

PhD Candidate Profile

Name:

Elizângela Pinheiro da Costa

Research Group:

GruPOA - Grupo de Estudos sobre Processos Oxidativos Avançados

Research Centre:

N/A

Department/School:

Department of Sanitary and Environmental Engineering /Engineering School

College:

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Supervisor(s):

Dr. Camila Costa de Amorim / Dr. Sixto Malato

Funding body:

CNPq (National Council for Scientific and Technological Development)

Area (field) of study:

Removal of micropollutants (pesticides, pharmaceuticals, etc.) by Advanced Oxidation Processes in solar reactors (CPC, RPR).

Thesis Title:

Removal of micropollutants in secondary domestic wastewater by solar photo-Fenton treatment in Raceway Pond Reactors

Abstract:

Micropollutants or contaminants of emerging concern (CEC) are pollutants found at very low concentrations in the environment, detected by advanced analytical methods and that may impair the environment and human health even at low doses, which are also rarely present in water monitoring policies over the world. Conventional wastewater technologies are usually inefficient in the removal or degradation of micropollutants. In Brazil, the most applied wastewater treatment technologies are stabilization ponds and upflow anaerobic sludge blanket (UASB) reactors. Most treatment plants are of small size (flow < 10L.s⁻¹), and many of them are reportedly to operate in insufficient conditions with several limitations.

Recent studies have demonstrated elevated micropollutants removal efficiency in solar Raceway Pond Reactors (RPR) at low cost, short reaction and hydraulic detention time, high treatment capacity and operation at neutral pH for the photo-Fenton reaction. In this scenario, this work aims at the removal of micropollutants and also residual organic matter



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in a real secondary wastewater for small treatment plants, as an alternative treatment that could be more efficient than conventional maturation ponds.

Collaborations:

N/A

Publications:

BOTTREL, SUE ELLEN C.; AMORIM, CAMILA C.; LEÃO, MÔNICA M.D.; **COSTA, ELIZÂNGELA P.**; LACERDA, I. A. Degradation of ethylenethiourea pesticide metabolite from water by photocatalytic processes. Journal of Environmental Science and Health. Part B. Pesticides, Food Contaminants, and Agricultural Wastes, v. 49, p. 263-270, 2014.

Presentations:

XXIV JORNADAS JÓVENES INVESTIGADORES AUGM Desafios Contemporâneos dos Jovens Investigadores no Desenvolvimento da Ciência na América Latina. São Pedro, Brazil, 24-26 October 2016. (ORAL).

VIII Encontro sobre Aplicações Ambientais de Processos Oxidativos Avançados e II Congresso Iberoamericano de Processos Oxidativos Avançados (8th EPOA/2nd CIPOA). Belo Horizonte, Brazil, 03-06 November 2015. (SHORT-COMMUNICATION).

28^o Congresso Brasileiro de Engenharia Sanitária e Ambiental. Rio de Janeiro, Brazil, 04-08 October 2015. (ORAL).

9^o Encontro Brasileiro Sobre Adsorção. 1^o Simpósio Ibero-americano sobre Adsorção. Recife, Brazil, 06-10 May 2012. (POSTER).