

江西省优秀科技期刊  
中国期刊全文数据库收录期刊  
中国学术期刊(光盘版)全文收录期刊  
中国核心期刊(遴选)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

万方数据——数字化期刊群全文入网期刊  
中国煤炭数字图书馆全文收录核心期刊  
中国煤炭技术与设备网入网期刊  
煤炭科技论文数据库收录期刊  
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

2020

ISSN 1006-2572



9 771006 257200

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

万方数据

江西煤炭科技

第二期  
二〇二〇年五月

JIANGXI COAL SCIENCE & TECHNOLOGY NO.2

2020.05

# 江西煤炭科技

(季刊)

-----1979年创刊-----

2020年第2期(总第166期)

2020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 彭呈喜 岑代全

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 CN36-1121/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 15.00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

### ●专题论述

王坡矿3210孤岛工作面矿压分布规律探讨 ..... 郭永军(1)  
不规则孤岛工作面开采可行性研究

..... 徐诚军,熊辉荣,杨建平(4)

突出煤层掘进工作面本煤层预抽瓦斯技术实践 ..... 李肖君(7)

综采工作面风压测定及采空区瓦斯渗漏分析 ..... 廖清发(10)

烟花爆竹企业安全生产实时监控联网系统设计 ... 罗文浩(13)

东峰煤矿3201工作面切顶卸压护巷技术应用 ..... 刘亚洲(17)

石竹山一樟木桥矿区控煤构造及赋煤特征浅析

..... 刘少华,刘溢宣(21)

巷道交叉口围岩应力随角度变化规律分析 ..... 田志宏(24)

大断面拱形巷道综掘掘支作业合理空顶距探讨 ... 安 通(28)

高瓦斯矿井回采工作面瓦斯综合抽采技术实践 ... 杨振新(31)

大断面回采巷道锚网索支护技术优化 ..... 陈晓宁(34)

马脊梁煤矿运输大巷返修支护方法 ..... 王守贵(37)

预应力锚杆在辛置煤矿复合顶板巷道中的应用 ... 王恩龙(40)

段王煤矿综放工作面煤层自燃防治技术探讨 ..... 张刘波(44)

斜沟煤矿工作面运输巷围岩控制技术实践 ..... 田彦斌(46)

浅谈新形势下县域自然资源综合信息化系统建设

..... 张文斌,魏益友(50)

采用GPS控制测量系统圈定西沟煤业保安煤柱 ..... 张晋锋(53)

四台矿复合顶板锚网索支护技术应用 ..... 陈 磊(57)

2-126工作面覆岩移动及超前支承压力分布规律 ... 周宝江(61)

余吾煤矿受采动影响巷道支护方案优化 ..... 徐云飞(65)

回采面导水裂隙带发育高度与富水性探测分析 ... 张小健(69)

孤岛煤柱面回采巷道过断层围岩控制技术 ..... 郭韶鲁(72)

综合探测在回采面隐蔽构造及探放水中的应用

..... 赵东东(75)

“三软”煤层回采巷道掘进技术的实践 ..... 李二鹏(79)

软碎回采巷道围岩承载体系及控制技术探讨 ..... 冯 宁(82)

综放工作面“两带”高度钻探实测分析 ..... 焦 昊(86)

矿井复合顶板应力分析及支护对策 ..... 郭永伟(90)

官地矿采空区及采空区积水分布特征研究 ..... 张 瑜(94)

高硫炼焦煤中硫的嵌布规律及降硫方案研究 ..... 王旺楠(98)

10101综放工作面采空区自燃“三带”分布特征 ... 马龙飞(102)

东坡煤矿914工作面防灭火技术实践 ..... 王利新(105)

亚辰煤业综采放顶煤工作面顶板控制技术探讨 ... 张 雄(107)

# Jiangxi Coal Science & Technology

(Quarterly)

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

No. 2 2020 ( Series No. 166 )

May 2020

## 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 Peng Chengxi Cen Daiquan

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 & pre-pressing llc

List Price 15.00 / One Issue

切顶卸压沿空留巷瓦斯和煤自燃防治技术探讨 ... 罗伟荣(110)  
综放工作面推进缓慢时期防灭火技术实践 ..... 高楠楠(113)  
西铭矿42204综采工作面瓦斯抽采技术应用 ..... 梁文明(116)

### ●问题探讨

综采工作面设备快速回撤工艺探讨 ..... 陈小刚,李 耀(119)  
穿层高压水力冲孔造穴增透消突技术探讨 ..... 赵建栋(121)  
极近距离下位煤层开切眼合理位置探讨 ..... 潘瑞峰(123)  
对注册测绘师执业制度的一些思考 ..... 王 挺,张文斌(127)  
综采工作面采用松动爆破过断层技术探讨 ..... 郝淑荣(129)

### ●技术经验

矿井主要通风机性能检测方法的选择与实践 ..... 宋朝春(133)  
厚煤层一次采全高煤壁失稳原因及控制技术 ..... 陈 宁(137)  
空气源热泵在鑫顺煤业的选型分析与应用  
..... 赵聪慧,冯希宏(140)  
综采工作面过空巷冒顶压架处理技术措施 ..... 薛龙志(144)  
超前精准预注氮在自燃煤层工作面中的应用  
..... 赵文曙,咸英群,刘晓春(146)  
综放面端头及顺槽超前区顶板支护技术与实践  
..... 罗宝红(150)  
压滤机传动机构改造方案 ..... 杨志萍(153)  
破损水文观测孔涌水封堵技术在高河矿的应用  
..... 石 强(155)  
龙泉矿4301工作面钻孔注浆防治水技术 ..... 李高鹏(158)  
马脊梁煤矿井下巷道贯通测量方法分析 ..... 温 阳(162)  
渗漏水综合治理方法在寺河矿主斜井中的应用 ... 宋俊波(165)  
华润煤业205工作面煤壁片帮治理技术 ..... 张 新(167)  
利用矿井钻探数据分析断层的几种方法探析 ..... 常蓝天(171)  
伏岩煤业工作面煤层注水降尘技术应用 ..... 杨向东(175)  
水峪煤业井下排水监控系统的设计及测试研究 ... 宫 强(178)  
基于芦家峪风井联系测量的应用研究 ..... 张会兵(181)  
高应力软岩巷道支护技术实践 ..... 崔小波(184)  
义城煤业3402复采工作面过空巷充填技术应用  
..... 姬海鱼(186)

### ●煤矿安全

浅谈瓦斯抽采与曲江、尚庄两矿的生存与发展 ... 李永铭(190)  
工作面带压开采安全评价及防治水技术实践 ..... 弓远程(193)

# Contents

## Colliery Safety

Study on Law of Rock Pressure at 3210 Island Coal Face in Wangpo Colliery .....	Guo Yongjun(1)
Study on Mining Feasibility at Irregular Island Coal face ... Xu Chengjun,Xiong Huirong,Yang Jianping(4)	
Technical Practice of Pre-draining Gas in Coal Seam of Driving Face at Outburst Coal Seam .....	Li Xiaojun(7)
Analysis of Wind Pressure Measurement at Fully Mechanized Mining face and Gas Leakage in Goaf .....	Liao Qingfa(10)
Design of Safety Production Monitoring and Personnel Positioning Management for Fireworks and Firecrackers Enterprises .....	Luo Wenhao,Li Dongmei,Xu Mingyuan(13)
Application of Roof Cutting roof, Pressure Relief and Roadway Protection Technology in 3201 Working Face of Dongfeng Coal Mine .....	Liu Yazhou(17)
Coal Control Structure and Coal Seam Occurrence Chagecteris in Zhang Mu-qiao Ming area,Shi Zhushan- Shang Gao Conuty,in Yu Shui District,XinYu,Jiang Xi Province .....	Liu Shaohua,Liu Yixuan(21)
Analysis of Law of Surrounding Rock Stress Variation with Angle at Roadway Intersection .....	Tian Zhihong(24)
Discussion on Reasonable Empty Roof Distance of Comprehensive Excavation and Supporting Operation in Large-scale Arched Roadway .....	An Tong(28)
Practice of Comprehensive Gas Drainage Technology in Working Face of High Gas Mine .....	Yang Zhenxin(31)
Optimization of Bolt-mesh-cable Supporting Technology for Large-scale Mining Roadway in Ganhe Colliery .....	Chen Xiaoning(34)
Study on Maintenance Support Strategy of Main Haulage Roadway in Majiliang Colliery .....	Wang Shougui(37)
Application of High Prestress Bolt in Composite Roof Roadway of Xinzhi Colliery .....	Wang Enlong(40)
Discussion on Seam Spontaneous Combustion Prevention Technology at Fully Mechanized Caving Face in Duanwang Colliery .....	Zhang Liubo(44)
Application of Surrounding Rock Control Technology for Haulage Roadway in Working Face of Xiegou Colliery .....	Tian Yanbin(46)
Introduction of the country natural resources comprehensive information system under the new situation .....	Zhang Wenbin,Wei Yiyou(50)
Security Coal Pillars Based on GPS Control Measurement System in Xigou Coal Industry Co. .....	Zhang Jinfeng(53)
Research and Application of Cable Anchor Support Technology for Composite Roof in Sitai Coal Mine .....	Chen Lei(57)
Overburden Strata Movement and Distribution Law of Advanced Abutment Pressure in 2-126 Working Face .....	Zhou Baojiang(61)
Research on Optimization of Roadway Support Scheme Affected by Mining in Yuwu Colliery .....	Xu Yunfei(65)
Analysis of Development Height of Water Flowing Fractured Zone and Water Yield Property Detection in Mining Face .....	Zhang Xiaojian(69)
Study on Surrounding Rock Control Technology Passing through Faults for Mining Roadway in Island Coal Pillar .....	Guo Shaolu(72)
Application of Comprehensive Detection Technology in Concealed Structure and Water Detection and Water Release in Mining Face .....	Zhao Dongdong(75)
Practice of Tunneling Technology for Mining Roadway in Three Soft Coal Seam .....	Li Erpeng(79)
Discuss on Surrounding Rock Bearing System and Control Technology in Soft-broken Mining Roadway .....	Feng Ning(82)
Field Measurement Analysis of "Two Belts" Height Drilling in Fully Mechanized Caving Face .....	Jiao Hao(86)
Stress Analysis and Supporting Countermeasures of Mine Compound Roof .....	Guo Yongwei(90)
Study on Distribution Characteristics of Goaf and Hydrocele in Goaf of Guandi Mine .....	Zhang Yu(94)
Study on Dissemination Law of Sulfur and Sulfur Reduction Scheme in High Sulfur Coking Coal .....	Wang Wangnan(98)
Distribution Characteristics of Spontaneous Combustion "Three Zones" in Goaf, 10101 Fully Mechanized Caving Face .....	Ma Longfei(102)
Practice on Fire Prevention and Extinguishing Technology at 914 Mining Face of Dongpo Colliery .....	Wang Lixin(105)

Discussion on Roof Control Technology at Fully-mechanized Caving Face in Yachen Coal Industry Co.  
 ..... Zhang Xiong(107)

Application Practice on Fire Prevention and Extinguishing Technology in Slow Heading Period  
 at Fully-mechanized Caving Face ..... Gan Nannan(113)

Discussion on Control Technology of Gas and Coal Spontaneous Combustion in Gob-side Entry Retaining  
 by Roof Cutting and Pressure Relief ..... Luo Weirong(110)

Application Practice on Fire Prevention and Extinguishing Technology in Slow Heading Period  
 at Fully-mechanized Caving Face ..... Gao Nannan(113)

Application of Gas Drainage Technology at 42204 Fully-mechanized Mining Face of  
 Ximing Colliery ..... Liang Wenming(116)

### Topic Exposition

Discussion on Equipment Quick Withdrawal Technology at Fully-mechanized Working Face  
 ..... Chen Xiaogang, Li Yao(119)

Application of Anti-reflection Outburst Elimination Technology by Penetrating  
 High-pressure Hydraulic Flushing in Hole ..... Zhao Jiandong(121)

Discussion on Rational Position of Open-off Cut in Ultra-close Underlying Coal Seam ... Pan Ruifeng(123)

Reflections about the practice of Registered Surveyors ..... Wang Ting,Zhang Wenbin(127)

Discussion on Crossing Fault with Loose Blasting Technology at Fully-mechanized Working Face  
 ..... Hao Shurong(129)

### Problem Probe

Practice on Selection of Performance Test Method of Main Ventilator ..... Song Zhaochu(133)

Causes and control techniques of instability of high coal wall in thick coal seam ..... Chen ning(137)

Application Analysis of Air-source Heat Pump in Xinshun Coal Industry Co.  
 ..... Zhao Conghui, Feng Xihong(140)

Treatment Technology of Frame Pressing by Roof Fall in Passing Abandoned Roadway  
 at fully- mechanized Working Face ..... Xue Longzhi(144)

Application of Advanced and Precise Nitrogen Pre-injection at Working Face  
 with Spontaneous -combustion Coal Seam ..... Zhao Wenshu, Xian Yingqun, Liu Xiaochun(146)

Practice on Roof Management in Repeated Fully-mechanized Caving Face Ends  
 and Leading Area of Crossheading ..... Luo Baohong(150)

Failure Cause Analysis of Transmission Gear and Transformation Scheme  
 in Pressure Filter ..... Yang Zhiping(153)

Application of Water-inflow Sealing Technology in Hydrological Observation Hole  
 of Damaged Ordovician Limestone in Gaohe Colliery ..... Shi Qiang(155)

Water Control Technology with Drilling and Grouting at 4301 Working Face  
 of Longquan Colliery ..... Li Gaopen(158)

Analysis of Holing-through Survey Method in Underground Roadway  
 of Majiliang Colliery ..... Wen Yang(162)

Application of Comprehensive Water Leakage Control Methods in Eastern Main Inclined Shaft  
 of Sihe Colliery ..... Song Junbo(165)

Study on Rib Spalling Control of Coal Wall at No. 205 Working Face of Huarun Coal Industry Co.  
 ..... Zhang Xin(167)

Discussion on Faults Analysis Methods Based on Geological Drilling Data ..... Chang Lantian(171)

Research and Application of Dust Suppression with Water Injection in Coal Seam at Working Face  
 of Fuyan Coal Industry Co., Ltd. .... Yang Xiangdong(175)

Research on Design and Testing of Underground Drainage Monitoring System ..... Gong Qiang(178)

Application of Connection Survey in Lujiayu Air Shaft ..... Zhang Huibing(181)

Application of Support Technology in High-stress Soft-rock Roadway ..... Cui Xiaobo(184)

Application of Mining with Filling Technology in Crossing Abandoned Roadway  
 at 3402 Repeated mining Face of Yicheng Coal Industry Co., Ltd. .... Ji Haiyu(186)

### Technology & Experience

Discussion on Gas Drainage and Survival and Development of Qujiang Colliery and Shangzhuang Colliery  
 ..... Li Yongming(190)

Study on Safety Evaluation of Mining under Pressure and Water Control Technology  
 ..... Gong Yuancheng(193)