

PhD Candidate Profile

Name:

Paula Serrano Tarí

Research Group (if relevant):

Solar Treatment of Water Research Unit

Research Centre (if relevant):

Plataforma Solar de Almería - CIEMAT

Department/School(s) (if relevant):

Department of Energy

College:

International Doctoral School of the University of Almería (EIDUAL)

Supervisor(s):

Isabel Oller Alberola

Funding body:

CIEMAT

Area (field) of study:

Advanced Oxidation Processes (based or not in solar energy), industrial wastewater treatment, nutrients recovery.

Thesis Title:

Industrial wastewater regeneration and recovery of added-value substances.

Abstract:

Nowadays, the high demand for freshwater attributed to population growth, economic development and changing consumption patterns, increases the stress on water resources. Furthermore, climate change is already aggravating this situation. On the other hand, the levels of water contamination are increasingly higher, creating significant risks to humans and ecosystems while reducing the availability of this resource as well as its good quality. Specifically, industrial wastewaters cause numerous problems and a high environmental impact by providing a wide variety of toxic substances. So, in the last years, the search for new sustainable technological solutions that enable the depuration and reuse of industrial wastewater, while reducing the water footprint associated with several industrial activities has been pursued.

Due to the significant complexity and variety of industrial wastewater, the management and treatment through conventional treatments are not efficient enough. Thus, it is necessary the development of new sustainable alternatives to improve water resources management, depuration of contaminated waters and the reuse of treated waters in the



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production processes. For this purpose, strategies based on integrated chemical-physical processes must be developed, being the Advanced Oxidation Processes (AOPs) highly efficient and competitive, to ameliorate the drawbacks of individual processes. In this sense, the use of such AOPs, which can be carried out using solar energy, is especially interesting with the aim of reducing the related operating costs.

The main goal of this work is to reduce of industry-related water footprint through the integration of technologies for the treatment and regeneration of complex industrial wastewater and the recovery of added-value substances present in these waters.

Collaborations:

N/A

Publications:

N/A

Presentations:

N/A