Available online at **www.joac.info**

ISSN: 2278-1862

Journal of Applicable Chemistry

2018, 7 (6): 1670-1675

(International Peer Reviewed Journal)

Vanadium Titanate Nanotube Arrays for Photocatalytic Application

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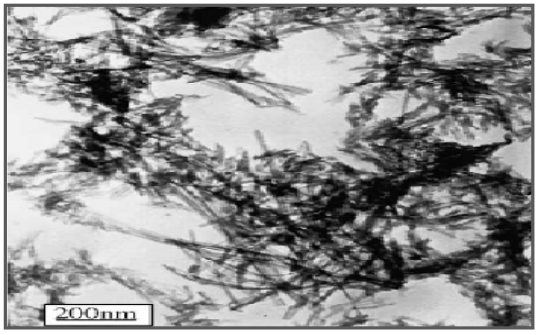
Accepted on 15th November, 2018

ABSTRACT

Titanate or vanadium nanocomposites consisting of titanate and vanadium oxide nanoparticles nanotubes were successfully prepared via a hydrothermal method. The samples were characterized by means of X-ray diffraction (XRD) and transmission electron microscopy (TEM). The activity of the nanocomposites was examined by photocatalytic depolarization of Remazole B under visible light irradiation. It is found that the nanocomposites exhibited a much improved photocatalytic activity in comparison with titanate nanotube, and anatase TiO_2 nanoparticle.

Graphical Abstract



TEM image of titnate nanotubes

Keywords: Hydrothermal cell, Vanadium/titanium oxide, Photocatalytic depolarization