# Removal Characterisitics of NOx Using Coated $V_2O_5$-$TiO_2$ Catalyst on Ceramic Filters in $NH_3$-SCR

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Ceramic foams prepared from silica-clay were coated with $TiO_2$ and $V_2O_5$ catalysts for selective catalytic reduction of NOx with $NH_3$. The effects of $V_2O_5$ loading, reaction temperature, space velocity, and oxygen content on NOx reduction with $NH_3$ were mainly investigated. Also, the NOx reduction characteristics of $V_2O_5$ and $V_2O_5$-$TiO_2$ filters were compared under the existence of sulfur dioxide. From the results, the optimal NOx reduction with the maximum reduction efficiency of 91% could be performed under the condition with $V_2O_5$ loading 6.0wt.%, reaction temperature 350℃, space velocity 6000$h^{-1}$, and oxygen content 5%. And, the $V_2O_5$-$TiO_2$ filters have shown more excellent NOx reduction efficiency and stronger resistance against sulfur dioxide than the $V_2O_5$ filters.