



## Nb doped TiO<sub>2</sub> thin films as photocatalytic materials

Submitted by Mihaela Girtan on Mon, 11/02/2015 - 22:17

Titre	Nb doped TiO <sub>2</sub> thin films as photocatalytic materials
Type de publication	Article de revue
Auteur	Adomnitei, Catalin [1], Tascu, Sorin [2], Luca, Dumitru [3], Dobromir, Marius [4], Girtan, Mihaela [5], Mardare, Diana [6]
Pays	Inde
Editeur	Springer India
Ville	New Delhi
Type	Article scientifique dans une revue à comité de lecture
Année	2015
Langue	Anglais
Date	2015
Numéro	5
Pagination	1259-1262
Volume	38
Titre de la revue	Bulletin of Materials Science
ISSN	0973-7669
Mots-clés	Hydrophilicity [7], Nb-doped TiO <sub>2</sub> thin films [8], oleic acid decomposition [9], photocatalysis. [10]
Résumé en anglais	<p>Amorphous undoped and Nb-doped films were obtained by the spin coating method. The films have a compact structure, as revealed by scanning electron microscopy, and are very thin, with thickness values under 100 nm. The photocatalytic activity of the films was evaluated by observing the decomposition of an oleic acid solution under UV irradiation, and by studying the change in the optical transmittance of an aqueous solution containing methylene blue, in the presence of the UV-irradiated films. More than 30 h, depending on doping, are needed to recover their initial contact angles before applying oleic acid. The increase of the optical transmittance of the methylene blue solution confirms the photocatalytic degradation of methylene blue on the Nb-doped TiO<sub>2</sub> films. X-ray photoelectron spectroscopy studies, performed to detect the presence of the carbon on the irradiated surface of the films, drive to the conclusion that at the surface of the films, even for contact angles close to 0°, the presence of carbon still can be detected, which demonstrates that hydrophilicity is ruled by a different mechanism than photocatalysis.</p>
URL de la notice	<a href="http://okina.univ-angers.fr/publications/ua14159">http://okina.univ-angers.fr/publications/ua14159</a> [11]
DOI	10.1007/s12034-015-1008-7 [12]
Lien vers le document	<a href="http://link.springer.com/article/10.1007%2Fs12034-015-1008-7">http://link.springer.com/article/10.1007%2Fs12034-015-1008-7</a> [13]

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### Liens

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Publié sur *Okina* (<http://okina.univ-angers.fr>)