



“Gheorghe Asachi” Technical University of Iasi, Romania



INFLUENCE OF PRECURSOR COMPOSITION ON OPTOELECTRIC AND PHOTOCATALYTIC PROPERTIES OF TiO₂ AND WO₃ FILMS

Alexandru Enesca

Transilvania University of Brasov, Centre of Product Design for Sustainable Development, 29 Eroilor Blvd., 500036, Brasov, Romania, e-mail: aenesca@unitbv.ro, Phone: +40726680794, Fax: +40268410525

Abstract

The paper presents the influence of different WO₃:TiO₂ ratios on the photocatalytic and photoelectrolytic properties of the films. The investigations are focused on the morphological (Atomic Force Microscopy, Contact angle), compositional (X-ray diffraction), optoelectric (conductivity, photocurrent) and photocatalytic properties of titanium dioxide films mixed with tungsten oxide. The most important application of these layers is in wastewater purification and hydrogen production using a photoelectrochemical cell (PECC).

Key words: optoelectric properties, oxide semiconductors, thin films, titanium oxide, tungsten oxide

Received: March, 2010; Revised final: August, 2011; Accepted: August, 2011
