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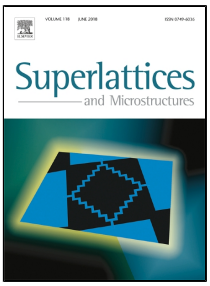

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Phattranit Dumrongrojthanath, Anukorn Phuruangrat, Suchada Thipkonglas, Budsabong Kuntalue, Somchai Thongtem, Titipun Thongtem

PII:	S0749-6036(18)30481-6
DOI:	10.1016/j.spmi.2018.05.052
Reference:	YSPMI 5719
To appear in:	*Superlattices and Microstructures*
Received Date:	09 March 2018
Accepted Date:	24 May 2018

Please cite this article as: Phattranit Dumrongrojthanath, Anukorn Phuruangrat, Suchada Thipkonglas, Budsabong Kuntalue, Somchai Thongtem, Titipun Thongtem, Synthesis and characterization of Ce-doped MoO_3 nanobelts for using as visible-light-driven photocatalysts, *Superlattices and Microstructures* (2018), doi: 10.1016/j.spmi.2018.05.052

Synthesis and characterization of Ce-doped MoO_3 nanobelts for using as visible-light-driven photocatalysts

Phattranit Dumrongrojthanath[a], Anukorn Phuruangrat[b,*], Suchada Thipkonglas[b], Budsabong Kuntalue[c], Somchai Thongtem[d,e] and Titipun Thongtem[a,e,*]

[a] Department of Chemistry, Faculty of Science, Chiang Mai University, Chiang Mai 50200, Thailand

[b] Department of Materials Science and Technology, Faculty of Science, Prince of Songkla University, Hat Yai, Songkhla 90112, Thailand

[c] Electron Microscopy Research and Service Center, Faculty of Science, Chiang Mai University, Chiang Mai 50200, Thailand

[d] Department of Physics and Materials Science, Faculty of Science, Chiang Mai University, Chiang Mai 50200, Thailand

[e] Materials Science Research Center, Faculty of Science, Chiang Mai University, Chiang Mai 50200, Thailand

* Corresponding authors: phuruangrat@hotmail.com (A. Phuruangrat[b])
Tel. +66 (0)74 288374, Fax. +66 (0)74 288395 and
ttpthongtem@yahoo.com (T. Thongtem[d])
Tel. +66 (0)53 941915, Fax. +66 (0)53 941915

Abstract

0–4 wt% (0–4.11 mol%) Ce-doped MoO_3 nanobelts were successfully synthesized by hydrothermal method at 180 °C for 20 h. X-ray diffraction (XRD), X-ray photoelectron spectroscopy (XPS), Raman spectroscopy, Fourier transform infrared spectroscopy (FTIR), scanning electron microscopy (SEM) and transmission electron microscopy (TEM) show orthorhombic MoO_3 and Ce-doped MoO_3 nanobelts with >10 μm long, 200–250 nm wide and their growth along the [010] direction. The photocatalytic performance of pure MoO_3 and Ce-doped MoO_3 nanobelts was investigated through photodegradation of methylene blue (MB) under visible radiation. In this research, 3 wt% (3.08 mol%) Ce-doped MoO_3