

## A Study on the V/TiO<sub>2</sub> Catalysts of SO<sub>2</sub> Deactivation by Using Mechanochemical Method

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The present study conducted reactivity experiments and several physiochemical property analyses using a fixed bed reactor fit for the actual process in order to improve durability against SO<sub>2</sub> based on the properties of V/TiO<sub>2</sub> catalyst by the high-energy metal dissolution method using ball milling. Although original catalysts were deactivated with time caused by ammonium sulfate salt formed, but V[2]/G-5 BM catalysts which has the extremely superior activity sustains the initial NO<sub>x</sub> removal efficiency without forming salts. Through XPS analysis, it was found that non-stoichiometric oxide of impregnated vanadium catalyst increases, and the increase of non-stoichiometric vanadium species can inhibit the production of ammonium sulfate salt by facilitating oxidation in SCR reaction.

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