

Preparation and characterization of porous ceramic-supported V_2O_5/TiO_2 catalyst for SCR of NO_x with NH_3

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The porous ceramic-supports with constant pore size and with porosity about 80% were prepared by foaming method combined with gelcasting and pseudo double-emulsion method. Titania coating on porous ceramic spheres was developed using a novel processing by sol-gel process. V_2O_5/TiO_2 catalyst was prepared vanadium coating again on titania coated on porous ceramic-supported by impregnation method. The physical properties were characterized by SEM-EDS, XRD and BET. The porous ceramic-supported V_2O_5/TiO_2 catalyst was applied in the selective catalytic reduction (SCR) of NO_x by NH_3 . The NO removal efficiency of this catalyst 96% at a space velocity of 12600/h, NH_3/NO mole ratio of 1.0 and reaction temperature of 250-400°C. This work has demonstrated feasibility of V_2O_5/TiO_2 catalyst on porous ceramic-support as catalyst support of SCR of NO_x with NH_3 .