## IMPLEMENTING AGREEMENT ON PHOTOVOLTAIC POWER SYSTEMS



# **IEA PVPS Workshop @ EUPVSEC 2012**

# "Characterizing and Classifying Failures of PV Modules"

Day: Monday, 24 September, 2012

Time: 14:00 – 18:00

Site: Conference Room 2 on Level C3, Congress Center

Access: Open to all registered participants of the 27<sup>th</sup> EU PVSEC

The characterization of PV module failures is growing in importance as the growth in the PV sector boots the demand for more accurate information on PV module performance and reliability. This information is essential for PV module designer and manufacturers to observe process difficulties during the production, to keep improving their modules during development processes and last, but not least, to assure PV module warranties. For plant operators and customers, PV module characterization is important to observe output performance and reliability of their PV systems and to proof the faultless operation of the PV modules in the field.

This workshop will look at issues ranging from testing and certification of PV modules, cracking of crystalline silicon modules, the results of field investigations into module failures such as snail tracks and PV module failures in the field. The workshop will be of interest to both researchers in the field and PV module manufacturers as information on state-of-the-art of PV module degradation, identification of main problems due to material properties and failure risk estimations will be shared and discussed.

The international list of speakers will draw on their experiences in Europe, the US and Japan.

## **Programme Outline**

14:00-14:20

#### The mission of PVPS towards reliable PV

Stefan Nowak (invited), Chairman IEA PVPS, International Energy Agency Photovoltaic Power Systems Programme, Conference General Chairman of EU PVSEC

14:20-14:50

#### PV module reliability issues including testing and certification

Ulrike Jahn, TÜV Rheinland, Cologne, Germany

14:50-15:20

#### Snail tracks, worm marks and micro cracks

Marc Köntges, Institute for Solar Energy Research Hamelin, Germany

15:20-15:50

#### Crack statistic of crystalline silicon photovoltaic modules

Sarah Kajari-Schröder, Institute for Solar Energy Research Hamelin, Germany

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15:50-16:20

**Networking break** 

16:20-16:50

Fielded PV module condition

Corinne E. Packard, Colorado School of Mines, USA (invited)

16:50-17:20

PV module failures observed in the field - solder bond and bypass diode failures

Kazuhiko Kato, National Institute of Advanced Industrial Science and Technology, Japan

17:20-17:50

PV module failures from field experiences

Werner Knaupp, PV-plan, Stuttgart, Germany

18:00

Workshop conclusion

Participants can look forward to a series of expert presentations, discussions and networking opportunities.