

# 煤田地质与勘探

MEITIAN DIZHI YU KANTAN

2025 年第 10 期

(月刊 1973 年创刊)

第 53 卷 总 334 期

## 目 次

### ·黄河流域生态保护和高质量发展 专题·

- 论煤炭开采多圈层响应与减损保障 ..... 王双明, 孙 强, 李识博, 胡 鑫, 谷 超, 耿济世, 周书涛, 袁士豪, 宋世杰, 牛 超, 吴 云, 陈 洋(1)
- 黄河下游高潜水位采煤沉陷区平原水库建设利用研究现状与展望 ..... 陈绍杰, 江 宁, 张根旺, 蒋春林, 高 群(12)
- 排土场土层重构与接菌对植物水分利用的影响机制 ..... 毕银丽, 李中庆, 柯增鸣, 彭苏萍(23)
- 黄河中游黄土采煤沉陷对坡面水土流失经济损失的影响规律 ..... 宋世杰, 李源红, 王 艺, 刘 露, 田 雨, 谈庆钰(33)
- 黄河流域生态脆弱矿区地表水体时空演变特征与驱动力——以榆神府矿区为例 ..... 陈 超, 宣 昂, 胡振琪, 王一鸣, 张家超, 王 果, 杨福芹(45)
- 煤炭开采有效隔水土层固结释水机理及矿井涌水量预测 ..... 李 涛, 高 颖, 范立民, 杨军伟(56)
- 半干旱区煤炭采动下植被生态与土地利用变化响应特征 ..... 杜 臻, 张茂省, 员少奇, 孙萍萍, 冯 立(68)
- 植被配置对露天煤矿粉尘迁移影响的数值模拟研究 ..... 韩 力, 李人杰, 毕银丽(82)
- 典型中深埋煤层覆岩结构特征与风化基岩富水性研究 ..... 王 路, 华照来, 黄 浩, 李增林, 任帅峰, 王嗣桐(91)

### ·煤炭地质 矿井地质·

- 煤矿连采连充欠接顶区覆岩稳定性数值模拟研究 ..... 刘 浪, 罗屹骁, 朱梦博, 何 军, 屈慧升, 段怀军, 蔚保宁, 刘智振(101)
- 二叠—三叠纪之交华北板块化学风化增强和镍富集与火山活动的联系 ..... 王 野, 叶澄卓, 张 彤, 杨敏芳, 周 凯, 张培新, 杨玉竹, 张春华, 鲁 静(116)
- 储层孔隙结构对 CO<sub>2</sub> 地质封存井周围盐沉淀作用的影响机制 ..... 邓晨光, 孙小龙, 刘可禹, 安森友, 远光辉, 王宇翔(128)
- 不同 CO<sub>2</sub> 相态咸水层碳封存盖层突破压力实验研究 ..... 淡文栋, 李 铨, 王福刚, 胡智凯, 刁玉杰, 马 鑫, 刘 廷(141)
- 侧限条件下破碎岩体压缩变形及能量耗散特性 ..... 田 雨, 林海飞, 李树刚, 双海清, 徐培耘, 刘思博, 季鹏飞, 崔名威(151)

### ·水文地质 工程地质 环境地质·

- 煤层采动底板隐伏断裂扩展突水机制及突水判据 ..... 张文泉, 邵建立, 史俊伟, 李梁宁(161)
- 浅埋薄基岩煤层过沟开采溃水危险性预测 ..... 牛 超, 罗钰韬, 刘 宁, 肖乐乐, 孙 强, 张伟伟, 薛喜成, 曾大宝, 白 杨(172)
- 含界面人工坝体试样水浸损伤机理及纳米改性增强 ..... 李宜家, 郝宪杰, 陈昱光, 庞 天, 杨怀翔, 李 航, 季金一, 李欣宇(182)
- 纳米材料对超细硫铝酸盐水泥性能的影响规律 ..... 李笑霖, 王朋飞, 高英慧, 张明璇, 董恩远, 曲 越, 赵 越(191)

### ·煤田物探 矿井物探·

- 全球钾盐经典成矿模式及其地球物理勘探方法的研究现状与展望 ..... 曲 平, 岳航羽, 黄晓兵, 宋 炯(204)
- 胶州湾填海区三维电阻率模型构建与地质解译 ..... 于 鹏, 赵明月, 杨海燕, 李文宇, 田 健, 闫后振, 张 超(225)
- 融合测井与微动数据的浅埋煤层风氧化带圈定方法与应用 ..... 马 智, 何维胜, 胡秋萍, 郭政学, 周进举, 陈同俊, 杨 乐, 袁志超(233)

期刊基本参数: CN 61-1155/P\*1973\*m\*A4\*242\*zh\*P\* ¥ 40.00\*1500\*21\*2025-10 本期执行编辑: 吴敏杰

2025 年 10 月 25 日出版

公开发行

邮发代号: 52-14

国内定价: 40.00 元

## CONTENTS

Discussion on multi-sphere responses and damage reduction-oriented geological guarantees in coal mining .....	WANG Shuangming, SUN Qiang, LI Shibo, HU Xin, GU Chao, GENG Jishi, ZHOU Shutao, YUAN Shihao, SONG Shijie, NIU Chao, WU Yun, CHEN Yang(1)
Overview and prospects of plain reservoir construction and utilization in coal mining-induced subsidence areas with high water tables in the lower reaches of the Yellow River .....	CHEN Shaojie, JIANG Ning, ZHANG Genwang, JIANG Chunlin, GAO Qun(12)
Influence mechanisms of soil layer reconstruction and fungal inoculation on plant water use in waste dumps .....	BI Yinli, LI Zhongqing, KE Zengming, PENG Suping(23)
Influence patterns of coal mining-induced subsidence on economic losses from soil erosion of loess slopes in the middle reaches of the Yellow River .....	SONG Shi jie, LI Yuan hong, WANG Yi, LIU Lu, TIAN Yu, TAN Qing yu(33)
Characteristics and driving forces of the spatiotemporal evolution of surface water bodies in ecologically fragile mining areas in the Yellow River basin: A case study of the Yushenfu mining area .....	CHEN Chao, XUAN Ang, HU Zhenqi, WANG Yiming, ZHANG Jiachao, WANG Guo, YANG Fuqin(45)
Mechanisms behind consolidation-induced water release from effective impermeable soil layers and mine water inflow prediction in coal mining .....	LI Tao, GAO Ying, FAN Limin, YANG Junwei(56)
Response characteristics of vegetation ecology and land use changes to coal mining in semi-arid regions .....	DU Zhen, ZHANG Maosheng, YUN Shaoqi, SUN Pingping, FENG Li(68)
Numerical simulations of the influence of vegetation configuration on dust migration in open-pit coal mines .....	HAN Li, LI Renjie, BI Yinli(82)
Structural characteristics of the overburden and water yield property of weathered bedrock aquifer in a representative medium-deep coal seam .....	WANG Lu, HUA Zhaolai, HUANG Hao, LI Zenglin, REN Shuaifeng, WANG Sitong(91)
Numerical simulations of the overburden stability in underfilling zones during continuous mining and continuous backfilling of coal mines .....	LIU Lang, LUO yixiao, ZHU Mengbo, HE Jun, QU Huisheng, DUAN Huaijun, WEI Baoning, LIU zhizhen(101)
Links of intensification chemical weathering and nickel enrichment with volcanism in the North China Plate around the Permian-Triassic Boundary .....	WANG Ye, YE Chengzhuo, ZHANG Tong, YANG Minfang, ZHOU Kai, ZHANG Peixin, YANG Yuzhu, ZHANG Chunhua, LU Jing(116)
Mechanisms underlying the impacts of reservoir pore structures on near-well salt precipitation in CO <sub>2</sub> geological storage .....	DENG Chenguang, SUN Xiaolong, LIU Keyu, AN Senyou, YUAN Guanghui, WANG Yuxiang(128)
An experimental study on the breakthrough pressure of different CO <sub>2</sub> phases against cap rocks for carbon storage in saline aquifers .....	DAN Wendong, LI Yi, WANG Fugang, HU Zhikai, DIAO Yujie, MA Xin, LIU Ting(141)
Compressive deformations and energy dissipation characteristics of broken rock masses under lateral confinement .....	TIAN Yu, LIN Haifei, LI Shugang, SHUANG Haiqing, XU Peiyun, LIU Sibao, JI Pengfei, CUI Mingwei(151)
Mechanisms and risk criteria for water intrusions caused by mining-induced propagation of concealed faults in a coal seam floor .....	ZHANG Wenquan, SHAO Jianli, SHI Junwei, LI Liangning(161)
Risk prediction of surface-water bursting in the gully-crossing mining section of shallow coal seams within thin bedrock zones .....	NIU Chao, LUO Yutao, LIU Ning, XIAO Lele, SUN Qiang, ZHANG Weiwei, XUE Xicheng, ZENG Dabao, BAI Yang(172)
Water immersion-induced damage mechanisms and enhancement via nano-modification for artificial dam specimens with vertical interfaces .....	LI Yijia, HAO Xianjie, CHEN Yuguang, PANG Tian, YANG Huaixiang, LI Hang, JI Jinyi, LI Xinyu(182)
Influence patterns of nanomaterials on the properties of ultrafine sulfoaluminate cement .....	LI Xiaolin, WANG Pengfei, GAO Yinghui, ZHANG Mingxuan, DONG Enyuan, QU Yue, ZHAO Yue(191)
Global representative metallogenic models and geophysical exploration methods of sylvite: Current research status and prospects .....	QU Ping, YUE Hangyu, HUANG Xiaobing, SONG Jiog(204)
Building and geological interpretation of a 3D resistivity model for the reclamation area of the Jiaozhou Bay .....	YU Peng, ZHAO Mingyue, YANG Haiyan, LI Wenyu, TIAN Jian, YAN Houzhen, ZHANG Chao(225)
A method for detecting weathered and oxidized zones in shallowly buried coal seams integrating logging and dense microtremor array technology .....	MA Zhi, HE Weisheng, HU Qiuping, GUO Zhengxue, ZHOU Jinju, CHEN Tongjun, YANG Le, YUAN Zhichao(233)