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Area: Advanced Materials for Energy
Group: Solar Energy Materials and Systems Group (SEMS Group)
Group leader: Prof. Alejandro Pérez-Rodríguez

The Solar Energy Materials and Systems Group (SEMS) announces one post-doctoral position in the frame of the SOLAR-WIN 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.

Description

The post-doctoral positions will be developed in the framework of the European Solar-Win project. This project proposes the development of next generation PV Solar windows that are based in the integration of customised CuInGaSe2 (CIGS) PV modules, providing with a unique transparent and electricity-generating window that merges the functionality of a PV module and a window in one. Achievement of the project objectives will require:

1) Optimisation of CIGS PV processes for production of customised CIGS modules adapted to the Solar-Win transparent solar windows: this will require a deep fundamental characterization of the materials and devices properties in terms of the physicochemical and optoelectronics properties, and their correlation with the technological process parameters;

2) Implementation and demonstration of innovative methodologies and optical systems compatibles with in-line CIGS PV process monitoring for improvement of the process yield and reliability.

Tasks to develop: The candidates will carry out a multidisciplinary scientific activity centred in the support in the optimization of the CIGS processes and devices and in the development of optical based methodologies for the advanced characterization of the compositional/structural properties of the CIGS devices. A special emphasis will be given to the development of methodologies and optical systems suitable for in-line process monitoring, including the development of advanced algorithms based in big-data processing for fast process reliability assessment.

Requirements

The candidates need to be in possession of PhD title in the field of applied sciences or materials science with consolidated knowledge in optics, electronics and solid state physics. Demonstrable experience in thin film chalcogenide photovoltaic technologies synthesis and optoelectronic/structural/physico-chemical characterization it is required.

Additional, demonstrable experience in synthesis of wide/narrow band gap CIGSe devices, Raman spectroscopy characterization and language skills in English and Spanish will be very well evaluated.

Application

Send the CV, Degree and Master Diplomas, and Degree and Master records to Dr. Victor Izquierdo-Roca (vizquierdo@irec.cat) indicating **SOLAR-WIN** in the subject of the e-mail.

Deadline: 8th December 2019

Starting date: January 1st 2020

Duration of contract: 3 months of trial period (12 months maximum, renewable yearly)