

Fe/ZrO₂气胶超细粒子催化剂的XAFS研究

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摘要 采用XAFS方法对Fe/ZrO₂气凝胶超细粒子催化剂中Fe的近邻结构进行研究。随着催化剂粒减小, Fe/ZrO₂远程结构逐渐无序, Fe最近邻Fe-O配位数不变, Fe-O键长略有下降, 次近邻Fe-O配 数和键长均减小, 对于高配位层, 配位数下降更快, Fe的配位环境的影响与催化剂活性和选择性的规律有较好的关联。

关键词 [催化剂](#) [铁](#) [X射线衍射分析](#) [氧化锆](#) [XAFS](#)

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XAFS study of Fe/ZrO₂ aerogel ultrafine particle catalysts

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Abstract A series of Fe/ZrO₂ catalysts with different particle size has been prepared by the supercritical fluid drying and conventional impregnation methods. The neighboring coordinative environment of iron in these catalysts was investigated by XAFS. The results show that as the particle size of Fe/ZrO₂ catalysts is decreased, their structure is disorder gradually, the coordination number of the firts Fe-O shell does not change and their Fe-O bond length has a litter shrink, The coordination number and bond length of the second Fe-O shell are decreased, and coordination number of higher coordination shell decreases very quickly. The correlation between the XAFS results and the activity and selectivity of these catalystst was obtained.

Key words [CATALYST](#) [IRON](#) [X-RAY DIFFRACTION ANALYSIS](#) [ZIRCONIUM OXIDE](#)

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