

Pd/NaZSM-5负载型催化剂上CO完全氧化研究

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摘要 采用浸渍法制备了一系列Pd/NaZSM-5负载型催化剂。考察了焙烧温度、反应温度、Pd含量及预还原等对CO氧化性能的影响。结果表明:制备条件和反应条件对催化活性均有较大影响,催化剂的活性随着焙烧温度的增加而降低,随反应温度及Pd含量的增加而增加。XRD,TEM结果表明催化剂中Pd组分处于高分散状;表面XPS分析证实催化剂表面Pd物种PdO₂和PdO在反应过程中发生明显的表面化学变化,高价Pd物种随反应的进行逐步被CO还原为低价Pd物种,催化剂活性下降与Pd物种被还原有关。H₂预还原作用也导致催化剂活性有所下降。

关键词 [钯](#) [ZSM-5](#) [一氧化氮](#) [催化活性](#)

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Studies of CO Complete Oxidation over Pd/NaZSM-5 Supported Catalysts

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Abstract A series of NaZSM-5 supported palladium catalysts have been prepared by impregnation method. Influences of the calcination temperature, reaction temperature, Pd content and reduction on CO oxidation have been studied. It is found that the catalytic activity decreased with the increase of the calcination temperature. the higher reaction temperature or Pd content resulted in the higher catalytic performance for CO oxidation, and H₂ reduction on catalyst resulted in lower catalytic performance. The results of XRD and TEM show that Pd species are highly dispersed over NaZSM-5 zeolite, which is dependent on the pretreatment temperatures and reaction conditions. Analysis of the surface by XPS proves the PdO₂ is easily reduced to PdO and Pd by CO and H₂, which is related to the deactivation of Pd/NaZSM-5 catalyst for CO complete oxidation.

Key words [PALLADIUM](#) [ZSM-5](#) [NO](#) [CATALYTIC ACTIVITY](#)

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