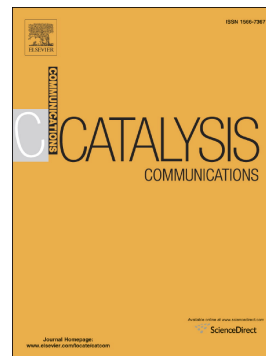


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Poisoning effect of CaO on Cu/ZSM-5 for the selective catalytic reduction of NO with NH₃

Hongyan Xue^a, Xiaoming Guo^{a,*} guoxiaoming@sit.edu.cn, Shengdong Wang^b, Chao Sun^a, Ju Yu^a, Dongsen Mao^{a,*} dsmao@sit.edu.cn

^aResearch Institute of Applied Catalysis, School of Chemical and Environmental Engineering, Shanghai Institute of Technology, Shanghai 201418, PR China;

^bShanghai Institute for Design & Research in Environmental Engineering Co., Ltd.; Shanghai 200232, PR China)

*Corresponding author.

Abstract

The influence of the presence of CaO in the Cu/ZSM-5 catalyst on the selective catalytic reduction of NO by NH₃ was investigated. A series of samples containing different amounts of Ca loading have been prepared by the incipient wetness impregnation method. The catalysts were characterized using N₂ adsorption/desorption, powder XRD, H₂-TPR, NH₃-TPD and XPS techniques. The Ca loading led to a decrease in the ability for reduction of CuO, a loss of the surface acid sites and a decrease in the surface concentration of Cu, which all appear responsible for the deactivation of Ca-impregnated Cu/ZSM-5 catalysts.

Keywords: Selective catalytic reduction, NO_x, Cu/ZSM-5, CaO, Poisoning effect.

1. Introduction

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