

PhD Candidate Profile

Name:

Joyce Villachica Llamosas

Research Group:

Solar Treatment of Water Unit

Research Centre:

CIEMAT

Department/School(s):

Plataforma Solar de Almería

College:**Supervisor(s):**

Dr. Alba Ruiz Aguirre and Prof. Sixto Malato Rodriguez

Funding body:

N/A

Area (field) of study:

Photocatalytic hydrogen production and wastewater treatment

Thesis Title:

Towards the development of non - fossil fuels based on solar technologies through simultaneous wastewater treatment.

Abstract:

Therefore, we are studying Hydrogen production by heterogeneous photocatalysis, applied to photoreforming of organic substances, that are contained in waste water. Urban and industrial organic contaminants in wastewater effluents, can be used as sacrificial agents, producing hydrogen at the same time of degrading contaminants. Experiments are carried at pilot plant scale. Among the main objectives of the investigation, are considered the study of novel photocatalysts for solar driven hydrogen production, the optimization of the conditions that maximize hydrogen production for each catalyst, the optimization of the photoreactor design and simultaneous hydrogen production, decontamination and disinfection of wastewater.

Collaborations:

N/A

Publications:

N/A



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Presentations:

15th SolLab and 2nd SFERA-III-Doctoral Colloquium. Almería, Spain, 6-8 October 2021.

Reunión Bienal de la Sociedad Española de Catálisis (SECAT 2021). Valencia, Spain, 18 - 23 October 2021.

Reunión Coordinación Proyecto plan nacional de investigación: Tecnologías avanzadas e híbridas para eliminación de contaminantes, microcontaminantes, reúso y revalorización en diferentes aguas residuales, incluyendo enfoques tecno-económicos (CalypSol). Almería, Spain, 11 March 2022.

11th European Conference on Solar Chemistry and Photocatalysis: Environmental Applications. Turin, Italy, 6-10, June 2022.