



EU PV Materials TC Chapter Meeting Summary and Minutes

May 21, 2019

Fraunhofer CSP, Halle, Germany

Table 1 Meeting Attendees

Italics indicate virtual participants

Co-Chairs: Peter Wagner (Self), Christian Hagendorf (Fraunhofer CSP)

SEMI Staff: John Doe

<i>Company</i>	<i>Last</i>	<i>First</i>	<i>Company</i>	<i>Last</i>	<i>First</i>
Fraunhofer CSP	Bauer	Jan			
Fraunhofer CSP	Hagendorf	Christian			
Self	Wagner	Peter			
Hanwa Q-Cells	Kontopf	Max			
Laytec		Christian			

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

<i>#</i>	<i>Type</i>	<i>SC/TF/WG</i>	<i>Details</i>
None			

Table 6 Authorized Activities

Listing of all revised or new SNARF(s) approved by the Originating TC Chapter.

#	Type	SC/TF/WG	Details
TBD	SNARF	PV Si Materials Task Force	Reapproval of SEMI PV42-0314: Test Method for In-Line Measurement of Waviness of PV Silicon Wafers by a Light Sectioning Technique Using Multiple Line Segments
TBD	SNARF	PV Si Materials Task Force	Reapproval of SEMI PV51-0214: Test Method for In-Line Characterization of Photovoltaic Silicon Wafers by Using Photoluminescence
TBD	SNARF	PV Si Materials Task Force	Reapproval of SEMI PV52-0214: Test Method for In-Line Characterization of Photovoltaic Silicon Wafers Regarding Grain Size

#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	TF	Details
6373	Cycle 7-2019	PV Materials Degradation Task Force	New Standard: Test Method For Accelerated Cell Level Testing For Light And Elevated Temperature Induced Degradation (LeTID) Susceptibility Of Solar Cells
6543	Cycle 7-2019	PV Si Materials Task Force	Reapproval of SEMI PV42-0314: Test Method for In-Line Measurement of Waviness of PV Silicon Wafers by a Light Sectioning Technique Using Multiple Line Segments
6544	Cycle 7-2019	PV Si Materials Task Force	Reapproval of SEMI PV51-0214: Test Method for In-Line Characterization of Photovoltaic Silicon Wafers by Using Photoluminescence
6545	Cycle 7-2019	PV Si Materials Task Force	Reapproval of SEMI PV52-0214: Test Method for In-Line Characterization of Photovoltaic Silicon Wafers Regarding Grain Size

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

<i>Item #</i>	<i>Assigned to</i>	<i>Details</i>
1905-1	Kevin Nguyen	Issue reapproval ballots for PV42, PV51, and PV52 in Cycle 7-2019
1905-2	Christian Hagendorf	Submit ballot 6373 to staff in time for issuance in Cycle 7-2019

Table 12 Previous Meeting Action Items

<i>Item #</i>	<i>Assigned to</i>	<i>Details</i>
None		

1 Welcome, Reminders, and Introductions

Peter Wagner called the meeting to order at 13:00. The meeting reminders on antitrust issues, intellectual property issues and holding meetings with international attendance were reviewed. Attendees introduced themselves.

Attachment: Required Elements.ppt

2 Review of Previous Meeting Minutes

The TC Chapter reviewed the minutes of the previous meeting.

Motion: To approve the minutes from the SEMICON Europa 2018 meeting as submitted

By / 2nd: Jan Bauer/Christian Hagendorf

Discussion: None

Vote: 3-0

Attachment: EU PVM Europa 2018 v1.pdf

3 Liaison Reports

3.1 Japan PV Materials TC Chapter

James Amano reported. Of note:

- Five-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: LiaisonReport_JA_PVPVM_v1.0

3.2 Taiwan PV TC Chapter

James Amano reported. 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: 20190418_TW PV Liaison Report V1

3.3 *China PV and PV Materials TC Chapters*

James Amano. Of note:

- 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 rework
- 6070B New Standard: Test Method for Cell Defects in Crystalline Silicon PV Modules by Electroluminescence (EL) Imaging
 - Failed and return to TF for rework

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

3.4 *NA PV Materials TC Chapter*

James Amano reported. Of note:

- Doc. 6100, Reapproval of SEMI PV1-0211 Test Method for Measuring Trace Elements in Silicon Feedstock for Silicon Solar Cells by High-Mass Resolution Glow Discharge Mass Spectrometry
 - Passed and published
- Reapproval ballots to be reviewed at SEMICON West
 - SEMI PV49-0613 , Test Method for the Measurement of Elemental Impurity Concentrations in Silicon Feedstock for Silicon Solar Cells by Bulk Digestion, Inductively Coupled-Plasma Mass Spectrometry
 - SEMI PV43-0113 , Test Method for the Measurement of Oxygen Concentration in PV Silicon Materials for Silicon Solar Cells by Inert Gas Fusion Infrared Detection Method
 - SEMI PV37-0912 , Guide for Fluorine (F₂), Used in Photovoltaic Applications

Attachment: NA Liaison June 2018

4 Ballot Review

None

5 Subcommittee and Task Force Reports

5.1 PV Materials Degradation Task Force

Christian Hagendorf reported for the Task Force. Ballot 6373, New Standard: Test Method For Accelerated Cell Level Testing For Light And Elevated Temperature Induced Degradation (LeTID) Susceptibility Of Solar Cells, will be ready to issue for Cycle 7-2019

Motion: To issue ballot 6373, New Standard: Test Method For Accelerated Cell Level Testing For Light And Elevated Temperature Induced Degradation (LeTID) Susceptibility Of Solar Cells, in Cycle 7-2019 for adjudication at SEMICON Europa

By / 2nd: Jan Bauer/Max Kontopff

Discussion: None

Vote: 3-0

Action Item: Christian Hagendorf to submit ballot 6373 to staff in time for Cycle 7

5.2 PV Silicon Materials Task Force

Peter Wagner reported. Multiple standards are due for five-year review.

Motion: To approval SNARFs for reapproval ballots for PV42, PV51, and PV52 in Cycle 7

By / 2nd: Christian Hagendorf/Max Kontopff

Discussion: None

Vote: 3-0

Motion: To issue reapproval ballots for PV42, PV51, and PV52 in Cycle 7 for adjudication at SEMICON Europa

By / 2nd: Christian Hagendorf/Max Kontopff

Discussion: None

Vote: 3-0

Action Item: Staff to issue reapproval ballots for PV42, PV51, and PV52 in Cycle 7.

6 Old Business

None

7 New Business

None

8 Next Meeting and Adjournment

The next meeting is scheduled for November 12 at SEMICON Europa in Munich, Germany. See <http://www.semi.org/standards-events> for the current list of events.