

特邀主编 朱祥坤 牛志军 蒋少涌 王 磊

地球科学

2025年7月 第50卷 第7期

目 次

同位素技术地质应用专辑——纪念中国地质科学院和中国地质调查局 武汉地质调查中心同位素地球化学学科成立65周年

高温钡同位素地球化学研究进展及其应用 吴 非, 周来童, 冯 亮, 南晓云(2461)
硫同位素非质量分馏记录地幔不均一性及其地球动力学意义 张军波, 黄 静, 徐 荣, 刘勇胜(2482)
铌钽铁矿U-Pb年代学方法研究进展 涂家润, 张 妍, 周红英, 崔玉荣, 李国占, 吴 磊, 李志丹(2498)

改进的两柱Cd色谱分离流程和高精度的Cd同位素分析 钟桥辉, 彭冰钰, 何炽凤, 郭家凯, 初高彬, 尹 露, 李 杰(2511)

南岭半坑高分异A型花岗岩成因及其地质意义 何 川, 刘文斌, 胡文洁, 陈 露, 李海立, 孙建东, 王 运, 田世洪(2525)

广东大宝山多金属矿床叠加成因:硫化物Re-Os和Rb-Sr年龄及原位微量元素证据 王 磊, 王祥东, 胡 军, 金鑫镖, 张 熊, 谭娟娟(2548)

峡东九龙湾剖面埃迪卡拉纪陡山沱组盖帽白云岩无机碳同位素异常成因 蔡应雄, 安志辉, 杨文武, 王宁涛, 王保忠, 梅玉萍, 丁丽雪, 杨小莉, 宋 松(2566)

早三叠世南漳—远安动物群地层格架及时间约束 安志辉, 方子晨, 阎春波, 李姜丽, 刘琦灵, 邹亚锐, 陈 刚, 程 龙(2584)

喜马拉雅造山带东段拉隆淡色花岗岩的成因及其与藏南拆离系的关系 吴 健, 田世洪, 李光明, 付建刚, 郭伟康, 许 伟, 李浩通, 李文强, 向开义, 黄昌祺, 刘文斌(2593)

扬子克拉通北缘中元古代神农架群构造属性:来自碎屑锆石U-Pb年代学的约束 卢山松, 童喜润, 吴年文, 江 拓, 王志先, 周 涛, 王 江, 邱啸飞(2613)

大别山南缘翁门杂岩中太古代TTG和钾质花岗岩成因:对扬子陆块早期演化的约束 徐大良, 彭练红, 邓 新, 童喜润, 徐 扬, 金鑫镖(2628)

· 矿物学·岩石学·矿床学 ·

高产热花岗岩与锂成矿作用:以赣西地区宜丰—奉新巨型锂矿田为例 吴俊华, 蔡 敏, 李国猛, 吴贊华, 季 浩, 周建廷, 况二龙, 李艳军(2643)

江西城门山铜多金属矿床中稀散元素的差异化富集规律 朱乔乔, 谢桂青, 高 任, 徐 净, 卢丽帆(2667)

冀东中元古代雾迷山组富锂岩系的发现及其对锂富集成矿机制的启示 耿晓磊, 张晓容, 王克冰, 刘何凡, 赵保强, 杨 建, 米澄宇, 李晓峰, 杨江海(2689)

福州寿山石矿床的流体包裹体和H-O同位素特征及其矿床成因意义 朱律运, 孟 梓, 杨 仲, 许 文, 李玉娟, 詹旭焘, 陈润生(2707)

玄武岩风化剖面P、Al元素的迁移与淋失及其对滇黔桂地区晚二叠世风化沉积成矿效应的指示意义 陈 波, 杨江海, 任俊童, 程 亮, 刘 澳, 张晓容, 葛海莉, 王敬富, 黄 庆, 王 彪(2720)

华北克拉通中部造山带北端罗卜起沟~2.33 Ga辉绿岩长岩成因及构造意义 郑海平, 姜雨奇, 于文明, 景国庆, 徐洪波, 吕晓慧(2735)

西南天山下泥盆统阿帕达尔坎组砂岩物源及构造环境 罗彦军, 王 斌, 王国灿, 陈 博, 张海迪, 马伯永(2759)

华南主要大河新生代演化:南海北缘沉积学记录的制约 张增杰, 田云涛, 孙习林, 闫 义(2775)

新元古代氧化事件促发“雪球地球”冰期气候? 崔一鑫, 李东东, 沈 冰, 高晓鹏(2791)

· 地球生物学 ·

中国泥盆系构造-地层区划及岩石地层格架 骆满生, 袁晓萍, 张克信, 何卫红(2811)

· 能源地质学 ·

深层-超深层碳酸盐岩储层测井评价关键技术进展 武宏亮, 赖 强, 冯 周, 信 毅, 李潮流, 刘 鹏, 李雨生, 田 瀚(2844)

深层碎屑岩储层特征及控储因素分析:以饶阳凹陷杨武寨地区为例 李熹微, 蒋 怒, 史原鹏, 王海燕, 张霁潮, 张 丽, 赵 懿, 刘 辰, 盛 晨, 杨柳青(2861)

咸化湖盆优质烃源岩发育机制与页岩油富集过程:以柴达木盆地干柴沟组上段为例 尹 嘉, 邹才能, 吴松涛, 伍坤宇, 邢浩婷, 魏 琳, 赵正福, 路冠文, 袁 铭, 符芳亮, 华柑霖, 荆振华(2875)

· 海洋地质学与地球物理学 ·

西菲律宾海深水沉积物的声速结构特征 周 娇, 田雨杭, 何高文, 罗伟东, 杨楚鹏, 谭玉芳(2899)

改进DS证据理论算法岩溶特征融合与三维成像 师学明, 何家乐, 张 凯, 王 菲, 张亚星, 田 杉, 姚洪锡, 蒋道君, 郑 洪(2912)

· 其他 ·

《地球科学》2025年8月第50卷第8期要目预告 (2810)

主编 王焰新 责任编辑 胡 悅

期刊基本参数: CN 42-1874/P * 1957 * m * A4 * 464 * zh * P * ¥50.00 * 1200 * 26 * 2025-07

封面照片: 大别地区木子店始太古代花岗片麻岩(王磊提供)

Guest Editors Zhu Xiangkun Niu Zhijun Jiang Shaoyong Wang Lei

EARTH SCIENCE
Vol.50 No.7 Jul. 2025

CONTENTS

Advances in Isotope Geochronology and Geochemistry: The 65th Anniversary of Establishment of Isotope Geochemistry in Chinese Academy of Geological Sciences, and Wuhan Center, China Geological Survey

Research Progress and Applications of High-Temperature Barium Isotope Geochemistry	Wu Fei, Zhou Laitong, Feng Liang, Nan Xiaoyun (2461)
Mantle Heterogeneity Recorded by Mass-Independent Fractionation of Sulfur Isotopes and Dynamic Implications	Zhang Junbo, Huang Jing, Xu Rong, Liu Yongsheng (2482)
Progress in U-Pb Dating Methods of Columbite-Tantalite Minerals	Tu Jiarun, Zhang Yan, Zhou Hongying, Cui Yurong, Li Guozhan, Wu Lei, Li Zhdan (2498)
Improved Two-Column Cd Chromatographic Separation Procedure and High-Precision Cd Isotope Analysis	Zhong Qiaohui, Peng Bingyu, He Chifeng, Guo Jiakai, Chu Gaobin, Yin Lu, Li Jie (2511)
Petrogenesis and Geological Significance of Highly Differentiated A-Type Granites in Bankeng Pluton, Nanling Region, South China	He Chuan, Liu Wenbin, Hu Wenjie, Chen Lu, Li Hatli, Sun Jianlong, Wang Yun, Tian Shihong (2525)
Superimposed Mineralization of Dabaoshan Polymetallic Deposit in Guangdong Province: Evidence from Sulfide Re-Os and Rb-Sr Dating and In-Situ Trace Element Analysis	Wang Lei, Wang Xiangdong, Hu Jun, Jin Xinbiao, Zhang Xiong, Tan Juanjuan (2548)
Origin of Inorganic Carbon Isotope Excursions in Ediacaran Doushantuo Cap Dolostone at Jiulongwan Section in East Yangtze Gorges	Cai Yingxiong, An Zihui, Yang Wenwu, Wang Ningtao, Wang Baozhong, Mei Yuping, Ding Lixue, Yang Xiaoli, Song Song (2566)
Stratigraphic Framework and Timing Constraints of Early Triassic Nanzhang-Yuan'an Fauna	An Zihui, Fang Zichen, Yan Chunbo, Li Jiangli, Liu Qiling, Zou Yarui, Chen Gang, Cheng Long (2584)
Petrogenesis of Lalong Leucogranites in Eastern Himalayan Orogenic Belt and Relationship with South Tibetan Detachment System	Wu Jian, Tian Shihong, Li Guangming, Fu Jiangang, Guo Weikang, Xu Wei, Li Haotong, Li Wenqiang, Xiang Kaiyi, Huang Changqi, Liu Wenbin (2593)
Mesoproterozoic Tectonic Characteristics of Shennongjia Group in Northern Margin of Yangtze Craton: Constraints from Detrital Zircon U-Pb Geochronology	Lu Shansong, Tong Xirun, Wu Nianwen, Jiang Tuo, Wang Zhixian, Zhou Tao, Wang Jiang, Qiu Xiaofei (2613)
Petrogenesis of Mesoarchean TTG and Potassic Granite Suit in Wengmen Complex, Southern Dabie Orogen: Implications for Early Crustal Evolution of Yangtze Block	Xu Daliang, Peng Lianhong, Deng Xin, Tong Xirun, Xu Yang, Jin Xinbiao (2628)

• Mineralogy•Petrology•Mineral Deposits •	
High Heat Producing Granites and Related Lithium Mineralization: Insights from Giant Yifeng-Fengxin Lithium Ore Field, West Jiangxi Province	Wu Junhua, Gong Min, Li Guomeng, Wu Zanhua, Ji Hao, Zhou Jianting, Kuang Erlong, Li Yanjun (2643)
Diversified Enrichment Regularity of Dispersed Elements of Chengmenshan Cu Polymetallic Deposit from Jiangxi Province	Zhu Qiaoqiao, Xie Guiqing, Gao Ren, Xu Jing, Lu Lifan (2667)
Discovery of Lithium-Rich Sedimentary Rocks in Mesoproterozoic Wumishan Formation in Eastern Hebei Province and Implications for Mechanism of Lithium Enrichment and Mineralization	Geng Xiaolei, Zhang Xiaorong, Wang Kebing, Liu Hefan, Zhao Baoqiang, Yang Jian, Mi Chengyu, Li Xiaofeng, Yang Jianghai (2689)
Fluid Inclusions and H-O Isotopic Characterization of Shoushan Stone Deposits in Fuzhou and Its Significance for Genesis of Deposits	Zhu Lyuyun, Meng Wei, Yang Zhong, Xu Wen, Li Yujuan, Zhan Xutao, Chen Runsheng (2707)
Migration and Leaching of Phosphorus and Aluminum in Basalt Weathering Profile: Implications for Late Permian Weathering-Depositional Mineralization in Yunnan-Guizhou-Guangxi Region	Chen Bo, Yang Jianghai, Ren Junlong, Cheng Liang, Liu Ao, Zhang Xiaorong, Ge Haili, Wang Jingfu, Huang Qing, Wang Biao (2720)
Petrogenesis and Tectonic Implications of ~2.33 Ga Luobuqigou Diabase-Gabbro in Northern End of Trans-North China Orogen of North China Craton	Zheng Haiping, Jiang Yuqi, Yu Wenming, Jing Guoqing, Xu Hongbo, Lyu Xiaohui (2735)
Provenance and Tectonic Environment of Lower Devonian Apadalkan Formation in Southwest Tianshan	Luo Yanjun, Wang Bin, Wang Guocan, Chen Bo, Zhang Haidi, Ma Boyong (2759)
Cenozoic Evolution of Large Rivers in South China: Constraints from Sedimentary Archive in Northern South China Sea	Zhang Zengjie, Tian Yuntao, Sun Xilin, Yan Yi (2775)
Did the Neoproterozoic Oxygenation Event Trigger the Snowball Earth?	Cui Yixin, Li Dongdong, Shen Bing, Gao Xiaopeng (2791)
• Geobiology •	
Devonian Tectonic-Stratigraphic Realms and Lithostratigraphic Framework in China	Luo Mansheng, Yuan Xiaoping, Zhang Kexin, He Weihong (2811)
• Energy Geology •	
Progress on Key Technologies for Logging Evaluation of Deep and Ultra-Deep Carbonate Reservoirs	Wu Hongliang, Lai Qiang, Feng Zhou, Xin Yi, Li Chaoliu, Liu Peng, Li Yusheng, Tian Han (2844)
Characterization and Genetic Mechanism of Deep Clastic Reservoirs: A Case Study of Yangwuzhai Block in Raoyang Sag	Li Xiwei, Jiang Shu, Shi Yuanpeng, Wang Haiyan, Zhang Jichao, Zhang Li, Zhao Yi, Liu Chen, Sheng Chen, Yang Liuqing (2861)
Development Mechanism of High-Quality Source Rock and Enrichment Processes of Shale Oil in Saline Lacustrine Basin: A Case Study of Upper Member of Lower Ganchaigou Formation, Qaidam Basin	Yin Jia, Zou Caineng, Wu Songtao, Wu Kunyu, Xing Haotong, Wei Lin, Zhao Zhengfu, Lu Guanwen, Yuan Ming, Fu Fangliang, Hua Ganlin, Jing Zhenhua (2875)
• Marine Geology and Geophysics •	
Characteristics of Sound Velocity Structure in Deep Water Sediments of West Philippine Sea	Zhou Jiao, Tian Yuhang, He Gaowen, Luo Weidong, Yang Chupeng, Tan Yufang (2899)
Karst Feature-Level Data Fusion of Comprehensive Exploration Data Using Improved DS Evidence Theory Algorithm	Shi Xueming, He Jiale, Zhang Kai, Wang Fei, Zhang Yaxing, Tian Shan, Yao Hongxi, Jiang Daojun, Zheng Hong (2912)