18-Months Postdoctoral Research Associate Position

Fabrication and advanced characterization of lead-free perovskite solar cells

Employer: University of Limoges, CNRS
Workplace: XLIM Research Institute, Limoges, France (www.xlim.fr)
Expected starting date: 04/2017 – 05/2017
Salary: from 1800€ net per month depending on experience
Skill area: Perovskite solar cells, Thin film technologies, Physics and Photo-Physics

The **XLIM** research institute (UMR CNRS 7252, University of Limoges, France) is currently seeking for a 18 months postdoctoral research associate on the **Fabrication and advanced characterization of lead-free perovskite solar cells**. The research project of the postdoctoral position is integrated within the framework of the **SuperSansPlomb** project, which is founded by the French ANR agency over 2016-2019. The objective of this challenging project involving three academic partners (CEA-INAC, Grenoble; FOTON, Rennes; XLIM, Limoges) is to jointly develop alternative lead-free perovskite active layers in order to demonstrate efficient and stable third generation solar cells.

Description of the position

Hybrid perovskites have emerged as a relevant alternative to thin film solar cell technologies in the last few years, with power conversion efficiencies rapidly passing the 20% threshold. While stability issues remain to be better understood, the presence of lead is an important drawback towards practical applications. Although intense research efforts are conducted to address this issue, only few lead-free materials reported today can allow efficient and stable devices. In this context, the **SuperSansPlomb** project aims at identifying potential lead-free perovskite structures and at integrating them into working devices in order to assess their potentialities for efficient and stable operation.

The successful applicant will be in charge of the **integration of the novel lead-free perovskite materials identified by our partners into working solar cells**. A special focus will be paid on **interface engineering** in order to ensure optimized device performance, as well as to achieve improved device lifetime. A second aspect of the position will be focusing on the **advanced characterization of the system** both at the material (transient photoluminescence) and device level (transient photovoltage and photocurrent, impedance spectroscopy) in order to get a better understanding of the relation between the properties of the lead-free active layer and the main device limitations.

This position will exploit the technological infrastructures available at XLIM in the field of printed electronics (PLATINOM Platform), as well as common facilities of the University of Limoges (electron microscopy techniques, AFM, etc).

Profile of the candidates

The postdoctoral position is open from April 2017. We are looking for a highly motivated young researcher presenting a relevant experience in the field of organic or hybrid optoelectronic devices (an experience in perovskite devices could be appreciated). Some additional experience in advanced characterization techniques including photoluminescence spectroscopy, transient photovoltage/photocurrent, or electrochemical impedance spectroscopy will be an advantage. The ideal candidate also demonstrates good experimental skills, as well as some understanding of charge transfer mechanisms in solar cells. Team working abilities and good communication skills are mandatory.

How to apply?

Applicants must send by email their cover letter, a detailed CV including a list of publications, as well as two references, to:

Dr. Johann Bouclé *(Associate Professor, HDR)*
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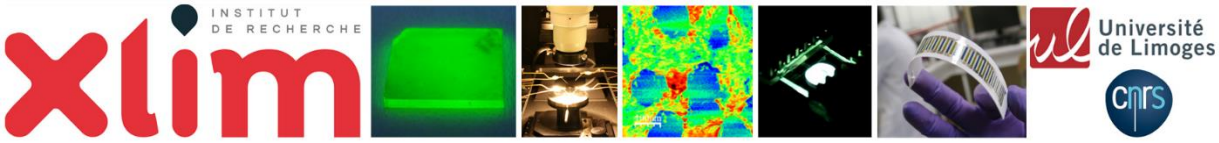

Website: http://www.xlim.fr/en/research/electronics/rf-elite/elite