







## 2<sup>nd</sup> Summer School on Environmental Applications of Advanced Oxidation Processes and Training School on Advanced Treatment Technologies and Contaminants of Emerging Concern (NEREUS COST Action ES1403) Venue: Auditorium of the Almeida Garrett Municipal Library

Biblioteca Municipal Almeida Garrett, Rua de D. Manuel II - Jardins do Palácio de Cristal 4050-239 Porto, Portugal

#### July 10-14, 2017



The "European PhD School on Advanced Oxidation Processes" (**School**) and NEREUS COST Action ES1403, with the support of Associate Laboratory LSRE-LCM, Department of Chemical Engineering, Faculty of Engineering, University of Porto, organize the 2<sup>nd</sup> Summer School on "Environmental Applications of Advanced Oxidation Processes" jointly with the NEREUS Training School on "Advanced Treatment Technologies and Contaminants of Emerging Concern" in July 10-14, 2017, at the Auditorium of the Almeida Garrett Municipal Library, Cristal Palace Gardens, considered Porto's most beautiful gardens overlooking the Douro River.

The **School**, founded in June 2014 by a group of European scientists (Management Committee (MC)) from different Universities and Research Institutes, promotes the higher education of young researchers in the environmental applications of AOPs (please visit our official web-page for further details: www.aops-school.com). Currently, the **School** includes 53 Scientific Committee (SC) members from 14 different European Countries.

The Summer School is among the initiatives organized for **School** PhD candidates but other PhD students, MSc students, post-doc and professionals are also welcome. The Summer School program includes: (i) a section specifically devoted to PhD students ("Floor to PhD Students") where they will have the chance to introduce themselves and their work, through a short oral presentation























and/or a poster communication, as well as to meet experts from the **School**; (ii) a special session on "Contaminants of emerging concern and antibiotic resistance control in water by AOPs"; (iii) lectures on complementary skills; (iv) a workshop on advanced treatments delivered by **School SC** members and international experts; and (v) a technical-social visit sponsored by Adventech.

PhD students are encouraged to submit a short abstract (please use the attached template). The short abstract must be submitted by email (aops@fe.up.pt) no later than April 15, 2017, in MSWord format. Please select the preferred form of presentation (ORAL or POSTER) in the red box located at the right side of the abstract title.

Research presented in the Summer School will be considered for possible publication in a special issue on *Environmental Science and Pollution Research* (ESPR, Springer, Impact Factor: 2.760). The interest must be mentioned in the red box of the short abstract, by replacing "NONE" by "ESPR". Authors will receive an invitation letter by email. Authors should reply the email specifying the type of article (critical review or research paper), the preliminary title and the name of the authors. Please don't forget to select the article type "AOPsPhDSchool" Special Issue during the paper submission process, and attach the respective invitation letter as a "Supplementary Material" file. The deadline for paper submission to the Special Issue on the ESPR journal is 30<sup>th</sup> September 2017.

Any update (including the registration form) will be published in the "Summer School 2017" section of **School** official web-page: <u>www.aops-school.com</u>

Organization contact email address: aops@fe.up.pt

Summer School Chairs

Adrián M.T. Silva Associate Laboratory LSRE-LCM, FEUP, University of Porto

Vítor J.P. Vilar Associate Laboratory LSRE-LCM, FEUP, University of Porto

Luigi Rizzo University of Salerno, Italy Chair of European PhD School on AOPs

Despo Fatta-Kassinos NIREAS-IWRC, University of Cyprus Chair of NEREUS COST Action ES1403

























#### Monday July 10, 2017 (School introduction and "Floor to PhD students")

#### Registration

#### Welcome greetings and Introduction of the Summer School

**Publication of Research Results** FEUP Library Team

#### Short Oral Communications (PhD students)

**How to Get your Article Published: An Editor Perspective** Gianluca Li Puma, Loughborough University, UK Editor, Journal of Hazardous Materials (Elsevier)

**Poster session** 

Tuesday July 11, 2017 (Complementary skills and fundamentals of AOPs)

### AOPs for environmental applications: an overview

Dionissios Mantzavinos, U. Patras, Greece

# Synthesis and characterization of (photo)catalysts for water/wastewater treatment applications

Suresh Pillai, Institute of Technology Sligo, Ireland

#### Photocatalysis: semiconductor physics

Carlos Tavares, U. Minho, Portugal

**Fundamentals of photocatalysis applications for water detoxification, trends and limitations** J.M. Doña Rodriguez, U. las Palmas Gran Canaria, Spain

**Photophysical mechanistic aspects of AOPs** Antonio Arques, U. Politècnica de València, Spain

**Simulation and design of photoreactors** Javier Marugan, U. Rey Juan Carlos, Spain

**Catalytic wet peroxide oxidation (CWPO): potential applications and challenges** Juan José Rodriguez, U. Autonoma de Madrid, Spain

**Catalytic wet air oxidation (CWAO): process and catalyst developments** Helder T. Gomes, IPB, Bragança, Portugal

**Electrochemical advanced oxidation processes** Manuel A. Rodrigo Rodrigo, U. Castilla la Mancha, Spain













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#### Assessment of ElectroFenton technology for water and soil restoration M. Pazos Currás and A. Sanroman, U. Vigo, Spain

Chromatography-mass spectrometry analysis of polar chemicals in water and transformation products elucidation

José Benito Quintana, U. Santiago Compostela, Spain

General discussion about AOPs Montserrat Pérez-Moya, U. Politècnica de Catalunya, Spain

Wednesday July 12, 2017 (Contaminants of emerging concern and antibiotic resistance control in water/wastewater)

**AOPs in the framework of contaminants of emerging concern (CECs)** Despo Fatta-Kassinos, NIREAS-IWRC, University of Cyprus

**Treatment of CECs by solar driven AOPs** Sixto Malato, Plataforma Solar de Almeria, Spain

Effects of AOPs on toxicity of CECs oxidation intermediates

Idil Arslan Alaton, Istanbul Technical U., Turkey

Antibiotic resistant bacteria as contaminants of emerging concern Celia Manaia, U.Católica, Portugal

**Effect of TiO<sub>2</sub> photocatalysis on antibiotic resistance transfer (to be confirmed)** Patrick Dunlop, U. Ulster, UK

**Microbial inactivation by the solar-assisted Fenton process at near-neutral pH** Stefanos Giannakis, Lausanne, Switzerland

**Endocrine disrupting chemicals and emerging contaminants: new challenges and perspectives** Miguel Santos, CIIMAR, Portugal

Advances in photocatalytic urban wastewater treatment for controlling antibiotic resistance spread Luigi Rizzo, U. Salerno, Italy

**Improvement photocatalytic oxidation efficiency of water contaminants: use of ozone and visible light photocatalysts** Fernando Beltran, U. Extremadura, Spain

**Applications of raceway pond reactors for solar photo-Fenton: principles and uses** J.A. Sánchez Pérez, U. Almeria, Spain





















Thursday July 13, 2017 (Workshop on Advanced Treatment)

**Photocatalytic removal organic pollutants and the subsequent synergic reduction of Cr<sup>6+</sup> in aqueous solution, using sodium decatungstate photocatalysts (to be confirmed)** Mohamed Sarakha, U. Blaise Pascal, France

**To be confirmed** Joaquim L. Faria, FEUP, U. Porto, Portugal

**On photocatalytic membrane reactors in water and wastewater treatment: recent experiences and perspectives** Sylwia Mozia, U. of West Pomeranian, Poland

**Wastewater treatment by heterogeneous Fenton-like processes in continuous reactors** L. Miguel Madeira, FEUP, U. Porto, Portugal

**Catalytic ozonation: from powder to structured catalysts** M. Fernando R. Pereira, FEUP, U. Porto, Portugal

**Wastewater treatment by ozonation** Santiago Esplugas, U. Barcelona, Spain

**Treatment by AOPs and reuse of Oil&Gas wastewater** Sandra Contreras, U. Rovira i Virgili, Spain

**Novel photoreactors for photocatalytic processes: towards process Intensification** Vítor Vilar, FEUP, U. Porto, Portugal

**The Arvia Process: combining adsorption and advanced oxidation** Mikael A. Khan, Arvia, UK

**To be confirmed** Achim Ried, Xylen Water Solutions, Germany

**To be confirmed** Domenico Santoro, TrOJAN Technologies, Canada

**From bench- to full-scale AOPs application** Sergio C. Silva, Adventech, Portugal

Friday July 14, 2017 (Technical-Social Event, Sponsored by Adventech)











