

## 目次

<b>❖ 油气勘探与开发</b>	栏目负责人:黄斌
古龙页岩油注CO <sub>2</sub> /烃类气相态特征及多周期作用机制 ..... 宋兆杰 邓森 韩啸 张翊航 张利超 李斌会 陈旻宸 李培宇(1)	
超临界CO <sub>2</sub> 压裂物理模拟实验研究进展 ..... 蔡灿 周圣文 陈浩 赵玉龙 张烈辉(11)	
基于组合赋权的超深层气藏效益建产评价 ..... 李继强 张卫 戚会清 刘勇 胡世莱 黄小亮(20)	
<b>❖ 冶金材料与化工</b>	栏目负责人:韩涛
不同离子掺杂策略下的无铅卤化物钙钛矿发光性质及其应用 ..... 邱建备 赵春力(28)	
植酸掺杂型三聚苯胺/氧化石墨烯水性复合涂层耐蚀性能研究 ..... 邱会东 冯含宇 邹奇 宋焱 卢浩(39)	
高熵氧化物在催化领域的应用研究进展 ..... 燕艳 饶泽平 杨雪 王振华 蔡苇(45)	
<b>❖ 土木水利与环境</b>	栏目负责人:孙毅
拱腰溶洞大小对隧道围岩和初期支护的影响研究 ..... 余洁 彭杰 郑勇(53)	
甲基硅酸盐类防水剂对磷建筑石膏砌块耐水性能的影响 ..... 张明涛 王泽萍 李鑫 孙毅 卜长明 赵敏(61)	
高速公路收费岗亭浮游菌落时空分布特征解析 ..... 刘松荣 肖燕萍 周世军 周鹏 晏致涛 马非 钟永力 蔡姣 方丁伟 刘炜(68)	
<b>❖ 计算机与人工智能</b>	栏目负责人:李作进
一种改进RetinaNet深度学习网络的城乡结合部违章建筑检测方法 ..... 李作进 曹亚男 贺学乐 李明虹 李东阳 Simon X. Yang(75)	
基于改进YOLOv5算法和ResNet50网络的行人检测与识别系统 ..... 雷远彬 赵恩铭 刘光宇 裴焱 刘彪 张吉磊 赵洪一 陈波波(83)	
基于双向搜索的改进A*算法路径规划研究 ..... 张俊林 贾兵 聂玲 石冬阳(89)	
<b>❖ 机械电子与智能制造</b>	栏目负责人:石幸利
基于OptiSLang的离心泵叶轮多目标优化 ..... 朱军龙 任岩丛 李育房 王彦伟(98)	
旋转下套管装置卡瓦牙结构优化 ..... 谢帅 罗乙凯 朱祥龙 邹鑫 曾国恩 彭佳辉(105)	
基于未知输入观测器的电液执行器容错控制研究 ..... 王建军 郝素兰 李文雷 刘文龙(113)	
风冷永磁调速器散热结构热-流耦合分析 ..... 陈思琦 徐曼曼 汪杰 张志涛 邵龙 陆益敏 王向东(118)	
一种新型雷达探测方法 ..... 张涛(124)	

## CONTENTS

Phase Characteristics and Multi-Round Interaction Mechanism of CO <sub>2</sub> /Hydrocarbon Gas Injection in Gulong Shale Oil .....	SONG Zhaojie DENG Sen HAN Xiao ZHANG Yihang ZHANG Lichao LI Binhui CHEN Minchen LI Peiyu(1)
Advancements in Supercritical CO <sub>2</sub> Fracturing Physical Simulation Experiments .....	CAI Can ZHOU Shengwen CHEN Hao ZHAO Yulong ZHANG Liehui(11)
Evaluation of Ultra-Deep Gas Reservoirs Benefit Construction Based on Combined Weight .....	LI Jiqiang ZHANG Wei QI Huiqing LIU Yong HU Shilai HUANG Xiaoliang(20)
The Luminescent Properties and Applications of Lead-Free Halide Perovskites Doped With Different Ion Strategies .....	QIU Jianbei ZHAO Chunli(28)
Study on the Corrosion Resistance of Phthalic Acid Doped Polyaniline/Graphene Oxide Waterborne Composite Coatings .....	QIU Huidong FENG Hanyu ZOU Qi SONG Yi LU Hao(39)
Advancements in the Application of High-Entropy Oxides in the Field of Catalysis .....	YAN Yan RAO Zeping YANG Xue WANG Zhenhua CAI Wei(45)
Study on the Influence of the Size of the Karst Caves at the Arch Waist on the Tunnel Surrounding Rock and Initial Support .....	YU Jie PENG Jie ZHENG Yong(53)
Influence of Methyl Silicate Waterproofing Agents on the Water Resistance Performance of Phosphorus Building Gypsum Blocks .....	ZHANG Mingtao WANG Zeping LI Xin SUN Yi BU Changming ZHAO Min(61)
Analysis of Spatial and Temporal Distribution Characteristics of Planktonic Bacteria in Toll Booths on Highways .....	LIU Songrong XIAO Yanping ZHOU Shijun ZHOU Peng YAN Zhitao MA Fei ZHONG Yongli CAI Jiao FANG Dingwei LIU Wei(68)
A Robust Detection Method for Illegal Buildings in Urban-Rural Fringe Areas Based on Improved RetinaNet Deep Learning Network .....	LI Zuojin CAO Yanan HE Xuele LI Minghong LI Dongyang Simon X. YANG(75)
Pedestrian Detection and Recognition System Based on YOLOv5 Algorithm and ResNet50 Network .....	LEI Yuanbin ZHAO Enming LIU Guangyu PEI Yi LIU Biao ZHANG Jilei ZHAO Hongyi CHEN Bobo(83)
Research on Improved A* Algorithm Path Planning Based on Bidirectional Search .....	ZHANG Junlin JIA Bing NIE Ling SHI Dongyang(89)
Multi-Objective Optimization of Centrifugal Pump Impeller Based on OptiSLang .....	ZHU Junlong REN Yancong LI Yufang WANG Yanwei(98)
Optimization of the Slip Tooth Structure of the Rotating Casing Device .....	XIE Shuai LUO Yikai ZHU Xianglong ZOU Xin ZENG Guo'en PENG Jiahui(105)
Research on Fault-Tolerant Control of Electro-Hydraulic Actuator Based on Unknown Input Observer .....	WANG Jianjun HAO Sulan LI Wenlei LIU Wenlong(113)
Thermal-Fluid Coupling Analysis of Heat Dissipation Structure of Air-Cooled Permanent Magnet Speed Governor .....	CHEN Siqi XU Manman WANG Jie ZHANG Zhitao SHAO Long LU Yimin WANG Xiangdong(118)
A New Type of Radar Detection Method .....	ZHANG Tao(124)