



COST ACTION GREENERING – DATA COLLECTION

First name, Family Name: Luciana, Rocha
Type (Academic or Industrial): Academic
Country: Portugal
Leadership position in the COST: Participant
Working Group in which you are involved: WG1
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Laboratory/Company: Department of Chemistry and Associated Laboratory Centre for Environmental and Marine Studies (CESAM), University of Aveiro, Aveiro, Portugal.

Laboratory/Company info (limited to 400 characters):

The mission of CESAM is to develop leading international research on environmental sciences and related risks, including extreme weather events and climate change, with emphasis on complex socio-ecological coastal systems and marine areas. CESAM focuses on the key priorities of the European 2020 strategy and its main objective is to promote a more efficient use of terrestrial and aquatic environmental resources and a more competitive, resilient, and sustainable economy.

Link to the home page of the Laboratory/Company:

<http://www.cesam.ua.pt>

Fields of expertise (limited to 400 characters):

- Development and implementation of environmentally friendly electro-analytical sensors for quantification and speciation analysis of trace metals in waters.
- Water remediation containing classic and emerging contaminants, using innovative technologies, with focus on living macroalgae and low-cost materials derived from agricultural and industrial residues.
- Ecotoxicological risk assessment of water contamination and potential impacts on biota.
- Synthesis and characterization of polymers, nanomaterials, supported ionic liquid phases and activated carbon materials.

5 Main publications or patents:

- Luciana S. Rocha, Josep Galceran, Jaume Puy & José Paulo Pinheiro: "Determination of the free metal ion concentration using AGNES implemented with environmentally-



friendly bismuth film electrodes"; Analytical Chemistry 87/12 (2015) 6071–6078. DOI: 10.1021/acs.analchem.5b00606.

- Luciana S. Rocha, Ângela Almeida, Cláudia Nunes, Bruno Henriques, Manuel A. Coimbra, Cláudia B. Lopes, Carlos M. Silva, Armando C. Duarte, Eduarda Pereira: "Simple and effective chitosan based films for the removal of Hg from waters: Equilibrium, kinetic and ionic competition". Chemical Engineering Journal 300 (2016) 217-229. DOI:10.1016/j.cej.2016.04.054.
- Bruno Henriques, Luciana S. Rocha, Cláudia B. Lopes, Paula Figueira, A.C. Duarte, Carlos Vale, M.A. Pardo, E. Pereira: "A macroalgae-based biotechnology for water remediation: Simultaneous removal of Cd, Pb and Hg by living *Ulva lactuca*". Journal of Environmental Management 191 (2017) 275-289. DOI:10.1016/j.jenvman.2017.01.035.
- Luciana S.Rocha, Diogo Pereira, Érika Sousa, Marta Otero, Valdemar I. Esteves, Vânia Calisto: "Recent advances on the development and application of magnetic activated carbon and char for the removal of pharmaceutical compounds from waters: A review". Science of the Total Environment 718 (2020) 137272. DOI:10.1016/j.scitotenv.2020.137272
- Érika Sousa, Luciana Rocha, Guilaine Jaria, Maria V. Gil, Marta Otero, Valdemar I. Esteves, Vânia Calisto: "Optimizing microwave-assisted production of waste-based activated carbons for the removal of antibiotics from water". Science of the Total Environment 752 (2021) 141662. DOI:10.1016/j.scitotenv.2020.141662

Collaborations:

Collaboration with several researchers of international institutions, namely:

- Dr. Galceran from the University of Lleida (Lleida, Spain)
- Dr. Hartog from the KWR Watercycle Research Institute (Nieuwegein, The Netherlands)
- Dr. Botero from the Federal University of Alagoas (Arapiraca, Brazil)
- Dr. Pinheiro from the University of Lorraine (Nancy, France)
- Dr. Pascal Salaun from the University of Liverpool (Liverpool, UK)
- Dr. Maria V. Gil from Instituto de Ciencia y Tecnología del Carbono, INCAR-CSIC (Oviedo, Spain)

Facilities:

- Electrochemical techniques: the classical Anodic Stripping Voltammetry (ASV) and two recent developed techniques, Scanning Stripping ChronoPotentiometry (SSCP) and Absence of Gradients and Nernstian Equilibrium Stripping (AGNES).
- Preparation and characterization of different materials (polymers, nanomaterials, supported ionic liquid phases and activated carbon-based materials) by chemical



(FTIR, X-Ray Diffraction Powder, Elemental Analysis), morphological (SEM and TEM) and/or electrochemical (AGNES and SSCP) techniques.