

Fe<sub>2</sub>O<sub>3</sub>, V<sub>2</sub>O<sub>5</sub>-supported High Surface Area TiO<sub>2</sub> SCR Catalyst for Natural Gas Thermal Power Plants

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In recent times V<sub>2</sub>O<sub>5</sub>-based SCR catalysts is widely used in catalytic deNO<sub>x</sub> processes in thermal power plants including natural gas plants, due to It had proper operating temperature range, remarkable efficiency, and strong durability. And then tungsten or molybdenum used as promoter components. But It is relatively high-priced, so It required cheaper alternative that doesn't reduce catalytic performance sharply. Iron is low-priced than tungsten and molybdenum and in SCR reaction it has depression of N<sub>2</sub>O formation characteristic. So, it is considered as good alternative. In this study, we synthesize V<sub>2</sub>O<sub>5</sub>-based, Fe<sub>2</sub>O<sub>3</sub>-introduced new catalyst prepared by wet impregnation method using different supports. It shows It is possible for new catalyst to get cheaper than existing ones and to keep a catalytic performance reasonably. We analyze its surface characteristics and catalytic activities utilizing BET, XRD, NH<sub>3</sub>-TPD, FT-IR method.