



New approaches for identifying and analysing failures in PV

COST Action CA16235 Pearl PV

Organized by Working Group 2: Reliability and Durability of PV

Workshop Introduction

Dr. Mohammadreza Aghaei (TU/e)

Dr. Jeffrey Kettle (University of Glasgow)

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

Working group 2: reliability and durability of PV

- Working Group 2 (WG2) consists of 46 members of universities, research centers and industrial partners across Europe.
- WG2 is focused on development of novel schemes and methods for reliability and durability assessment of PV in cooperation with leading PV experts in Europe and using cutting edge research and knowledge.
- The particular focus of WG2 is on the reliability and longer lifetimes of PV and WG2 aims upon how reliability metrics and reliability analytical techniques are changing within PV modules and systems and how advancements in big data analytics (BDA) approaches can be used to assess reliability.

Lead by

dr. Mohammadreza Aghaei (TU/e)

dr. Jeffrey Kettle (University of Glasgow)

- 47 members (M:33 / F:15) from 24 COST countries
- 13 MC members
- 6 MC Substitutes
- 25 Regular members

Online WG2 workshop

- ▮ 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.

Time	Item/Title	Presenter
9:00	Introduction to WG2 and Workshop	Mohammadreza Aghaei, TU/e 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)
10:20	Degradation Mechanism of CIGS Devices"	Mirjam Theelen, TNO, Solliance
10:40	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, (HZB)
	"How can data from Pearl repository (CKAN) be used for assessing new types of failures"	Lead by Mohammadreza Aghae, Eindhoven University of Technology (TU/e) and Christian Braun, Fraunhofer ISE
11:40	Summary and closing	Jeff Kettle, University of Glasgow Mohammadreza Aghaei, TU/e

Thank You Very Much for Your Attention!

Jeff Kettle & Mohammadreza Aghaei

COST Action CA16235 Pearl PV

Working Group 2: Reliability and Durability of PV

<https://www.pearl-pv-cost.eu/wg/wg2>

Jeff.Kettle@glasgow.ac.uk / m.aghaei@tue.nl