SOLAR-TRAIN is an innovative project focused on durability and life time assessment of photovoltaic modules. As part of the H2020 Marie Sklodowska-Curie Actions (MSCA) Innovative Training Networks (ITN) SOLAR-TRAIN invites applications for 14 Marie Sklodowska 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 write a PhD thesis.

With a staff of about 1100, the Fraunhofer Institute for Solar Energy Systems ISE in Freiburg, Germany is the largest solar energy research institute in Europe. Its application-oriented research focuses on the technical use of solar energy and on the development of materials, systems and procedures for a sustainable energy supply. Our group "Module Testing" researches into the influence of various environmental stresses on PV modules and materials, investigates failures on solar modules and operates the accredited TestLab PV Modules for certification testing. The candidate will work within the interdisciplinary team "Failure Detection and Analytics" at Fraunhofer ISE.

As of **March 1st** the following Marie Sklodowska Curie fellowship will be assigned:

Analysis of PV Material and Module Parameters and Correlation to Degradation Modes

Project description

Objective is the analysis of material and module parameters and their correlation to accelerated ageing tests and degradation modes. Specific tasks are:

- ✓ Planning/realization of experiments to identify weak points in PV modules in terms of reliability
- ✓ Investigations on material properties (polymers, metals) and influences of additives/processing
- ✓ Researching on surface interactions of different material combinations, identification of interface properties (adhesion, chemical reaction) and surface energies by quantum chemistry calculation
- ✓ Accelerated stress tests on module- and material level (accelerated aging)
- ✓ Non-destructive and destructive analytics to identify degradation partners and mechanisms
- ✓ Identification and definition of loads or reaction kinetics which induces degradation modes
- ✓ Correlation between naturally and artificially provoked degradation mechanisms.
- ✓ Investigate important module characteristics (e.g. el. impedance of the insulation materials) and their progress over exposure time
- ✓ Topic should be covered within a PhD thesis (university supervision) / PhD study is possible

Your profile

- ✓ 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
- ✓ Willingness to move countries for ESR placement and temporary secondments
- ✓ Degree in physics, chemistry, related engineering or material science that qualifies for PhD study
- ✓ Experience in analytical methods / Knowledge in polymer material science and/or in photovoltaic module testing is of advantage
- ✓ Good proficiency in English and German language
- ✓ Intercultural competence, excellent communication skills, ability to work in teams

Application

Please apply till **11 December 2016** according to the instructions on project website www.solar-train.eu