

Abstract Submitted
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Nano-crystalline structure and catalytic activity of TiO₂ supported manganese oxide catalysts SERGEY MAMEDOV, Horiba Jobin Yvon Inc., PADMANABHA REDDY ETTIREDDY, NEERAJA ETTIREDDY, Chemical and Materials Engineering Department, University of Cincinnati, Cincinnati, OH, USA, PUNIT BOOLCHAND, Department of Electrical and Computer Engineering, and Computer Science, University of Cincinnati, Cincinnati, OH, USA, PANAGIOTIS G. SMIRNIOTIS, Chemical and Materials Engineering Department, University of Cincinnati, Cincinnati, OH, USA — A series of TiO₂ supported manganese oxide catalysts were prepared by wet-impregnation method. Raman spectroscopy was used to characterize the structure and chemical environment of these catalysts as well as manganese oxides. Spectra of different Mn-oxides are presented. It was found that there is strong correlation of the position and the width of E_{2g} mode of anatase at 146 cm⁻¹ and Mn-oxide(s) concentration. Evolution of Raman spectra described in the frame of the optical confinement model. In this model, the position and width of the Raman band depend on structural disorder and size of nano-crystals. Size of nano-crystal was estimated.

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