2 de MARZO de 2022

12.00 h
Sala de Conferencias, Edificio I+D, Campus Río Ebro

INMA Junior

LED-DRIVEN PHOTOCATALYTIC HYDROGENERATION OF CO_2 INTO SYNTHETIC FUELS

Arturo Sanz Marco
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The overall depletion of fossil fuels together with the overwhelming evidence of the impact of greenhouse gas emissions in the global environment are among the major challenges of the humankind today and demands a swift transition into renewable and sustainable processes. Among the strategies advocated to face these issues, the photocatalytic gas-phase hydrogenation of CO_2 for synthetic fuel production is an appealing mid-term solution to promote an overall neutral CO_2 emission cycle. By means of light irradiation exploitation, photocatalysis involves a greener vision of chemical processes, including the smart and selective transformation of chemicals into fuel and/or chemical intermediates of interest. In this work we use energy efficient light emitting diodes (LEDs) for inducing photocatalytic processes with enhanced effectiveness in the hydrogenation of CO_2.

GRAPHENE-BASED MEMBRANES FOR GAS SEPARATION AND WATER PURIFICATION APPLICATIONS

José Miguel Luque Alled
INMA-CSIC/UNIZAR

The steady greenhouse gas emissions due to energy-intensive human activities is contributing to an increase in the global temperature. In other words, there is a pressing need in modern society to develop more energy-efficient technologies capable of achieving the same productivity at lower energy consumption rates. Membranes-based processes emerge as a powerful tool to cut high energy consumption in numerous industrial separation processes such as water treatment, gas separation, pervaporation, and energy devices. The use of membranes can result in a reduction in energy consumption when compared with conventional technologies, reducing greenhouse gas emissions and lowering the production costs. However this is only possible if adequate membrane permeation flux and sufficient separation efficiencies are achieved. Membrane material and membrane structure will play an essential role in the membrane flux and selectivity which strongly influences the economics of the overall separation process. In this communication, I will explain how the incorporation of graphene-based materials to existing polymer membranes can boost the performance of the membrane for CO_2/CH_4 separations in natural gas processing and water treatment applications such as nanofiltration and ultrafiltration.

Vamos a proceder a enviar certificados de asistencia al ciclo de seminarios junior del INMA por la asistencia a al menos dos de las sesiones del ciclo. Pedimos a los interesados que nos manden un email a cualquiera de los organizadores:

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Síguelo via Zoom
https://zoom.us/j/81899308881?pwd=bCtaYXZLQWd1TmE1aHk0MlZwKzNnQT09

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