



POLITÉCNICA



INSTITUTO  
DE ENERGÍA  
SOLAR

Innovation in photovoltaics since 1979

## Researcher Position on

# DEVELOPMENT OF ADVANCED SILICON SOLAR CELLS

## INTRODUCTION

The research group “Silicio y Nuevos Conceptos de Células Solares” is looking for a candidate willing to pursue a research career in the framework of the development of next-generation silicon-based photovoltaic devices.



## SCOPE

The PV market is transitioning from PERC solar cell technology to more advanced architectures (TOPCon, SHJ), looking ahead for the implementation of silicon-based tandem solar cells capable of surpassing the maximum efficiency of single silicon devices. To achieve this, key challenges all along the Si-PV technology value chain need to be addressed, from solar cell manufacturing to end-of-life recycling. The proposed research work will provide support to the development of solar cell architectures compatible with the future generation of Si-based tandems, addressing aspects such as the evaluation of the optoelectronic quality of appropriate silicon substrates, the implementation of passivating contacts, the characterisation of in-operando degradation mechanisms, and the reutilisation of the silicon recovered from recycled PV modules.

## REQUIREMENTS

- ❑ A bachelor in Physics, Electronic Engineering, Materials Science, Telecommunication Engineering or equivalent.
- ❑ Good academic record
- ❑ Great motivation for scientific and team work
- ❑ Knowledge of semiconductor physics and device physics
- ❑ Full proficiency in English (and basic knowledge of Spanish for foreign applicants)

## GENERAL CONDITIONS

- ❑ Part-time research position compatible with master studies that can be followed by a fellowship for a PhD.

## APPLICATIONS

Interested candidates should send his/her Resumé and transcripts of all undergraduate and graduate (if any) coursework to Prof. Carlos del Cañizo Nadal ([carlos.canizo@upm.es](mailto:carlos.canizo@upm.es)) stating in the Subject “Job offer Silicio”.

*January 7<sup>th</sup>, 2025*