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**Ref. 39/2022**

**Code:**

**Project: Mater-One**

**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 (SEMS) group announces a postdoc position (2.1.1) in the frame of the Mater-One project, in the research line of:

## **Development of optimized charge transport layers in wide band gap chalcogenide based thin film solar cells**

**Position description:** The candidate will carry out a multidisciplinary technological and scientific activity centered in the development and optimization of advanced charge transport layers (CTL's) (including both inorganic and organic layers deposited either by PVD or solution based processes) for wide band gap chalcogenide thin film solar cells. This activity will include the systematic synthesis and advanced characterization of thin film materials including organics and inorganics approach together with PV devices in the frame of the Mater-One research project. The candidate will be at the forefront of the photovoltaic device research/characterization for the development of these research activities.

**Tasks to develop:** The candidate will coordinate with a high degree of autonomy, with the support of the SEMS group, the following activities:

- 1) Preparation and coordination of experimental activities
- 2) Development and optimization of synthesis procedures by physical and/or chemical routes of charge transport layers (CTL's) compatible with wide band gap chalcogenide based PV applications.
- 3) Characterization of materials at the nanometric scale and PV devices.
- 4) Preparation of periodic reports of the experiments carried out, including observations, conclusions, and proposed experiments for next steps.
- 5) Contribute in dissemination activities including preparation of peer-reviewed research articles, Mater-One specific project reports and presentations, and conference activities.

**Requisites:** The candidate must be in possession of a PhD degree in Physics, Materials Science or equivalent before the incorporation date, and demonstrable previous research experience in

- 1) Demonstrable experience in thin film technologies including chalcogenide based PV devices. Knowledge in other thin film technologies as hybrid perovskite technologies will be very well evaluated.
- 2) Experience in thin film processes (including solution based processes) for thin film chalcogenide devices
- 3) Experience in materials, layers and PV devices characterization.



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- 4) Demonstrable autonomy and experience in research activities including dissemination activities (first author in peer-reviewed research articles, conferences presentations, etc...)
- 5) Availability for incorporation in the position during June 2022
- 6)

**Candidacy:** Send the CV, a motivation letter and PhD diploma (or certificate) to Dr. Victor Izquierdo-Roca (vizquierdo@irec.cat) (with copy to Prof. Alejandro Pérez-Rodríguez, e-mail aperezr@irec.cat) indicating Ref. 39/2022 in the subject of the e-mail.

**Deadline:** May 31<sup>st</sup> 2022

**Starting date:** June 15<sup>th</sup> 2022

**Expected duration of contract:** 12 months