



Fe₂O₃ – TiO₂ THIN FILMS PREPARED BY SOL-GEL METHOD

Ramona - Crina Suciu^{1*}, Marcela Corina Roșu¹, Teofil Dănuț Silipaș¹,
Emil Indrea¹, Violeta Popescu², George Liviu Popescu²

¹National Institute for R&D of Isotopic and Molecular Technologies, P.O. Box 700, 400293 Cluj-Napoca, Romania

²Technical University of Cluj-Napoca, 15 C. Daicoviciu, 400020 Cluj-Napoca, Romania

Abstract

Fe₂O₃-doped TiO₂ photocatalysts were prepared by sol-gel method. Mixed films of TiO₂ and Fe₂O₃ were deposited on indium tin oxide (ITO) coated glass slides by spray pyrolysis using solutions that contains both tetraisopropoxides of titanium as Ti²⁺ source and FeCl₃ in butanol as Fe³⁺ source. The film consists on five to ten Fe₂O₃ – TiO₂ layers.

UV-VIS spectra were obtained both for the solutions of precursors and films before and after heat treatment. Fluorescence measurements were made for the solutions. X – ray diffraction was use for structural investigations. The morphology of the film was studied by Scanning Electron Microscopy.

Enhancement in the UV optical absorption domain of Fe₂O₃-doped TiO₂ indicates that it can be used as an efficient photocatalyst under visible light irradiation.

Key words: photocatalytic activity, sol – gel, spray pyrolysis, TiO₂

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* Author to whom all correspondence should be addressed: e-mail: Ramona.Suciu@itim-cj.ro