

催化、动力学与反应器

镍与铜的相互作用对于苯甲醇催化氧化性能的影响

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摘要

通过共沉淀法制备了不同配比的Ni-Cu催化剂, 并采用XRD、TPR和XPS表征方法研究了镍铜相互作用对苯甲醇的催化氧化性能的影响。结果显示, 当催化剂体系中只有Ni时, 催化剂组分为Ni(OH)₂;当催化剂体系含有Ni和Cu时, 催化剂组分为Ni(OH)₂和Cu(OH)₂混合晶相;当催化剂体系中仅含Cu时, 催化剂组分为CuO;并且由于镍、铜的相互作用, 催化剂的还原温度降低, Ni的存在阻止了Cu(OH)₂晶相转变为CuO。此外, 催化剂体系中Ni含量越高, 其催化活性也越高, Ni的存在提高了Cu的催化性能。

关键词

[苯甲醇](#) [催化氧化](#) [镍铜相互作用](#)

分类号

Influence of Ni-Cu interaction on catalytic oxidation of benzyl alcohol

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Abstract

Ni-Cu catalysts with different ratios were prepared through the precipitation method. The influence of Ni-Cu interaction on the catalytic oxidation of benzyl alcohol was studied with XRD, TPR and XPS characterizations. The result showed that the obtained catalysts were Ni(OH)₂, the mixture of Ni(OH)₂ and Cu(OH)₂, and CuO respectively when the catalyst system contains only Ni, Ni and Cu, and only Cu. The reduction temperature of the catalyst decreased owing to Ni-Cu interaction, and Ni prevented the transformation of Cu(OH)₂ to CuO. In addition, the catalytic activity was higher with a higher Ni content and the existence of Ni improved the catalytic activity of Cu.

Key words

[benzyl alcohol](#) [catalytic oxidation](#) [Ni-Cu interaction](#)

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