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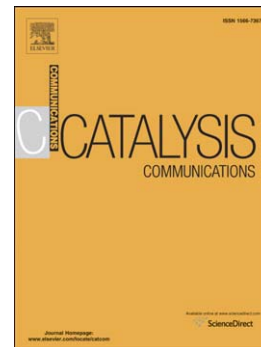
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Effect of impregnation sequence on performance of SiO₂ supported Cu-Fe catalysts for higher alcohols synthesis from syngas

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Abstract: The effects of different impregnation sequences of copper and iron on the performance of Cu-Fe/SiO₂ catalysts for higher alcohols synthesis from syngas were investigated by N₂ adsorption, XRD, H₂-TPR, CO-IR, XPS, and CO hydrogenation reaction. The results indicate that the catalyst prepared by impregnation of support first with Fe and then with Cu exhibits the highest selectivity (36.1%) and space time yield (153.3 g·kg_{cat}⁻¹·h⁻¹) of alcohols. The CO conversion and alcohol selectivity of the catalysts was closely related to the content of surface Cu, and the ratio of surface contents of Cu to Fe, respectively.

Key words: Cu-Fe/SiO₂, CO hydrogenation, higher alcohols, impregnation sequences

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