

## PHOTOCATALYTIC ACTIVITY OF DOPPED TiO<sub>2</sub> OVER ORGANIC COMPOUNDS DEGRADATION

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**Abstract.** *Nanomaterials have attracted a great interest among the researchers due to their special properties and wide applicability in different fields, with special emphasis on wastewater treatment processes. Heterogeneous photocatalysis is a process in which a semiconductor material is irradiated and generate hydroxyl radical, which are able to degrade and mineralize organic compounds. In order to improve some drawbacks of semiconductors, researchers focused their attention on improving synthesis methods and changing the surface structure of the photocatalyst. Some of the most used synthesis methods are: sol-gel method, hydrothermal method and doping the photocatalyst with different metallic or non-metallic ions. The aim of this paper is to show the influence of synthesis methods on the photocatalytic activity of nanomaterials.*

**Keywords:** nanomaterials, synthesis methods, water treatment

### 1. Introduction

Over the last decades, nanotechnology has become one of the most interesting research areas, being an advanced technology, whose main exertions are the synthesis, characterization and exploration of nanomaterials. Due to their small dimensions, nanomaterials have unique structure and properties compared to bulk materials [1, 2].

Nanomaterials are extensively used in different fields, such as: cancer treatment [3, 4], cardiovascular diseases treatment [5], supercapacitor [6], solar cells [7], gas sensors [8], UV protection [9], environmental applications [10-13] etc.

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