

高比表面TiO₂柱层状HLaNb₂O₇的制备和表征

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摘要 采用分步离子交换法,将含钛多聚阳离子嵌入层状镧铌酸(HLaNb₂O₇)的层间,通过焙烧,制得了TiO₂柱层状镧铌酸(TiO₂-HLaNb₂O₇)。应用XRD, FTIR, TEM和BET(Brunauer-Emmett-Teller)等技术对该材料进行了表征。结果表明, TiO₂-HLaNb₂O₇具有较大的层间距(1.61 nm, 450 ℃)和较高的比表面积(S_{BET} = 132 m²·g⁻¹),而且是一中孔材料,其孔径分布曲线上呈现一狭窄的孔分布,最可几孔直径为3.3 nm。

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Synthesis and Characterization of Titania-pillared Layered HLaNb₂O₇ High Specific Surface Area

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Abstract Ti(IV) polycation-intercalated layered HLaNb₂O₇ has been prepared by the intercalation of n-hexylamine into the interlayers of HLaNb₂O₇ followed by replacing hexylammonium with n-dodecylammonium and further with Ti(IV) polycation species. Titania-pillared layered HLaNb₂O₇ was obtained by calcining the Ti(IV) polycation-intercalated HLaNb₂O₇ at 450 ℃ in air. XRD, FTIR, TEM and BET (Brunauer-Emmett-Teller) techniques were used to characterize the resultant. The results showed that the titania-pillared HLaNb₂O₇ had an interlayer distance of 1.61 nm (450 V.), a specific surface area of 132 m²·g⁻¹ and a narrow pore-size distribution centered at 3.3 nm.

Key words [TITANIUM OXIDE](#) [layered lanthanum niobic acid](#) [ION EXCHANGE PROCESS](#) [ROASTING](#) [XPS](#) [FT IR](#) [TEM](#) [PORE SIZE DISTRIBUTION](#) [CHARACTERIZATION](#)

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