

中文科技期刊数据库全文收录  
中国核心期刊（遴选）数据库收录  
万方数据-数字化期刊群全文上网  
中国学术期刊网络出版总库全文收录

ISSN 1673-3177

CN 51-1159/TE

# 天然气勘探与开发

NATURAL GAS EXPLORATION AND DEVELOPMENT



2023

第46卷 第1期  
Vol.46 No.1

ISSN 1673-3177



中国石油西南油气田公司 主管

中国石油西南油气田公司勘探开发研究院 主办

# 目 次

## ■ 资源勘探

- 德阳—安岳裂陷北段沉积充填过程和充填模式 张本健, 和源, 周刚, 严威, 汪华, 曾云贤, 钟原, 李堃宇, 王文之, 黄茂轩(1)
- 龙门山北段推覆构造带—山前带构造解析及油气勘探前景 谢格云, 胡欣, 王旭丽, 杨涛, 田云英, 辛荣跃, 梅杰, 李洪林(11)
- 鲕粒的不均匀白云石化及其成因——以重庆云阳上坝剖面飞仙关组为例 韩宇, 张云峰, 张亚, 孙尧斌, 周刚, 聂晶, 乔艳萍, 徐亮, 豆霜(19)
- 鄂尔多斯盆地大牛地气田马家沟组四段白云岩特征及分布规律 李春堂, 邢壮壮, 丁晓琪, 刘四洪, 高景云, 朱颖(32)
- 北部湾盆地涠西南凹陷流三段储层特征 李文龙(42)
- 曲流河点坝及其内部构型建模方法 左毅, 赵腊腊, 史卓丽, 李晓利, 左欣泽(50)
- 渤海旅大 X 构造区古近系近源扇体保真成像技术应用 张建峰, 麻旭刚, 王志亮, 高京华(57)

## ■ 气田开发

- 人工智能技术在气藏工程专业的应用前景展望 冯曦, 彭先, 李隆新, 梅青燕, 赵梓寒, 李玥洋, 李滔, 张春, 戚涛(65)
- 川西地区二叠系火山岩储层岩石敏感性及气水两相渗流特征 周克明, 刘婷芝, 袁小玲, 张伟, 余华洁, 缪海燕, 张琳羚(77)
- 超高压定容气藏弹性能量变化特征 刘斐(85)
- 蓬莱气区超深井钻井提速技术 夏连彬, 胡锡辉, 李文哲, 郭建华, 沈欣宇, 王秋彤, 王晓娇, 陈一丹(91)

## ■ 非常规油气

- 川南页岩气峰值产量预测 余果, 刘海峰, 李海涛, 方一竹, 罗莉(97)
- 四川盆地营山地区上三叠统须家河组二段水化学特征及其成因 张继伟, 王显东, 王永超, 王志国(105)
- 四川盆地东南缘二叠系龙潭组泥页岩成岩作用特征及其对孔隙演化的影响 王代富, 孙冬华(112)
- 非常规油气藏水平井注采一体化技术探讨——以四川盆地侏罗系油藏为例 金涛, 张少敏, 李秀清, 白蓉, 郭蕊莹, 周春林(119)
- 苏里格致密气藏水平井高压压裂主控因素 曾凌翔, 李彬, 杨南鹏, 欧治林(127)
- 胜利油田东部油区页岩油气水平井固井技术 李国栋(132)

## ■ 行业动态

- 超深层天然气开发成我国天然气上产重要增长极(49)
- 地热能有望“热”起来(96)
- 我国页岩油勘探开发在多领域获重要进展(118)

封面说明：长庆油田第二采气厂神木天然气处理厂  
摄 影：杨万忠

# NATURAL GAS EXPLORATION AND DEVELOPMENT

## CONTENTS

---

### ■ RESOURCES EXPLORATION

#### Sedimentary filling process and model of northern Deyang-Anyue rift, Sichuan Basin

ZHANG Benjian, HE Yuan, ZHOU Gang, YAN Wei, WANG Hua, ZENG Yunxian, ZHONG Yuan, LI Kuryu, WANG Wenzhi, and HUANG Maoxuan (1)

#### Structural analysis and exploration prospects of nappe-piedmont structural belt in northern Longmenshan area, Sichuan Basin

XIE Geyun, HU Xin, WANG Xuli, YANG Tao, TIAN Yunying, XIN Rongyue, MEI Jie, and LI Honglin (11)

#### Non-uniform dolomitization of oolites and its genesis: A case study of Feixianguan Formation in Shangba section, Yunyang, Chongqing

HAN Yu, ZHANG Yunfeng, ZHANG Ya, SUN Yaobin, ZHOU Gang, NIE Jing, QIAO Yanping, XU Liang, and DOU Shuang (19)

#### Characteristics and distribution regularity of dolomites in the fourth member of Majiagou Formation, Daniudi gas field, Ordos Basin

LI Chuntang, QI Zhuangzhuang, DING Xiaoqi, LIU Sihong, GAO Jingyun, and ZHU Ying (32)

#### Reservoir characteristics of Liushagang 3 Member, Weixi'an sag, Beibu Gulf Basin

LI Wenlong (42)

#### A modeling method for meandering-river point bar and its internal configuration

ZUO Yi, ZHAO Lala, SHI Zhuoli, LI Xiaoli, and ZUO Xinze (50)

#### Application of fidelity imaging to the Paleogene near-source fans, Lvda X structural area in the Bohai Sea

ZHANG Jianfeng, MA Xugang, WANG Zhiliang, and GAO Jinghua (57)

### ■ GASFIELD DEVELOPMENT

#### Artificial intelligence techniques and their application to gas reservoir engineering

FENG Xi, PENG Xian, LI Longxin, MEI Qingyan, ZHAO Zihan, LI Yueyang, LI Tao, ZHANG Chun, and QI Tao (65)

#### Rock sensitivity and gas-water two-phase seepage characteristics of Permian volcanic reservoirs in western Sichuan Basin

ZHOU Keming, LIU Tingzhi, YUAN Xiaoling, ZHANG Wei, YU Huajie, MIAO Haiyan, and ZHANG Linling (77)

#### Elastic energy variation in volumetric gas reservoirs with ultrahigh pressure

LIU Fei (85)

#### Technologies of ROP improvement in ultra-deep wells, Penglai gas area

XIA Lianbin, HU Xihui, LI Wenzhe, GUO Jianhua, SHEN Xinyu, WANG Qiutong, WANG Xiaojiao, and CHEN Yidan (91)

### ■ UNCONVENTIONAL OIL AND GAS

#### Prediction on peak production of shale gas, southern Sichuan Basin

YU Guo, LIU Haifeng, LI Haitao, FANG Yizhu, and LUO Li (97)

#### Hydrochemical characteristics and genesis of the Upper Triassic Xujiache 2 Member, Yingshan area, Sichuan Basin

ZHANG Jiwei, WANG Xiandong, WANG Yongchao, and WANG Zhiguo (105)

#### Diagenesis of shale and its influence on pore evolution in the Permian Longtan Formation, southeastern Sichuan Basin

WANG Daifu and SUN Donghua (112)

#### Injection-production integration for horizontal wells in unconventional oil and gas reservoirs: Examples from Jurassic reservoirs in Sichuan Basin

JIN Tao, ZHANG Shaomin, LI Xiuqing, BAI Rong, GUO Ruiying, and ZHOU Chunlin (119)

#### Main influential factors on efficient horizontal-well fracturing in Sulige tight gas reservoirs

ZENG Lingxiang, LI Bin, YANG Nanpeng, and OU Zhilin (127)

#### Cementing technologies for shale oil and gas horizontal wells, eastern oil block, Shengli oilfield

LI Guodong (132)

### ■ INDUSTRY DYNAMIC DEVELOPMENT