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**Ref. 43/2021**

**Code:**

**Project: In4CIS**

**Area: Advanced Materials for Energy**

**Area leader: Prof. Joan Ramon Morante**

**Group: Solar Energy Materials and Systems, SEMS**

**Group leader: Prof. Alejandro Pérez Rodríguez**

The Solar Energy Materials and Systems group, belonging to the Advanced Materials for Energy area, is announcing an early stage researcher (pre-doctoral) position, in the framework of the In4CIS Project, in the research line of:

**Development of advanced optical based methodologies for fast and high accuracy composition/structural characterization of chalcogenide-based devices for photovoltaic applications.**

Position description: Activities in this position will be developed in the frame of the European Solar-Era.Net In4CIS project. This project proposes the development of systems and methodologies compatibles with CIGSe based industrial in-line process monitoring. Activities developed in the project include:

- Deep fundamental characterization of the materials properties in terms of the physicochemical and optoelectronics properties;
- Implementation and demonstration of innovative Artificial Intelligence (AI) based methodologies and optical systems compatibles with in-line PV process monitoring for improvement of the device efficiencies and process yield/reliability.

Activities to develop: The candidate will carry out, with the support of the group, a multidisciplinary scientific activity centred in the basic materials characterization, and in the development of optical based methodologies for the advanced characterization of the compositional/structural properties of chalcogenide bases devices. This will include two types of activities: one more focused in research (fundamental material characterization) and a second one with more focus in technology (development of methodologies, big-data processing, and development of optical systems)

The development of the methodologies and systems and the correlation of the physicochemical properties of the layers with the optoelectronic properties of the devices will provide with a high level scientific knowledge compatible with the development of successful PhD.

Candidate requirements: The candidates need to be in position of the Bachelor and Master degrees in Physics, Chemistry, Statistics, Mathematics, Electronic Engineering, Materials

Engineering or equivalent, before the incorporation date, being able to accede to the corresponding Doctorate Program. Previous experience in thin film chalcogenide photovoltaic technologies, materials characterization, big-data processing, industrial process monitoring, AI-Based algorithms, and python/Labview programming are required. Availability for incorporation in the position in August 2021 is also required

Candidacy: send the CV, Degree and Master diplomas, and Degree and Master records to Prof. Alejandro Pérez-Rodríguez (e-mail [aperezz@irec.cat](mailto:aperezz@irec.cat)) indicating **Ref.43/2021** in the subject of the e-mail.

Deadline: June 20<sup>th</sup> 2021

Starting date: 1<sup>st</sup> August 2021

Contract duration: 3 months of trial period (16 months maximum)

For additional information please contact Prof. Alejandro Pérez-Rodríguez ([aperezz@irec.cat](mailto:aperezz@irec.cat))