



Postdoctoral Associate Position  
Solar Technologies Research Division of the Florida Solar Energy Center  
University of Central Florida  
Orlando, Florida USA  
April 2018

#### Description

A postdoctoral associate with relevant experience in crystalline silicon photovoltaics (PV) is sought to join the Solar Technologies Research Division of the Florida Solar Energy Center (FSEC), a research institute of the University of Central Florida (UCF), the second largest university in the United States. The Solar Technologies Research Division features office space in UCF's Research Park, office space and PV test fields at FSEC's Cocoa, FL site. This position is a 1-year position with benefits starting as soon as possible, with the ability to renew up to 3-years.

This position is directly related to UCF's recent award (DE-EE-0008157) under the US DOE's SunShot initiative entitled "LCOE reduction through proactively optimized monitoring of PV systems". The position is a combination of hands-on testing of PV systems as well as the development of advanced algorithms for the detection of the various power loss anomalies occurring in the field. The program scope is broken into four main categories 1) set up and operate a high resolution PV monitoring system that has in situ I-V monitoring at both the string and module level as well as the methods detailed in IEC 61724, 2) develop and validate algorithms that are able to detect, quantify, and determine potential root cause for the power loss events, 3) develop a diagnostic-prognostic monitoring system that can provide intelligent work orders for repairs or maintenance, and 4) quantify the impact this type of system has on LCOE. The work begins with a two-string test array and finishes with a demonstration at our partner's utility scale PV production field. This is a 4-year funded project with a Go/No Go decision on December 2019.

FSEC is searching for candidates with a background in the PV systems, PV system monitoring with strong skills in programming, and algorithm development and validation. The candidate should know the I-V characteristic curve and its meaning as well as have the ability to decipher anomalies in that curve. The candidate should be able to work with database queries to pull data and post data programmatically. The candidate should have programming experience (Python, C+, C++, F#, Visual Basic, or others) such that complex analysis can be accomplished from data extracted from the database. Results of the analysis gets posted back into the database. PV system modeling is required to incorporate the in situ I-V into relevant models to improve the power predictions and levelized cost of energy impacts. An added benefit would be a candidate that has familiarity with OSIsoft's PI application suite.

#### Minimum Qualifications

Doctoral degree in a physical science or engineering field and appropriate education and experience.

#### Application

Please send your CV and cover letter [joseph.walters@ucf.edu](mailto:joseph.walters@ucf.edu) Make sure to highlight your past experience, as it relates to the topics described above. This position is a 1-year position with the possibility of renewal.

