dimarts, 31 d’octubre de 2023

Ponència. Enhancing Solar Cell Efficiency with Passive Radiative cooling: Exploring 2D Metamaterial Simulations and Experimental Testing

Informació de l'esdeveniment

Lloc:
Sala de Graus EPS

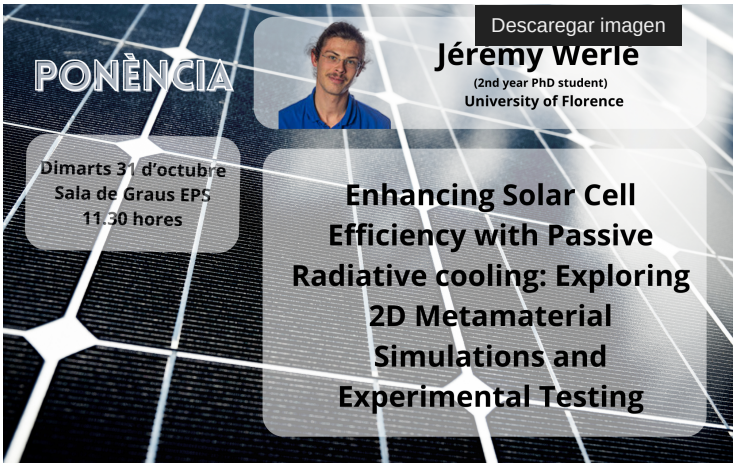
Adreça:
Campus Cappont

Jaume II, 69

Preu:
Activitat Gratuïta

Organitza:
EPS - SEMB

Inici:
31 de d’octubre de 2023



El dimarts 31 d'octubre, amb motiu de la visita de **Jérémy Werlé**, investigador predoctoral de la Universitat de Florència, es realitzarà una ponència on es presentarà la seva recerca: ***Enhancing Solar Cell Efficiency with Passive Radiative cooling: Exploring 2D Metamaterial Simulations and Experimental Testing***

La xerrada, adreçada als alumnes i oberta a les persones que els pugui interessar, es realitzarà a les 11.30h a la Sala de Graus (2.03) de l'Escola Politècnica Superior.

Resum Ponència:

Passive radiative cooling materials recently emerged as an environmentally friendly technology able to provide net cooling power without any external energy source by dissipating their thermal energy into outer space (3K) at wavelengths between 8 and 13 m, where the atmosphere is largely transparent in case of a cloudless sky. Among many applications, passive radiative cooling materials could be therefore used as a top layer for the thermal management of photovoltaic cells, to increase their efficiency and slow down their aging rate.

In this presentation, I will explore two main aspects. The first part will delve into the numerical design of optimized micro patterns to enhance the performance of solar cells. In the second part, I will present our recent efforts to develop an open-hardware real-time temperature measurement apparatus for the testing of passive radiative cooling samples, discussing common pitfalls encountered in the monitoring of ambient and sample parameters, and some lessons learned during the process.