

## 目 次

### · 专论 ·

油气大模型在钻完井领域的应用研究现状及展望 ..... 吴耀辉, 刘梅全, 李雪松, 刘长跃 143

### · 钻井液 ·

深地塔科 1 井钻井液技术 ..... 孙金声, 王建华 155

深水深层高温高压裂缝性呼吸效应动态响应特征

..... 吴艳辉, 黄洪林, 罗鸣, 李文拓, 马传华, 代锐, 李军 167

亚洲最深直井——蓬深 6 特超深井钻井液技术 ..... 徐毅, 何涛, 王君, 欧猛, 严福寿, 周华安, 黄旭耀 180

基于润湿性原位表征和亚临界水特性的高温储层水锁损害机理

..... 单锴, 邱正松, 程征, 杨梦涛, 李楷, 钟汉毅, 任晓霞 187

南极地区超低温钻井液用封堵剂的制备与评价

..... 张广生, 吕开河, 孙金声, 刘敬平, 孙元伟, 黄宁, 易海江 195

蓖麻油基环保水性聚氨酯成膜剂 CWPU ..... 肖泮峰, 杨丽丽, 吴家乐, 冯尚江, 邱士鑫, 蒋官澄 201

环保性纳米硅酸镁锂/纤维素/明胶复合凝胶的制备及堵漏性能

..... 范宇, 唐宜家, 夏连彬, 王锐, 黄桃, 王建威 209

川东北陆相页岩储层井壁失稳机理研究 ..... 高书阳, 薄克浩, 张亚云, 高宏, 皇甫景龙 217

冀中地区深层煤岩气水平井强封堵钻井液技术 ..... 罗玉财, 喻化民, 孙昊, 于建涛, 冯丹, 刘飞 225

钻井液用甲酸盐含量测定方法 ..... 张晓光, 杨俊贞, 王萍, 李彬, 李慧敏, 陈蕾旭, 张灵英 233

### · 固井液 ·

华北储气库韧性水泥浆及增韧机理 ..... 李立昌, 曹洪昌, 高阳, 刘景丽, 马骏, 黄建, 刘俊华, 孙文昭 239

硅酸盐水泥石超高温干热环境热损伤规律 ..... 李小江, 王越洋, 肖京男, 魏浩光, 杨睿月 247

铝酸三钙和石膏协同对油井水泥浆性能的影响 ..... 代丹, 王义昕, 邹亦玮, 孙超, 马英, 宋鑫君 255

### · 压裂液与酸化液 ·

黏弹性六聚阳离子表面活性剂胶束压裂液体系流变性

..... 宾钰洁, 韩晓阳, 田珍瑞, 武志颖, 张思琪, 方波, 卢拥军 262

压裂用有机硅暂堵转向剂的制备及性能评价

..... 刘彝, 余成林, 李云子, 姜喜梅, 于洋洋, 吴均, 刘京 275

# Drilling Fluid & Completion Fluid

Vol. 42, No. 2, Mar. 2025

---

## CONTENTS

### •FORUM•

The Status-Quo of the Application and Research and Prospect of Oil and Gas Large Model in Well Drilling and Completion Industry  
..... *WU Yaohui, LIU Meiquan, LI Xuesong, LIU Changyue* 143

### •DRILLING FLUID•

Drilling fluid technology for deep subsurface Tako-1 well  
..... *SUN Jinsheng, WANG Jianhua* 155

The Dynamic Response Characteristics of Ballooning Effect in Deep Fractured High Temperature High Pressure Formations in Deep Water Drilling  
..... *WU Yanhui, HUANG Honglin, LUO Ming, LI Wentuo, MA Chuanhua, DAI Rui, LI Jun* 167

Drilling Fluid Technology for the Deepest Vertical Well in Asia – The Ultra-Deep Well Pengshen-6  
..... *XU Yi, HE Tao, WANG Jun, OU Meng, YAN Fushou, ZHOU Huaan, HUANG Xuyao* 180

Mechanisms of Water Block Damage of High Temperature Reservoirs Based on In-situ Characterization of Wettability and Subcritical Water Characteristics  
..... *SHAN Kai, QIU Zhengsong, CHENG Zheng, YANG Mengtao, LI Kai, ZHONG Hanyi, REN Xiaoxia* 187

Preparation and Evaluation of a Drilling Fluid Plugging Agent Used in Ultra-Low Temperature Environment in Antarctic Region  
..... *ZHANG Guangsheng, LYU Kaihe, SUN Jinsheng, LIU Jingping, SUN Yuanwei, HUANG Ning, YI Haijiang* 195

Castor Oil-Based Environmentally Friendly Waterborne Polyurethane Filming Agent CWPU  
..... *XIAO Fengfeng, YANG Lili, WU Jiale, FENG Shangjiang, QIU Shixin, JIANG Guancheng* 201

Preparation of Environmentally Friendly Nano Lithium Magnesium Silicate-Cellulose-Gelatin Composite Gel and Study on its Ability to Control Mud Losses  
..... *FAN Yu, TANG Yijia, XIA Lianbin, WANG Rui, HUANG Tao, WANG Jiamwei* 209

Study on Wellbore Instability Mechanism of Continental Shale Reservoir in Northeastern Sichuan Basin  
..... *GAO Shuyang, BO Kehao, ZHANG Yayun, GAO Hong, HUANGFU Jinglong* 217

High Plugging Capacity Drilling Fluid Technology for Deep Buried Coal-Bed Methane Drilling in Jizhong Area  
..... *LUO Yucui, YU Huamin, SUN Hao, YU Jiantao, FENG Dan, LIU Fei* 225

Methods of Measuring Formate Content in Drilling Fluids  
..... *ZHANG Xiaoguang, YANG Junzhen, WANG Ping, LI Bin, LI Huimin, CHEN Leixu, ZHANG Lingying* 233

### •CEMENTING FLUID•

The Toughening Mechanisms of Tough Cement Slurries for the Underground Gas Storage in North China  
..... *LI Lichang, CAO Hongchang, GAO Yang, LIU Jingli, MA Jun, HUANG Jian, LIU Junhua, SUN Wenzhao* 239

Thermal Damage of Set Silicate Cement in Ultra-High Temperature Xerothermic Environment  
..... *LI Xiaojiang, WANG Yueyang, XIAO Jingnan, WEI Haoguang, YANG Ruiyue* 247

Synergistic Effects of Tricalcium Aluminate and Gypsum on Performance of Oil Well Cement Slurries  
..... *DAI Dan, WANG Yixin, ZOU Yiwei, SUN Chao, MA Ying, SONG Xinjun* 255

### •FRACTUREING FLUID & ACIDIZING FLUID•

Rheology of a Viscoelastic Hexameric Cationic Surfactant Micellar Fracturing Fluid  
..... *BIN Yujie, HAN Xiaoyang, TIAN Zhenrui, WU Zhiying, ZHANG Siqu, FANG Bo, LU Yongjun* 262

Preparation and Evaluation of a Temporary Plugging Organosilicon Diverting Agent for Fracturing Fluids  
..... *LIU Yi, YU Chenglin, LI Yunzi, JIANG Ximei, YU Yangyang, WU Jun, LIU Jing* 275