

论文

伊敏褐煤和腐殖酸中稀土元素的地球化学特征差异分析

梁虎珍, 曾凡桂, 孙蓓蕾, 李美芬

太原理工大学 矿业工程学院 煤科学与技术教育部及山西省重点实验室, 山西 太原 030024

摘要:

运用电感耦合等离子体质谱(ICP-MS)及常规化学分析方法, 对伊敏褐煤稀土元素含量等地球化学特征进行了分析, 认为伊敏褐煤稀土元素主要赋存在黏土矿物和含钛矿物中, 而黄铁矿、碳酸盐、硫酸盐等矿物中稀土元素含量低, 具有稀释效应。稀土元素在脱灰煤提取腐殖酸和脱灰煤提取腐殖酸残煤中的赋存有一定的互补性, 稀土元素在脱灰煤提取腐殖酸中相对富集程度为轻稀土<中稀土<重稀土, 稀土元素在脱灰煤提取腐殖酸残煤中的相对富集程度为轻稀土>中稀土>重稀土, 表明稀土元素在有机质中的分布具有重稀土主要赋存在腐殖酸中、轻稀土主要赋存在煤主体有机结构中的配分特征。

关键词: 伊敏褐煤; 腐殖酸; 稀土元素; 镧系收缩

Differences of geochemical characteristics of rare earth elements of Yimin lignite and humic acid

Abstract:

The geochemical characteristics of the rare earth element contents in Yimin lignite were analyzed by using ICP MS and conventional chemical analysis methods. The results show that the rare earth element in Yimin lignite mainly occurs in clay minerals and titanium containing minerals, and less being in pyrite, carbonates, sulfates, which result in dilution effect. Meanwhile, a complementary relationship on the occurrence of the rare earth elements in humic acid extracted from demineralized coal and residue was found. The relative enrichment degree of rare earth elements in the humic acid extracted from demineralized coal is light rare earth element(LREE) <medium rare earth element(MREE)<heavy rare earth element(HREE), that of in residue is LREE> MREE > HREE, which suggest that the distribution of rare earth elements in the organic matter is characterized by HREE mainly occurs in humic acid while LREE are in the major organic structure of coal.

Keywords: Yimin lignite; humic acid; the rare earth element; lanthanide contraction

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通讯作者: 梁虎珍

作者简介: 梁虎珍(1974—), 女, 山西介休人, 博士研究生

作者Email: lianghuzhen@tyut.edu.cn

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