

论文

大同煤田七峰山矿2号煤层若干微量元素地球化学特征

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摘要:

为查明大同煤田七峰山2号煤中微量元素的地球化学特征,应用电感耦合等离子体质谱(ICP-MS)方法测定煤中15种微量元素的含量;采用光学显微镜和X射线衍射(XRD)方法观测煤中矿物组成特征,运用数理统计方法分析煤中微量元素的有机亲和性、赋存特征等问题。研究表明:形成于陆相环境的七峰山2号煤,微量元素含量相对较低,其质量分数普遍低于相应元素在华北或中国煤中的质量分数,只有As, Re, Mo, Se的富集系数高于6,属富集元素。2号煤中Mo为强亲有机元素, Be, W, Tl, Co为亲有机元素, As, Th, Se, Sb, Ni, Li和Bi为无机-有机元素, Pb, Re, Sc不具有有机亲和性。元素在煤中的赋存状态主要以铝硅酸盐结合态、有机结合态、碳酸盐和无机化合物形式为主。

关键词: 大同煤田; 七峰山矿; 微量元素; 有机显微组分; 赋存特征

The geochemistry of trace elements in the No.2 coal seam of Qifengshan coalmine at Datong coalfield

Abstract:

In order to ascertain the geochemistry of trace elements in the No.2 coal seam at Datong coalfield’s Qifengshan coalmine, the contents of 15 kinds of trace elements in coal were determined by Inductively Coupled Plasma Mass Spectrometry (ICP-MS), the mineral composition characteristics were observed through optical microscope and the X-ray Diffraction (XRD) method, and the organic affinity and occurrence of trace elements were then analyzed based on statistics.The results show that the contents of most trace elements in the No.2 coal seam, which is deposited under a continental environment, is lower than that in North China or China coal, and only the elements of As, Re, Mo, Se have enrichment factors higher than six.Mo is a strong organic affinity element; Be, W, Tl and Co are organic affinity elements; As, Th, Se, Sb, Ni, Li and Bi are inorganic organic affinity elements; Pb, Re and Sc have no organic affinity.The Alluminosilicate fractionation, organic combination, carbonate and inorganic compounds forms are the dominant occurrences for these trace elements in coal.

Keywords: Datong coalfield; Qifengshan Mine; trace elements; organic maceral; occurrence

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