. Ivan Bily PhD, Ing. Marcel Brejcha, Ing. Jiri Brabenec PhD, VSB, Severocesk Doly a.s., Czech Republic
94. RELIABILITY ANALYSIS OF THE BRAKE PADS OF THE WHEELEI FRONT END LOADING AND TRANSPORTATION MACHINERY USED IN MINING, Ovidiu-Bogdan Tomus, Iosif Andras, Andrei Andras, University o Petrosani, Romania
95. RESEARCH ON THE DEVELOPMENT OF METHODS FOR DETERMINING THE SURFACE TEMPERATURES OF NON-ELECTRICAL EQUIPMENT AIMING PREVENTION AND PROTECTION TO EXPLOSION Adrian Jurca, Mihaela Paraian, Niculina Vatavu, Florin Paun, Leonard Lupu, Nationa Institute for Research and Development in Mine Safety and Protection to Explosion INSEMEX, Romania
96. RESEARCHES IN THE PHASE OF EXPLOITATION OF THE ORE BODY CUKAR 2 EAST IN FUNCTION OF INCREASING LIFETIME OF THE BUCHIM COPPER MINE, EASTERN MACEDONIA, Todor Serafimovski, Kiri Filev, Goran Tasev, University Goce Delcev, FYR of Macedonia

RELOCATION TO THE POSITION WITH THE WORSE MINING CONDITIONS IN THE LIBOUS MINE (THE MOST BASIN), Michal Rehor, PhD, Vlastimil Moni, PhD, Vaclav Novak, Vlastimil Kraus, Pavel Schmidt, Brown Coal Research Institute j.s.c., Czech Republic
Vlastimil Moni, PhD, Vaclav Novak, Vlastimil Kraus, Pavel Schmidt, Brown Coal Research Institute j.s.c., Czech Republic
Research Institute j.s.c., Czech Republic
98. REVEAL OF INTERRELATIONSHIP BETWEEN STRESS STATE AND SEISMIC ACTIVITY IN THE TECTONIC STRESSED ROCK MASS, Zhuravleva O.G., Zemtsovskii A.V., Avetisian I.M., Mining Institute of the Kola Science Centre of the Russian Academy of Sciences, Russia
SEISMIC ACTIVITY IN THE TECTONIC STRESSED ROCK MASS, Zhuravleva O.G., Zemtsovskii A.V., Avetisian I.M., Mining Institute of the Kola Science Centre of the Russian Academy of Sciences, Russia
SEISMIC ACTIVITY IN THE TECTONIC STRESSED ROCK MASS, Zhuravleva O.G., Zemtsovskii A.V., Avetisian I.M., Mining Institute of the Kola Science Centre of the Russian Academy of Sciences, Russia
Zhuravleva O.G., Zemtsovskii A.V., Avetisian I.M., Mining Institute of the Kola Science Centre of the Russian Academy of Sciences, Russia773
Science Centre of the Russian Academy of Sciences, Russia773
00 DOLE AND DELEVANCE OF AN ELECTRO CONTROL SYSTEM FOR
THE OPERATION OF A POWERED ROOF SUPPORT, Dawid Szurgacz,
Jaroslaw Brodny, Center of Hydraulics DOH Sp. Ltd, Poland781
100 DODEGOV - DOGODEGOVE - DOVODODE - DOVODOV GUIGADOV - DOD
100. ROPECON - PROGRESSIVE TRANSPORTATION SYSTEM FOR
CONTINUOUS RAW MATERIALS TRASPORTATION, Hana Neradilova, Jozef
Stolarik, College of Logistics Prerov, Czech Republic789
101. ROTARY PERCUSSIVE DRILLING WITH SUBMERSIBLE DRILLING
HAMMERS AND OTHER METHODS OF DRILLING WORK IN QUARRY
OPERATIONS,
Mikolas Milan, Mikolas Martin, Mikusinec Jozef, Abrahamovsky Jan, Bednarik
Zdenek, VSB-Technical University of Ostrava, Czech Republic797
102. SIMULATION INVESTIGATIONS OF ROADHEADER DYNAMICS FOR
AUTOMATIC CONTROL OF CUTTING PROCESS, Associate Professor PhD.
DSc. Eng. Piotr Cheluszka, PhD. Eng. Eryk Remiorz, MSc. Eng. Jacek Gawlik, Silesian
University of Technology, Poland805
omversity of Technology, Foliatid
omversity of Technology, Folding
103. STRUCTURAL DETAILS AND OPERATIONAL AND CALCULATION
103. STRUCTURAL DETAILS AND OPERATIONAL AND CALCULATION PARTICULARITIES OF HYDRAULIC POWER SYSTEMS FOR THE ROOF
103. STRUCTURAL DETAILS AND OPERATIONAL AND CALCULATION
103. STRUCTURAL DETAILS AND OPERATIONAL AND CALCULATION PARTICULARITIES OF HYDRAULIC POWER SYSTEMS FOR THE ROOF SUPPORTS, Sorin Vatavu, University of Petrosani, Romania
103. STRUCTURAL DETAILS AND OPERATIONAL AND CALCULATION PARTICULARITIES OF HYDRAULIC POWER SYSTEMS FOR THE ROOF SUPPORTS, Sorin Vatavu, University of Petrosani, Romania
103. STRUCTURAL DETAILS AND OPERATIONAL AND CALCULATION PARTICULARITIES OF HYDRAULIC POWER SYSTEMS FOR THE ROOF SUPPORTS, Sorin Vatavu, University of Petrosani, Romania
103. STRUCTURAL DETAILS AND OPERATIONAL AND CALCULATION PARTICULARITIES OF HYDRAULIC POWER SYSTEMS FOR THE ROOF SUPPORTS, Sorin Vatavu, University of Petrosani, Romania
103. STRUCTURAL DETAILS AND OPERATIONAL AND CALCULATION PARTICULARITIES OF HYDRAULIC POWER SYSTEMS FOR THE ROOF SUPPORTS, Sorin Vatavu, University of Petrosani, Romania
103. STRUCTURAL DETAILS AND OPERATIONAL AND CALCULATION PARTICULARITIES OF HYDRAULIC POWER SYSTEMS FOR THE ROOF SUPPORTS, Sorin Vatavu, University of Petrosani, Romania
103. STRUCTURAL DETAILS AND OPERATIONAL AND CALCULATION PARTICULARITIES OF HYDRAULIC POWER SYSTEMS FOR THE ROOF SUPPORTS, Sorin Vatavu, University of Petrosani, Romania
103. STRUCTURAL DETAILS AND OPERATIONAL AND CALCULATION PARTICULARITIES OF HYDRAULIC POWER SYSTEMS FOR THE ROOF SUPPORTS, Sorin Vatavu, University of Petrosani, Romania
103. STRUCTURAL DETAILS AND OPERATIONAL AND CALCULATION PARTICULARITIES OF HYDRAULIC POWER SYSTEMS FOR THE ROOF SUPPORTS, Sorin Vatavu, University of Petrosani, Romania
103. STRUCTURAL DETAILS AND OPERATIONAL AND CALCULATION PARTICULARITIES OF HYDRAULIC POWER SYSTEMS FOR THE ROOF SUPPORTS, Sorin Vatavu, University of Petrosani, Romania

106. TECHNICAL SOLUTION FOR THE MINING DRILLING EQUIPMEN' COMMAND SYSTEM, Praporgescu G., Mihailescu S., University of Petrosan Romania
107. TESTS CARRIED OUT ON CABLE ENTRIES AND THEIR IMPORTANCE WITHIN THE CERTIFICATION PROCESS OF EXPLOSION PROOF EQUIPMENT, Dragos Fotau, Sorin Burian, Mihai Magyari, Lucia: Moldovan, Marcel Rad, National Institute for Research and Development in Min Safety and Protection to Explosion - INSEMEX, Romania
108. THE CONDITIONS OF APPLICATION OF FLY ASH FROM BIOMASS IN THE AGRICULTURAL, FORESTRY AND RECLAMATION ACTIVITIES IN THE CZECH REPUBLIC, Ing. Pavel Schmidt, RNDr. Michal Rehor, Ph.D., Ing Lukas Zizka, Brown Coal Research Institute j.s.c., Czech Republic
109. THE CONFORMITY OF DELAYED IGNITION MEANS AS KEY FACTOR ON A SAFE BLASTING IN QUARRIES, Edward Gheorghiosu, Attila Kovacs, Gabriel Vasilescu, Ilie-Ciprian Jitea, Sorin Bordos, National Institute for Research and Development in Mine Safety and Protection to Explosion - INSEMEX Romania
110. THE CORELATION BETWEEN PHYSICAL-MECHANICAL PROPERTIES AND THE CUTTING CHARACTERISTICS IN THE CASE OF UNMINEABLE ROCK FORMATIONS FROM HUSNICIOARA LIGNITE OPEN PIT, Andras Iosif, Lazar Maria, Andras Andrei, University of Petrosani Romania
111. THE COST-EFFECTIVE AND GEOTECHNIC SAFELY BUILDINGS ON THE AREAS WITH MINE EXPLOITATION, Monika Gwozdz - Lason, University of Bielsko-Biala, Poland
112. THE INCREASE OF ENERGETIC EFFICIENCY OF SCREW COMPRESSORS USED FOR THE PRODUCTION OF COMPRESSED AIR INSIDE A COAL MINE, Lecturer Ph.D. Adriana Zamora, Lecturer Ph.D. Sorina Stanila, University of Petrosani, Romania
113. THE METHOD OF DETECTING MOVEMENTS OF THE MACHINE TOOL FOUNDATIONS, Ing. Lukas Rudolf, Assoc. prof. Ing. Jiri Fries, Ph.D., Ing. Oldrich Ucen, Ph.D., VSB-Technical University of Ostrava, Czech Republic893
114. THE METHOD OF MINIMIZING THE CALCULATED POWER OF VERTICAL TRANSPORT INSTALLATIONS, Florin Dimitru Popescu, Andrei Andras, Ildiko Kertesz, University of Petrosani, Romania
115. THE PERSPECTIVE OF THE USE OF MINERAL FUELS MINED IN SLOVAKIA, Assoc. Prof. Zofia Kuzevicova, MSc., PhD., Assoc. Prof. Stefan Kuzevic, MSc., PhD., Assoc. Prof. Marcela Gergelova, MSc., PhD., Technical University of Kosice, Slovakia

116. THE POSSIBILITY OF BATTERY DRIVE APPLICATION IN MINING DRILLING RIGS, Krzysztof Kotwica, Pawel Mendyka, Andrzej Czajkowski, Leslaw Ostapow, Artur Kozlowski, AGH University of Science and Technology, Poland917
117. THE PROPOSAL OF THE TEST EQUIPMENT FOR ANALYSIS OF THE COVERING LAYERS OF THE CONVEYOR BELT., Peter Michalik, Michal Hatala, Jana Fabianova, Dusan Mital, The Technical University of Kosice, Slovakia.925
118. THE ROLE OF COAL PIT EXPLOITATION FROM THE JIU VALLEY ON THE REGION'S SUSTAINABLE FUTURE, PhD Alina Adela Davidoiu Tescan, University of Petrosani, Romania
119. THE STUDY OF THE MECHANISM OF THE INTERACTION IN THE ROCK-SUPPORT SYSTEM CONSIDERING THE DEFORMATION BEHAVIOUR OF ROCKS SURROUNDING UNDERGROUND EXCAVATIONS Veres Ioel Samuel, Radu Mihai Sorin, Ghimisi Stefan Sorinel, Plesea Valeriu, University of Petrosani, Romania
120. THE TECHNOLOGY OF THE PLASMA CUTTING ON A CNC MACHINE, Ing. Lukas Kudrna, Assoc. prof. Ing. Jiri Fries, Ph.D., Ing. Marek Merta, VSB-Technical University of Ostrava, Czech Republic
121. USING THE FBG TECHNOLOGY FOR SAFETY AND OPERATION ISSUES OF UNDERGROUND MINING MACHINERY, Janusz Juraszek, University of Bielsko-Biala, Poland
122. VALORIZATION OF COAL MINING WASTE DUMPS IN THE AREA OF GLIWICE CITY (SOUTHERN POLAND), Marcisz Marek, Lukasz Gawor, Silesian University of Technology, Poland
123. VARIANTS OF IDENTIFICATION OF THE RUN-OF-MINE ORE COMPOUND WITH THE HELP OF PROCESS ANALYTIC TECHNOLOGY IN THE KGHM UNDERGROUND COPPER MINES, Leszek Jurdziak, Damian Kaszuba, Witold Kawalec, Robert Krol, Wrocław University of Science and Technology, Poland
124. VERIFICATION OF FORECASTS OF SUBSIDENCES, INCLINATIONS AND CURVATURES OF AREA CAUSED BY MULTIDEPOSIT MINING CONDUCTED BY INCLUDING MINING MARGIN – CASE ANALYSIS, Justyna Orwat, Silesian University of Technology, Poland
125. ANALYSIS OF CORE FAILURE DISTRIBUTION IN STEEL CORD BELTS ON THE CROSS-SECTION, Ryszard Blazej, Leszek Jurdziak, Robert Burduk, Agata Kirjanow, Tomasz Kozlowski, Wrocław University of Technology, Poland