

丝光沸石骨架中Fe的XAFS表征

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摘要 通过水热法合成了骨架含铁的杂原子丝光沸石,采用XRD, FT-IR及TPR等表征技术确认铁进入了分子筛骨架。利用XAFS对分子筛中铁的精细结构和配位环境进行了表征和计算,近边吸收的Fe-K边前跃迁证实铁在分子筛骨架中位于四面体配位环境中,与邻近原子存在共价键作用;铁-氧配位键长为0.188~0.189nm。

关键词 [丝光沸石](#) [铁](#) [X射线衍射分析](#) [付里叶变换](#) [红外分光光度法](#)

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A XAFS study on the Fe-substituted mordenite

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Abstract The Fe-substituted mordenite was hydrothemally synthesized and characterized by XRD, FT-IR, TPR and XAFS. The FT-IR spectra and powder X-ray diffraction patterns showed that the as-synthesized samples were well crystalline mordenite and the incorporation of Fe into the framework of zeolite was verified. The local structure of Fe in the framework was characterized by XAFS. The pre-edge peaks appeared in the XANES spectra of (Si, Fe)-MOR suggested the tetrahedral structure of Fe, and confirmed the incorporation of Fe into the framework of zeolites. the results calculated from the XAFS indicated that the Fe had a tetrahedral structure with an Fe—O distance of 0.188~0.189nm, which accorded well with the stable structure of as-synthesized zeolites. The peaks at 0.320nm and 0.338nm were assigned to the coordinated Si atoms in the framework.

Key words [MORDENITE](#) [IRON](#) [X-RAY DIFFRACTION ANALYSIS](#) [FOURIER TRANSFORM](#) [INFRARED SPECTROPHOTOMETRY](#)

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