

ZnO (Ag-N) Nanorods Films Optimized for Photocatalytic Water Purification

Luis Sanchez ¹, Carlos Castillo ¹, Willy Cruz ¹, Bryan Yauri ¹, Miguel Sosa ¹, Clemente Luyo ¹, Roberto Candal ^{2,3}, Silvia Ponce ⁴ and Juan M. Rodriguez ^{1,*}

¹ Center for the Development of Advanced Materials and Nanotechnology, Universidad Nacional de Ingeniería, Av. Tupac Amaru 210, Rimac, Lima 15333, Perú; lasr_uni@hotmail.com (L.S.); castillocorreac@gmail.com (C.C.); cruzbw@outlook.es (W.C.); bryan.yauri@hotmail.com (B.Y.); miguel7101992@gmail.com (M.S.); clemente_luyo@yahoo.com (C.L.)

² Escuela de Ciencia y Tecnología, Universidad Nacional de San Martín, San Martin 1650, Argentina; rjcandal@gmail.com

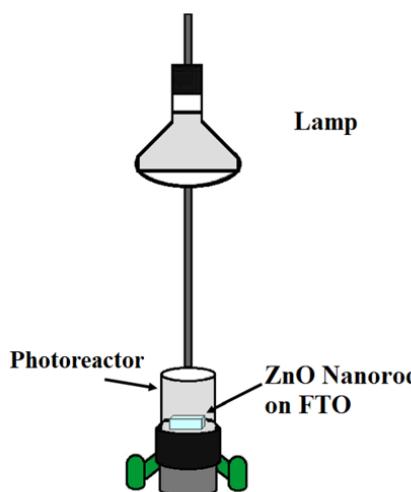
³ Instituto de Investigación e Ingeniería Ambiental, CONICET, Universidad Nacional de San Martín, San Martin 1650, Argentina.

⁴ Facultad de Ingeniería Industrial, Universidad de Lima, Av. Javier Prado Este 4600, Santiago de Surco, Lima 15023, Perú; spponceal@gmail.com

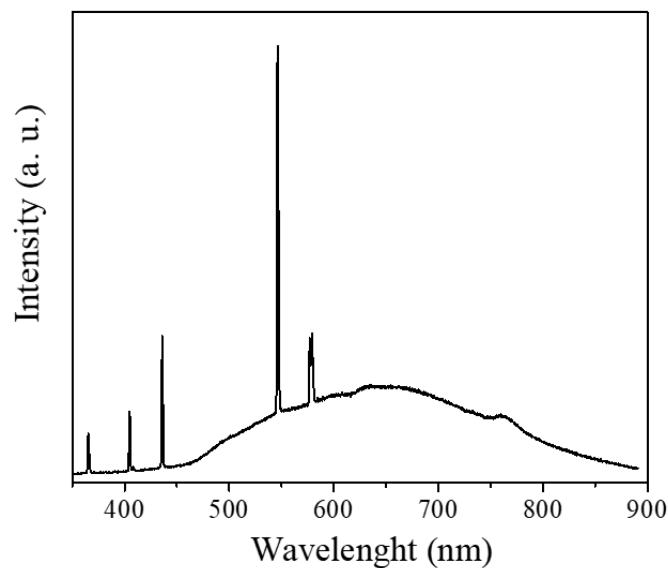
* Correspondence: jrodriguez@uni.edu.pe

Received: 24 July 2019; Accepted: 4 November 2019; Published: date

Supplementary materials



(a)



(b)

Figure S1. (a) Photocatalytic reactor system and (b) emission spectra of the 300 W OSRAM Ultravitalux lamp.

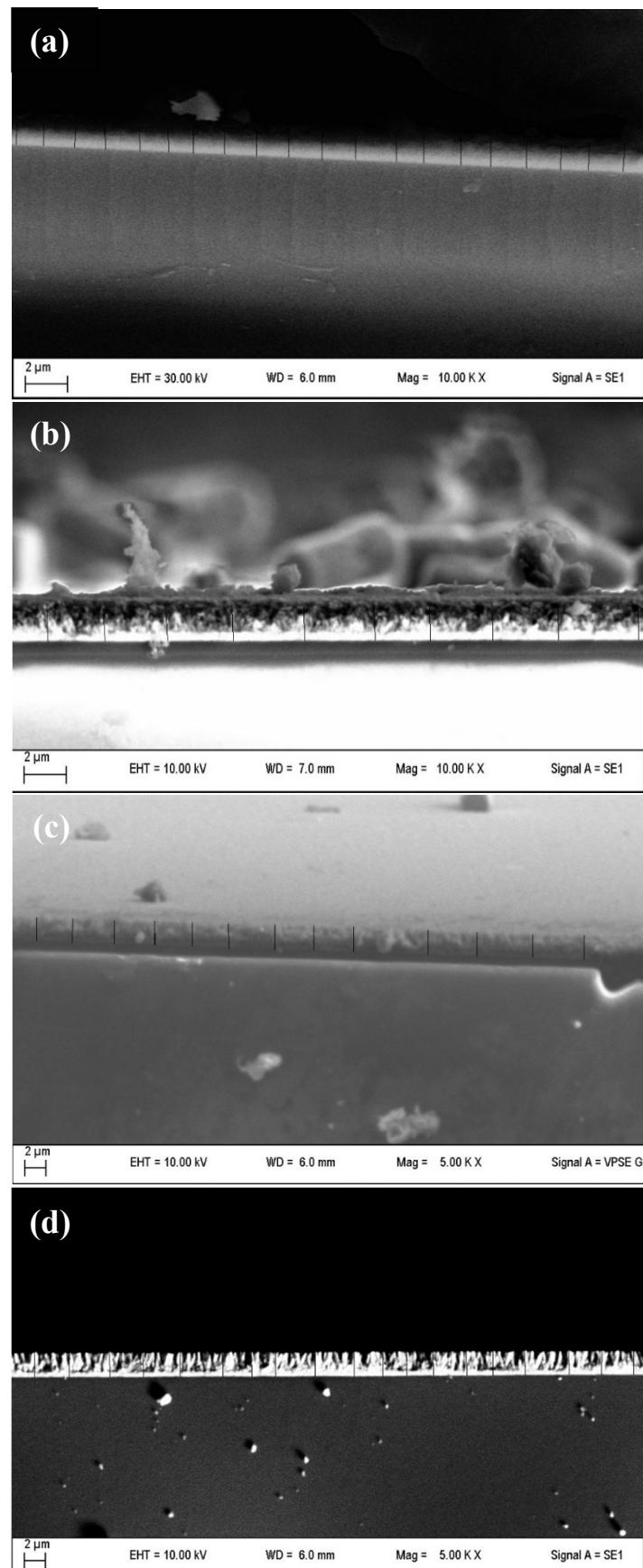


Figure S2. SEM images of the cross section NRs films prepared under different conditions of seed deposition: (a) ZnO, (b) ZnO:N (1:1), (c) ZnO:N (1:3) and (d) ZnO:N (1:4).

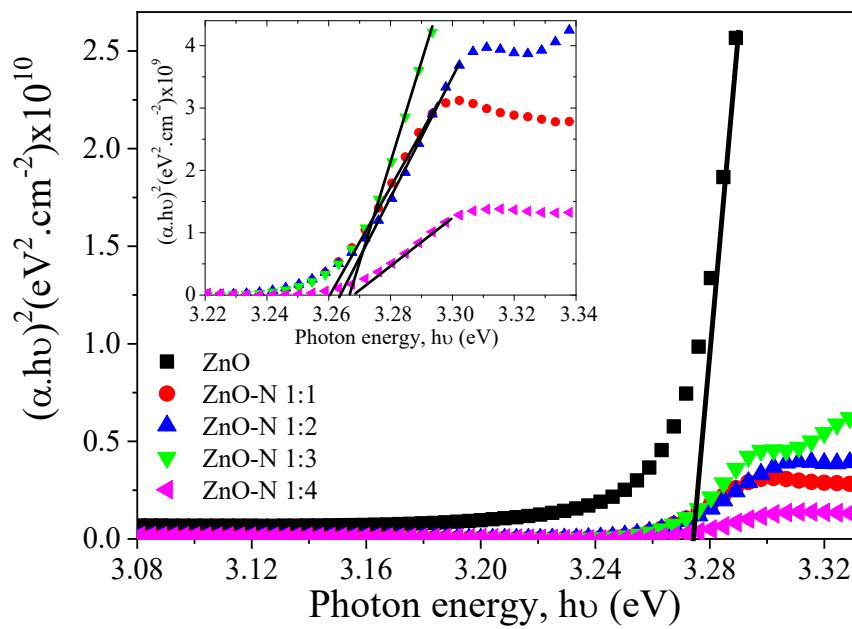


Figure S3. $(\alpha \cdot h\nu)^2$ vs. $h\nu$ plots derived from transmittance spectra for ZnO for undoped ZnO and ZnO:N NRs films. Inset shows the extrapolation exclusively for the ZnO:N NRs films.

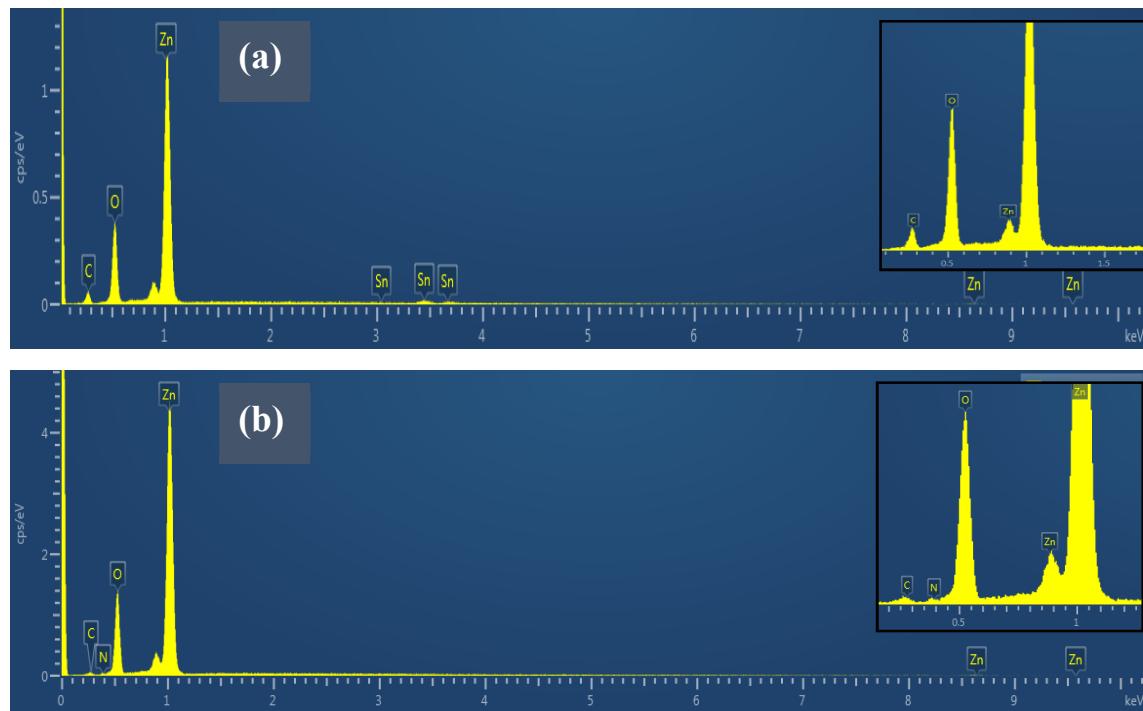


Figure S4. Typical elemental analysis spectrums of ZnO NRs films (a) and ZnO:N NRs films (b).

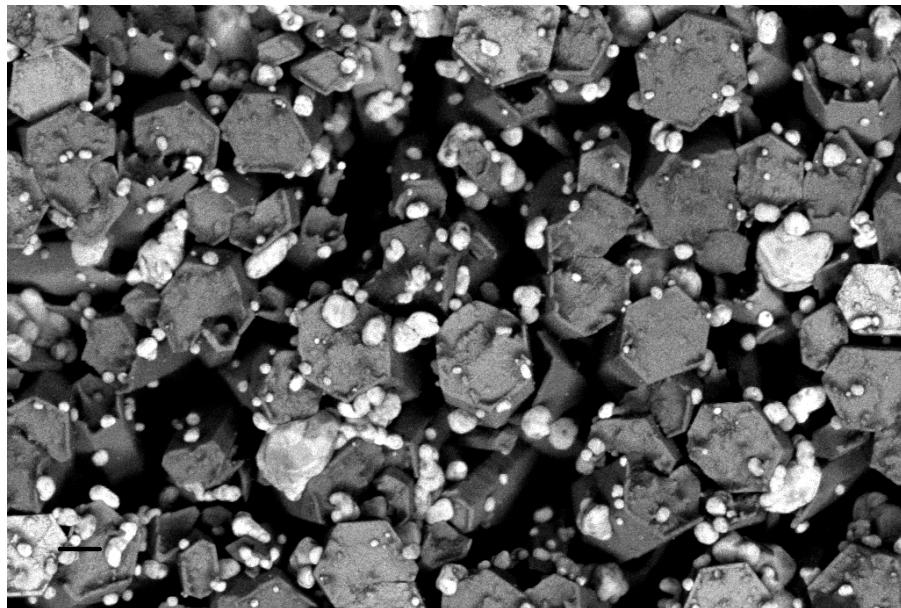


Figure S5. Backscattered electron micrograph of sample ZnO:N (1:2).