

IMPROVEMENT OF A PREDICTION MODEL FOR POTENTIAL INDUCED DEGRADATION BY BETTER UNDERSTANDING THE REGENERATION MECHANISM

Autors:

Simon Koch, Juliane Berghold, Cyril Hinz, Stefan Krauter and Paul Grunow

Abstract/Summary:

This paper is the continuation of the work presented at the EUPVEC 2013 and 2014 [1, 2]. It will present the further developed PID simulation model. The potential-induced-degradation (PID) effect can be described mainly by two parameters. The performance of a solar module is its essential characteristics. Its power reduction is related to the increase of the shunt resistance, which indicates PID. The purpose of this work is the development of a PID prediction model using climate data. For the mathematical description of the degradation process, a “logistic” function is presented. This feature is already applied in other fields of research and is here adjusted for simulating potential-induced degradation. With this function it is possible to describe mathematically the performance measured and the related shunt resistance. A main topic in that advanced prediction model is the aspect of regeneration. The influencing parameters for the regeneration can be divided into accelerating and decelerating factors. This work will underline the importance of understanding the regeneration on the way to fully understand PID.

For more Information on the topic please contact the R&D Team of PI Berlin.