

PhD Candidate Profile

Name:

Rafaela Brito Portela Marcelino

Research Group (if relevant):

GruPOA

Research Centre (if relevant):

N.A.

Department/School(s) (if relevant):

Graduate Program in Sanitation, Environment and Water Resources, Engineering School.

College:

Universidade Federal de Minas Gerais (UFMG)

Supervisor(s):

Camila Amorim and Luigi Rizzo

Funding body:

CAPES

Area (field) of study:

Environmental application of photocatalytic surfaces

Thesis Title:

Development and application of photocatalytic coatings for solar water treatment

Abstract:

Solar photocatalysis has been used for the removal of contaminants of emerging concern from water. The use of the catalyst in its powdered form results in high surface area, but poses some difficulties to recover the powder after treatment. In this context, this work aims at studying a possible solution through the development of semiconductors activated by solar radiation coatings on different surfaces which can be easily manageable in water detoxification facilities.

Collaborations:

Surface Engineering Research Group - Prof. Peter Kelly (MMU/UK)

Publications:

MARCELINO, R. B. P.; LEÃO M.M.D., LAGO, R.M., AMORIM, C.C. Multistage ozone and biological treatment system for real wastewater containing antibiotics, Journal of Environmental Management, 195, 110-116, 2017.

MARCELINO, R. B. P.; ANDRADE, L. N. ; STARLING, M. C. V. M. ; AMORIM, C. C. ; BARBOSA, M. L. T. ; Lopes, R. P. ; REIS, B. G. ; LEAO, M. M. D. Evaluation of Aerobic and Anaerobic Biodegradability and



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Toxicity Assessment of Real Pharmaceutical Wastewater From Industrial Production of Antibiotics. Brazilian Journal of Chemical Engineering, v. 33, p. 445-452, 2016.

STARLING, M. C. V. M. ; CASTRO, L. A. S. ; MARCELINO, R. B. P.; LEÃO, M. M. D. ; AMORIM, C. C. Optimized treatment conditions for textile wastewater reuse using photocatalytic processes under UV and visible light sources. Environmental Science and Pollution Research International, v. 1, p. 1, 2016.

MARCELINO, R. B. P.; M.T.A. Queiroz, C.C. Amorim, M.M.D. Leão, F.F. Brites-Nóbrega, Solar energy for wastewater treatment: review of international technologies and their applicability in Brazil, Environ Sci Pollut Res, 22, 762-773, 2015.

Presentations:

MARCELINO, R. B. P.; RATOVA, M. ; STARLING, MARIA CLARA V. M. ; CASTRO, LUIZ AUGUSTO S. ; RIBEIRO, M. C. M. ; SIMOES, F. M. ; YUKAWA, Y. N. ; TENENWURCEL, M. A. ; KELLY, P. ; AMORIM, C. C. . Solar Semiconductor Photocatalysis For Advanced Water Treatment: Performance Of Novel Catalysts Activated By Sunlight. In: The 14th IWA Leading Edge Conference on Water and Wastewater Technologies, 2017, Florianópolis, Brazil.

MARCELINO, R. B. P.; RATOVA, M. ; CASTRO, L. A. S. ; SIMOES, F. M. ; YUKAWA, Y. N. ; RIBEIRO, M. C. M. ; KELLY, P. ; AMORIM, C. C. . Towards the development of titanium dioxide and niobium pentoxide solar photocatalytic coatings for water treatment. In: 5th European Conference on Environmental Applications of Advanced Oxidation Processes - EAAOP5, 2017, Prague, Czech Republic.

MARCELINO, R. B. P.; AMORIM, C. C. ; Emrich, A. L. ; LEAO, M. M. D. . Antibiotics Contaminated Wastewater Treatment by Ozonation and Ozonation Combined with Biological Process. In: 4th European Conference on Environmental Applications of Advanced Oxidation Processes, 2015, Athens, Greece.

ANDRADE, L. N. ; MARCELINO, R. B. P. ; AMORIM, CAMILA C. . In Situ Chemical Oxidation With Sodium Persulfate in a Soil Rich in Iron: Behavior of the Oxidation/Reduction Potential. 9th European meeting on Solar Chemistry and Photocatalysis: Environmental Applications (SPEA), 2016, Strasbourg, France.