

# ADSORPTION STUDIES OF METHYL ORANGE ON NANOSTRUCTURED POWDER OF TiO<sub>2</sub>

L. ANDRONIC<sup>1</sup>    A. DUȚĂ<sup>1</sup>

**Abstract:** *The photocatalytic degradation of methyl orange in aqueous suspensions of nanoporous TiO<sub>2</sub> powder under a variety of factors: pH, amount of TiO<sub>2</sub>, illumination time and concentration of MO was discussed. We investigated the adsorption of methyl orange on TiO<sub>2</sub> under visible light ( $\lambda > 420$  nm), as a primary step in a photodegradation (in UV). Since, for low concentration of MO the heat evolved during adsorption was  $-29.638$  kJ mol<sup>-1</sup>, the forces between the adsorbent and adsorbate appear to be mainly van der Waals forces. The Freundlich and Langmuir equations are used for modeling.*

**Key words:** *adsorption isotherm, Freundlich equation, Langmuir equation, methyl orange, TiO<sub>2</sub>.*