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Reliability of Photovoltaic Cells, Modules, Components, and Systems IX

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Session Chairs

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3 Thin Film PV Module Reliability, Standards
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Thomas C. Felder, E.I. du Pont Nemours and Company (United States)

6 PV Module Reliability Accelerated and Outdoor Testing II
Keiichiro Sakurai, National Institute of Advanced Industrial Science and Technology (Japan)

Introduction

Sunday, 28 August

Sunday morning, Session 1 on Encapsulant, Backsheet, Frontsheet, and Packaging Materials was chaired by Dr. Keiichiro Sakurai, National Institute of Advanced Industrial Science and Technology (Japan). Two invited papers were presented, "Investigation of a wedge adhesion test for edge seals," by Kempe et al., and "Sequential accelerated tests: improving the correlation of accelerated tests to module performance in the field," by Felder et al. Two contributed papers were also presented.

Session 2 on Dust, Soiling was chaired by Dr. Michael D. Kempe, National Renewable Energy Lab (United States). An invited paper was presented, "Dust in the wind: Soiling of solar devices: Is there a Holy Grail solution?" by Kazmerski et al., followed by discussions on PV module degradation due to dust and soiling.

Sunday afternoon, Session 3 on Thin Film PV Module Reliability, Standards was chaired by Christopher Flueckiger, Underwriters Laboratories Inc. (United States). An invited paper was presented, "Proposed new damp heat test standards for commercial CIGS modules with bias application or light irradiation," by Sakurai et al., along with one contributed paper.

Session 3 continued after the coffee break, with presentation of two invited papers,."How heat influences CIGSSe solar cells properties," by Flammini et al., and "SMART empirical approaches for predicting Field performance of PV modules from results of reliability tests," by Hardikar.

In the afternoon, Session 4 on Fault Detection and NEC Codes was chaired by Dr. Neelkanth G. Dhere, University of Central Florida (United States). An invited paper was presented, "Requirements for module level rapid shutdown in the 2017 National Electrical Code: a brand new call for high reliability in module level power electronics," by Dr. Ward Bower.

Monday, 29 August

Monday morning, Session 5 on PV Module Reliability Accelerated and Outdoor Testing I was chaired by Tom Felder, E.I. du Pont Nemours and Co. (United States). An invited paper was presented, "Characterizing the weathering induced haze formation and gloss loss of poly(ethylene-terephthalate) via MaPd:RTS spectroscopy," by Gordon et al., along with five contributed papers.

After the morning Coffee break, Session 6 on PV Module Reliability Accelerated and Outdoor Testing II was chaired by Dr. Keiichiro Sakurai, National Institute of Advanced Industrial Science and Technology (Japan). An invited paper was presented, "Degradation of veteran Si modules in hot-humid locations in México," by Dalia Martinez Escobar and colleagues, along with three contributed papers.

The Optics + Photonics for Sustainable Energy Plenary Session took place on Monday afternoon. Dr. Christopher Flueckiger, of Underwriters Laboratories Inc. (United States) presented, "Qualifying materials for use in PV modules."

The Poster Session took place Monday evening with four poster presentations, one related to PV module reliability.

Overall, the SPIE Reliability of Photovoltaic Cells, Modules, Components, and Systems IX Conference has good following and was very well-attended with participants from the United States, Mexico, Europe and Japan. There were 25 presentations. Two papers were withdrawn because the company closed its operations in the area and there were two no-shows. The discussion and question-answer sessions were very lively and interesting.

We would like to thank the authors and other participants for their continuing interest and valuable support.

Finally, let us thanks outgoing Conference Chair Dr. John H. Wohlgemuth, NREL, for his long-term and valuable contribution to this Conference. Let us also welcome Dr. Michael D. Kempe, NREL who has kindly agreed to join as a Conference Chair.

Neelkanth G. Dhere
John H. Wohlgemuth
Keiichiro Sakurai