

江西省优秀科技期刊 万方数据——数字化期刊群全文入网期刊
中国期刊全文数据库收录期刊 中国煤炭数字图书馆全文收录核心期刊
中国学术期刊(光盘版)全文收录期刊 中国煤炭技术与设备网入网期刊
中国核心期刊(遴选)数据库收录期刊 煤炭科技论文数据库收录期刊
中国学术期刊综合评价数据库统计源期刊 中文科技期刊数据库收录期刊

ISSN 1006-2572
CN 36-1121/TD

江西煤炭科技

JIANGXI COAL SCIENCE & TECHNOLOGY

2

2023

第2期 2023年5月出版

ISSN 1006-2572



江西省煤炭学会
江西省能源集团有限公司
江西省煤炭经济研究会
江西省煤炭工业科学研究所

主办

江西煤炭科技
总第一百七十八期

2023年5月 第二期

江西煤炭科技

JIANGXI MEITAN KEJI

(季刊)

-----1979年创刊-----

2023年第2期(总第178期)

2023年5月出版

主管单位 江西煤矿安全监察局

主办单位 江西省煤炭学会

江西省能源集团有限公司

江西省煤炭经济研究会

江西省煤炭工业科学研究所

编辑出版 《江西煤炭科技》编辑部

通讯地址 江西省南昌市北京东路23号

(330029)

主 编 吴银富

责任编辑 郭 丹 彭呈喜

电 话 0791-88326754

电子信箱 jxmtkj@163.com

发行范围 公开发行

订 购 处 《江西煤炭科技》编辑部

国内统一连续出版物号 CN 36-1121/TD

国际标准连续出版物号 ISSN 1006-2572

广告经营许可证号 3600004000039

印 刷 江西晨光彩印包装有限责任公司

定 价 25.00元

本刊关于作者稿件版权转让的声明

本刊已被中国核心期刊(遴选)数据库、中国期刊全文数据库、中国学术期刊综合评价数据库、中文科技期刊数据库、煤炭科技论文数据库等收录。

本刊对发表的文章同时持有与网络数据库合作以数字化方式复制、编绘、发行、信息网络传播的权利,文章著作权使用报酬及稿酬一次付清。稿件一经采用,作者向本刊提交文章发表的行为即视为同意本刊上述声明。

作者如不同意上述约定,请在来稿中声明,编辑部将做适当处理。

目 次

●采矿技术

深井大倾角煤层巷道围岩控制技术探讨

..... 高峰,马富强,刘元超,等(1)

厚煤层综放开采合理割煤高度的研究 郝贵林(4)

高应力区巷道松动爆破卸压支护技术应用 杜慧玉(7)

西铭矿坚硬顶板水力压裂弱化技术应用 梁铁光(10)

沿空留巷技术在忻峪煤业薄煤层工作面的应用 ... 杨秀庭(13)

注水压裂技术在综采面的应用效果分析 张 瑞(17)

回采工作面顺槽主动式超前支护技术应用

..... 马富强,张信承,高峰,等(20)

工作面运用闭墙与充填支护过横川技术实践 王 敏(24)

冲击倾向性掘进巷道钻孔卸压技术应用分析

..... 杨 凯,张 峰(27)

深埋综放工作面过褶曲构造带方案优化选择 王 伟(30)

长城三矿沿空留巷顶板支护技术应用分析

..... 张信承,刘元超,马富强,等(33)

潞宁煤矿大采高工作面冲击地压显现机理及防治 ... 王 亮(36)

天安煤矿5[#]煤层回采巷道支护设计与应用 刘龙飞(40)

大断面泥岩顶底板回采巷道支护技术优化 毕海鹏(43)

申南凹矿破碎顶板“锚喷注”一体化围岩加固技术 ... 刘毅峰(47)

锦程煤矿21010运输顺槽支护设计及应用 陈宏宇(50)

大跨度切眼分层围岩体协同支护技术研究 陈存粮(53)

深部倾斜厚煤层区段煤柱尺寸设计优化 苏岳嵘(57)

采空区管理新技术在4603工作面的应用 黄志杰(61)

综采工作面支架高效快速回撤方法优化及应用 ... 樊胜杰(65)

综采支架初撑力自动加压控制装置设计与应用 ... 李 晨(69)

窄煤柱分区非对称支护工艺在塔山煤矿的应用 ... 杜晓欢(72)

矿井煤仓大范围垮塌快速修复工程技术实践 杨冬冬(75)

马兰矿采面轨道巷过陷落柱锚注支护技术试验 ... 高志龙(78)

申南凹煤矿沿空掘巷区段煤柱宽度留设探讨 蔡晓军(80)

8[#]高地应力区煤层钻孔施工工艺优化与应用 范 翔(84)

沿空掘巷合理煤柱宽度留设研究及应用 盖 艳(87)

软岩巷道新型钢组件结构承载能力测试分析 王艳生(91)

北翼辅运大巷支护方案优化与应用 刘朝阳(94)

宜兴煤业松软底板超前支护技术优化与应用 张 健(97)

郭庄煤业大断面回采巷道支护设计优化与应用 ... 吴同勋(101)

通合煤业厚煤层梯形巷道锚网索支护优化研究 ... 郑东平(105)

付家焉煤业提高综放工作面采出率的工程实践 ... 宋东欣(108)

浅埋深风氧化带回采巷道锚网索支护技术探讨 ... 宋 飞(112)

深孔爆破技术在晋北煤业采面过断层中的应用 ... 杨 凯(116)

3107面沿空留巷充填体参数优选及效果分析 ... 池津维(120)

●地测防治水技术

五阳煤矿地质特征分析及深部储量预测 王 珊(124)

煤矿防治水工作的现状及探讨 牛亮红(127)

Jiangxi Coal Science & Technology
JIANGXI MEITAN KEJI
(Quarterly)

-----Started in 1979-----

No. 2 2023 (Series No. 178)
May 2023

Responsible Institution

Jiangxi Bureau of Colliery Safety Supervision

Sponsor

Jiangxi Coal Society
Jiangxi Energy Group Limited company
Jiangxi Research Institute of Coal Industry
Jiangxi Research Institute of Coal Industry

Editorial and Publishing Dept.

Editorial Office of Jiangxi Coal Science & Technology

Address

No.23, Beijing east road, nanchang, jiangxi (330029)

Chief Editor Wu Yinfu

Responsible Editor Guo Dan Peng Chengxi

Tel/Fax (0791)88326754

E-mail jxmtkj@163.com

Issuance Scope Public Offering

Order Office Order Office Editorial Office of Jiangxi Coal Science & Technology

Periodical Registration No. CN 36-1121/TD
ISSN 1006-2572

License No. of Advertising 3600004000039

Printed by Jiangxi morning light color printing & prepressing llc

List Price 25.00

徐州市煤矿地质钻孔资料专题数据库的建设
..... 单雨阳, 黄 阳, 钱 静, 等(130)
物探钻探一体化探测技术在云岗矿的应用 贺 伟(133)
青洼矿定向长钻孔疏放采空区积水技术应用
..... 王伟伟, 康马超(137)
南山煤矿致突水源井封堵的实践 白大伟(140)
采煤沉陷区裂缝发育特征及修复措施 高凌峰(143)
方山店坪煤矿水文地质条件分析及防治水措施 ... 胡方坤(146)
大斗沟煤矿充水因素分析及涌水量预测 崔 鑫(149)
6100N回采工作面导水裂隙带的分析 吕云龙(153)

●通风安全技术

永安宏泰煤业煤巷掘进工作面防突措施分析 ... 姬静伟(157)
玉溪矿回采面综合降尘措施效果实践 赵晓林(160)
活性磁化水喷雾技术在N3-13综放面的应用 李 波(163)
霍尔辛赫煤矿综采面雾化立体降尘技术实践 ... 黄汉斌(167)
自燃煤层高位抽采钻孔参数优化与应用 窦志明(170)
综采工作面回风隅角瓦斯综合治理方案及效果 ... 石少华(173)
燕子山煤矿工作面煤层注水降尘工艺应用 周妍希(176)
回坡底煤矿综掘巷道粉尘防治技术应用分析 ... 武东东(179)
亿隆煤业综掘巷道综合降尘技术应用分析 王 毅(182)
伏岩煤业综采工作面粉尘分布特征探究 李永兵(186)

●机电信息化技术

双路电源+UPS电气原理图改进设计与实践 宋新元(189)
深冷处理工艺对铝合金耐腐蚀性能影响研究现状
..... 刘世文, 邓名洋(192)
综采工作面液压支架护帮板收放监测系统研究 ... 李小东(197)
基于视频识别的皮带输送机智能控制系统 张沁锋(200)
煤矿通风机变频调速系统设计与应用研究 韩瑞婷(203)
煤矿用大功率整流电源系统的设计与实现 魏 征(206)
矿山机电提升系统罐笼故障检测方法研究 张宏阳(209)
超超临界机组微油助燃风机节能技术改造 王卓勋(212)
煤矿掘进机截割头结构螺旋角优化设计研究 ... 王 翔(216)
图像识别报警装置在选煤厂的应用 杨 波, 郭四龙(219)
井下泵房自动化排水系统的研发与应用 王南南(221)
TD75型带式输送机托辊远程故障诊断系统研究 ... 滑木兰(224)
综采工作面液压支架智能选型系统设计与应用 ... 王 琳(227)
矿井提升机主轴振动监测故障诊断方法研究 ... 史文龙(230)
矿井供电设备实施状态检修的思考 赵 莉(233)
带式输送机滚筒辐板轮毂受力分析及结构优化 ... 李 逸(236)
采煤机传动装置监测和故障诊断系统设计 刘 斌(239)
液压支架后顶梁静力学分析及结构优化研究 ... 方存志(242)
采煤机牵引机构动力学分析与优化研究 武 涛(245)
煤矿带式输送机自动张紧装置的设计与应用研究
..... 赵 越(248)

●经营管理及其他

矿山救护队伍能力建设提升探索 罗峻强(251)
行为治理在煤矿安全管理中的应用实践 杨 威(254)

Contents

Mining Technology

Study on Roadway Surrounding Rock Control Technology in Deep Shaft with Large inclined-angle Coal Seam	Gao Feng, Ma Fuqiang, Liu Yuanchao, et al(1)
Discussion on Reasonable Coal Cutting Height in Fully-mechanized Caving Mining of Thick Coal Seam ...	Hao Guilin(4)
Application of Roadway Support Technology by Pressure Relief with Loose Blasting in High-stress Zone ...	Du Huiyu(7)
Application of Hydro-fracturing Weakening Technology for Hard Roof in Ximing Colliery	Liang Tieguang(10)
Application of Gob Side Entry Retaining Technology in Working Face with Thin Coal Seam of Xinyu Coal Industry Co.,Ltd	Yang Xiuting(13)
Application Effect Analysis of Water Injection Fracturing Technology at Fully- mechanized Working Face	Zhang Rui(17)
Application of Active Advanced Support for Crossheading at Working Face	Ma Fuqiang, Zhang Xincheng, Gao Feng, et al(20)
Practice on Crossing Traversable Connection with Sealing Wall and Filling Support at Working Face	Wang Min(24)
Application Analysis of Pressure Relief Technology by Drilling in Burst-potential Excavation Roadway	Yang Kai, Zhang Feng(27)
Scheme Optimization of Crossing Folding Tectonic Zone at Deeply-buried Fully-mechanized Caving Face	Wang Wei(30)
Application Analysis of Roof Support Technology in Retaining Roadway along Goaf of Changcheng No. 3 Colliery	Zhang Xincheng, Liu Yuanchao, Ma Fuqiang, et al(33)
Rock Burst Behavior Mechanism and Prevention at large mining-height Working Face in Lu'ning Colliery	Wang Liang(36)
Design and Application of Gateway Support for No. 5 Coal Seam in Tian'an Colliery	Liu Longfei(40)
Support Optimization of Large-section Gateway with Sandstone Roof and Floor in Wangzhuang Colliery	Bi Haipeng(43)
Integrated Surrounding Rock Reinforcement Technology with Bolt- shotcrete and Grouting for Broken Roof in Shennan'ao Colliery	Liu Yifeng(47)
Design and Application of Support for 21010 Conveyor Gateway in Jincheng Colliery	Chen Hongyu(50)
Study on Collaborative Support Technology for Layered Surrounding Rock Mass with Large-span Open-off Cut	Chen Cunliang(53)
Section Coal Pillar Dimension Design Optimization in Deep Inclined Thick Coal Seam	Su Yuerong(57)
Application of Goaf Management Technology at 4603 Working Face	Huang Zhijie(61)
Optimization and Application of Efficient and Rapid Support Withdrawal at Fully-mechanized Mining Face	Fan Shengjie(65)
Design and Application of Pressure Control Device for Setting Force of Hydraulic Support at Fully-mechanized Working Face	Li Chen(69)
Application of Asymmetric Support Technology in Zoning with Narrow Coal Pillar in Tashan Colliery	Du Xiaohuan(72)
Practice on Engineering Technology of Rapid Restoration for Large-range Collapse of Coal Bunker in Mine	Yang Dongdong(75)
Testing of Bolt-grouting Support during Crossing Subsided Column in Track Lane at Working face of Malan Colliery	Gao Zhilong(78)
Discussion on Width Reservation of Coal Pillar in Gob-side Entry Driving in Shennan'ao Colliery	Cai Xiaojun(80)
Optimization and Application of Drilling Construction Technology in Coal Seam in No. 8 High Ground Stress Area.	Fan Xiang(84)
Study and Application of Reasonable Coal Pillar Width Reservation in Driving along Goaf	Gai Yan(87)
Testing Analysis of Bearing Capacity of New-typed Steel Kit Structure in Soft-rock Roadway	Wang Yansheng(91)
Research on Support Optimization of Auxiliary Haulage Roadway in North Wing of Bailian Xusheng Colliery	Liu Chaoyang(94)
Optimization and Application of Advanced Support Technology for Soft Floor in Yixing Coal Industry Co., Ltd	Zhang Jian(97)
Optimization and Application of Support Design for Large-section Mining Roadway in Guozhuang Coal Industry Co	Wu Tongxun(101)
Study on Optimization of Bolt-mesh-cable Support for Right-angle Trapezoidal Roadway in Tonghe Coal Industry Co	Zheng Dongping(105)
Engineering Practice on Improving Recovery Rate at Fully-mechanized Caving Face in Fujiayan Coal Industry Co	Song Dongxin(108)
Discussion on Bolt-mesh-cable Support Technology for Gateway in Shallowly-buried Wind Oxidation Zone	Song Fei(112)
Application of Deep-hole Blasting Technology during Crossing Fault at Working Face in Jinbei Coal Industry Co., Ltd	Yang Kai(116)
Parameters Optimization and Effect Analysis of of Filling Body in Retaining roadway along goaf at 3107 Working Face	Chi Jinwei(120)

Water Control Technology in Geological Survey

- Analysis of Deep Coal Reserves Prediction Based on Geological Characteristics Wang Shan(124)
Discussion on Present Situation of Water Control in Mine Niu Lianghong(127)
Construction and Significance of Thematic Database of Mine Geological Borehole in Xuzhou City
..... Shan Yuyang, Huang Yang, Qian Jing, et al(130)
Analysis and Application of Integrated Exploration Technology of Geophysical Exploration
and Drilling in Yungang Colliery He Wei(133)
Application Analysis of Directional Drainage Technology for Goaf Water
by Long Distance Drilling in Qingwa Colliery Wang Weiwei, Kang Machao(137)
Practice of Plugging Outburst Water Supply Well in Nanshan Colliery Bai Dawei(140)
Fracture Development Characteristics and Repair Measures in Coal Mining Subsidence Area Gao Lingfeng(143)
Analysis of Hydrogeological Conditions and Water Control Measures in Fangshan Diaping Colliery - - - Hu Fangkun(146)
Water Filling Factor Analysis and Water Inflow Prediction of 3402 Working Face in Dadougou Colliery - - - Cui Xin(149)
Analysis of Water-conducting Fracture Zone in 6100N Mining Face Lv Yunlong(153)

Ventilation Safety Technology

- Analysis of Outburst Prevention Measures in Heading Excavation Working Face
of Yong'an Hongtai Coal Industry Co Ji Jingwei(157)
Practice of Comprehensive Dustfall Measures in Mining Face of Yuxi Colliery Zhao Xiaolin(160)
Application of Active Magnetized Water Spray Technology in N3-13 Coal Mining Working Face Li Bo(163)
Practice on Atomization Solid Dust Technology in Fully Mechanized Mining Face of Holsinghe Colliery
..... Huang Hanbin(167)
Optimization and Application of Drilling Parameters for High Level Drainage
in Spontaneous Combustion Coal Seam Dou Zhiming(170)
Comprehensive Gas Control Scheme and Effect in Return Airway Corner of Fully Mechanized Mining Face
..... Shi Shaohua(173)
Optimized Application of Coal Seam Water Injection and Dustfall Technology in Yanzishan Colliery - - - Zhou Yanxi(176)
Application Analysis of Dust Prevention and Control Technology in Combined Excavation Roadway
of Huipodi Colliery Wu Dongdong(179)
Application Analysis of Combined Dustfall Technology in Fully Mechanized Excavation Face of Yilong Coal Industry
..... Wang Yi(182)
Study on Dust Distribution Characteristics in Fully Mechanized Mining Face of Fuyan Coal Industry ... Li Yongbing(186)

Electromechanical Informatization Technology

- Improved Design and Practice of Electrical Schematic Diagram of Double Power Supply and UPS - - - Song Xinyuan(189)
Research Status of the Influence of Deep Cryogenic Treatment Technology
on Corrosion Resistance of Aluminum Alloy Liu Shiwen, Deng Mingyang(192)
Study on Monitoring System of Hydraulic Support Protection Board Retraction in Fully Mechanized Mining Face
..... Li Xiaodong(197)
Research on Intelligent Control System of Belt Conveyor Based on Video Recognition Zhang Qinfeng(200)
Design and Application Research on Variable Frequency Speed Regulation System for Coal Mine Ventilator
..... Han Ruiting(203)
Design and Realization of High Power Rectifying Power Supply System for Coal Mine Wei Zheng(206)
Study on Cage Fault Detection Method of Mine Electromechanical Hoisting System Zhang Hongyang(209)
Energy Saving Technical Transformation of Micro-oil Combustion Supporting Fan for Ultra Supercritical Unit
..... Wang Zhuoxun(212)
Research on Optimization Design of Helix Angle of Cutting Head Structure of Coal Mine Roadheader
..... Wang Xiang(216)
Application of Image Recognition and Alarm Device in Coal Preparation Plant Yang Bo, Guo Silong(219)
Development and Application of Automatic Drainage System for Subsurface Pump House Wang Nannan(221)
Study on Roller Remote Diagnosis System of TD75 Belt Conveyor Hua Mulan(224)
Design and Application of Intelligent Form Selection System for Hydraulic Support
in Fully Mechanized Coal Face Wang Lin(227)
Study on Fault Diagnosis Methods of Spindle Vibration Monitoring of Hoist Shi Wenlong(230)
Thinking of the Implementation of Condition-based Maintenance of Mine Power Supply Equipment Zhao Li(233)
Stress Analysis and Structural Optimization of Drum Wheel Disk Hub of Belt Conveyor Li Yi(236)
Design and Research on Monitoring and Fault Diagnosis System of Shearer Gearing Liu Bin(239)
Static Analysis and Structural Optimization Research on Rear Roof Beam of Mine Hydraulic Support ... Fang Cunzhi(242)
Dynamic Analysis and Optimization Design of Shearer Haulage Gear Wu Tao(245)
Design and Application Research on Automatic Tension Device for Coal Mine Belt Conveyor Zhao Yue(248)

Operating Management, etc.

- Probe into the Improvement of Capability Construction of Mine Rescue Team Luo Junqiang(251)
Application Practice of Behavior Governance in Coal Mine Safety Management Yang Wei(254)

中国标准连续出版物号：**ISSN 1006-2572**
CN 36-1121/TD
定价：25.00元