

**Vanadia-titania composite xerogel catalysts for
gas-phase ammoxidation of m-xylene**

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vanadia-titania composite xerogel catalysts prepared by the sol-gel process were evaluated as catalysts in a fixed bed reactor for the gas-phase ammoxidation of m-xylene in a temperature range from 300°C to 425°C. The effects of the reaction temperature and the vanadia loadings on reaction characteristic were investigated. A maximum yield of 72% isophthalonitrile (IPN) was obtained with a V_2O_5 loading of 3wt% at 375°C with a contact time of 0.5 s.

The vanadia-titania xerogel catalysts were characterized by nitrogen adsorption-desorption, temperature programmed reduction (TPR), X-ray diffraction (XRD), and scanning electronic microscopy (SEM) to explain their excellent catalytic performance in comparison with those of conventionally impregnated catalysts.