

Abstract Submitted
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Synthesis and characterization of TiO₂ nanocrystals through sol-gel and hydrothermal methods¹ CORINA ILEANA ORHA, CARMEN LAZAU, CORNELIA ELENA RATIU, PAULA SFIRLOAGA, PAULINA VLAZAN, National Institute for Research and Development in Electrochemistry and Condensed Matter Timisoara, Romania, PAUL BARVINSCHI, West University from Timisoara, Romania, IOAN MUSCUTARIU, Physics Department, Baldwin Wallace College, USA, IOAN GROZESCU, National Institute for Research and Development in Electrochemistry and Condensed Matter Timisoara, Romania — Nanomaterials with special and interesting properties, which can be different comparing to the macro scale materials, offer a large area of practical applications in all social-economical fields. Incorporating metallic and non-metallic dopant ions into the titanium dioxide particles can influence the performance of these photocatalysts. This affects the dynamics of electron-ion recombination and interfacial charge transfer. In this paper it was synthesized undoped and doped TiO₂ nanocrystals with metallic (Ag) and non-metallic (N) ions through sol-gel and hydrothermal methods. The materials were characterized by X-ray diffraction (XRD), scanning electron microscopy (SEM) and energy dispersive X-ray analysis (EDAX), diffuse reflectance UV-VIS, thermogravimetric analysis (TG) and differential thermal analysis (DTA).

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