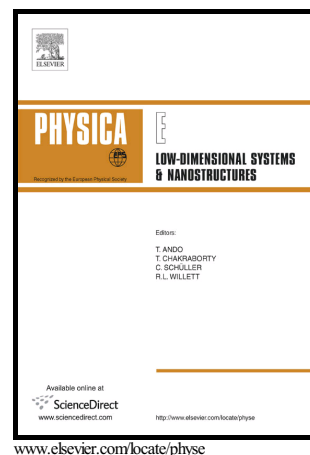


# Author's Accepted Manuscript

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PII: S1386-9477(17)30373-9  
DOI: <http://dx.doi.org/10.1016/j.physe.2017.05.020>  
Reference: PHYSE12820

To appear in: *Physica E: Low-dimensional Systems and Nanostructures*

Received date: 15 March 2017  
Revised date: 2 May 2017  
Accepted date: 26 May 2017

Cite this article as: J. Maragatha, C. Rani, S. Rajendran and S. Karuppuchamy  
Microwave synthesis of Nitrogen doped  $Ti_4O_7$  for photocatalytic applications  
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## Microwave synthesis of Nitrogen doped Ti<sub>4</sub>O<sub>7</sub> for photocatalytic applications

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### Abstract

The nitrogen (N) doped Ti<sub>4</sub>O<sub>7</sub> photocatalyst was prepared from urea as a nitrogen source by a microwave method. The resulting photocatalyst was characterized by X-ray diffraction (XRD), Field Emission Scanning electron microscopy (FESEM), Fourier transform infrared spectroscopy (FTIR), UV-visible diffuse reflectance spectroscopy (UV-Vis DRS) and UV-vis spectroscopy (UV-Vis). 0.1M N doped Ti<sub>4</sub>O<sub>7</sub> photocatalyst exhibited methylene blue decomposition efficiency of 100% which was prepared by microwave treatment for above 30 min. Rate constant was found to be 0.028910min<sup>-1</sup> in the first order kinetic.

**Keywords:** Titanium oxide; Nitrogen; Photocatalyst; Methylene blue; Ultra-violet (UV) light.

### 1. Introduction

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