

## Department of Electrical and Computer Engineering

**Title:** « Prediction model for potential-induced degradation (PID) of photovoltaic modules at different locations based on local weather data»

**Simon Koch**

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**Wednesday, 13<sup>th</sup> November 2013, 17:00 – 18:30**

**Room ΠΤΕΡ E113, Old Campus**

**University of Cyprus**

### **Abstract:**

The Potential-Induced Degradation (PID) of p-type silicon photovoltaic (PV) modules, due to the high d.c. voltage stress between the PV cells and the ground potential, is known since 2010. Since then a wide variety of publications presented different aspects and influencing parameters of PID.

The presentation will add the newest test results from the actual PID research work from PI-Berlin. The parameters will be explained in detail and their influence on the degradation process will be discussed. In addition the difference between tests on one cell mini modules and full size modules will be examined, e.g. contact design, the impact of the potential against ground. Furthermore the special conditions in a power plant, for example the degradation phase during the day, which affects the PID degradation time in the field, will be analyzed. This work shows a model which can predict a degradation process, of a specific material composition after it is analyzed and stressed with indoor and outdoor tests. The first outdoor data and their analysis on mini module level will be presented.

### **Biography:**

Simon Koch joined PI-Berlin in 2007. He studied environmental engineering at the University of Applied Science in Berlin, Germany, and received his diploma degree in 2008. For his diploma thesis Simon worked on defect analysis of silicon solar modules using electroluminescence and photoluminescence imaging, and is now focusing on PID simulation for his Ph.D. thesis.