TC Chapter Announcements

Next TC Chapter Meeting

Table 1 Meeting Attendees

Co-Chairs: Hugh Gotts (Air Liquide)
SEMI Staff: Kevin Nguyen (SEMI HQ)

<table>
<thead>
<tr>
<th>Company</th>
<th>Last</th>
<th>First</th>
<th>Company</th>
<th>Last</th>
<th>First</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sonoscan</td>
<td>Martell</td>
<td>Steve</td>
<td>Air Liquide</td>
<td>Fister</td>
<td>Thomas</td>
</tr>
<tr>
<td>E+H Metrology</td>
<td>Michel</td>
<td>Peter</td>
<td>Swagelok</td>
<td>Shutter</td>
<td>Rob</td>
</tr>
</tbody>
</table>

*Italic* indicates remote participant

Table 2 Leadership Changes

<table>
<thead>
<tr>
<th>WG/TF/SC/TC Name</th>
<th>Previous Leader</th>
<th>New Leader</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3 Committee Structure Changes

<table>
<thead>
<tr>
<th>Previous WG/TF/SC Name</th>
<th>New WG/TF/SC Name or Status Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

Table 4 Ballot Results

<table>
<thead>
<tr>
<th>Document #</th>
<th>Document Title</th>
<th>Committee Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>6100</td>
<td>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</td>
<td>Passed as balloted</td>
</tr>
</tbody>
</table>

#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

<table>
<thead>
<tr>
<th>#</th>
<th>Type</th>
<th>SC/TF/WG</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 6 Authorized Activities

<table>
<thead>
<tr>
<th>#</th>
<th>Type</th>
<th>SC/TF/WG</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>tbd</td>
<td>SNARF</td>
<td>International PV Analytical Test Methods, Metrology, and Inspection Task Force</td>
<td>Reapproval of 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</td>
</tr>
<tr>
<td>tbd</td>
<td>SNARF</td>
<td>International PV Analytical Test Methods, Metrology, and Inspection Task Force</td>
<td>Reapproval of SEMI PV37-0912, Guide for Fluorine (F2), Used in Photovoltaic Applications</td>
</tr>
</tbody>
</table>

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

Table 7 Authorized Ballots

<table>
<thead>
<tr>
<th>#</th>
<th>When</th>
<th>SC/TF/WG</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>tbd</td>
<td>Cycle 7-17</td>
<td>International PV Analytical Test Methods, Metrology, and Inspection Task Force</td>
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</table>
1 Welcome, Reminders, and Introductions

Hugh Gotts called the meeting to order at 11:00 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

The TC Chapter reviewed the minutes of the previous meeting.

Motion: Accept the minutes as written
By / 2nd: Thomas Fister/Steve Martell
Discussion: None
Vote: 4-0

3 Liaison Reports

3.1 PV Materials Europe TC Chapter

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


Attachment: 01, PVMaterialReportOct2016
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 7, 2017, 1:30 p.m. – 5:00 p.m.
  - @ SEMI Japan Office, Tokyo, Japan

- Next Meeting
  - September 15, 2017, 13:30 - 17:00
  - @ SEMI Japan Office, Tokyo, Japan

- Ballot development
  - Doc. 6016: New Standard: Test Method for Exposure Durability of PV Cells to Acetic Acid Vapor
    - Passed

**Attachment:** 02, 170622_LiaisonReport_JA_PV&PVM_v2

3.3 PV Taiwan TC Chapter

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

- Previous Meeting
  - 13:30-15:00, April 26, 2017,
    - ITRI office, Hsinchu, Taiwan

- Next Meeting
  - 10:00-12:00, July 26, 2017,
    - ITRI office, Hsinchu, Taiwan

- Ballot review
  - Doc. 5979, New Standard: Specification of indoor lighting simulator requirements for emerging PV

- 5 year review
  - SEMI PV23-1011 : ” Test Method for Mechanical Vibration of Crystalline Silicon Photovoltaic (PV) Modules in Shipping Environment”
  - SEMI PV38-0912 : “Test Method for Mechanical Vibration of c-Si PV cells in Shipping Environment”

**Attachment:** 03, Taiwan PV Standard Committee Liaison Report_june 26 2017

3.4 PV China TC Chapter

3.4.1 Kevin Nguyen reported for the China TC Chapter. Of note:

- Last meeting
  - PV&PV Materials China Spring Standards Joint Meeting 2017
  - Shanghai, China
  - Tuesday, April 18th, 2017

- Next meeting
  - PV&PV Materials China Fall Standards Joint Meeting 2017
  - Taizhou, Jiangsu
  - Friday, October 13th, 2017

- 3 new SNARFs:
  - Testing Equipment Task Force:
PV Materials NA TC Chapter 5 July 12, 2017
Meeting Minutes  San Francisco, CA/USA

  - PV Silicon raw Materials Task Force:
  - PV Silicon Raw Materials Task Force:
    - Doc 6193, New Standard: Specification for Trichlorosilane Used in Polysilicon Production

- 3 ballots failed committee review and return to TF
  - PV Module Task Force:
  - PV Module Task Force:
  - Crystalline Silicon Solar Cell Task Force:

Attachment: 04, China PV&PVM Committee Chapter Liaison Report20170522

3.5 SEMI Staff Report

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

- Next meetings
  - November 6-9, 2017
    - SEMI HQ in Milpitas, California
- 2017 Critical Dates for SEMI Standards Ballots
  - Cycle 6, 2017
    - Ballot Submission Date: July 21
    - Voting Period Starts: August 1
    - Voting Period Ends: August 31
  - Cycle 7, 2017
    - Ballot Submission Date: August 18
    - Voting Period Starts: September 1
    - Voting Period Ends: October 2

- SEMI Standards Publications
  - Total SEMI Standards in portfolio: 974
    - Includes 191 Inactive Standards

Attachment: 05, Staff Report July 2017_LN_SA v2 PV

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 **Document 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**

4.1.1 It passed as balloted

**Attachment:** 06, 6100 Procedural Review

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**5 Subcommittee and Task Force Reports**

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

5.1.1 Hugh Gotts reported for the Task Force. Of note:

- 5 year review
  - 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 PV37-0912 Guide for Fluorine (F2), Used in Photovoltaic Applications

**Motion:** To issue reapproval ballot for review at the next meeting

**By / 2nd:** Steve Martell/Rob Shutter

**Discussion:** PV43 and PV49 are current. PV37 should be issued intercommittee ballot to Liquids and Gases committees

**Vote:** 4-0. Motion passed.

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**6 Old Business**

None

**7 New Business**

Hugh mentioned there is a potential standard activity for single particle ICP MS test method. The test method is being used at academic institutions, but it has not been commercialized yet. There are plans to communicate with two equipment suppliers to collaborate. More details will be discussed at the next meeting.

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**8 Next Meeting and Adjournment**

8.1 The next meeting is scheduled for Wednesday, July 11, 2018 at the San Francisco Marriott Marquis in San Francisco, CA. See [http://www.semi.org/en/events](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 12:00 PM.

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>
### Table 13 Index of Available Attachments

<table>
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<td>Taiwan PV Standard Committee Liaison Report_june 26 2017</td>
</tr>
<tr>
<td>China PV&amp;PVM Committee Chapter Liaison Report20170522</td>
<td>6100 Procedural Review</td>
</tr>
<tr>
<td>PVMaterialReportOct2016</td>
<td>Staff Report July 2017_LN_SA v2 PV</td>
</tr>
</tbody>
</table>

#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.