



“Gheorghe Asachi” Technical University of Iasi, Romania



REMOVING TOXIC COMPOUNDS FROM WASTEWATER

Cristina Orbeci*, Gheorghe Nechifor, Rodica Stănescu

*University Politehnica of Bucharest, Faculty of Applied Chemistry and Materials Science, 1-7 Gh. Polizu Street,
011061, Bucharest, Romania*

Abstract

The paper presents a hybrid method for the advanced removal of low biodegradable organic compounds from water, by combining the separation selectivity of the membrane with the oxidation efficiency of the photocatalytic process. The aim of this study is to evaluate the performance of the hybrid method to remove toxic compounds from wastewater. The advanced oxidation process, based on a photocatalytic reactor with continuous recirculation, ultraviolet (UV) radiations and a membrane, was used for the removal of 2,4-dichlorophenol (2,4-DCP). The membrane was prepared by immobilization on the carrier material such as fiberglass through the sol-gel specific method, with layer-by-layer deposition.

Key words: 2,4-dichlorophenol, membrane, toxic compounds, wastewater

Received: March, 2014; *Revised final:* August, 2014; *Accepted:* September, 2014

* Author to whom all correspondence should be addressed: e-mail: cristina27ccc@yahoo.com; Phone: +40721259875