New approaches for identifying and analysing failures in PV

2nd February 2021, 09:00h-12:00h (CET)

Organized by WG2: Reliability and Durability of PV

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Introduction

Working Group 2 (WG2) as part of PEARL PV and is focused on the development of new schemes and methods for reliability and durability assessment of PV modules, components, and systems in cooperation with leading PV experts in Europe. WG2 aims upon how reliability metrics and analytical techniques are changing within PV modules and systems and how advancements in big data analytics (BDA) approaches can be used to assess reliability.

WG2 is organizing a workshop on ''New approaches for identifying and analysing failures in PV''. In this seminar, we will enjoy several presentations from world leading outstanding PV experts. The main aim of this workshop is to present the recent development and trends in lifetime prediction, degradation mechanism, failure identification, and analytical approaches for failure modes in PV systems, modules, and components.

At the end of this workshop, we will host two parallel sessions, namely, on how Big Data can be used to improve advancing PV technologies and on how the datasets from Pearl PV repository can be employed for identifying and analyzing of new types of failures in PV systems and components.

Programme

Time	Item/Title	Presenter
9:00	Introduction to WG2 and workshop	Mohammadreza Aghaei, Eindhoven University of Technology (TU/e) and Jeff Kettle, University of Glasgow
Keynote presentation		
9:10	"Lifetime prediction: when is it useful and when is it a distraction"	Sarah Kurtz, University of California Merced
Plenary presentations		
9:40	"Outdoor inspection of PV modules using drone-based electroluminescence imaging"	Gisele Alves dos Reis Benatto, Technical University of Denmark (DTU)
10:00	"Combined-accelerated stress testing of PV modules and materials"	Michael Owen Bellini, National Renewable Energy Laboratory (NREL)
---------------------------Break---------------------------		
10:30	"Degradation mechanism of CIGS devices"	Mirjam Theelen, TNO, Solliance
10:50	"Assessing end-of-life failure modes in PV modules"	Andrew Fairbrother École polytechnique fédérale de Lausanne (EPFL)
Parallel sessions		
11:10	"Big data for identifying material instability issues in next generation solar cell"	Lead by Jeff Kettle, University of Glasgow and Jesper Jacobson, Helmholtz-Zentrum Berlin (HZB)
	"How can data from Pearl PV repository (CKAN) be used for assessing new types of failures"	Lead by Mohammadreza Aghaei, TU/e and Christian Braun, Fraunhofer ISE
11:40	Workshop summary and closing	Mohammadreza Aghaei, TU/e and Jeff Kettle, University of Glasgow