

## 目 次

### ■ 专家视点

- 超临界二氧化碳钻井基础研究进展 ..... 王瑞和,倪红坚,宋维强,肖彩云(1)

### ■ 钻井完井

- 南堡2号构造深层潜山水平井钻井完井技术 ..... 李云峰,徐吉,徐小峰,朱宽亮,吴艳(10)  
涪陵页岩气田三维水平井轨道优化设计方法探讨 ..... 李伟,刘文臣,周贤海,倪红坚,于凡,臧艳彬(17)  
渤海人工岛大型丛式井组加密防碰优化设计技术 ..... 许军富,徐文浩,耿应春(24)  
哥伦比亚 Matambo 区块深井钻井关键技术 ..... 郑振国,黎红胜,赵海艳,温慧芸,孙东方(30)  
南海西部超浅层气田水平井 EZFLOW 无固相弱凝胶钻井液研究与应用 ..... 向雄,杨洪烈,刘喜亮,由福昌,周姗姗(38)  
分段压裂用尾管悬挂器与回接装置关键技术 ..... 郭朝辉(44)  
近钻头井下钻具运动特征及异常状态分析方法 ..... 王超,李军,柳贡慧,张涛,徐小峰(50)  
非均质地层锥形辅助切削齿 PDC 钻头设计与试验 ..... 汪为涛(58)  
井下射频电磁识别影响因素研究 ..... 胡亮,肖莉,赵建军,尹慧博(63)  
膨胀波纹管在小井眼的安全应用工况模拟试验研究 ..... 涂玉林,杨红歧,胡彦峰,陶兴华,刘晓丹(69)

### ■ 油气开发

- 渤海 Q 油田隔夹层发育底水稠油油藏精细注采技术 ..... 张吉磊,龙明,何逸凡,章威,缪飞飞(75)  
低产油气井强制裂缝转向重复压裂技术 ..... 王坤,葛腾泽,曾雯婷(81)  
基于驱替定量表征的高含水油田注水井分层配注量确定方法 ..... 孙召勃,李云鹏,贾晓飞,李彦来,张国浩(87)  
CO<sub>2</sub> 泡沫双子表面活性剂清洁压裂液研究与试验 ..... 杨浩珑,向祖平,李龙,袁迎中(92)  
基于改性氯凝的水平井定点堵水技术 ..... 闫海俊,胡书宝,谢刚,魏爱军,张黎黎,秦忠海(98)  
接箍锚定式井下节流器锚定机构性能分析及优化 ..... 徐建宁,郑舜泽,李中文,席文奎,卫亚明,杨旭东(103)  
中孔中渗砂岩储层 Biot 系数测试方法对比研究 ..... 徐欣,王伟,胡明毅,黎慧,冯毅(109)

### ■ 测井录井

- 录井装备技术现状及发展探讨 ..... 万亚旗,陈会年,杨明清,张杰(115)  
阵列侧向测井曲线极化角影响因素研究 ..... 倪小威,徐观佑,敖旋峰,冯加明,艾林,刘迪仁(120)

### ■ 科技简讯

- 井下电脉冲辅助破岩钻井技术(126)

## CONTENTS

### ■ Expert Viewpoint

- The Development of Fundamental Research on Supercritical Carbon Dioxide Drilling .....  
..... *WA NG Ruihe, NI Hongjian, SONG Weiqiang, XIAO Caiyun* (1)

### ■ Drilling & Completion

- Drilling and Completion Techniques for Horizontal Wells in the Deep Buried Hills of the Nanpu No.2 Structure .....  
..... *LI Yunfeng, XU Ji, XU Xiaofeng, ZHU Kuanliang, WU Yan* (10)  
3D Horizontal Wellbore Trajectory Optimization Design Method in the Fuling Shale Gas Field .....  
..... *LI Wei, LIU Wenchen, ZHOU Xianhai, NI Hongjian, YU Fan, ZANG Yanbin* (17)  
Anti-Collision Optimization Design Technology for Large-Scale Infill Drilling for Cluster Well Groups in the Artificial Island of the Bohai Sea ..... *XU Junfu, XU Wenhao, GENG Yingchun* (24)  
Key Techniques for Deep Well Drilling Optimization in the Block Matambo, Colombia .....  
..... *ZHENG Zhenguo, LI Hongsheng, ZHAO Haiyan, WEN Huiyun, SUN Dongfang* (30)  
Research and Application of EZFLOW Solid-Free Weak Gel Drilling Fluid in Horizontal Wells in Shallow Gas Fields in the Western South China Sea ..... *XIA NG Xiong, YANG Honglie, LIU Xiliang, YOU Fuchang, ZHOU Shanshan* (38)  
Key Technology of Drilling Liner Hanger and Tieback Device in Staged Fracturing ..... *GUO Zhaozhi* (44)  
An Analytical Method for Determining the Motion Characteristics and Abnormal Conditions of Near-Bit Bottom Hole Assembly ..... *WA NG Chao, LI Jun, LIU Gonghui, ZHANG Tao, XU Xiaofeng* (50)  
Design and Test of a New PDC Bit with Tapered Auxiliary Cutter for Heterogeneous Formations .....  
..... *WA NG Weitao* (58)  
Study on the Downhole Influence Factors of Radio Frequency Identification Technology .....  
..... *HU Liang, XIAO Li, ZHAO Jianjun, YIN Huibo* (63)  
Simulation and Experimental Study on the Safe Application Condition of Expandable Profile Liner in Slim Holes .....  
..... *TU Yulin, YANG Hongqi, HU Yanfeng, TAO Xinghua, LIU Xiaodan* (69)

### ■ Oil & Gas Exploitation

- Fine Injection-Production Technology for Bottom-Water Viscous Oil Reservoirs with Interlayers in Bohai Q Oilfield .....  
..... *ZHANG Jilei, LONG Ming, HE Yifan, ZHANG Wei, MIAO Feifei* (75)  
Re-Fracturing Technique Using Forced Fracture Re-Orientation of Low Production Oil and Gas Wells .....  
..... *WA NG Kun, GE Tengze, ZENG Wenting* (81)  
A Method to Determine the Layered Injection Allocation Rates for Water Injection Wells in High Water Cut Oilfield Based on Displacement Quantitative Characterization .....  
..... *SUN Zhaobo, LI Yunpeng, JIA Xiaofei, LI Yanlai, ZHANG Guohao* (87)  
Research and Experiments of a Clean Fracturing Fluid System with CO<sub>2</sub> Foam Gemini Surfactant .....  
..... *YANG Haolong, XIA NG Zuping, LI Long, YUAN Yingzhong* (92)  
Fixed-Point Water Shut-off Technology in Horizontal Wells Based on Modified Cyanogen Coagulation .....  
..... *YA N Haijun, HU Shubao, XIE Gang, WEI Aijun, ZHANG Lili, QIN Zhonghai* (98)  
Performance Analysis and Optimization of the Anchor Mechanism of Coupling Anchor Type Downhole Throttle .....  
..... *XU Jianning, ZHENG Shunze, LI Zhongwen, XI Wenkui, WEI Yaming, YANG Xudong* (103)  
Comparison and Study over the Biot Coefficients Test Methods in Medium Porosity and Medium Permeability Sandstone Reservoirs ..... *XU Xin, WA NG Wei, HU Mingyi, LI Hui, FENG Yi* (109)

### ■ Well Logging & Surface Logging

- Status Quo and Development Exploration of Mud Logging Equipment .....  
..... *WA N Yaqi, CHEN Huinian, YANG Mingqing, ZHANG Jie* (115)  
The Influencing Factors on the Polarizing Angle of Array Laterolog Curves .....  
..... *NI Xiaowei, XU Guanyou, AO Xuanfeng, FENG Jiaming, AI Lin, LIU Diren* (120)