

Sn-Mo混合氧化物的缺陷结构及催化性能的研究

李淑芳,韩富荣,王玉华,洪廷舜,于作龙

中国科学院长春应用化学研究所

收稿日期 修回日期 网络版发布日期 接受日期

摘要 本文以1-丁烯在水蒸汽存在下选择性氧化制甲乙酮为典型反应,利用XRD, ESR,IR, XPS, TEM和SEM研究了Sn-Mo氧化物的结构与活性的关系。制备了8个样品, A, B,C,D,E,F,G和H的Mo/(Mo+Sn)分别为0,0.1,0.2,0.4,0.6,0.8,0.9,1.0。

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Studies on defect structure and catalytic properties of Sn-Mo oxides

LI SHUFANG,HAN FURONG,WANG YUHUA,HONG TINGSHUN,YU ZUOLONG

Abstract The relation between structure and activity of Sn-Mo oxides was studied by using x-ray diffraction, ESR, IR, XPS, TEM and SEM. Eight samples with Mo/(Mo+Sn) ratios of 0-1 were prepared On the basis of structure characterization, Sn-Mo oxides can be divided into 3 groups: catalysts I with Mo/(Mo+Sn) \geq 0.2, Catalysts II with $0.2 < \text{Mo}/(\text{Mo}+\text{Sn}) < 0.8$, and catalysts III with Mo/(Mo+Sn) \leq 0.2. A solid solution of Mo⁵⁺ in tin oxide and cation vacancies were formed in catalysts I. A solid solution of Sn⁴⁺ in Mo oxide was formed in catalysts III. The lattice O in catalysts III has higher mobility and reactivity than that in catalysts I.

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