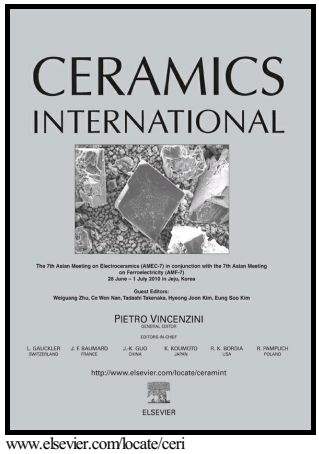

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Aba-Guevara, Cinthia G.[1], Medina-Ramírez, Iliana E.[1,*], Hernández-Ramírez, Aracely[2], Jáuregui-Rincón, Juan[3], Lozano-Álvarez Juan Antonio[3], Rodríguez-López José Luis[4].

[1]Departamento de Química, Universidad Autónoma de Aguascalientes. Av. Universidad # 940, Ciudad Universitaria, C.P. 20131, Aguascalientes, Ags., México.

[2]Universidad Autónoma de Nuevo León. Facultad de Ciencias Químicas. Guerrero y Progreso s/n, Col. Treviño. Monterrey, Nuevo León, México. C. P. 65570

[3]Departamento de Ingeniería Bioquímica, Universidad Autónoma de Aguascalientes. Av. Universidad # 940, Ciudad Universitaria, C.P. 20131, Aguascalientes, Ags., México.

[4]Advanced Materials Department, Instituto Potosino de Investigación Científica y Tecnológica, A.C. Camino Presa Sn José 2055, Lomas 4ª Secc., 78216 San Luis Potosí, SLP, México.

[*]Correspondence should be addressed to Iliana E. Medina-Ramírez; iemedina@correo.uaa.mx

Abstract

In this work, we report the synthesis, characterization and photocatalytic evaluation of visible light active iron-nitrogen co-doped titanium dioxide (Fe^{3+}-$TiO_{2-x}N_x$) nanostructured catalyst. Fe^{3+}-$TiO_{2-x}N_x$ was synthesized using two different chemical approaches: sol-gel (SG) and microwave (MW) methods. The materials were fully characterized using several techniques (SEM, UV-Vis diffuse reflectance DRS, X-ray diffraction XRD, and X-ray photoelectron spectroscopy XPS). The photocatalytic activity of the nanostructured materials synthesized by both methods was evaluated for the degradation of amoxicillin (AMX), streptomycin (STR) and diclofenac (DCF) in aqueous solution. Higher degradation efficiencies were encountered for the materials synthesized by the SG method, for instance, degradation efficiencies values of 58.61 % (SG) and 46.12 % (MW) were observed for