

Surface characterization of composite catalysts prepared by sol–gel route

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Abstract

The aim of this work was to synthesize by sol gel route starting from metal alkoxides using different H₂O/V ratios a catalyst. Dried samples have been characterized by XRD, atomic absorption and BET analysis. Calcination of dried materials up to 600 °C in flowing air has been followed with TG–FT-IR spectroscopic analysis. Catalytic properties of calcined materials have been tested in the oxidative dehydrogenation of ethane at 600 °C and compared with those of a catalyst prepared by impregnation of Nb₂O₅ with V₂O₅ having the same composition of gel systems. An improvement of the catalytic performances of vanadium for the gel prepared with the higher H₂O/V ratio was found with respect to those of the supported catalyst due to the better interaction between vanadium and niobium.