Contents

Part I Resources of the Coal Industry and Their Features

Technological Progress Having Impact on Coal Demand Growth .................. 3
V.S. Litvinenko

New Approaches to Creation of Low-temperature Compositions for Prevention of Coal Congealing .................................................. 17
Gushchin Alexey Alexeyevich, Ermakov Anatoliy Yurjevich and Miroshnikov Alexander Mikhailovich

Various potential uses of coal from Apsatsky coalfield ................................. 23
Vladimir Artemiev and Sergey Silyutin

Combined Chemical-beneficiation Processes of Valuable Components Extraction from Coal Burning Wastes ................................. 29
Valentin A. Chanturia, Anatoly A. Lavrinenko and Anatoly P. Sorokin

Coal in the economy of Russia ................................................................. 35
G.L. Krasniansky

Desulphurization of high-sulfur coking coal by microwave irradiation assisted with alkali solution ......................................................... 41
Tao Xiuxiang, Yang Yancheng and Xu Ning

Country report Mongolia .............................................................................. 47
Helga Wittmers and Bayarmagnai Tsedenbaljir

Indonesia economic output and employment impact of low rank coal utilization: An input output analysis ............................................. 53
Tri Winarno and C. Drebenstedt

From Mining to Refining-Contribution of selective Mining to Value Chain optimisation ................................................................. 59
C. Drebenstedt
Status of Coal Mining and Coal Preparation in Poland .......... 67
Wiesław S. Blaschke, Józef Szafarczyk, Ireneusz Baic, Zofia Blaschke and Lidia Gawlik

Further Developments in Washability Prediction Using CGA .......... 73
B. Atkinson and A. Swanson

New type of noble metal mineralization in the graphite formation of the Khanka terrane, Russian Southeast ................. 79
A.I. Khanchuk

Part II Coal Preparation Plants Design

Design of coal preparation plants: problems and solutions .......... 87
Antipenko Lina Alexandrovna and Ermakov Anatoliy Yurievich

Implementation of modern coal processing solutions in the project of “Elegest” coal preparation plant ................. 95
Vadim A. Kozlov, Elena N. Chernysheva and Mikhail F. Pikalov

Sludge Formation Coefficient for a Given Process Flow of a Coal Preparation Plant ........................................ 101
Aleksandr Danilovich Polulyakh, Andrey Sergeevich Buchatskiy and Sergey Aleksandrovich Vyrodov

Criteria of Engineering Efficiency of Thickening Flowcharts .......... 107
A.V. Bauman

Sandwich Belt High Angle Conveyors Coal Mine to Prep Plant and Beyond–2016 ........................................ 111
Joseph A. Dos Santos

The Role of Fine Coal Classification on Fine Coal Cleaning Circuit Performance ........................................ 119
Baojie Zhang and Paul Brodzik

Technologies in Use for the Processing of Fine Coal ................. 129
W. Erasmus, F. Bornman and J. de Korte

Emergency Braking of Fast Running Coal Handling Gantry Hoists ... 135
Stefan Vöth

HiBar Steam Pressure Filtration of Coal Ultrafines-New Developments and Results ........................................ 141
J. Hahn, R. Bott and T. Langeloh

Coal Preparation Plant Design Requirements for 2050 ............... 147
C.J. Clarkson and C. Hillard

Establishment and Operation of the Ravensworth North CHPP ....... 155
Peter Walsh, Brad Garraway, Phillip Enderby and Andrew Swanson
Coal Beneficiation: Initiatives Taken by Mahanadi Coalfields Limited (a Subsidiary of Coal India Limited) ........................................... 163
P.K. Mishra, O.P. Mishra and K. Kusuma Kumari

Dense Medium Baths and Drum Separators a Re-evaluation of Their Role in Modern Coal Preparation Plants ..................... 169
David Woodruff

Development Trend of China’s Coal Preparation Industry in Critical Process and Equipment ........................................... 175
Li Minghui, Li Zhiyong, Xu Sheng and Yao Kaixuan

Part III Use of Quality Control, Automation and Computer Technologies in Coal Processing

Models and Control Algorithms of Coal Washing Processes .............. 183

Analytical Representation of Washability Curves with Application in the Simulation of Gravity Concentration Methods .............. 191
Ivan Korolev and Vladimir I. Udovitskiy

Elemental Management System (ElMan) Based on TNC + NIS Technology for on-Line Coal Analysis and Process Control .............. 197
Tyurnikov Boris and Denisov Sergey

Managing Efficiency from a Coal Mine/Preparation Plant Complex ... 205
Michael Evans and Zavalishin Dmitry

Probing the Preparation of Low-Rank Lignite and Non-Caking Coal .......................................................... 223
Zhen Zhang

The Economic Impact Analysis of Coal Quality Management in China .......................................................... 229
Xie Wenbo

Optimal Utilization of Dense Medium Cyclones ............................ 235
E. Bekker

The Importance of Coal Particle Characterization in Setting up a Dem Model for the Flow of Fine Coal Through a Hopper .............. 243
N. Naudé

Simulation of washability and liberation information from photographs .......................................................... 249
Online Washability: Comparison of Dual Parameter and Triple Parameter Analysis ........................................ 255
Jan V.P. Bachmann, Helge Wurst, Michael Cipold and Claus Bachmann

Real-world model based validation of blending bed simulation techniques .................................................. 261
Michael P. Cipold, Pradyumn Kumar Shukla, Christian Autenrieth, Marvin Baral and Lukas Lihotzki

Rapid Coal Analysis with the Online X-ray Elemental Analyzer OXEA® .................................................. 267
Albert Klein, Sven Reuter and Andy Zein

Technological Management in Coal Preparation on the Basis of Information Technologies ......................... 273
P.I. Pilov

System Optimal Control of the Ball mill for the Preparation of the Pulverized Coal Mixture for Forced Draft ........ 279
E.V. Tishchenko, A.V. Sadovoy, N.T. Tishchenko and B.D. Zhigaylo

Radiometric Control Systems for Refuse Discharge in a Jig .......... 285
Stanisław Cierpisz, Marek Kryca and Waldemar Sobierański

Optical analysis of the coal on belt distribution and its use in qualitative and quantitative measurements ............ 291
Marek Kryca, Piotr Wojtas and Artur Kozłowski

Optimisation and Control of Dense Medium Cyclone Circuits .......... 297
M. O’Brien, B. Firth, P. Holtham, S. Hu, N. Scott and A. Burger

Handling Data in Coal Quality Monitoring ......................... 303
Gary Wain, Kevin Corcoran, Chris Knight and Neil Jenkinson

Part IV Analysis, Processing and Preparation of Coal Slimes and By-Products of Coal Preparation, Coal-Mining and Combustion

Technogenic Coal Deposits: Actual Status and Processing Prospects ....................................................... 311
J.B. Rubinstein and B.I. Linev

Physical-chemical grounds of producing valuable trace elements concentrates and preventing unfavorable toxic trace elements actions on the environment while coal processing ............ 317
M. Ya. Shpirt and S.A. Epshtein

Zeolite Synthesis as Potential Application of Coal Fly Ash .......... 321
O.B. Kotova, D.A. Shushkov, E.L. Kotova, Yu. S. Simakova and E.V. Popova
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal Utilization in Thermal Power Plants. Influence of Coal Quality</td>
<td>327</td>
</tr>
<tr>
<td>on Technical-economical and Ecological Indices</td>
<td></td>
</tr>
<tr>
<td>B.F. Reutov and G.A. Ryabov</td>
<td></td>
</tr>
<tr>
<td>Technology of Fly Ash Recycling at Coal-Fired Power Plants</td>
<td>333</td>
</tr>
<tr>
<td>V.A. Arsentyev, S.V. Dmitriev, A.O. Mezenin and Y.L. Kotova</td>
<td></td>
</tr>
<tr>
<td>The Development Of A Technological Complex For Utilization Of Fine</td>
<td>339</td>
</tr>
<tr>
<td>Waste Coal PP “Tugnuyskaya”</td>
<td></td>
</tr>
<tr>
<td>V.I. Murko, V.I. Karpenok, V.T. Fedyaev and S.A. Silyutin</td>
<td></td>
</tr>
<tr>
<td>The Usage Of Boilers With A Vortex Furnace For Burning Enrichment</td>
<td>345</td>
</tr>
<tr>
<td>Products And Deballasting Coal</td>
<td></td>
</tr>
<tr>
<td>V.I. Murko, E.M. Puzyryov, V.I. Karpenok, V.I. Fedyaev and M. P.</td>
<td></td>
</tr>
<tr>
<td>Baranova</td>
<td></td>
</tr>
<tr>
<td>Complex processing of ash and slag wastes from coal-fired CHP plants</td>
<td>351</td>
</tr>
<tr>
<td>Sergey A. Prokopev, Valentin A. Chanturiya, Mikhail L. Bolotin,</td>
<td></td>
</tr>
<tr>
<td>Maria Ye. Shulgina and Yevgeny S. Prokopev</td>
<td></td>
</tr>
<tr>
<td>Implementation of Fine Screening Technology in Fine Coal Tailing</td>
<td>357</td>
</tr>
<tr>
<td>Circuits</td>
<td></td>
</tr>
<tr>
<td>Amit Jain and Baojie Zhang</td>
<td></td>
</tr>
<tr>
<td>Problem Analysis and Optimization Test for Separation Process of</td>
<td>365</td>
</tr>
<tr>
<td>Coal Slime Classifying Flotation</td>
<td></td>
</tr>
<tr>
<td>Zhou wei, Zhu Jinbo and Min Fanfei</td>
<td></td>
</tr>
<tr>
<td>The Progress and Review of Fine Coal Pulp-mixing Technology</td>
<td>371</td>
</tr>
<tr>
<td>Sun Ya-wei, Zhou An-ning and Li Zhen</td>
<td></td>
</tr>
<tr>
<td>Three-Product Teetered Bed Separator——A New Design for Coal Slime</td>
<td>377</td>
</tr>
<tr>
<td>Separation</td>
<td></td>
</tr>
<tr>
<td>Dongxu Fu</td>
<td></td>
</tr>
<tr>
<td>Technical and economic aspects of granulation of coal</td>
<td>383</td>
</tr>
<tr>
<td>Lieberwirth Holger and J. Lampke</td>
<td></td>
</tr>
<tr>
<td>Perspectives of Use of Technogenic Raw Materials of the Metallurgical</td>
<td>391</td>
</tr>
<tr>
<td>Enterprises as Weighting Compounds of Mineral Suspensions</td>
<td></td>
</tr>
<tr>
<td>Oliinyk Tatyana Anatolivna, Mulyavko Valery Ivanovich, Sklyar</td>
<td></td>
</tr>
<tr>
<td>Ljudmila Vasilivna, Yehurnov Alexander Ivanovich and Oliinyk Maksim</td>
<td></td>
</tr>
<tr>
<td>Olegovitch</td>
<td></td>
</tr>
<tr>
<td>Prospects for Raising the Calorific Value of Composite Water-Coal</td>
<td>397</td>
</tr>
<tr>
<td>Fuel</td>
<td></td>
</tr>
<tr>
<td>A.I. Yehurnov, A.S. Makarov, D.P. Savitskiy and A.Y. Lobanov</td>
<td></td>
</tr>
</tbody>
</table>
A Study of the Beneficiation of Coal Slurry Deposits to Obtain Quality Properties Which Would Make Them Usable Commercial Energy Products ............................... 403
Aleksander Lutyński, Wiesław S. Blaschke, Jan Szpyrka and Ireneusz Baic

Methods of Increasing the Calorific Value of Fine Coal Waste ........... 409
Jan J. Hycnar, Piotr Pasiowiec and Barbara Tora

Ecological and Economic Aspects of the Management of Mining Waste in TAURON Mining S.A. ..................... 415
Andrzej Fraś, Rafał Przstaś and Barbara Tora

The Impact of Sampling Errors on the Accuracy of Mass Balance in the Coal Enrichment Process ................................. 421
Kaletko Tomasz, Budzyń Stanisław, Olkuski Tadeusz, Tora Barbara, Szurlej Adam and Gradowski Włodzimierz

Ash melting behaviour with respect to VM content of coal ............ 427
Mehmet Bilen and Sait Kizgut

Petrographic properties with respect to VM content of coal ............ 433
Sait Kizgut and Mehmet Bilen

Facing the Challenges of Ultrafine Coal Recovery .................. 439
D.G. Osborne and K.J. Walton

Online Slurry Particle Density Meter ............................. 445
Noel Lambert, Nicholas Cox and Rod Nicholson

Coal Hydrophobicity and the settling behaviour of coal fines tailings ................................................................. 451
K.M.P. Singh, G. Udayabhanu and T. Gouricharan

Assessment of quarry of reopened mine Čáry based on the mining right of the Slovak Republic and European Union .......................... 457
Matej Puzder and Michaela Koščová

Evaluation and risk estimation by business with the earth’s resources ................................................................. 463
Michal Cehlár

Part V Coal Deep Processing Technologies

Efficiency of Low-grade Coal Processing During Metal Selective Extraction ................................................................. 471
V. Yu. Bazhin and A.A. Pyaterneva
Technological researches of coal mining waste with its processing and utilization to build-up production of constructional concrete in the north .......................................................... 477
V.N. Zemlyanskiy, I.V. Kurta and A.V. Pasynkov

New Approaches for Coal Oxidation Propensity Estimation .......... 483
S.A. Epshtein, E.L. Kossovich, N.N. Dobryakova and L.A. Obvintseva

Potentially valuable microelements in coal balance reserves of JSC SUEK mining units ......................................................... 489
Vladimir Rashevsky, Mikhail Shpirt, Vladimir Artemiev and Sergey Silyutin

Perspectives of Complex Development of Coal Deposits ............ 493
Y.F. Patrakov, B.A. Anfyorov, L.V. Kuznetsova, V.I. Klishin and S.M. Nikitenko

Development of Technology for Producing Compound Coal Binder . 499
E.N. Marakushina, V.K. Frizorger and E.I. Andreykov

Complex Technology of Underground Coal Gasification and Coal-Based Methane Recovery Using Geodynamic Zoning ....... 505
Shabarov Arkady Nikolaevich, Tsirel Sergey Vadimovich and Goncharov Evgeniy Vladimirovich

The technology of the oil shale processing to obtain products and semi-products for the chemical and metallurgical industries .... 513
Kondrasheva Natalia Konstantinovna, Saltykova Svetlana Nikolaevna and Nazarenko Maxim Yurievich

Progress of Steam Coal Clean and Efficient Jigging Technology in China ................................................................. 519
Xiaoyu Yu, Haibo Yu and Chunhui Yu

The Golden Decade of the Rapid Development of China’s Coal Preparation Equipment ................................. 525
Pan Yongtai, Lang Jun, Liu Wenchang and Gong Qinggang

Preparation of High-Strength Gasified Coke Used for DRI from Low Rank Coal ......................................................... 531
Xingxing Qiao, Yongfa Zhang, Ying Wang, Yuqiong Zhao, Yaling Sun, Yue Dong, Jiangning Jia and Xiuli Zhao

Efficient & Rational Utilization of Low-Rank Coal Resource by Using Dadi New Type Coal Deep Processing Technology .... 537
Xiangsheng Gong and Shaolei Zhou
Novel additives obtained from low grade biomasses for coke-making ........................................ 543
Xianqing Zhu, Jin Ge, Shan Tong, Yaxin Gao, Chao Wu, Chaorui Chang,
Xiaoyong Zhang, Xian Li and Hong Yao

Study of Lignite Upgrading by Using a Pulsing Air Riser .......... 549
Haifeng Wang, Yaqun He, Yuemin Zhao, Hao Hou, Xie Weining
and Wang Shuai

Low Relative Density Processing of Fine Coal ................. 555
GJ de Korte

Coal Underground Liquefaction as Alternative to Natural Oil
Production ................................................... 561
Chuluun Enkhbold, Alexander Brodt and Enkhbold Uyanga

Diversification of Jsc “Shubarkol Komir” Production With Obtaining
Products of Coal Deep Processing ................................ 567
V.S. Korshenko, S.P. Kim, S.V. Nechipurenko, S.A. Yefremov
and M.K. Nauryzbayev

Coal Gasification and Gas Obtaining for Synthesis of Motor Fuels . 573
Bolat Toleukhanuly Yermagambet, Nuraly Sultanovich Becturganov,
Marat Askenovich Nabiye, Nurken Uteovich Nurgaliev
and Zhanar Muratbekovna Kassenova

Production of gasoline from coal based on the stf process ...... 579
F. Baitalow, R. Stahlschmidt, P. Seifert, R. Pardemann, B. Meyer
and J. Engelmann

Environmentally friendly energy production technology based
on water-coal fuel ............................................. 587
Zygmunt Kowalski, Joanna Kulczycka, Lelek Lukasz, Anita Staroń
and Marcin Banach

Study of the Possible Use of Producer Gas of Coal
Gasification as Fuel ....................................... 593
O.A. Dubovikov, V.N. Brichkin and D.A. Loginov

Part VI Environmental Protection

To the question of complex use of ashes and slag waste CHP plant . 603
A.N. Shabarov, T.N. Aleksandrova and N.V. Nikolaeva

Abandoned Coal Mines Influence on Atmosphere, Environmental
Monitoring of Coal Mining and Processing Territories
and Preventive Measures Resources Optimizing ............... 609
Nikolai M. Kachurin, Sergey A. Vorobei and Pavel V. Vasilev
New Progress of Coal Preparation Technology in China.

Deng Xiaoyang

Study on Multi-model roof safety warning based on decision fusion

Hao Qinxia, Zhang Jinsuo and Jin Tiantian

Experience of Warehousing of Watery and Jellied Waste of Coal Preparation

G. Reznichenko, A. Polulyakh, A. Korchevskyi and I. Eremeev

Mercury reduction in hard coal cleaning processes in Poland—the technology and the environmental impacts

Ireneusz Pyka, Krzysztof Wierzchowski and Barbara Bialecka

Modelling of coking coal preparation taking into account mercury content variability

Krzysztof Kurus and Barbara Bialaacka

Technological and ecological aspects of briquettes production on the basis of coal wastes in Upper-Silesian Coal Basin.

Karolina Jadzserko, Krzysztof Kurus and Barbara Bialaacka

Selection of Parameters of the Support Vector Machine Method to the Problem of Subsidence Modelling Due to Drainage

Wojciech T. Witkowski and Ryszard Hejmanowski

Desulfurization of High Rank Coal (TKI-Husamlar, Mugla, Turkey) using Humic Acid

Oktay Bayat, Zehra Altincelik and Seda Demirci

Removal of Sulphur from Sorgun Yozgat Lignite Coal with HNO_3 Leaching

Ercument Bilger, Cemaliye Selek and Seda Demirci

Alternative storage of ashes to reduce the impacts to the environment

Daniel Slrosar and Matej Puzder

Novel environmental management application for lignite

I. Gombkotó, T. Madarasz, P. Szucs, J. Lakatos and I. székely

Part VII Dewatering, Drying and Briquetting of Coal

Determination of Rational Parameters of Brown Coal Briquetting

A.V. Rasskazova and T.N. Alexandrova

The analysis of process flowsheets and selection of equipment for coal fines dewatering

Vadim Novak
Innovative Drying Technology “Chronos”. Deep Non-Thermal Dewatering of Coal And Mineral Fines .......................... 695
Kirill M. Kirillov, Elena N. Chernyshova and Vadim A. Kozlov

Production of fuel briquettes from carbon containing materials ........ 701
Bazhin Vladimir Yuryevich and Kuskov Vadim Borisovich

Parametric Optimization of Coal Concentrate Thermal Drying (in case of Elegest Mining and Processing Complex .......... 707
Churin Andrei Sergeyevich

The Usage of flocculants for the Processes of Thickening and Dewatering of thin coal sludges .......................... 713
V.S. Frolov, L.N. Merkusheva, D.V. Frolov and A.V. Sidorov

Granulating of coal fines using peat ......................... 719
Mikhailov Aleksandr

Development & Application of High Efficiency Thickener Without Moving Parts ........................................ 727
Shuyan Zhao, Jimmy Yu, Xuewu Xu, Xiao Song, Liqin Ren and Chaodang Wu

Gas heat carrier pyrolysis of low rank coal and associated heat transfer characteristics .......................... 735
Ying Wang, Yongfa Zhang, Xingxing Qiao, Yali Fu, Guoqiang Li, Xianglan Li and Mo Zhang

Drying of coal fines assisted by ceramic sorbents ................. 741
M.J. van Rensburg, M. Le Roux and Q.P. Campbell

Coal product moisture control using stockpiles .................. 747
Quentin Campbell, Marco le Roux and Chané Espag

Enhancement of High-frequency Screens Performance at Coal Slurry Dewatering .......................... 753
A.D. Polulyakh, I.V. Ereemeev and S.B. Chaplygin

Statistical analysis of sedimentation process of mineral suspension with application of bioflocculation ............... 759
Agnieszka Surowiak and Tomasz Niedoba

New Control Head Design for Hyperbaric Disk Filter Gives Better Performance and Longer Life-Time ............... 765
Rainer Raberger, Tamara Dmitriewa, Ernst Frohnwieser and Gernot Krammer
Part VIII  Gravity Concentration Methods

Experimental Research on Fine Coal Desulfurization by the Efficient Centrifugal Gravity Separator .......................... 773
Tao Yaojun, Zhu xiangnan and Song ao

Process Features of Panji Coal Preparation Plant. ......................... 779
Yu Yu, Yong-wu Zhu, Hong-jun Yuan, Da-wei Wu, Yi-dong Yu and Xiang-rui Cheng

Application of 3-Product Heavy Medium Cyclone in the Retrofit Project at Umlalazi Coal Preparation Plant in South Africa ...................................................... 785
Xue-qi Cui, Xu-wen Gong, Lei Zhang, Jia-jun Ge and Bao-dong Pan

Application of Density Monitoring System Upgrading in SuanCiGou Coal Preparation Plant ................................. 791
Lang Jun

Study on the Model System of Jig with Flexible Air Chamber and Pulsating Current Characteristics .............................. 797
Yunxiang Liu, Jingxuan Xie, Mingming Zhang and Yali Kuang

Amenability of representative Greek lignite deposits to beneficiation. An overview ...................................................... 803
Georgios N. Anastassakis

Technological Evaluation of Work of Coal Preparation Plants ........ 809
Fyodorov Andrey Vladimirovich, Dolbiyev Yuriy Nikolayevich and Polulyakh Aleksandr Danilovich

TB3II-50 Technology of Middling Product Rewashing ................ 815
V.G. Krasnik, Yu N. Filippenko and T.M. Shifigulin

heavy-medium hydrocyclones as a substitute for jigging machines .............................................................. 821
C.A. Antonenko, D.P. Golik and K.F. Kitam

Application of Heavy Medium Cyclone in the SILESIA Coal Preparation Plant ......................................................... 827
Bronisław Gaj, Zbysek Folwarczny and Władysław Borkowski

Intensification the Sedimentation Process of Coal Suspension ...... 833
Włodzimierz P. Kowalski, Marian Banaś, Krzysztof Kołodziejczyk and Tymoteusz Turlej

Performance Evaluation Practices at Dense Medium Separation Circuits ......................................................... 839
E. Caner Orhan, Metin Can, Zeki Olgun and Ayşe Özer
In-Plant Testing of Teetered Bed Separator in Omerler Washing Plant ......................................................... 849
Levent Ergun, Ataallah Bahrami, Mustafa Ziypak and Ayşe Özer

Commercial Coal Preparation Plants Capability for the Removal of Trace Elements .................................................. 855
Gülhan Özbayoğlu

The Development of a new Low Cut Point Spiral for Fine Coal Processing .......................................................... 861
M.K. Palmer

Circuits Incorporating New Low Cut Point Spirals ................... 867
B. Narbutas, W. Mackinnon and A. Swanson

Reviving Antiquated BATA® Jigs in India through Technological Upgrades .......................................................... 873
Gurudas Mustafi and Monomit Nandy

Effect of some operating variables on the performance of a 100 mm Heavy Medium Cyclone treating high ash Indian Coking Coal ................................................................. 879
Gopal Shankar Jha, K.M.K. Sinha and T. Gouri Charan

Part IX Crushing, Grinding, Screening and Sizing Specification

Mechanized Crushing & Screening Plant ........................................ 887
A.Y. Ermakov and V.V. Senkus

Technology of electromagnetic dynamic crushing and milling ........ 891
Sergey Silyutin and Vladimir Artemiev

Activation Grinding of Coal in Production of Low-Ash High-Purity Concentrates .................................................. 895

Prospects of electric pulse technology for production coal-water fuel (CWF) and extracted from coal deposits of rare elements ......................................................... 903
Aleksandr S. Potokin

Toothed screw crushers in the processes of coal beneficiation .......... 907
A.I. Stepanenko

Application of flip flow screen in Sihe Coal Preparation Plant ....... 913
Guo Qingliang and Gong Gu

Research on difficult-to-separate coal grinding-dissociation and flotation process ............................................. 919
Liu Lijun, Yu Wei, Zhou Anning and Li Zhen
Investigation of Energy Consumed Characterization of Mixture Grinding in the Ball-and-Race Mill. .................................. 925
Yaqun He, Weining Xie, Yong Yang, Hong Li, Shuai Wang and Hua Wei

Advanced vibration technology innovations for coal screening ........... 931
Marcus Wirtz

Improved screening of coal and other difficult to screen bulk materials by means of LIWELL® screens ........................................ 935
Stockhowe Andree and Panfilov Pavel

A new approach for processing and agglomeration of low-rank coals for material usage ........................................ 941
Franz Fehse, Hans-Werner Schröder, Jens-Uwe Repke, Mathias Scheller, Matthias Spöttle and Ronald Kim

Hydraulic Screening as Method of Rom Coal Machine Grades Preparation ................................................................. 947
Polulyakh Danil Alexandrovitch, Polulyakh Alexander Danilovitch, Pererva Andrey Yurjevitch and Shawarskiy Yaroslav Teodozievitch

Empirical Relationships of HGI in terms of proximate analysis of coal ................................................................. 953
Serdar Yılmaz and Mehmet Bilen

Sub 38 μm Wet Sizing with Sieves ............................................. 959
Noel Lambert, Nicholas Cox and Andrey Coffey

Sulcis Coal Water Jet Assisted Comminution .................................... 965
Maria Caterina Tilocca, Marco Surracco, Enrico Maggio and Paolo Deiana

Optimisation of operating costs due to the implementation of innovative technologies in coal preparation ................................. 971
Alfred Kalcher

Part X Flotation

Improvement of the Efficiency of Fine Coal Slimes Flotation ............. 979
Y.B. Rubinstein, B.I. Linev and E.K. Samoylova

Efficient selection of flocculants-the key to success ........................ 985
A.M. Bulaeva

Economic Benefits of a Deslime Flotation Circuit Using StackCell Technology at Patriot’s Kanawha Eagle Coal Preparation Plant ........ 991
Robert DeHart, Peter Bethell, Gerald Luttrell, Jaisen Kohmuench and Michael Mankosa
Overview of Typical Coal Flotation Flowsheets in China’s Coal Preparation Plants ........................................ 997
Guangyuan Xie, Chao Ni, Jie Sha and Ling Wu

Coal flotation improvement through hydrophobic flocculation induced by polyethylene oxide .................................................. 1003
Yaoli Peng, Long Liang and Wencheng Xia

A classification device capable of being integrated to flotation columns and its classification performance .................. 1009
Yang Hong-li, Fan Min-qiang, Dong Lian-ping and Liu Ai-rong

Latest Development in the Study of the XJM-S Flotation Machine . . . 1015
Cheng Hongzhi, Liu Chunyan and Shi Huan

The Magnification Principles of the FJCA Series Coal Jet Flotation Cells .................................................. 1021
Wu Da-wei, Yan Rui-min, Wang Hai-yan and Yu Chao-fu

Flotation of a Waterberg Coal using Release Analysis ................. 1027
Christopher Anderson

High end pneumatic flotation ........................................ 1033
Lutz Markworth and Nikita Chevga

Flotability Sludge From Coal Waste Technogenic Deposits of Ukraine .................................................. 1039
Filippenko Yuri Nikolayevich and Fedosieieva Svetlana Olegovna

Flotation of Polish Hard Coal in Saline Water ....................... 1045
Agnieszka Grabiec, Anna Młynarczykowska and Klaudia Tupek

Vostochnaya Coal Washing Plant Improvements .................... 1053
Dmitry Bojarskiy and Steve Frankland

Three-parametr Phenomenological Coal Flotation Model ........ 1059
Ljudmilla Bokányi

“Forensic engineering science” to aid process control of flotation circuits when processing difficult-to-float coal blends. .......... 1065
M.E. Holuszko, L. Gutierrez and J. Engwayu

Part XI Dry Coal Separation

Perspectives of Reduced Water Consumption in Coal Cleaning . . 1075
V.A. Arsentyev, L.A. Vaisberg, I.D. Ustinov and A.M. Gerasimov

Dry destoning of coal based on XRT-separation method .......... 1083
I.V. Alushkin, V.B. Schipchin, I.G. Korneev and T.I. Eushina
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>«SEPAIR» pneumatic separation complex for dry coal beneficiation</td>
<td>1089</td>
</tr>
<tr>
<td>Andrei Ivanovich Stepanenko</td>
<td></td>
</tr>
<tr>
<td>Small Coal Dry Cleaning Jig</td>
<td>1095</td>
</tr>
<tr>
<td>Ren Shangjin, Sun He and Chen Jianzhong</td>
<td></td>
</tr>
<tr>
<td>The Progress of the Pulsing Airflow Fluidized Bed for Separating the Fine Coal</td>
<td>1101</td>
</tr>
<tr>
<td>Zhang Yong, Duan Chenlong, Zhao Yuemin, Dong Liang and Cai Luhui</td>
<td></td>
</tr>
<tr>
<td>Fine Coal Beneficiation with the Application of a Pulsing Air Dense Medium Fluidized Bed</td>
<td>1107</td>
</tr>
<tr>
<td>Yuemin Zhao, Liang Dong, Luhui Cai, Houkun Wang, Bo Zhang, Chenlong Duan and Zhenfu Luo</td>
<td></td>
</tr>
<tr>
<td>The Application and Research on Before-Furnace Coal Desulfurization by ZM Dry Separator in Guizhzou Tongzi</td>
<td>1113</td>
</tr>
<tr>
<td>Gongmin Li, Xiaodong Yu and Zhifu Cui</td>
<td></td>
</tr>
<tr>
<td>Dry Cleaning, an Affordable Separation Process for Deshaling Indian High Ash Thermal Coal</td>
<td>1119</td>
</tr>
<tr>
<td>Y.K. Xia, G.M. Li and Z.F. Cui</td>
<td></td>
</tr>
<tr>
<td>Destoning of fine coal in a fluidized bed</td>
<td>1125</td>
</tr>
<tr>
<td>Marcole Roux, Quentin Campbell and Danie Langner</td>
<td></td>
</tr>
<tr>
<td>Dry Allair® Washing Pilot Plant Test Results on Naryn Sukhait's Multi Layer Coal</td>
<td>1131</td>
</tr>
<tr>
<td>Gendeekhuu Davaatseren and Magsar Bazarragchaa</td>
<td></td>
</tr>
<tr>
<td>Application of Vibration Pneumatic Separation</td>
<td>1137</td>
</tr>
<tr>
<td>A. Korchevskiy, O. Nazymko, G. Gordeev, K. Gumenyuk and A. Plastovets</td>
<td></td>
</tr>
<tr>
<td>A Study of The Deshaling of Polish Hard Coal Using An Fgx Unit Type of Air Concentrating Table</td>
<td>1143</td>
</tr>
<tr>
<td>Wiesław S. Blaschke, Józef Szafarczyk, Ireneusz Baic and Wojciech Sobko</td>
<td></td>
</tr>
<tr>
<td>Novel Dry Sorter for Coal Processing and Coal Recovery from Mine Originating Wastes</td>
<td>1149</td>
</tr>
<tr>
<td>Călăs Moszko Joanna, Iwaszenko Sebastian, Bajerski Andrez and Janoszek Tomasz</td>
<td></td>
</tr>
<tr>
<td>Investigation of Dry Coal Beneficiation with Optical Sorter</td>
<td>1155</td>
</tr>
<tr>
<td>Ergin Gulcan, Ozcan Gulsoy, İlkay B. Çelik, Zeki Olgun and Selda Karaoğuz</td>
<td></td>
</tr>
</tbody>
</table>
ArdeeSort—Next Generation Coal Dry Beneficiation Technology ........................................... 1161
G.V. Ramana

Coal Preparation in India: New Business Opportunities & Need for Dry Separation Technology ................................................................. 1167
V.K. Sinha, B.K. Dey and Pradip Kr Baranwal

Dry Coal Preparation of Fine Particles by KAT Process .................................................. 1171
Jambal Davaasuren, Byoung-Gon Kim, Ju-Hyoung Lee, Gendeekhuu Davaatseren and Magsar Bazarragchaa

Part XII  Preparation and Processing of Carbonaceous Ores

Key issues for improving of carbonaceous ore beneficiation processes for the extraction of valuable components ....................................................... 1179
T.N. Aleksandrova and A.N. Shabarov

A Cyclone for a Reason—Dense Medium Cyclone Efficiency .................................... 1185
Kenneth R.G. Tuckey, Ernst Bekker and Faan Bornmann

Production of Shungite Concentrates—Multifunctional Fillers for Elastomers .......................................................... 1193
XVIII International Coal Preparation Congress
28 June—01 July 2016 Saint-Petersburg, Russia
Litvinenko, V. (Ed.)
2016, XXXVIII, 1196 p. 677 illus., 300 illus. in color. In 2 volumes, not available separately. Softcover
ISBN: 978-3-319-40942-9