Effect of Mn-Cr Catalyst Structure for Low Temperature NH_3 Selective Catalytic Reduction

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In this study, the various structure Mn-Cr mixed oxide catalysts are synthesized by co-precipitation method and they are used as active catalysts for NH_3 selective catalytic reduction. The Mn-Cr mixed oxide catalysts are characterized by X-ray diffraction, NH_3-temperature programed desorption, H_2-temperature programed reduction, X-ray photoelectron spectroscopy and Fourier-transform infrared spectroscopy. The prepared Mn-Cr layered structure mixed oxide catalyst was explored as a catalyst for NH_3 selective catalytic reduction, resulted in an outstanding deNO_x performance at low temperature. Moreover, the improved H_2O and SO_2 tolerance of Mn-Cr layered structure catalysts was also obtained. The enhanced NO_x removal efficiency suggests that Mn based layered structure catalysts could be used as the effective catalyst for low temperature NH_3-SCR processes.