



Q K 2 2 5 3 3 7 2 ⅠA ISSN 0253-9993
CN 11-2190/TD

煤炭学报

JOURNAL OF CHINA COAL SOCIETY

“卓越科学家”特刊



1

2023

第48卷 第1期
2023年1月出版



ISSN 0253-9993



01>

9 770253 999239

万方数据

中国科学技术协会 主管

中国煤炭学会 主办

交叉·前沿

煤矿透明地质模型动态重构的关键技术与路径思考 袁 亮,张平松(1)

深部软岩巷道围岩扩容与流变特性模拟研究及应用 康红普,伊 康(15)

煤矿无人化智能开采系统理论与技术研发进展 王国法,张 良,李首滨,李 森,冯银辉,孟令宇,
南柄飞,杜 明,付 振,李 然,王 峰,刘 清,王丹丹(34)

煤矿机器人技术新进展及新方向 葛世荣,胡而已,李允旺(54)

采矿理论与工程

采动覆岩与地表下沉关系模型及离层量估算方法
..... 崔希民,高 宇,李培现,李梓豪,张文豪,彭小沾,康新亮(74)

我国综放开采 40 年及展望 王家臣(83)

大倾角层状采动煤岩体重力-倾角效应与岩层控制
..... 伍永平,解盘石,负东风,王红伟,罗生虎,高喜才,郎 丁,胡博胜,闫壮壮,王 同(100)

浅埋近距离煤层开采超前煤柱群冲击失稳机制 冯国瑞,朱卫兵,白锦文,余 丹,谢建林,李 竹(114)

坚硬顶板复合爆破定向造缝技术及工程应用 于 斌,邵 阳,李 勇,匡铁军,张文阳,孟祥斌(126)

基于不平衡力的坚硬顶板破断数值分析 杨 强,王 昀,段宏飞,朱卫兵(139)

煤矿开采嗣后空间矸石注浆充填方法 张吉雄,周 楠,高 峰,闫 浩(150)

基于多源信息表征的深部巷道围岩结构灾变演化机理 靖洪文,赵振龙,吴疆宇(163)

岩块锚固机理的模拟试验研究 王卫军,韩 森,董恩远,彭 刚(177)

冲击地压预测的煤岩变形局部化方法 潘一山,宋义敏,朱晨利,任 何,许海亮(185)

循环载荷对岩石节理宏观细观剪切特性影响的模拟研究
..... 蒋宇静,张孙豪,栾恒杰,陈连军,张广超,王长盛(199)

安全科学与工程

基于煤中甲烷赋存和运移特性的新孔隙分类方法 程远平,胡 彪(212)

真三轴路径下含瓦斯复合煤岩体渗流及力学破坏特性 王 凯,郭阳阳,王 刚,杜 锋(226)

巷道结构对突出流体冲击特性的影响性试验研究
..... 许 江,程 亮,彭守建,周 斌,焦 峰,杨海林,魏仁忠(238)

磨料质量分数对预混合磨料水射流破岩效果的影响

..... 魏建平,王梦园,杨 恒,张铁岗,都 阳,刘 勇(251)

高海拔隧道爆破后粉尘污染动力学模型及影响因素

..... 蒋仲安,曾发镔,冯 雪,张国梁,杨 斌,王亚朋(263)

湿式弦栅水膜除尘试验研究及效率优化 王海桥,吴志荣,陈世强,王鹏飞,黄敏华(279)

煤与煤系气地质与勘查

面向项目风险控制的煤炭地下气化地质条件分析 秦 勇,易同生,汪凌霞,金 军,周 泽,孔维敏(290)

沁水盆地煤储层地温场条件及其低地温异常区形成机理 孟召平,禹艺娜,李国富,田永东,王宇红(307)

深部低煤阶煤层高值化学品与天然气共采技术构想

..... 梁运培,王庆慧,朱拴成,陈 强,胡千庭,皇凡生(317)

煤层气井地联合抽采全过程低负碳减排关键技术研究进展 苏现波,赵伟仲,王 乾,于世耀,

汪露飞,宋金星,王小明,夏大平,伏海蛟,郭红玉,孙长彦,郭红光,鲍 园,何 环,黄 津(335)

黔西与湖南寒婆坳地区煤制石墨烯结构的演化特征

..... 唐跃刚,车启立,李瑞青,马鹏亮,罗 鹏,琚敏敏,徐晓婷(357)

矿山环境保护

东部煤粮复合区采煤沉陷地边采边复时机 胡振琪,李根生,袁冬竹(373)

中部矿粮复合区采煤沉陷及耕地损毁研究现状与展望

..... 郭文兵,赵高博,白二虎,马 超,聂小军,陈俊杰,张合兵(388)

基于“空天地”一体化技术的岩层采动损伤监测与应用

..... 李全生,李晓斌,张 凯,曹志国,郭俊廷,阎跃观,张 村,徐祝贺,赵勇强(402)

导水裂隙带发育特征地震识别方法 侯恩科,袁 峰,王双明,谢晓深,吴宝海(414)

煤炭加工与利用

粉煤循环流化床燃烧技术 吕俊复,尚曼霞,柯希玮,周 托,黄 中,张 海,

张 缦,张 扬,吴玉新,岳光溪(430)

小容量超临界二氧化碳燃煤发电系统的一维设计及回热器紧凑性分析

..... 徐进良,田 贺,孙恩慧,常 诚,郭源东,王兆福(438)

氯化钠蒸气对高钠煤煤灰钠捕获性能及其烧结温度的影响

..... 张守玉,徐梓航,黄东东,郎 森,刘思梦,杨济凡,周 义,胡 南,吴玉新(452)

粒度对重介旋流器分选效果影响的量化解析 樊民强,田 蕾,董连平,杨润全,高建川(460)

煤矿机电与智能化

智能化建井理论技术与工程实践 范京道,魏 东,汪青仓,封 华,

刘 渭,刘全辉,黄克军,闫振国,刘家佳,李 川(470)

轴向振动截割下圆盘刀刀与煤岩作用机制及其载荷模型

..... 刘春生,刘延婷,李德根,刘若涵,任春平,袁 昊(484)

多机械臂多钻机协作的煤矿巷道钻锚机器人关键技术

..... 马宏伟,孙思雅,王川伟,毛清华,薛旭升,王 鹏,夏 晶,贾泽林,郭逸风,崔闻达(497)

矿山数字孪生构建方法与演化机理 张 帆,葛世荣(510)

CONTENTS

Key technology and path thinking of dynamic reconstruction of mine transparent geological model
..... YUAN Liang,ZHANG Pingsong(1)

Simulation study on dilatant and rheologic properties of soft rocks surrounding deep roadway and its application
..... KANG Hongpu,YI Kang(15)

Progresses in theory and technological development of unmanned smart mining system
..... WANG Guofa,ZHANG Liang,LI Shoubin,et al(34)

New progress and direction of robot technology in coal mine GE Shirong,HU Eryi,LI Yunwang(54)

Relationships between mining overburden rock and surface subsidence and its application to estimate bed separation
..... CUI Ximin,GAO Yu,LI Peixian,et al(74)

40 years development and prospect of longwall top coal caving in China WANG Jiachen(83)

Gravity-dip effect and strata control in mining of the steeply dipping coal seam
..... WU Yongping,XIE Panshi,YUN Dongfeng,et al(100)

Shocking failure mechanism of advanced coal pillars under the mining influence of shallow-buried closed
distance coal seams FENG Guorui,ZHU Weibing,BAI Jinwen,et al(114)

An innovative technology of directional roof slitting by composite blasting and an engineering application
..... YU Bin,TAI Yang,LI Yong,et al(126)

Numerical analysis on the fracture of hard roof based on unbalanced force
..... YANG Qiang,WANG Yun,DUAN Hongfei,et al(139)

Method of gangue grouting filling in subsequent space of coal mining
..... ZHANG Jixiong,ZHOU Nan,GAO Feng,et al(150)

Disaster evolution mechanism of surrounding rock structure of deep roadway based on multi-source information
representation JING Hongwen,ZHAO Zhenlong,WU Jiangyu(163)

Simulation on anchorage mechanism of rock mass WANG Weijun,HAN Sen,DONG Enyuan,et al(177)

Localization method of coal rock deformation for rock burst prediction
..... PAN Yishan,SONG Yimin,ZHU Chenli,et al(185)

Numerical investigation on the effect of cyclic loading on macro-meso shear characteristics of rock joints
..... JIANG Yujing,ZHANG Sunhao,LUAN Hengjie,et al(199)

A new pore classification method based on the methane occurrence and migration characteristics in coal
..... CHENG Yuanping,HU Biao(212)

Seepage and mechanical failure characteristics of gas-bearing composite coal-rock under true triaxial path
..... WANG Kai,GUO Yangyang,WANG Gang,et al(226)

万方数据

Experimental study on the influence of roadway structure on impact characteristics of outburst fluid
..... XU Jiang, CHENG Liang, PENG Shoujian, et al(238)

Influence of abrasive mass fraction on the effect of premixed abrasive water jets on rock breaking
..... WEI Jianping, WANG Mengyuan, YANG Heng, et al(251)

Dynamic model and influencing factors of dust pollution after blasting in high altitude tunnel
..... JIANG Zhong'an, ZENG Fabin, FENG Xue, et al(263)

Experimental study and efficiency optimization on water film dust removal of wet chord grid
..... WANG Haiqiao, WU Zhirong, CHEN Shiqiang, et al(279)

Analysis of geological conditions for risk control of UCG project
..... QIN Yong, YI Tongsheng, WANG Lingxia, et al(290)

Geothermal field condition of coal reservoir and its genetic mechanism of low geothermal anomaly area in the
Qinshui Basin MENG Zhaoping, YU Yina, LI Guofu, et al(307)

Conception of co-extraction technology of valuable chemicals and natural gas in deep low-rank coal seam
..... LIANG Yunpei, WANG Qinghui, ZHU Shuancheng, et al(317)

Conception of key technologies for low-negative carbon emission reduction in the process of coalbed methane
development from the CBM well, coal mine and goaf SU Xianbo, ZHAO Weizhong, WANG Qian, et al(335)

Evolutionary characteristics of coal based graphene structure in West Guizhou and Hanpo'ao, Hunan
..... TANG Yuegang, CHE Qili, LI Ruiqing, et al(357)

Timing of concurrent mining and reclamation in coal-grain overlapping areas with mining-induced subsidence,
Eastern China HU Zhenqi, LI Gensheng, YUAN Dongzhu(373)

Research status and prospect on cultivated land damage at surface subsidence basin due to longwall mining in
the central coal grain compound area GUO Wenbing, ZHAO Gaobo, BAI Erhu, et al(388)

Rock strata mining damage monitoring and application based on “space-sky-surface” integrated technology
..... LI Quansheng, LI Xiaobin, ZHANG Kai, et al(402)

Seismic identification and development characteristics of water conducting fissure zone in goaf
..... HOU Enke, YUAN Feng, WANG Shuangming, et al(414)

Powdered coal circulating fluidized bed combustion technology ... LÜ Junfu, SHANG Manxia, KE Xiwei, et al(430)

One dimensional design of small capacity supercritical CO₂ coal fired power generation system and analysis of
regenerator compactness XU Jinliang, TIAN He, SUN Enhui, et al(438)

Effect of NaCl vapor concentration on sodium-capturing performance and sintering temperature of coal ash
..... ZHANG Shouyu, XU Zihang, HUANG Dongdong, et al(452)

Quantitative analysis of particle size impact on separation effect of heavy medium cyclone
..... FAN Minqiang, TIAN Lei, DONG Lianping, et al(460)

Theory and practice of intelligent coal mine shaft excavation
..... FAN Jingdao, WEI Dong, WANG Qingcang, et al(470)

Interaction mechanism and load model between disc blade and coal rock under axial vibration cutting
..... LIU Chunsheng, LIU Yanting, LI Degen, et al(484)

Key technology of drilling anchor robot with multi-manipulator and multi-rig cooperation in the coal mine roadway
..... MA Hongwei, SUN Siya, WANG Chuanwei, et al(497)

Construction method and evolution mechanism of mine digital twins ZHANG Fan, GE Shirong(510)

万方数据



煤炭学报



传媒



中国煤炭行业
知识服务平台

第五届中国出版政府奖

中国“百强报刊”

百种中国杰出学术期刊

中国精品科技期刊

中国最具国际影响力学术期刊

中国科技期刊卓越行动计划入选期刊

Ei Compendex、Scopus、CSCD 收录期刊

中文核心期刊

中国科技核心期刊



煤炭学报

Journal of China Coal Society

MEITAN XUEBAO

月刊 (1964 年创刊)

第 48 卷第 1 期(总第 340 期) 2023 年 1 月

Monthly (Started in 1964)

Vol. 48 No. 1(Series No. 340) Jan. 2023

主 管 中国科学技术协会
主 办 中国煤炭学会
出 版 《煤炭学报》编辑部
(北京和平里, 邮政编码: 100013)

主 编 刘 峰
副 主 编 毕永华
执 行 主 编 毕永华
主 任 张晓宁
责 任 编 辑 韩晋平 王晓珍 张晓宁
郭晓炜 钱小静

数 字 编 辑 郭晓炜 宫在芹 赵泽维
印 刷 北京联合互通彩色印刷有限公司

国 内 发 行 《煤炭学报》编辑部
国 外 发 行 中国国际图书贸易集团有限公司
(北京 399 信箱)

国 外 代 号 M 190

Responsible Institution China Association for Science and Technology

Sponsor China Coal Society

Publisher Editorial Office of Journal of China Coal Society
(Hepingli, Beijing, China, 100013)

Editor in Chief LIU Feng

Associate Chief Editor BI Yonghua

Exec.Chief Editor BI Yonghua

Director ZHANG Xiaoning

Responsible Editor HAN Jinping WANG Xiaozhen
ZHANG Xiaoning GUO Xiaowei
QIAN Xiaojing

Digital Editor GUO Xiaowei GONG Zaiqin ZHAO Zewei

Domestic Distributor Editorial Office of Journal of China Coal Society

Overseas Distributor China International Book Trading Corporation
(P. O. Box 399, Beijing, China)

Code Number M 190

中国标准连续出版物号: ISSN 0253-9993
CN 11-2190/TD

国内定价: 78.00 元

万方数据

Tel: (010)87986411

E-mail: mtxb@vip.163.com

http://www.mtxb.com.cn