

ISSN 1001-1250  
CN 34-1055/TD  
CODEN JIKUFY

# 金属矿山

JIN SHU KUANG SHAN

METAL MINE



4

2016  
(总第478期)

中国百强科技期刊 | 国家期刊奖百种重点期刊 | 中国期刊方阵双百期刊 | 中国精品科技期刊

美国CA、CSA收录期刊 | 全国中文核心期刊 | 中国科技核心期刊 | RCCSE中国核心学术期刊（A）

主办单位：中钢集团马鞍山矿山研究院 中国金属学会



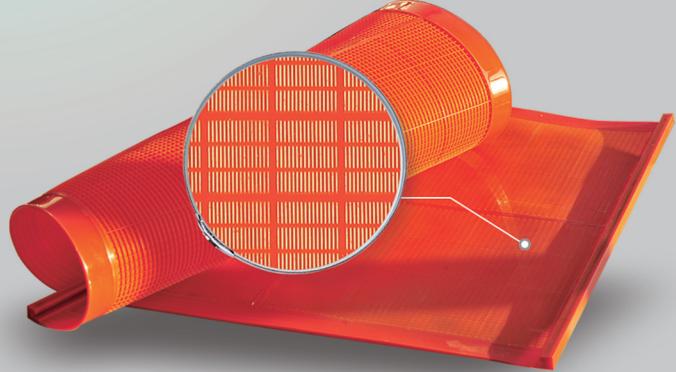
●振动方式独特、节省能耗、筛分效率高、处理量大、结构简单、运行稳定可靠，是目前细粒物料筛分领域最为先进的设备之一。该系列设备应用于矿山、煤炭、有色等行业的细粒物料筛分作业。



共振式高频细筛

柔性聚氨酯细筛网>>

筛缝在0.075~2mm, 开孔率28%~45%的CPU聚氨酯细筛网, 使用寿命均超过6个月。



ISSN 1001-1250



OFFICE

- 地址:河北省唐山市高新技术开发区 邮编: 063020
- 电话:0315-3853380/3853381/3852870/3852871
- 网址:www.LK-t.com.cn

- 传真:0315-3851098
- 邮箱:landsky@lk-t.com.cn

# 目 次

## · 专题综述 ·

金属矿山巷道地球物理超前预报方法研究进展及发展趋势 ..... 马俊学 陈 剑 藤永波 (1)

## · 采矿工程 ·

西石门铁矿北区斜井保安矿柱圈定优化 ..... 宋德林 任凤玉 祁建东 等 (13)

兰尖铁矿无底柱分段崩落法采场结构参数研究 ..... 宋晓双 杨 溢 刘 磊 等 (16)

柏杖子金矿多空区残矿开采技术研究 ..... 马姣阳 任凤玉 曹建立 等 (20)

地下难采矿体回采工艺系统可靠性研究 ..... 杨永盛 卿 黎 梁志强 (26)

金属矿山充填体强度分布规律实验研究 ..... 甘德清 申梦飞 孙光华 等 (32)

黄麦岭磷矿胶结充填开采配比试验及数值模拟 ..... 姜金洁 张建华 尹东升 等 (36)

冬瓜山铜矿深部大理岩单轴压缩条件下的力学特性 ..... 胡建东 王 春 (42)

隧道围岩关键块体爆破安全振速研究 ..... 吴 亮 李 凤 陈今东 等 (47)

不同应力路径下脆性岩石的加卸载响应比研究 ..... 祝方才 艾成才 刘丙肖 等 (52)

岩体结构面几何参数分布规律研究 ..... 代碧波 荆永滨 (58)

基于覆岩结构理论的冲击煤层孤岛工作面宽度研究 ..... 张 明 李克庆 姜福兴 等 (62)

## · 矿物工程 ·

金属离子对滑石浮选行为的影响及机理研究 ..... 张其东 袁致涛 刘炳天 等 (67)

苏丹某低品位金矿石柱浸—活性炭吸附试验研究 ..... 邱 沙 康维刚 (72)

熔剂性红土镍矿球团的还原焙烧—弱磁选效果 ..... 智 谦 (77)

抑制剂种类对油酸钠体系中焙烧稀土精矿可浮性的影响 ..... 杨治仁 吴文远 边 雪 (82)

羟肟酸协同脂肪酸分离磷灰石和白云石 ..... 唐 云 杨典奇 王 雪 等 (86)

我国贫铁矿石磁选预现状及发展趋势 ..... 郭小飞 赵通林 (91)

## · 地质与测量 ·

黟县胡家门地区锡多金属矿地质特征与成矿条件 ..... 王西荣 潘家永 李绍侠 (95)

矿山遥感图像自适应加权改进中值滤波算法 ..... 姚 薇 钱玲玲 (101)

## · 机电与自动化 ·

钨矿井下破损高压导线对 WSN 节点电磁干扰机理的建模分析 ..... 樊宽刚 辛鹏武 么晓康 等 (106)

菱形磁介质参数对磁场特性的影响 ..... 张 涛 李茂林 胡 伟 等 (110)

周期式高梯度磁选机线圈的计算机模拟分析 ..... 李作敏 冯安生 张颖新 等 (114)

基于 Weibull 分布的 Bond 冲击破碎粒度分布特征 ..... 蔡改贫 郭进山 夏刘洋 (118)

高压辊磨机工艺参数对翠宏山某磁铁矿石粉碎行为的影响 ..... 马晓振 张雁生 张 博 等 (122)

## · 安全与环保 ·

露天矿边坡局部破坏形式分类及破坏机理分析 ..... 陈关平 张拥军 李乾龙 等 (126)

某露天铁矿采场边坡优化设计可靠度分析 ..... 田莉梅 张兆财 (132)

多通道非接触式岩移监测系统典型应用 ..... 陈汝秀 李江河 (136)

越流补给群孔抽水试验的含水层参数计算及应用 ..... 史 骥 张建华 夏岸雄 等 (141)

复杂水文地质条件下地下水数值模型的应用 ..... 戚 星 (146)

硫化矿尘层氧化自热初始温度试验研究 ..... 饶运章 陈 斌 孙 翔 等 (151)

基于量子神经网络拟合法的矿区地表变形监测 ..... 齐秀峰 (154)

用  $WO_3$  纳米材料制备矿业安全用  $NO_2$  气体传感器 ..... 陈享享 沈岩柏 王 玮 等 (158)

用内蒙古煤系高岭土制备  $NaY$  分子筛 ..... 张金山 周 珊 李 侠 等 (164)

钒铬溶液中杂质砷的去除工艺 ..... 蒋 霖 伍珍秀 罗 翔 (169)

## · 综合利用 ·

风积沙似膏体煤矿充填材料的研究及应用 ..... 孙凯华 刘鹏亮 孙万明 等 (172)

石人沟铁矿全尾砂充填胶凝材料配比优化试验 ..... 李立涛 杨志强 高 谦 (177)

# CONTENTS

Research Progress and Development Trends of Geophysical Advanced Prediction Method of Metal Mine Roadway	.....	Ma Junxue Chen Jian Teng Yongbo	(1)
Delineation Optimization of Incline Shaft Safety Pillar for North Mining Area of Xishimen Iron	....	Song Delin Ren Fengyu Qi Jiantong et al	(13)
Study on Structural Parameters of Pillarless Sublevel Caving in Lanjian Iron	.....	Song Xiaoshaung Yang Yi Liu Lei et al	(16)
Study on Mining Technology of Residual Ore in Condition of Mined-out Area in Baizhangzi Gold Mine	.....	Ma Jiaoyang Ren Fengyu Cao Jianli et al	(20)
Study on the Reliability of the Mining Process System of the Underground Hard Coal Mine	.....	Yang Yongsheng Qing Li Liang Zhiqiang	(26)
Experimental Study on Strength Distribution of Filling Body in Metal Mine	.....	Gan Deqing Shen Mengfei Sun Guanghua et al	(32)
Numerical Simulation and Proportion Test of the Cemented Filling Mining in Huangmailing Phosphate Mine	.....	Jiang Jinjie Zhang Jianhua Yin Dongsheng et al	(36)
Mechanical Characteristics of Deep Marble in Dongguashan Copper Mine under Uniaxial Compression	.....	Hu Jiantong Wang Chun	(42)
Safety Vibration Velocity of Key Block in Tunnel Surrounding Rock under Blasting Loads	.....	Wu Liang Li Feng Chen Jindong et al	(47)
Study on Load/Unload Response Ratio of Brittle Rocks under Different Stress Paths	.....	Zhu Fangcai Ai Chengcai Liu Bingxiao et al	(52)
Research on Distribution of Geometric Parameters of Structural Plane	.....	Dai Bibo Jing Yongbin	(58)
Study on the Width of Isolated Coal Face with Rock-burst Hazards Based on the Theory of Overburden Structure	.....	Zhang Ming Li Keqing Jiang Fuxing et al	(62)
Influence and Mechanism of Metal Ions on Flotation Behavior of Talc	.....	Zhang Qidong Yuan Zhitao Liu Jiongtian et al	(67)
Study on Column Leaching-Activated Carbon Adsorption of a Low-grade Gold Ore from Sultan	.....	Qiu Sha Kang Weigang	(72)
Effects of Reduction Roasting-Low Intensity Magnetic Separation on Fluxed Laterite Pellets	.....	Zhi Qian	(77)
Effect of Types of Depressants on Floatability of Roasted Rare Earth Concentrate in NaOI System	.....	Yang Zhiren Wu Wenyuan Bian Xue	(82)
Synergistic Effect of Fatty Acid and Hydroxamic Acid in Flotation Separation of Apatite and Dolomite	.....	Tang Yun Yang Dianqi Wang Xue et al	(86)
Application and Development Tendency of Magnetic Separation for Pre-concentration of Lean Iron Ore in China	.....	Guo Xiaofei Zhao Tonglin	(91)
Geological Characteristics and Metallogenetic Conditions of Tin-polymetallic Deposit of the Hujiameg Area in Yixian County	.....	Wang Xirong Pan Jiayong Li Shaoxia	(95)
Adaptive Weighted Improved Median Filtering Algorithm of Mine Remote Sensing Image	.....	Yao Wei Qian Lingling	(101)
Analysis on Modeling from Electromagnetic Interference of Broken High Voltage Wire in the Tungsten Ore Underground on WSN Nodes	.....	Fan Kuangang Xin Pengwu Yao Xiaokang et al	(106)
Influence of the Parameter of Diamond Magnetic Medium on Magnetic Field Property	.....	Zhang Tao Li Maolin Hu Wei et al	(110)
Computer Simulation Analysis on Cycle Type High Gradient Magnetic Separator Coil	.....	Li Zuomin Feng Ansheng Zhang Yinxin et al	(114)
Particle Size Distribution Characteristics of Bond Impact Based on Weibull Distribution	.....	Cai Gaipin Guo Jinshan Xia Liuyang	(118)
Effect of High Pressure Grinding Roll Operation Parameters on Crushing Behavior of a Magnetite from Cuihongshan	.....	Ma Xiaozhen Zhang Yansheng Zhang Bo et al	(122)
Classification of Slope Local Damage and Damage Mechanism Analysis in a Open Pit Mine	.....	Chen Guanping Zhang Yongjun Li Qianlong et al	(126)
Reliability Analysis of Slope Design Optimization in an Open Pit Iron Mine	.....	Tian Limei Zhang Zhaocai	(132)
Typical Application of Multi Channel Non-contact Rock Shift Monitoring System	.....	Chen Ruxiu Li Jianghe	(136)
Aquifer Parameter Calculation and Application of Pumping Test of Group Holes with Leakage Recharge Boundary	.....	Shi Ji Zhang Jianhua Xia Anxiong et al	(141)
Application of Groundwater Numerical Model under Complex Hydrogeological Condition	.....	Qi Xing	(146)
Test of Oxidation and Self-heating Initial Temperature of Sulfide Ore Dust	.....	Rao Yunzhang Chen Bin Sun Xiang et al	(151)
Surface Deformation Monitoring of Mining Area Based on Quantum Neural Network Fitting Method	.....	Qi Xiufeng	(154)
NO <sub>2</sub> Gas Sensors Made from WO <sub>3</sub> Nanomaterials Used for Mining Safety	.....	Chen Xiangxiang Shen Yanbai Wang Wei et al	(158)
Preparation of NaY Zeolite from Inner Mongolia Coal Measures Kaolin	.....	Zhang Jinshan Zhou Shan Li Xia et al	(164)
Removing Process of Arsenic from the Solution Containing Vanadium and Chromium	.....	Jiang Lin Wu Zhenxiu Luo Xiang	(169)
Research and Application on Aeolian Sand Paste-like Stowing Material for Mine	.....	Sun Kaihua Liu Pengliang Sun Wanming et al	(172)
Experiment on Proportion Optimization of Filling Cementitious Material on Tailings from Shirengou Iron Mine	.....	Li Litao Yang Zhiqiang Gao Qian	(177)