



Announcement ⁽⁴⁾

9th SOPHIA Workshop PV-Module Reliability

May 28th – 29th, 2019

Hotel Weitzer, Graz, Austria

OBJECTIVES:

DEVELOPMENTS IN MATERIALS, ECONOMICS AND SUSTAINABILITY REQUIREMENTS CALL FOR NEW APPROACHES TO RELIABILITY ASSESSMENT

The Polymer Competence Center Leoben GmbH, PCCL in Leoben (Austria) and the Fraunhofer Institute for Solar Energy Systems ISE (Germany) are proud to invite to the 2019 SOPHIA-workshop 'PV-Module Reliability' in Graz, Austria. The 2019 workshop will feature reliability aspects of innovative materials and developments in service life prediction modelling and standardization. Aspects of the influence of reliability on sustainability will be presented and further information on the EU-Project SolarTrain provided.

This year's topics of the workshop are:

- **Interconnection**
Driven by the wish to further increase module efficiency, to reduce costs or to avoid critical materials, cell interconnection techniques are getting more and more divers. Their impact on module reliability will be in the focus of this session.
- **Standardization & Test development**
Consumers require a relevant proof of quality and performance, manufacturers expect a fast and cost-efficient testing process. Current considerations regarding the implementation of new testing methods on module and material level into established type approval standards will be discussed.
- **Advancements in lifetime modelling**
Material degradation effects strongly impact module reliability. How to calculate encapsulation degradation? Can machine learning support reliability assessment of PV modules and power plants?
- **Encapsulants & Backsheets**
Long term properties of polymeric encapsulants and backsheets play a major role in durability of PV-Modules. Innovative new materials offer chances for improved performance and reduced prices, but the durability has to be kept at a high level and material incompatibilities have to be investigated thoroughly.
- **Thin film/organic/perovskite**
Taking a closer look on influences and requirements of new cell types and technologies on module reliability.
- **Ecodesign & Recycability vs. Reliability**
Recycling and reliability have a strong influence on sustainability. Can repair measures ensure reliability? How do regulatory measures affect the market?

Regular Registration fees : 400 EUR – Early Bird Discount until March 31st: 350 EUR

Registration fees for TPPV-Members: 300 EUR – Early Bird Fee for TPPV-Members until March 31st: 250 EUR

For more information and for **registration** please visit the workshop's website:

www.pv-reliability.com

Structure

These program topics will be presented by experts and further developed in discussion groups or plenum.

Block 1: Interconnection

- a) Endurance of Smart Wires > Andreas Waltinger, Meyer Burger GmbH
- b) Reliability of ECA > Gernot Oreski, PCCL

Block 2: Standardization & Test development

- a) LeTID > Bengt Jäckel, Fraunhofer CSP
- b) Combined-Accelerated Stress Testing > Michael Owen-Bellini, NREL
- c) Experiences from certification according new standard with B and B1 sequences > Daniel Philipp, Fraunhofer ISE

Block 3: SolarTrain (<https://solar-train.eu>)

- a) Using reanalysis data to evaluate the PV degradation regarding the KGPV climate zones in Europe > Julian Ascencio-Vásquez, University of Ljubljana
- b) Humidity ingress in PV encapsulants and glass-encapsulant-backsheet laminates > Stefan Mitterhofer, University of Ljubljana
- c) Effect of micro-climate and aging condition on polymer degradation > Djamel Eddine Mansour, Fraunhofer ISE
- d) Degradation Modelling and Evaluation of Data Quality for Service Lifetime Prediction and Yield Estimation of PV Modules and Systems > Ismail Kaaya, Fraunhofer ISE

Block 4: Advancements in lifetime modelling

- a) Modelling and simulation of EVA degradation: Accelerated ageing tests vs. long-term outdoor exposure > Maria Gagliardi, IMT
- b) Machine learning approaches for PV reliability assessment > Abdulkemir Gok, GYTE

Block 5: Encapsulants & Backsheets

- a) PP Backsheets > Philip Hülsmann, Bischof + Klein SE & Co. KG
- b) Robust backsheet solutions for Aggressive climates: not necessarily Glass! > François Rummens, Renolit Belgium NV
- c) Reliability testing of new materials for module mass production > Marcel Kühne, Hanwah Qcells
- d) Backsheet-failures in the field > Luciana Pitta Bauermann, Fraunhofer ISE

Block 6: Thin film/organic/perovskite

- a) Stability of organic and perovskite solar cells > Gregor Trimmel, TU Graz
- b) Latest developments on CIGS Reliability

Block 7: Ecodesign & Recycability vs. Reliability

- a) Effects of reliability on sustainability > Karl-Anders Weiß, Fraunhofer ISE
- b) Possible repair strategies for PV-modules with cracked backsheets > Gabriele Eder, OFI
- c) Sustainability requirements: French tendering process, its evolution, and the impact on the market > Françoise Burgun, INES

Plenary discussion on the topics "How to include reliability metrics in sustainability assessment/Eco-labelling? How to increase the visibility of/awareness for quality and reliability aspects?" and sum up



Organizer

Fraunhofer ISE, Dr. Karl-Anders Weiß

Host

PCCL, Dr. Gernot Oreski

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Supported by: <http://tppv.at/>

