

PhD Candidate Profile

Name:

Jose Antonio Lara Ramos

Research Group (if relevant):

Advanced Processes for Biological and Chemical Treatments-GAOX

Research Centre (if relevant):

N/A

Department/School(s) (if relevant):

Faculty of Engineering

College:

Universidad del Valle, Cali

Supervisor(s):

Dr. Fiderman Machuca Martinez

Dr. Miguel Angel Mueses

Funding body:

Colciencias (doctoral study in Colombia)

Area (field) of study:

Mathematical modeling of advanced oxidation processes used in the degradation of emerging compounds

Thesis Title:

Modeling of heterogeneous catalytic ozonation in a flotation cell

Abstract:

The heterogeneous catalytic ozonation has shown to be a promising method of oxidation for the application in the treatment of organic pollutants and antibacterial agents present in drinking and residual waters, due to its high capacity of degradation and mineralization of organic compounds. This process is based on the use of catalysts for the heterogeneous decomposition of ozone in hydroxyl radicals.

At present, catalytic ozonation has made great progress in industrial applications, however, in the field of mathematical modeling, scaling and simulation, the investigations of this technology still require an adequate mathematical structure and methodology to satisfactorily describe the interaction of the dispersion of particles in suspension and the reaction rate in the heterogeneous catalytic ozonation process.



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Collaborations:

N/A

Publications:

N. Lopez-Saavedra, L. F. Muñoz-Delgado, J. A. Lara-Ramos, F. Machuca-Martinez, “Experimental data on the degradation of caffeine by photo-electro-fenton using BDD electrodes at pilot plant”. Data in Brief (21) 1709-1715.

Presentations:

9th European meeting on Solar Chemistry and Photocatalysis: Environmental Applications (SPEA9). Straburgo, Francia, June 13-17, 2016

3rd Iberoamerican Conference on Advanced Oxidation Technologies (III Cipoa). Guatapé, Colombia, 14-17, Nov. 2017.

10th European meeting on Solar Chemistry and Photocatalysis: Environmental Applications (SPEA10). Almería, España, 4-8, July 2018.