SOPHIA
European Research Infrastructure

Second Announcement

5th SOPHIA Workshop PV-Module Reliability

April 16th – 17th, 2015
Centre for Renewable Energy Systems Technology (CREST) at Loughborough University (UK)

OBJECTIVES

Reliability Assessment by Quality Assurance and Service Life Testing
The 2015 SOPHIA-workshop 'PV-Module Reliability', organized by Fraunhofer ISE and CREST in Loughborough (UK) on April 16th to April 17th, 2015, is dedicated to tests and tools which can be used or further developed to support the future reliability assessment of PV modules.

- One of the focal points will be to demonstrate various metrology tools for the assessment of local stresses on PV modules.
- Stress mapping in general and in detail will lead the way from specific stresses to concerted stress tests.
- Discussed are the degradation factors UV, temperature, water and thermomechanics.
- Followed by a session on the latest research results on potential induced degradation (PID).
- Quality Assurance in production and operation will be presented and discussed.
- Tests and tools for future reliability assessment techniques will be evaluated.

Fraunhofer ISE and the Centre for Renewable Energy Systems Technology (CREST) are inviting you to this workshop which will additionally offer extensive exchange between participants during four discussion sessions on the topics presented.

Regular Registration fees : 380 GBP - check website for discount prices -
Registration fees for students: 280 GBP

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

www.pv-reliability.com

Structure

The program topics will be presented by experts and further developed in discussion groups.

Block 1: Introduction to accelerated testing
a) Requirements for reliability assurance incl. PVQAT: Tony Sample, JRC,IT
b) Life-time Energy Yield: Ralph Gottschalg, CREST, UK
Discussion: What are the expectations and motivations for this workshop?

Block 2: From degradation factor assessment to test conditions – Part 1
a) UV: Michael Koehl, ISE, GER
b) Methodology for comparing indoor stress tests to outdoor exposure: Mike Kempe, NREL, USA
c) Thermomechanics: Sascha Dietrich, CSP, GER

Block 3: From degradation factor assessment to test conditions – Part 2
a) PID: Michael Koehl, ISE, GER
b) Stress mapping: Karolina Slamova, ISE, GER
c) Combined stress testing: Karl Berger, AIT, AUT
Discussion: How can we provide reliable accelerated service life tests?

Block 4: Optical methods for module inspection
a) Raman Spectroscopy: Karl-Anders Weiß, ISE, GER
b) Luminescence Spectroscopy as a tool for non-destructive inspection of PV module encapsulants: Beate Roeder, HU Berlin, GER
c) Quantification of Electroluminescence Spectroscopy: Karl Bedrich, CREST, UK

Block 5: Quality Assurance in production and operation
a) QS system applied in industry production: Norbert Lenk, Consultant, GER
b) Luminescence as a tool for spatially resolved evaluation of EVA crosslinking in PV-Module: Jan Schlothauer, HU Berlin, GER
c) Uncertainty of Power Rating in Production: Christos Monokoussos, TUV Rheinland, CN
Discussion: How comprehensive should be quality assurance?

Block 6: Field experience
a) Financial Risk Grading of PV Power Plants using Risk Priority Number (RPN): Govindasamy Tamizhmanir, ASU, USA
b) Correlation with type approval testing in the lab: John Wohlgemuth, NREL, USA
c) Field experience with PID and methods of prevention: Peter Benz, Solarfabrik, GER
Plenary discussion with presentation of discussion group results

Plenary discussion with presentation of discussion group results
Optional: Visit of the facilities of CREST

Fraunhofer ISE
Loughborough University
Centre for Renewable Energy Systems Technology

Organizer
Fraunhofer ISE, Dr.-Ing. Michael Köhl
CREST, Prof. Ralph Gottschalg

For questions please contact
A.Rahimifard@lboro.ac.uk
kerstin.koerner-ruf@ise.fraunhofer.de