

研究论文

锌硅钼钨多元取代多金属含氧簇化合物的合成、表征及其催化异丙醇气相反应的活性

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摘要 利用pH值的调变,以 $H_4SiMo_{12-n}W_nO_{40} \cdot (20 \sim 25)H_2O$ ($n=2, 4, 6, 8, 10$)和 $Zn(NO_3)_2$

饱和溶液为原料制得一系列锌硅钼钨多元取代多金属含氧簇化合物,通过IR, XRD, XPS等方法对合成的催化剂的结构和性质进行了表征,

并利用吡啶吸附红外及氨程序升温脱附分别测定样品表面的酸种类和酸强度.

考察了催化剂对异丙醇气相反应的活性,同时详细研究了异丙醇气相反应产物分布与催化剂组成之间的关系.

关键词 [Keggin结构](#) [多金属含氧簇化合物](#) [异丙醇](#) [锌](#) [催化作用](#)

分类号

Synthesis, Characterization of Zn-containing Tungstomolybdosilic Polyoxometalates and Their Catalytic Performance in Reaction of 2-Propanol

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Abstract Zn-containing derivatives of $H_4SiMo_{12-n}W_nO_{40}$ ($n=2, 4, 6, 8, 10$) were prepared under different pH according to the variation of n and characterized by elemental analysis, IR spectra, X-ray diffraction and XPS. The acid kind and intensity of the polyoxometalates were investigated by Py-IR and NH_3 -TPD, respectively. The polyoxometalates were used as heterogeneous catalysts in tested gaseous reaction of decomposition of isopropanol. The relationship between catalytic activity of the polyoxometalates and their component was discussed.

Key words [Keggin structure](#) [polyoxometalate](#) [isopropanol](#) [zinc](#) [catalysis](#)

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