

Accepted Manuscript

Full Length Article

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PII: S0169-4332(18)30652-4
DOI: <https://doi.org/10.1016/j.apsusc.2018.02.289>
Reference: APSUSC 38747

To appear in: *Applied Surface Science*

Received Date: 27 November 2017
Revised Date: 25 February 2018
Accepted Date: 28 February 2018

Please cite this article as: H. Makhlouf, C. Karam, A. Lamouchi, S. Tingry, P. Miele, R. Habchi, R. Chtourou, M. Bechelany, Analysis of Ultraviolet photo-response of ZnO nanostructures prepared by electrodeposition and atomic layer deposition, *Applied Surface Science* (2018), doi: <https://doi.org/10.1016/j.apsusc.2018.02.289>

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Analysis of Ultraviolet photo-response of ZnO nanostructures prepared by electrodeposition and atomic layer deposition

Houssin Makhlouf^{1,2,3 \pounds} , Chantal Karam^{1,4 \pounds} , Amina Lamouchi^{2,3}, Sophie Tingry¹, Philippe Miele¹, Roland Habchi⁴, Radhouane Chtourou² and Mikhael Bechelany¹

¹Institut Européen des Membranes, IEM, UMR 5635, Université Montpellier, ENSCM, CNRS, Place Eugène Bataillon, F-34095 Montpellier Cedex5, France.

²Laboratoire de Nanomatériaux et Systèmes des Energies Renouvelables (LANSER), Centre de Recherches et des Technologies de l'Energie, Technopole BorjCedria, Bp 95, Hammam-Lif, 2050 Tunis, Tunisia.

³Faculté des sciences de Tunis, Université de Tunis, El Manar, 2092 Tunis, Tunisia.

⁴EC2M, faculty of sciences 2, Campus Pierre Gemayel, Lebanese University,90656, Lebanon.

^{\pounds} These authors contributed equally to the paper.

ABSTRACT

In this work, ZnO nanowires (ZnO NWs) and urchin-like ZnO nanowires (U-ZnO NWs) based on self-assembled ordered polystyrene sphere (PS) were successfully prepared by combining atomic layer deposition (ALD) and electrochemical deposition (ECD) processes to build UV photosensors. The photo-response of the prepared samples was investigated and compared. The growth of the nanowires on self-assembled ordered PS introduce a significant modification on the morphology, crystal orientation and grain size of U-ZnO NWs compared to randomly vertically aligned ZnO NWs and therefore improve the photo-response of

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