

Metal precursor impregnation sequence effect for low-temperature NH₃-SCR of NO and reaction mechanism over Mn-Ce/TiO₂ catalyst

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In order to investigate the effect of impregnation sequence on CeO₂-promoted Mn/TiO₂ catalyst for low-temperature NH₃-SCR of NO, Mn/TiO₂, Mn/Ce/TiO₂, Mn-Ce/TiO₂, and Ce/Mn/TiO₂ catalysts were synthesized. Among these catalysts, Mn-Ce/TiO₂ exhibited the highest catalytic performance due to Mn dispersion and oxidation state of Mn, Ce, and O, confirmed by TEM, XPS, and H₂-TPR. Furthermore, DRIFT study showed that the catalyst synthesis method influenced the reaction mechanism which highly affects the catalytic activity.