

SOLAR-TRAIN is an innovative project focused on durability and life time assessment of photovoltaic modules. As part of the H2020 Marie Skłodowska-Curie Actions (MSCA) Innovative Training Networks (ITN) SOLAR-TRAIN invites applications for 14 Marie Skłodowska Curie fellowships starting in March 2017. The successful candidates will join the project as early stage researchers (ESRs) for three years with the possibility to enroll a PhD programme and finish with a PhD thesis.

The Centre for Renewable Energy Systems Technology (CREST) is a Centre within Loughborough University focussing on the application of renewable energy technologies. Loughborough University is a top ten University in the UK and CREST has been named as one of the top five research centres world-wide for renewable energy technologies. The Applied Photovoltaics Group within this Centre focusses on the performance of photovoltaic technologies. This includes precision measurements, failure analysis and energy forecasting from microscopic cell structures to gigawatt scale systems.

As of **March 1<sup>st</sup>** the following Marie Skłodowska Curie fellowship will be assigned:

### **Life-time Energy Yield of Photovoltaic Modules**

#### **Project description**

The aim is to assess how much energy is delivered by photovoltaic modules. This moves the current state of the art of assessing limited number of modules for potential warranty issues to the realistic service provision of these devices. A physics of failure based approach will meet these objectives

- ✓ Identify key ageing and failure modes (based on other work currently ongoing)
- ✓ Link failures to environmental stresses (in conjunction with other ESRs)
- ✓ Develop a model for the life-time energy yield of PV devices in different environments
- ✓ Develop a model for the ageing ranges to be expected for critical failure modes
- ✓ Develop a physics of failure driven model for statistical energy yield impact

Work will involve a mixture of theoretical and practical (testing) work. It is expected that some bespoke test cycles are run in conjunction with other ESRs. A key element is also the link of achievable prediction uncertainty with test length and number of samples to be tested. This is critical as the tests themselves are lengthy and costly, but currently do not meet the industry requirements in terms of accuracy.

#### **Your profile**

- ✓ Higher degree (MSc, Diploma) in physics, science or engineering that qualifies for enrollment to a doctoral programme.
- ✓ Compliance with the mobility rules laid out in the [MSCA ITN guidelines](#): At the time of recruitment, candidates **must not have legally resided or have had their main activity** in the country of their host organization for more than 12 months in the last 3 years.
- ✓ Good knowledge and skills in modelling and computing.
- ✓ Experience in materials, reliability engineering and PV technologies are advantageous
- ✓ Openness for interdisciplinary collaboration and topics.
- ✓ Willingness to move to countries within EU for ESR placement and temporary secondments
- ✓ Meet all requirements for PhD registration at Loughborough University ([www.lboro.ac.uk](http://www.lboro.ac.uk))
- ✓ Be **eligible for home student fees** for Loughborough University

#### **Application**

Please apply till **11 December 2016** according to the instructions on project website [www.solar-train.eu](http://www.solar-train.eu)

