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

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John H. Wohlgemuth
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Editors

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Contents

v	<i>Authors</i>
vii	<i>Conference Committee</i>
ix	<i>Introduction</i>

ENCAPSULANT, BACKSHEET, FRONTSHEET, AND PACKAGING MATERIALS

9938 03	Investigation of a wedge adhesion test for edge seals (Invited Paper) [9938-1]
9938 04	Sequential accelerated tests: Improving the correlation of accelerated tests to module performance in the field (Invited Paper) [9938-2]

THIN FILM PV MODULE RELIABILITY, STANDARDS

9938 0A	Proposed new damp heat test standards for commercial CIGS modules with bias application or light irradiation (Invited Paper) [9938-9]
9938 0C	How heat influences CIGS_{Se} solar cells properties (Invited Paper) [9938-12]
9938 0D	SMART empirical approaches for predicting field performance of PV modules from results of reliability tests (Invited Paper) [9938-13]

PV MODULE RELIABILITY ACCELERATED AND OUTDOOR TESTING I

9938 0G	Reliability and efficacy of organic passivation for polycrystalline silicon solar cells at room temperature [9938-16]
9938 0H	Correlation between mechanical and chemical degradation after outdoor and accelerated laboratory aging for multilayer photovoltaic backsheets [9938-17]
9938 0I	Characterizing the weathering induced haze formation and gloss loss of poly(ethylene-terephthalate) via MaPd:RTS spectroscopy (Invited Paper) [9938-18]
9938 0J	IR-images of PV-modules with potential induced degradation (PID) correlated to monitored string power output [9938-19]
9938 0K	Study of 1 MW PV array at the Kennedy Space Center [9938-20]
9938 0L	Statistical overview of findings by IR-inspections of PV-plants [9938-21]

PV MODULE RELIABILITY ACCELERATED AND OUTDOOR TESTING II

- 9938 0N **Detecting loss mechanisms of c-Si PV modules by I_{sc} - V_{oc} and I - V measurement** [9938-23]
- 9938 0O **Analysis of twelve-month degradation in three polycrystalline photovoltaic modules**
[9938-24]
- 9938 0P **Degradation of veteran Si modules in hot-humid locations in México (Invited Paper)**
[9938-25]

POSTER SESSION

- 9938 0Q **In-situ comparison of thermal measurement technologies for interpretation of PV module temperature de-rating effects** [9938-26]
- 9938 0S **Modification and upgrade of AzRISE/TEP solar photovoltaic test yard** [9938-28]

Authors

Numbers in the index correspond to the last two digits of the six-digit citation identifier (CID) article numbering system used in Proceedings of SPIE. The first four digits reflect the volume number. Base 36 numbering is employed for the last two digits and indicates the order of articles within the volume. Numbers start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B...0Z, followed by 10-1Z, 20-2Z, etc.

Adams, Jens, 0J
Bakker, Klaas, 0C
Bennett, Whit, 0Q, 0S
Bheemreddy, Venkata, 0D
Blumberg, Tiberius, 0J
Booth, Dennis, 03
Bosman, Johan, 0C
Brabec, Christoph J., 0J, 0L
Bradley, Alex, 04
Bruckman, Laura S., 0I
Buerhop, Claudia, 0J, 0L
Camus, Christian, 0J, 0L
Dalsass, Manuel, 0J
Davis, Kristopher O., 0N
Debernardi, Nicola, 0C
DeNoyer, Lin, 0I
Dhere, Neelkanth G., 0G, 0K
Dhere, Ramesh G., 0K
Dunne, Brendan, 0C
Dusane, Rajiv O., 0G
Elwood, Teri, 0Q, 0S
Fagerholm, Cara L., 0I
Felder, Thomas, 04
Fishgold, Asher, 0S
Flammini, Marco Giacomo, 0C
French, Roger H., 0I
Funde, Adinath M., 0G
Gambogi, William, 04
Garreau-Iles, Lucie, 04
Ghaisas, Subhash V., 0G
Gok, Abdulkarim, 0I
Gordon, Devin A., 0I
Gu, Xiaohong, 0H
Guo, Siyu, 0N
Hardikar, Kedar Y., 0D
Hauch, Jens, 0J, 0L
Hu, Hongjie, 04
Jadkar, Sandesh R., 0G
Kempe, Michael, 03
Lai, Teh, 0O, 0Q, 0S
Le Ster, Maxime, 0C
Lin, Chiao-Chi, 0H
Liu, Bill J. J., 0D
Lyu, Yadong, 0H
Martin, Wayne R., 0K
Martinez-Escobar, D., 0P
Masuda, Atsushi, 0A
Meyer, Corey W., 0I
Miller, David, 03

Ogawa, Kinichi, 0A
Ortega-Cruz, J., 0P
Phillips, Nancy, 03
Pickel, Tobias, 0J, 0L
Postak, Lori, 03
Potter, Barrett G. Jr., 0O, 0S
Sakurai, Keiichiro, 0A
Sánchez-Juárez, A., 0P
Sánchez-Pérez, P. A., 0P
Santos-Magdaleno, R., 0P
Scheuerpflug, Hans, 0L
Schmitz, Darshan, 0A
Schneller, Eric, 0K, 0N
Schoenfeld, Winston V., 0N
Shibata, Hajime, 0A
Shinde, Onkar S., 0G
Simmons-Potter, Kelly, 0O, 0Q, 0S
Stika, Katherine, 04
Sweet, Noah W., 0I
Theelen, Mirjam, 0C
Tokuda, Shuuji, 0A
Tomita, Hiroshi, 0A
Trout, T. John, 04
Walters, Joe, 0N
Wohlgemuth, John, 03
Wrana, Simon, 0J
Yu, Bao-Ling, 04
Yu, Li-Chieh, 0H
Zetzmann, Cornelia, 0J

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- 1 Encapsulant, Backsheet, Frontsheet, and Packaging Materials
Keiichiro Sakurai, National Institute of Advanced Industrial Science and Technology (Japan)
- 2 Dust, Soiling
Michael D. Kempe, National Renewable Energy Laboratory (United States)
- 3 Thin Film PV Module Reliability, Standards
Christopher Flueckiger, Underwriters Laboratories Inc. (United States)
- 4 Fault Detection and NEC Codes
Neelkanth G. Dhere, University of Central Florida (United States)
- 5 PV Module Reliability Accelerated and Outdoor Testing I
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 CIGS 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 thank 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