



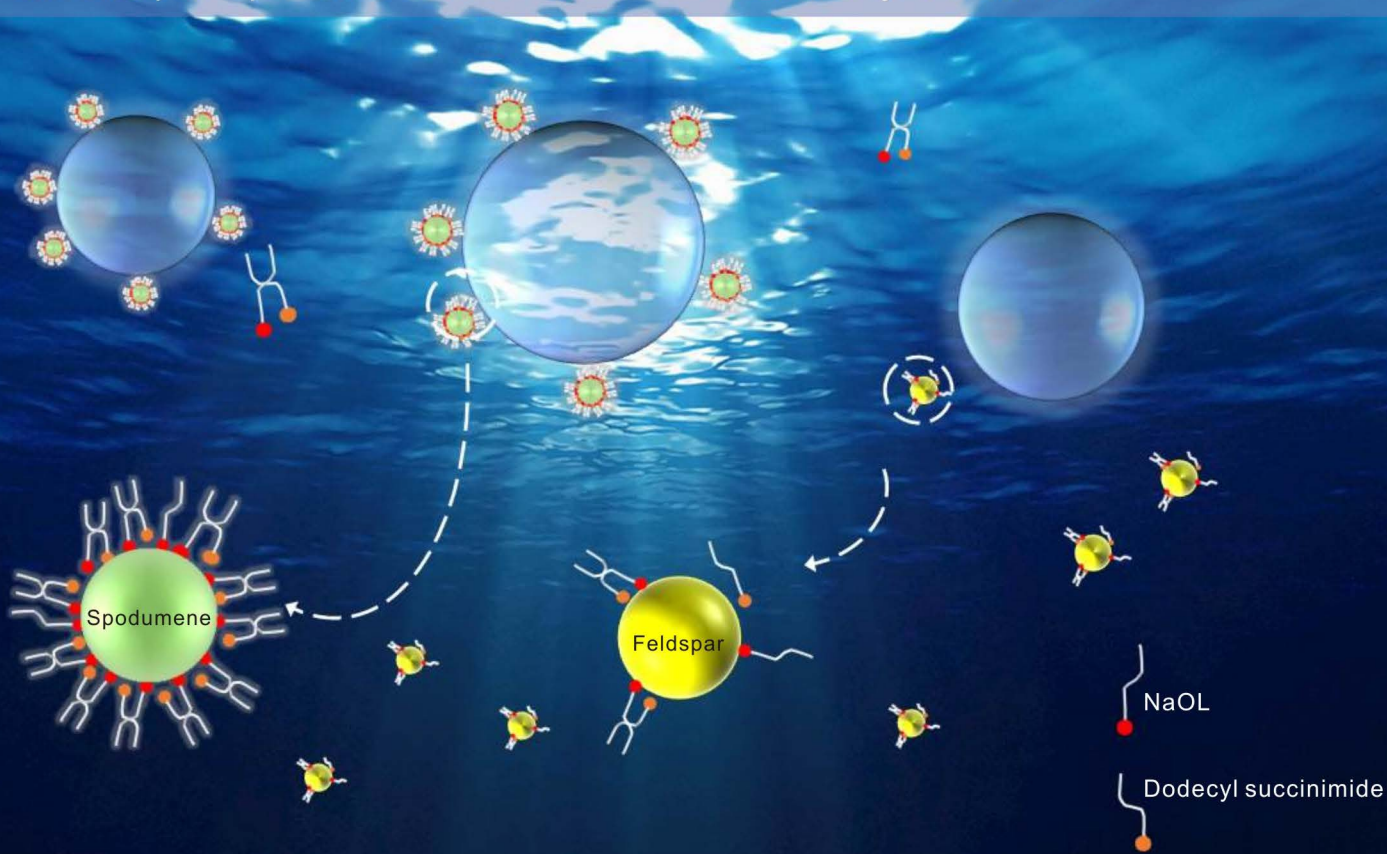
中国科技核心期刊  
RCCSE中国核心学术期刊

ISSN 1001-0076  
CN 41-1122/TD

# 矿产保护与利用

CONSERVATION AND UTILIZATION OF MINERAL RESOURCES

Schematic diagram of the separation mechanism on spodumene and feldspar in presence of mixed collector NaOL/dodecyl succinimide



中国地质调查局主管

中国地质科学院郑州矿产综合利用研究所 主办

Vol.43

2023

2

目次

浮选药剂的设计、合成与应用

锂辉石晶体结构及浮选药剂作用机理综述 ..... 王萍, 刘建, 郝佳美, 秦晓艳, 高虎林, 李达, 代龙富(1)
锂云母浮选捕收剂和抑制剂研究进展 ..... 程奇, 陈伟, 刘广义(11)
煤油/油酸甲酯复配捕收剂浮选南梁煤矿煤泥的试验研究 ..... 陈嘉亮, 朱文耀, 常梦洁, 李会录, 刘俊(20)
组合捕收剂强化回收普朗舍泥微细粒硫化铜矿试验及机理分析 ..... 张洋, 崔毅琦, 蓝卓越, 席欣月, 黄典强, 童雄, 王靖(27)
组合药剂硫化一浮选某含银氧化铜矿石的试验研究 ..... 路晓龙, 李天恩(35)
改性废机油常温浮选磷灰石矿的试验研究 ..... 汪国辉, 刘文刚, 李维超, 刘文宝, 李振(40)
浮选调浆过程金属阳离子对煤油/水界面张力的影响 ..... 杨娟利, 刘朝, 贺海波(46)
烷基硫酸盐捕收剂对菱镁矿和白云石的浮选性能研究 ..... 陈英铭, 马鹏举, 柴文翠, 马伟鸣(53)

矿物加工工程

等离子体的产生及其在矿物浮选中的应用 ..... 张怀瑶, 田付强, 李亚超, 郝海青, 范桂侠(60)
浮选柱内矿浆分散特性与气泡速度分布规律研究 ..... 赵月川, 张漠鑫, 王成龙(66)
基于高速摄像技术的溶气气浮微气泡尺寸原位测量方法及影响因素研究 ..... 曾婷, 谷原, 赵文涛, 隋倩, 宛勇(73)
磨矿方式对菱镁矿可浮性的影响 ..... 李闯, 刘榴, 付亚峰, 许鹏云, 王余莲, 苏德生, 姜伯昭, 于建伟(80)
超声波预处理氧化钙对改善黄铜矿浮选效果的机理分析 ..... 赵鑫, 彭祥玉, 王宇斌, 田家怡, 华开强, 桂婉婷(87)
甘肃某石英岩矿选矿提纯试验研究 ..... 李晓慧, 任子杰, 高惠民, 沈彦旭, 刘志, 宋昱晗(93)
两地石英岩矿的选矿提纯差异研究 ..... 刘孟浩, 管俊芳, 任子杰, 高惠民, 刘志, 唐腾望, 沈彦旭(99)
陕西某河湖相沉积型天然石英砂工艺矿物学研究 ..... 唐腾望, 管俊芳, 任子杰, 高惠民, 刘孟浩, 宋昱晗(106)
从某钨重选尾矿中浮选分离石英和长石的试验研究 ..... 孙宁, 李爱民, 孙伟, 王丽(112)
贵州某重晶石矿 X 射线预选一浮选试验研究 ..... 缪亚兵(117)
云南大平掌铜矿分支串流浮选工艺试验研究 ..... 解子花, 魏志聪, 李梦宇, 刘洋(123)
氧化亚铁硫杆菌浸出某低品位磷矿的试验研究 ..... 王大鹏, 渠光华, 孙伟(131)
湖北某低品位高镁质磷矿反浮选试验研究 ..... 黄鹏, 张凡, 李洪强, 贾正勋, 刘爽, 鲁力, 康健, 李健(138)

矿山环境

赤泥活化煤矸石提取 Al2O3 试验研究 ..... 季登会, 罗文波, 龙潇, 向春, 王晓福(142)

矿物材料

几种天然斜发沸石矿的组成结构及性质对比研究 ..... 王程, 冯锴, 王李鹏, 都扶岭, 于倩茹(148)
不同品位菱镁矿合成镁锆复相材料性能的研究 ..... 冯雨, 高永军, 罗旭东, 李心慰, 王林, 吴锋(154)

综合评述

纳米气泡强化超细颗粒浮选机理研究现状及展望 ..... 孟令轩, 赵通林, 范兆琳, 马芳源, 刘欣悦, 张迪, 张明泽, 李湘微, 李明娇(162)
微细粒白钨矿浮选研究进展 ..... 李小康, 张英, 管侦皓, 吴宇(169)

## CONTENTS IN BRIEF

### Design, Synthesis and Application of Flotation Reagents

- Crystal structure of spodumene and mechanism of flotation reagents: a review  
..... WANG Ping, LIU Jian, HAO Jiamei, QIN Xiaoyan, GAO Hulin, LI Da, DAI Longfu (1)
- Review on progress of lepidolite flotation collectors and depressants ..... CHENG Qi, CHEN Wei, LIU Guangyi (11)
- Experimental study on the slime flotation of Nanliang coal mine with kerosene/methyl oleate compound collectors  
..... CHEN Jialiang, ZHU Wenyao, CHANG Mengjie, LI Huilu, LIU Jun (20)
- Experiment and mechanism analysis of enhanced recycling mud-containing fine-grained copper sulfide ore of Pulang by combined collectors  
..... ZHANG Yang, CUI Yiqi, LAN Zhuoyue, XI Xinyue, HUANG Dianqiang, TONG Xiong, WANG Jing (27)
- Experimental study on sulfuration-flotation of silver-bearing copper oxide ore by combined reagents ..... LU Xiaolong, LI Tianen (35)
- Experimental study on flotation of apatite ore with modified waste engine oil at room temperature  
..... WANG Guohui, LIU Wengang, LI Weichao, LIU Wenbao, LI Zhen (40)
- Effect of metal cations on the kerosene/water interfacial tension in flotation conditioning ..... YANG Juanli, LIU Chao, HE Haibo (46)
- Flotation performance of alkyl sulfate collector for magnesite and dolomite ..... CHEN Yingming, MA Pengju, CHAI Wencui, MA Weiming (53)

### Mineral Processing

- Generation of plasma and its application in mineral flotation ..... ZHANG Huaiyao, TIAN Fuqiang, LI Yachao, HAO Haiqing, FAN Guixia (60)
- Study on the dispersion characteristics of slurry and bubble velocity in a flotation column ..... ZHAO Yuechuan, ZHANG Moxin, WANG Chenglong (66)
- In-situ measurement method and influencing factors of microbubble size in dissolved air flotation process based on high-speed camera technology  
..... ZENG Ting, GU Yuan, ZHAO Wentao, SUI Qian, WAN Yong (73)
- Effect of grinding methods on floatability of magnesite  
..... LI Chuang, LIU Liu, FU Yafeng, XU Pengyun, WANG Yulian, SU Desheng, JIANG Bozhao, YU Jianwei (80)
- Mechanism analysis of ultrasonic pretreatment of calcium oxide to improve chalcopyrite flotation  
..... ZHAO Xin, PENG Xiangyu, WANG Yubin, TIAN Jiayi, HUA Kaiqiang, GUI Wanting (87)
- Experimental study on mineral processing and purification of a quartzite ore in Gansu  
..... LI Xiaohui, REN Zijie, GAO Huimin, SHEN Yanxu, LIU Zhi, SONG Yuhan (93)
- Beneficiation difference of quartzite mines in two places  
..... LIU Menghao, GUAN Junfang, REN Zijie, GAO Huimin, LIU Zhi, TANG Tengwang, SHEN Yanxu (99)
- Process mineralogy of natural quartz sand deposited by river and lake facies in Shaanxi Province  
..... TANG Tengwang, GUAN Junfang, REN Zijie, GAO Huimin, LIU Menghao, SONG Yuhan (106)
- Flotation separation of quartz and feldspar from a tungsten gravity tailings ..... SUN Ning, LI Aimin, SUN Wei, WANG Li (112)
- Experimental study on X-ray pre-concentration—flotation of a barite ore in Guizhou ..... MIAO Yabing (117)
- Study on branch stream flotation process of Dapingzhang copper mine in Yunnan Province ..... XIE Zihua, WEI Zhicong, LI Mengyu, LIU Yang (123)
- Experimental study on leaching of a low-grade phosphate ore with thiobacillus ferrooxidans ..... WANG Dapeng, QU Guanghua, SUN wei (131)
- Study on reverse flotation of low grade phosphate ore with high magnesium in Hubei Province  
..... HUANG Peng, ZHANG Fan, LI Hongqiang, JIA Zhengxun, LIU Shuang, LU Li, KANG Jian, LI Jian (138)

### Mine Environment

- Experiment of  $Al_2O_3$  extraction from the activated red mud and coal gangue ..... JI Denghui, LUO Wenbo, LONG Xiao, XIANG Chun, WANG Xiaofu (142)

### Mineral Materials

- Comparison of compositions, structures and properties of several natural clinoptilolite zeolites  
..... WANG Cheng, FENG Kai, WANG Lipeng, DU Fuling, YU Qianru (148)
- Study on the properties of magnesia zirconia composite materials synthesized from different grades of magnesite  
..... FENG Yu, GAO Yongjun, LUO Xudong, LI Xinwei, WANG Lin, WU Feng (154)

### Reviews

- Research status of nanobubble enhanced flotation mechanism of ultrafine particles  
..... MENG Lingxuan, ZHAO Tonglin, FAN Zhaolin, MA Fangyuan, LIU Xinyue, ZHANG Di, ZHANG Mingze, LI Xiangwei, LI Mingjiao (162)
- Research status and prospect of flotation of fine scheelite ..... LI Xiaokang, ZHANG Ying, GUAN Zhenhao, WU Yu (169)

# 《矿产保护与利用》

## 收录

中国科技论文统计源期刊  
《中国核心期刊(遴选)数据库》收录期刊  
《中国学术期刊(光盘版)》收录期刊  
《中国期刊网》收录期刊  
《中国学术期刊综合评价数据库》收录期刊  
《中国万方数据库》收录期刊  
《中文科技期刊数据库》收录期刊  
《超星期刊域出版平台》收录期刊  
日本JST收录期刊

### 矿产保护与利用

KUANGCHAN BAOHUYU LIYONG

第43卷 第2期 (总第244期) 2023年4月

(双月刊)

### CONSERVATION AND UTILIZATION OF MINERAL RESOURCES

Vol.43 No.2(Sum. 244), Apr. 2023

(Bimonthly)

主管单位：中国地质调查局

主办单位：中国地质科学院郑州矿产综合利用研究所

主 编：赵军伟

编辑出版：《矿产保护与利用》编辑部

通讯地址：郑州市中原区陇海西路328号 (450006)

印 刷：郑州豫兴印刷有限公司

国内发行：《矿产保护与利用》编辑部

国外发行：中国出版对外贸易总公司

出版日期：2023年4月25日

电 话：0371-68632026

网 址：<http://kcbh.cbpt.cnki.net>

#### Superintended by:

China Geological Survey

#### Sponsored by:

Zhengzhou Institute of Multipurpose Utilization of  
Mineral Resources, CAGS

#### Editor in Chief:

ZHAO Junwei

#### Edited and Published by:

Editorial Department of Conservation and Utilization of  
Mineral Resources(Zhengzhou, Henan, China)

#### Printed by:

Yuxing Color Printing Ltd., Zhengzhou

#### Website:

<http://kcbh.cbpt.cnki.net>

ISSN 1001-0076



定价：15.00元