

3rd Atlas/NIST Workshop on Photovoltaic Materials Durability Agenda

December 8 and 9, 2015
Building 101, Portrait Room
NIST, Gaithersburg, MD 20899

Day 1: December 8 th , 2015	
8:00 - 8:30	Continental Breakfast
8:30 - 8:45	Opening Remarks--- Howard Harary , Director, NIST Engineering Laboratory & Conference hosts
Session 1: PV Module Field Study (Chair: Kurt Scott, Atlas Material Testing Technology)	
8:45 - 9:15	Use of Field Observations to Assess PV Module Reliability --- John Wohlgemuth (NREL)
9:15 - 9:45	PV modules' reliability deployed in Japanese PV power plant from viewpoint of encapsulant --- Tsuyoshi Shioda (Mitsui Chemicals, Inc.)
9:45 - 10:15	Degradation Study of Fielded PV Modules from Different Climates in China --- Xian Dong (ShunDe SYSU Institute for Solar Energy, China)
10:15 - 10:30	Break
Session 2: Accelerated Laboratory Testing of PV Modules and Materials (Chair: George Kelly)	
10:30 - 11:00	Development of Accelerated Tests based on Analysis of Fielded Modules --- Tom Felder/Bill Gambogi (DuPont)
11:00 - 11:30	Accelerated Laboratory Testing towards SLP of PV Polymeric Components-Reciprocity Study and Spectral UV Wavelength Effect --- Xiaohong Gu (NIST)
11:30 - 12:00	Investigating the Impact of Reciprocity on High-Irradiance Weathering Tests --- Kenneth White (3M)
12:00 - 1:00	Lunch
1:00 - 1:30	PV Component Weathering in IEC Standards – Development and Progress --- Nancy Phillips (3M)
1:30 - 2:00	Applying the Fundamental Principles of Weathering to Environmental Durability Testing of PV Backsheets --- Allen Zielnik (Atlas Material Testing Technology)
2:00 - 2:30	Predictive and semi-gSEM models of Poly(Ethylene-Terephthalate) under multi-factor accelerated weathering exposure--- Prof. Roger French (Case Western Reserve University)
2:30 - 3:00	Prediction of Moisture Induced Degradation in the Field for Flexible PV Modules --- Kedar Hardika (Miasolé)
3:00 - 3:30	Break
3:30- 4:30	Field and Accelerated Laboratory Tests - Panel Discussion (Chairs: Kurt Scott & George Kelly)
4:30	Adjourn/NIST Lab tour

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Day 2: December 9 th , 2015	
8:00 - 8:30	Continental Breakfast
8:30 - 8:45	Opening Remarks --- Xiaohong Gu (NIST)
Session 3: Adhesion of PV Components (Chair: John Wohlgemuth, NREL)	
9:15 - 9:45	Degradation in PV Encapsulant Adhesion: An Interlaboratory Study --- David C. Miller (NREL)
9:45 - 10:15	Thermo-Mechanical Degradation Mechanisms Relevant for Field Failures and Solar Lifetimes --- Reinhold Dauskardt (Stanford University)
10:15- 10:45	Break
10:45 - 11:15	Holistic Reliability: Accelerated Testing of Adhesion of Silver Paste --- Mason Terry (DuPont)
11:15 - 11:45	Moving the PV Industry to a Quantitative Adhesion Test Method --- Nick Bosco (NREL)
11:45- 12:30	Poster session
12:30 -1:30	Lunch
Session 4: Electrical Characterization of PV materials and Modules (Chair: Nancy Phillips, 3M)	
1:30 - 2:00	Non-contact Electrical Characterization of PV Films --- Jan Obrzut (NIST)
2:00 - 2:30	TBD--- Christopher Flueckiger (UL)
2:30 - 3:00	Electrical breakdown testing of polymeric materials intended for use in PV modules – standard development and progress --- Bernt-Ake Sultan (Borealis)
3:00 - 3:15	Break
3:15 - 4:00	Adhesion, Electrical Characterization & Posters - Panel Discussion (Chairs: John Wohlgemuth, Nancy Phillips & Xiaohong Gu)
4:00	Closing Remarks and Adjournment Xiaohong Gu & Kurt Scott