

4th International Conference and Exhibition on **Materials Science & Engineering** September 14-16, 2015 Orlando, USA

Photocatalytic and antioxidant activities of ZnO nanoparticles synthesized using *Citrus paradisi* peel extract

Alexis Debut

Universidad de las Fuerzas Armadas ESPE, Ecuador

Zinc oxide nanoparticles (ZnO-NPs) are known to be one of the multifunctional inorganic compounds which are widely used in everyday applications. This study aims to fabricate ZnO-NPs using *Citrus paradisi* peel extract with particle size ranging from 12 to 72 nm. Structural, morphological, and optical properties of the synthesized nanoparticles have been characterized by using UV-Vis spectrophotometer, TEM, DLS, and FTIR analysis. They show the significant photocatalytic degradation efficiency (>56%, 10 mg/L, 6 h) against methylene blue and antioxidant efficacy ($\geq 80\%$ for 1.2 mM) against 1, 1-diphenyl-2-picrylhydrazyl. From the results obtained it is suggested that green ZnO-NPs could be used effectively in environmental safety applications and also can address future medical concerns.

Biography

Alexis Debut has completed his PhD from Université des Sciences et Technologies de Lille, France. He is the Director of the Nanomaterials Characterization Laboratory of the Center of Nanoscience and Nanotechnology of the Universidad de las Fuerzas Armadas ESPE, Ecuador. He has published more than 35 research articles, patents and conference paper in the international and national level.

apdebut@espe.edu.ec

Notes: