



“Gheorghe Asachi” Technical University of Iasi, Romania



IN SITU STUDY OF THE ELECTRICAL/DIELECTRIC PROPERTIES OF ALUMINA SUPPORTED VANADIA USED AS COMBUSTION CATALYSTS

Mariana Scurtu^{1*}, **Monica Caldararu**¹, Veronica Bratan¹, Cristian Hornoiu¹,
Niculae I. Ionescu¹, Tatiana Yuzhakova², Ákos Rédey²

¹“Ilie Murgulescu” Institute of Physical Chemistry, Romanian Academy, 202 Splaiul Independentei, 060021 Bucharest, Romania

²University of Pannonia, Institute of Environmental Engineering, 10 Egyetem Street, 8200 Veszprém, Hungary

Abstract

The synthesis of vanadium oxide systems (with 5 and 20 wt% V₂O₅ loadings) supported on commercial γ -alumina was carried out by a wet impregnation method. The samples were characterized by low-temperature nitrogen adsorption (BET), inductively coupled plasma (ICP) method and by *in situ* electrical conductance/capacitance measurements. The adsorption of CO was used to investigate the acidic properties of alumina support and V₂O₅/ γ -Al₂O₃ catalysts by FTIR spectroscopy. The catalytic activities of the samples were tested in propylene oxidation reaction, in the temperature range of 30-400°C. The electrical/dielectric properties of the support strongly influence the surface behavior of the supported phase.

Key words: γ -alumina, conductance, dielectric constant, propylene oxidation, vanadium oxide

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* Author to whom all correspondence should be addressed: e-mail: mcarata@icf.ro; Phone: +4021 3167912; Fax: +4021 3121147