

地质论评

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目次

问题讨论

- 流体孔隙剪切变形与岩石圈层状运动机理 张永北, 毕华, 余龙师, 孙世华, 邱家骧, 王人镜(801)
- 四川广元上寺剖面长兴阶放射虫动物群演变及控制因素 聂小妹, 雷勇, 冯庆来, 向宇(809)
- 济阳坳陷青东凹陷基底断裂复活规律和方式 詹润, 朱光(816)
- 软沉积变形构造的分类和形成机制研究 李勇, 钟建华, 邵珠福, 毛毳(829)
- 基于气候变化特征的红层划分对比——以东营凹陷南坡为例 贺振建, 刘书会, 王长轩, 李慧, 张存霞, 何青芳(839)
- 被动陆缘深水重力流沉积单元及沉积体系——以尼日尔三角洲和珠江口盆地白云凹陷深水区为例 李磊, 王英民, 徐强, 黄志超(846)
- 华南西部新元古代中期沉积盆地性质及其动力学分析——来自桂北丹洲群的沉积学制约 杨菲, 汪正江, 王剑, 杜秋定, 邓奇, 伍浩, 周小琳(854)
- 北淮阳浅变质岩带卢镇关群变质压力及其对大别造山带演化的指示 王勇生, 盛勇, 向必伟, 张承云(865)
- 塔里木板块东北部坡北岩体内橄榄辉长苏长岩岩石成因 郭娜欣, 姜常义, 宋艳芳, 夏明哲, 凌锦兰, 夏昭德, 汪帮耀(873)
- 西藏墨竹工卡县邦铺钼(铜)矿床辉钼矿稀土—微量元素特征及对成矿流体性质的指示 王立强, 唐菊兴, 王登红, 罗茂澄, 陈伟, 黄凡(887)
- 济阳坳陷南部横向变换带构造演化及其油气聚集规律 劳海港, 陈清华(893)
- 陆相湖盆海侵地质事件识别及其对烃源岩形成影响 陈笑夜, 曹剑, 施春华, 边立曾(901)
- 沉积物微量金属元素在重建水体环境变化中的意义 于宇, 宋金明, 李学刚, 袁华茂, 李宁(911)

科技述评

- 塔里木地块前寒武纪地质研究进展评述 张传林, 李怀坤, 王洪燕(923)
- 从生物矿化作用衍生出的有机矿化作用: 地球生物学框架下重要的研究主题 梅冥相(937)

研究进展

- 四川冕宁基性岩墙的年代学、地球化学特征及其地质意义 李宏博, 张招崇, 吕林素, 李永生(952)
- 粤东地区早白垩世花岗岩岩浆作用及其成因演化 赵希林, 余明刚, 刘凯, 毛建仁, 叶海敏, 邢光福(965)
- 限定作用域的矿产资源综合信息定量预测模型——以桂西—滇东南锰矿为例 张宝一, 毛先成, 周尚国, 胡超, 闫芳(978)
- 赣南淘锡坑锡矿床中锡石晶体形态学和地球化学研究 黄品赞, 汪相, 陈洁, 任名华, 赖光兵(987)

通讯资料

- 书法: 庆祝中国地质学会成立 90 周年 安秀扬(886, 922)

imaging. We have revealed that there are two stages of crystallization of cassiterite in the Taoxikeng tin deposit. The early stage of cassiterite commonly shows a relatively weak CL brightness (black to dark grey) with the oscillatory zoning and the sector zoning, and the margin of the phase were highly corroded. The crystallographic type of the phase is responsible for A-type or B-type cassiterite. The late stage of cassiterite shows a relatively strong CL brightness (light grey to white) without the oscillatory zoning and the sector zoning. It occurs either as overgrowth on the early stage of cassiterite, or as veinlet within the early stage of cassiterite. The crystallographic type of the late stage of cassiterite is responsible for C-type cassiterite. The electron microprobe analysis data shows that the cassiterite in the Taoxikeng tin deposit contains high levels of FeO and Ta₂O₅, indicating that it should be formed at a higher temperature. It also shows high HfO₂ contents with low Zr/Hf ratio, suggesting that the ore-forming fluid should be derived from a highly differentiated granitic magma. The early stage of cassiterite contains higher FeO and lower In₂O₃ than the late stage of cassiterite, indicating that the early stage of cassiterite should be formed under a condition of higher temperature and pressure than the late stage of cassiterite. The two stages of cassiterite crystallization are considered to be related to the two stages of magmatic—hydrothermal activities in the Taoxikeng tin deposit, respectively.

Key words: cassiterite; crystallographic type; cathodoluminescence image; trace element; Taoxikeng tin deposit, southern Jiangxi

GEOLOGICAL REVIEW

Vol. 58 No. 5 2012

CONTENTS

Discussion

Fluid Pore Shearing Strain and the Mechanism of Layered Lithosphere Motion ZHANG Yongbei, BI Hua, YU Longshi, SUN Shihua, QIU Jiaxiang, WANG Renjing (808)

Evolution and Its Control Factors of the Changhsingian Radiolarian Fauna at the Shangsi Section in Jiange County, Guangyuan City, Sichuan Province NIE Xiaomei, LEI Yong, FENG Qinglai, XIANG Yu (815)

Reactivity Features and Patterns of Basement Faults in the Qingdong Sag, Jiyang Depression ZHAN Run, ZHU Guang (828)

An Overview on the Classification and Genesis of Soft-Sediment Deformation Structure LI Yong, ZHONG Jianhua, SHAO Zhufu, MAO Cui (838)

Study on Division and Correlation of Red Beds Based on Climate Change Feature: a Case Study on the Southern Slope of Dongying Depression HE Zhenjian, LIU Shuhui, WANG Changxuan, LI Hui, ZHANG Cunxia, HE Qingfang (845)

Deep-water Gravity Flow Depositional Elements and Depositional Systems in Passive Margin: Case Studies in Deep-water Areas of Niger Delta and Baiyun Sag, Pearl River Mouth Basin LI Lei, WANG Yingmin, XU Qiang, HUANG Zhichao (853)

An Analysis on Property and Dynamics of the Middle Neoproterozoic Sedimentary Basin in the Western of South China: Constraint from the Sedimentary Data of Danzhou Group in Northern Guangxi YANG Fei, WANG Zhengjiang, WANG Jian, DU Qiuding, DENG Qi, WU Hao, ZHOU Xiaolin (864)

Metamorphic Pressure of the Luzhenguan Group in the North Huaiyang Low-grade Metamorphic Belt and

Its Indication for Evolution of the Dabie Mountains	WANG Yongsheng, SHENG Yong, XIANG Biwei, ZHANG Chengyun(872)
Petrogenesis of the Olivine Gabbro-norite in Pobei Complex, Northeast Tarim Plate	GUO Naxin, JIANG Changyi, SONG Yanfang, XIA Mingzhe, (886)
.....	LING Jinlan, XIA Zhao-de, WANG Bangyao
Rare Earth Element and Trace Element Features of Molybdenite in Bangpu Mo (Cu) Deposit, Maizhokunggar, Xizang (Tibet), and Their Constraints on the Nature of Ore-forming Fluid	WANG Liqiang, TANG Juxing, WANG Denghong, LUO Maocheng, CHEN Wei, HUANG Fan(892)
The Tectonic Evolution of Lateral Transitional Zone in Southern Jiyang Depression and Its Hydrocarbon Accumulation	LAO Haigang, CHEN Qinghua(900)
A Review on the Distinguishing of Marine Transgression in Continental Basins and Its Impacts on the Formation of Hydrocarbon Source Rocks	CHEN Xiaoye, CAO Jian, SHI Chunhua, BIAN Lizeng(910)
Significance of Sedimentary Trace Metals in Reconstructing the Aquatic Environmental Changes	YU Yu, SONG Jinming, LI Xuegang, YUAN Huamao, LI Ning(921)
.....	

Scientific Comment

A Review on Precambrian Tectonic Evolution of Tarim Block: Possibility of Interaction between Neoproterozoic Plate Subduction and Mantle Plume	ZHANG Chuanlin, LI Huaikun, WANG Hongyan(936)
Organomineralization Derived from the Biomineralization: An Important Theme within the Framework of Geobiology	MEI Mingxiang(951)

Research Progress

Geochronology, Geochemistry and Geological Significances of the Permian Basic Dykes in Mianning, Sichuan Province	LI Hongbo, ZHANG Zhaochong, LÜ Linsu, LI Yongsheng(964)
The Magmatic and Genetic Evolution of Early Cretaceous Granitoids in Eastern Guangdong Province	ZHAO Xilin, MAO Jianren, YU Minggang, LIU Kai and YE Haimin, XING Guangfu(977)
Spatial Affecting Extents Limited Comprehensive Geo-information Mineral Resources Quantitative Prediction Models: A Case Study of Manganese Ore Prediction in Western Guangxi and Southeastern Yunnan, China	ZHANG Baoyi, MAO Xiancheng, ZHOU Shangguo, HU Chao, YAN Fang(986)
Morphological and Geochemical Studies of the Cassiterite in Taoxikeng Tin Deposit, Southern Jiangxi, China	HUANG Pinyun, WANG Xiang, CHEN Jie, REN Minghua, LAI Guangbing(999)

Correspondence • Reference

Works of Calligraphy: To Celebrate the 90th Anniversary of the Geological Society of China	AN Xiuyang (886, 922)
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