



PV Materials NA TC Chapter Meeting Summary and Minutes

SEMICON West

Tuesday, July 9, 2019

10:00 AM – 11:00 AM

Moscone Center, San Francisco, California

TC Chapter Announcements

Next TC Chapter Meeting

Wednesday, July 22, 2020 San Francisco, CA in conjunction with the SEMICON West Standards Meeting 2020. Check www.semi.org/en/standards for the latest update.

Table 1 Meeting Attendees

Co-Chairs: Hugh Gotts (Air Liquide)

SEMI Staff: Kevin Nguyen (SEMI HQ), Isadora Jin (SEMI China)

<i>Company</i>	<i>Last</i>	<i>First</i>	<i>Company</i>	<i>Last</i>	<i>First</i>
Evergreen Enhancement	Kerr	Bill	Air Liquide	Li	Fuhe
Evergreen Enhancement	Kerr	Barbara	Nordson Sonoscan	Martell	Steve

Italic indicates remote participant

Table 2 Leadership Changes

<i>WG/TF/SC/TC Name</i>	<i>Previous Leader</i>	<i>New Leader</i>
None		

Table 3 Committee Structure Changes

<i>Previous WG/TF/SC Name</i>	<i>New WG/TF/SC Name or Status Change</i>
None	

Table 4 Ballot Results

<i>Document #</i>	<i>Document Title</i>	<i>Committee Action</i>
None		

#1 **Passed** ballots and line items will be submitted to the ISC Audit & Review Subcommittee for procedural review.

#2 **Failed** ballots and line items were returned to the originating task forces for re-work and re-balloting or abandoning.



Table 5 Activities Approved by the GCS between meetings of the TC Chapter

#	Type	SC/TF/WG	Details
None			

Table 6 Authorized Activities

#	Type	SC/TF/WG	Details
TBD	SNARF	Int'l PV Analytical Test Methods, Metrology, and Inspection TF	Reapproval of SEMI PV13 - Test Method for Contactless Excess-Charge-Carrier Recombination Lifetime Measurement in Silicon Wafers, Ingots, and Bricks Using an Eddy-Current Sensor

NOTE 1: SNARFs and TFOFs are available for review on the SEMI Web site at: <http://downloads.semi.org/web/wstdsbal.nsf/TFOFSNARF>

Table 7 Authorized Ballots

#	When	SC/TF/WG	Details
TBD	Cycle 2-2020	Int'l PV Analytical Test Methods, Metrology, and Inspection TF	Reapproval of SEMI PV13 - Test Method for Contactless Excess-Charge-Carrier Recombination Lifetime Measurement in Silicon Wafers, Ingots, and Bricks Using an Eddy-Current Sensor

Table 8 SNARF(s) Granted a One-Year Extension

#	TF	Title	Expiration Date
None			

Table 9 SNARF(s) Abolished

#	TF	Title
None		

Table 10 Standard(s) to receive Inactive Status

Standard Designation	Title
None	

Table 11 New Action Items

Item #	Assigned to	Details
None		

Table 12 Previous Meeting Action Items

Item #	Assigned to	Details
None		



1 Welcome, Reminders, and Introductions

Hugh Gotts called the meeting to order at 10:00 AM. The meeting reminders on antitrust issues, intellectual property issues and holding meetings with international attendance were reviewed. Attendees introduced themselves.

2 Review of Previous Meeting Minutes

2.1 The TC Chapter reviewed the minutes of the previous meeting.

Motion: Accept the minutes as written

By / 2nd: Steve Martell/Bill Kerr

Discussion: None

Vote: 3-0

3 Liaison Reports

3.1 *PV Materials Europe TC Chapter*

3.1.1 Kevin Nguyen reported for the Europe TC Chapter. Of note:

- Last meeting
 - May 21, 2019
 - Berlin, Germany
- Next meeting
 - November 11, 2019
 - SEMICON Europe, Munich, Germany
- PV Silicon Materials TF
 - Several standards are coming up for 5 year review: PV42, PV51, PV52
- PV Materials Degradation TF
 - New Standard: Test Method for Silicon PV Materials for light-induced degradation (LID)
 - Authorized for ballot at next TC meeting, SEMICON Europa, November 2019

Attachment: 01, EU PV Materials Liaison Report March 2019 v1

3.2 *PV and PV Materials Joint Japan TC Chapters*

3.2.1 Kevin Nguyen reported for the Japan TC Chapter. Of note:

- Last meeting
 - April 19, 2019, 13:00-16:00 at the Japan Spring Meetings 2019
 - SEMI Japan Office, Tokyo, Japan
- Next meeting
 - November 5, 2019, 13:30-16:00 at the Japan Fall Meetings 2019
 - SEMI Japan Office, Tokyo, Japan
- 5 year review
 - PV60, Test Method for Measurement of Cracks in Photovoltaic (PV) Silicon Wafers in PV Modules by Laser Scanning
 - PV79, Test Method for Exposure Durability of Photovoltaic (PV) Cells to Acetic Acid Vapor

Attachment: 02, 190617_LiaisonReport_JA_PVPVM_v1.0

3.3 PV Taiwan TC Chapter

3.3.1 Kevin Nguyen reported for the Taiwan TC Chapter. Of note:

- Last meeting
 - Wednesday, April 18, 2019 at the Taiwan Spring 2019 Meetings
- Next meeting
 - Oct , 2019
- Organic and Dye Sensitized Solar Cell and Perovskite solar cell TF
 - Current ballot Doc. 6297 “New Standard: Test Method for Current-Voltage (I-V) Performance Measurement of Perovskite Solar Cell (PSC), Part 1: Standard Testing Condition (STC)”
- PV Reliability Test TF
 - SNARF “New Standard: Accelerated test method of environment potential induced degradation (PID) for encapsulation materials of PV modules”
- 5 year review
 - PV56, Test Method for Performance Criteria of Photovoltaic (PV) Cell and Module Package
 - PV57, Test Method for Current-Voltage (I-V) Performance Measurement of Organic Photovoltaic (OPV) and Dye-Sensitized Solar Cell (DSSC)

Attachment: 03, 20190418_TW PV Liaison Report V1

3.4 PV China TC Chapter

3.4.1 Isadora Jin reported for the China TC Chapter. Of note:

- Last meeting
 - PV&PV Materials China Spring Standards Joint Meeting 2019
 - Shanghai, China
 - April 26, 2019
- Next meeting
 - PV&PV Materials China Fall Standards Joint Meeting 2019
 - Beijing, China
 - Oct 25, 2019
- Ballot results

<i>Document #</i>	<i>Document Title</i>	<i>Committee Action</i>
6295	New Standard: Test Method for Extension of Flexible Thin Film PV Modules	Passed with Technical Changes. Ratification ballot to be issued.
5661D	New Standard: Test Method for Electrical Parameters of Bifacial Solar Module	Passed with Technical Changes. Ratification ballot to be issued.
6193A	New Standard: Specification for Trichlorosilane Used in Polysilicon Production	Passed as balloted
5983B	New Standard: Test Method for In-line Sheet Resistance Inspection	Failed and return to TF for re-work
6070B	New Standard: Test Method for Cell Defects in Crystalline Silicon PV Modules by Electroluminescence (EL) Imaging	Failed and return to TF for re-work

- Authorized Activities

<i>#</i>	<i>Type</i>	<i>SC/TF/WG</i>	<i>Details</i>
6401	SNARF	Thin Film PV Module Task Force	New Standard: Test Method for Indentation Force of Flexible Thin Film PV Modules



6402	SNARF	Thin Film PV Module Task Force	New Standard: Test Method for Vibration Durability of Flexible Thin Film PV Module
6404	SNARF	PV Module Task Force	Reapproval of SEMI PV44-0513, Specification for Package protection technology for PV Modules
6403	SNARF	PV Module Task Force	Reapproval of SEMI PV45-0513, Test Method for Vinyl Acetate (VA) Content for Ethylene-Vinyl Acetate (EVA) applied in photovoltaic modules—Thermal Gravimetric Analysis (TGA)

- Authorized Ballots

#	When	TF	Details
Photovoltaic			
5983C	Cycle 6-2019	PV Diffusion Furnace Test Methods Task Force	New Standard: Test Method for In-line Sheet Resistance Inspection
6070E	Cycle 6-2019	PV Module Task Force	New Standard: Guide for Identifying Cell Defects in Crystalline Silicon PV Modules by Electroluminescence (EL) Imaging
5842D	Cycle 6-2019	Crystalline Silicon Solar Cell Task Force	New Standard: Test Method for Metal-Wrap-Through Solar Cell Via Resistance
6191	Cycle 6-2019	Testing Equipment Task Force	New Standard: Guide for the Design of Testing and Sorting Equipment for Crystalline Silicon Solar Cells
Photovoltaic Materials			
6458	Cycle 6-2019	PV Silicon Raw Materials Task Force	New Standard: Specification for Silicon Powder Used in Polysilicon Production

Attachment: 04, China PV&PVM Committee Chapter Liaison Report April 2019 -v2

3.5 SEMI Staff Report

3.5.1 Kevin Nguyen (SEMI) gave the SEMI Staff Report. Of note:

- Next meetings
 - November 4-7, 2019
 - SEMI HQ in Milpitas, California
- 2019 Critical Dates for SEMI Standards Ballots
- SEMI Standards Publications
 - Total SEMI Standards in portfolio: 1003
 - Includes 268 Inactive Standards
- New Forms, Regulations & Procedure Manual
 - Regulations (Feb 28, 2019)
 - Latest version clarifies procedures applicable for Copyrighted Items and trademarks
 - What is a Trademark?
 - Trademarks are brands that owners consider to be valuable intellectual property.



- It can be a company name, an acronym, a graphical symbol, or a product name, even a software product. Products that are trademarked services are usually called service marks.
- Anyone can claim to trademark something, not already in use by others, to identify and distinguish it from others
- What are the Rules for Trademarks Clarified?
 - As part of SEMI policy to avoid any appearance of restraint of trade, the Regulations allow incorporation of trademarks in Standards Documents only under specific conditions.
 - Hence, incorporation of a trademark in a Standards Document without complying with those conditions is a violation of the Regulations.
 - It was brought to the attention of the ISC Regulations Subcommittee that a number of SEMI Standards Documents include trademarks or even require use of trademarked products without indicating that they were trademarks, who owned them, or the existence of a record of TC Chapter approval of that use.
- Responsibilities of the TC Chapter
 - See Regulations §§ 1.5.11 & 16.4 for official requirements
 - Examples
 - Example 1 for a product trademarked name
 - Not acknowledged: Kleenex
 - Not allowed: Kimberly-Clark Kleenex®
 - Allowed: Kleenex®1
 - Preferred: Kleenex®1 brand tissue (straight quote from box)
 - 1 Kleenex trademark is owned by Kimberly-Clark Corporation.
 - Example 2 for trademarked SDO name in subheadings of applicable sections
 - ASTM® Standards¹
 - 1 ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, USA; Telephone: +1.610.832.9585, Fax: +1.610.832.9555, <http://www.astm.org>. ASTM trademark is owned by ASTM International.
 - Procedure Manual (Feb 28, 2019)
 - SNARF (Feb 2019)

Attachment: 05, Staff Report July 2019_v2 PW

4 Ballot Review

Passed ballots and line items will be submitted to the ISC Audit & Review Subcommittee for procedural review.

Failed ballots and line items were returned to the originating task forces for re-work and re-balloting.

NOTE 2: TC Chapter adjudication on ballots reviewed is detailed in the Audits & Review (A&R) Subcommittee Forms for procedural review. The A&R forms are available as attachments to these minutes. The attachment number for each balloted document is provided under each ballot review section below.

4.1 *None*

5 Subcommittee and Task Force Reports

5.1 Int'l PV Analytical Test Methods, Metrology, and Inspection TF



5.1.1 Hugh Gotts reported no new activity. The only outstanding item is the 5 year review of SEMI PV13-0714 Test Method for Contactless Excess-Charge-Carrier Recombination Lifetime Measurement in Silicon Wafers, Ingots, and Bricks Using an Eddy-Current Sensor.

Motion: To issue PV13 for reapproval ballot
By / 2nd: Steve Martell/Bill Kerr
Discussion: None
Vote: 3-0

6 Old Business

6.1 None

7 New Business

7.1 None

8 Next Meeting and Adjournment

8.1 The next meeting is scheduled for Wednesday, July 22, 2020 in San Francisco, CA. See <http://www.semi.org/en/events> for the current list of meeting schedules.

Having no further business, a motion was made to adjourn. Adjournment was at 11:00 AM.

Respectfully submitted by:

Kevin Nguyen,
 SEMI Standards Operations Manager
 Phone: 408-943-7997
 Email: knguyen@semi.org

Minutes approved by:

Hugh Gotts (Air Liquide)	<Date approved>
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Table 13 Index of Available Attachments^{#1}

<i>Title</i>	<i>Title</i>
EU PV Materials Liaison Report March 2019 v1	China PV&PVM Committee Chapter Liaison Report April 2019 -v2
190617_LiaisonReport_JA_PVPVM_v1.0	Staff Report July 2019_v2 PW
20190418_TW PV Liaison Report V1	

#1 Due to file size and delivery issues, attachments must be downloaded separately. A .zip file containing all attachments for these minutes is available at www.semi.org. For additional information or to obtain individual attachments, please contact [SEMI Staff Name] at the contact information above.