TC Chapter Announcements

Next TC Chapter Meeting

NA Standards Spring 2018 Meetings
Monday, April 9, 13:30 – 16:00
SEMI Headquarters, Milpitas, California

Table 1 Meeting Attendees
Italics indicate virtual participants

Co-Chairs: Steve Martell (Sonoscan), Win Baylies (Bay-Tech Resor)
SEMI Staff: Laura Nguyen

<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>Asahi Glass Company (AGC)</td>
<td>Takahashi</td>
<td>Mark</td>
<td>Sonoscan</td>
<td>Martell</td>
<td>Steve</td>
</tr>
<tr>
<td>BW &amp; Associates</td>
<td>Wu</td>
<td>Bevan</td>
<td>SEMI</td>
<td>Amano</td>
<td>James</td>
</tr>
<tr>
<td>Diagnostics Biosensors</td>
<td>Tondra</td>
<td>Mark</td>
<td>SEMI</td>
<td>Nguyen</td>
<td>Laura</td>
</tr>
<tr>
<td>mCube</td>
<td>Bhandari</td>
<td>Sanjay</td>
<td>SEMI</td>
<td>Shemansky</td>
<td>Frank</td>
</tr>
</tbody>
</table>

Table 2 Leadership Changes
None

Table 3 Committee Structure Changes
None

Table 4 Ballot Results

<table>
<thead>
<tr>
<th>Document #</th>
<th>Document Title</th>
<th>Committee Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>5267A</td>
<td>New Standard, Specification for Microfluidic Port and Pitch Dimensions</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
None
Table 6 Authorized Activities

None

Table 7 Authorized Ballots

None

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

None

Table 9 SNARF(s) Abolished

None

Table 10 Standard(s) to receive Inactive Status

None

Table 11 New Action Items

<table>
<thead>
<tr>
<th>Item #</th>
<th>Assigned to</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017Nov#01</td>
<td>Laura Nguyen</td>
<td>Request SEMIViews access for Sanjay Bhandari of the MEMS volume.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Completed. Closed.</td>
</tr>
<tr>
<td>2017Nov#02</td>
<td>Laura Nguyen</td>
<td>Send SEMIViews access for SEMI MS5 to the committee for review for</td>
</tr>
<tr>
<td></td>
<td></td>
<td>upcoming 5-year. Completed. Closed.</td>
</tr>
<tr>
<td>2017Nov#03</td>
<td>Laura Nguyen</td>
<td>Pull notes from MSIG work shop during West 2016 (Bettina). Completed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– Steve Whalley sent some material. Closed.</td>
</tr>
</tbody>
</table>

Table 12 Previous Meeting Action Items

<table>
<thead>
<tr>
<th>Item #</th>
<th>Assigned to</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017July#01</td>
<td>Rich, Mark Tondra, Steve &amp;</td>
<td>Work on Doc 5267A to address the negatives and issue to re-ballot in</td>
</tr>
<tr>
<td></td>
<td>Chris</td>
<td>cycle 6 or 7, 2017. Completed.</td>
</tr>
<tr>
<td>2017July#02</td>
<td>Rich Allen</td>
<td>To get in contact with Frank Shemansky about NIST’s presentation on</td>
</tr>
<tr>
<td></td>
<td></td>
<td>reference materials. Completed.</td>
</tr>
<tr>
<td>2017July#03</td>
<td>Rich Allen, Steve Martell</td>
<td>To get in contact with Frank Shemansky about survey results. Closed.</td>
</tr>
</tbody>
</table>

1 Welcome, Reminders, and Introductions

Steve Martell (Sonoscan) called the meeting to order at 15:35. The meeting reminders on antitrust issues, intellectual property issues and holding meetings with international attendance were reviewed. Attendees introduced themselves.

Attachment: SEMI Standards Required Meetings Elements
2 Review of Previous Meeting Minutes
The TC Chapter reviewed the minutes of the previous meeting.

Motion: To accept the previous meeting minutes as written.
By / 2nd: Bevan Wu (BW & Associates) / Mark Takahashi (Asahi Glass)
Discussion: None.
Vote: 3-0 in favor. Motion passed.
Attachment: [2017West] MEMS Minutes FINAL v2

3 Liaison Reports
3.1 SEMI Staff Report
Laura Nguyen (SEMI) gave the SEMI Staff Report. Of note:

SEMI Global 2017 Calendar of Events
- SEMICON Europa (November 14-17, 2017; Munich, Germany)
- SEMICON Japan (December 13-15, 2017; Tokyo, Japan)

SEMI Global 2018 Calendar of Events
- SEMICON Korea (January 31-February 2; Seoul, Korea)
- 2018Flex/MSTC (February 12-15; Monterey, California)
- SEMICON China (March 14-16; Shanghai, China)
- SEMICON Southeast Asia (May 8-10; Kuala Lumpur, Malaysia)
- SEMICON West (July 10-12; San Francisco, California)

Upcoming North America Standards Meetings
- NA Standards Spring 2018 Meetings (April 9-12, 2018, SEMI HQ in Milpitas, California)
- SEMICON West 2018 (July 9-12, 2018, San Francisco, California)
- NA Standards Fall 2018 Meetings (November 5-8 [tentative], SEMI HQ in Milpitas, California)

Letter Ballot Critical Dates for 2017 & 2018
- Cycle 8-17: ballot submission due: Oct 13/Voting Period: Oct 27 – Nov 27
- Cycle 9-17: ballot submission due: Nov 16/Voting Period: Nov 29 – Dec 29
- Cycle 1-18: ballot submission due: Jan 3/Voting Period: Jan 16 – Feb 15
- Cycle 3-18: ballot submission due: Mar 9/Voting Period: Mar 23 – Apr 23
- Cycle 4-18: ballot submission due: Apr 20/Voting Period: Apr 30 – May 30

Standards Publications Report

<table>
<thead>
<tr>
<th>Cycle</th>
<th>New</th>
<th>Revised</th>
<th>Reapproved</th>
<th>Withdrawn</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 2017</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>August 2017</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>September 2017</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>October 2017</td>
<td>1</td>
<td>12</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

Total in portfolio – 978 (includes 210 Inactive Standards)

Nonconforming Titles (See PM Appendix 4) {None}

Five-Year Review

- SEMI MS5-0813, Test Method for Wafer Bond Strength Measurements Using Micro-Chevron Test Structures

SNARF 3 Year Status, TC Chapter may grant a one-year extension {None}

Action Item: 2017Nov#01, Request SEMIViews access for Sanjay Bhandari of the MEMS volume.
Action Item: 2017Nov#02, Send SEMIViews access for SEMI MS5 to the committee for review for upcoming 5-year.
Attachment: [2017Fall] Staff Report MEMSNEMS

4 Ballot Review

NOTE 1: 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.


- The ballot passed TC Chapter review as balloted. See attachment for ballot adjudication.
Attachment: 5267AProceduralReview

5 Subcommittee and Task Force Reports

The following task forces are currently inactive:

- Packaging TF
- Reliability TF
- Terminology TF
- Wafer Bond TF

5.1 MEMS Microfluidics Task Force

Mark Tondra (Diagnostics Biosensors) reported for the MEMS Microfluidics Task Force. The task force reviewed Ballot Document 5267A that was balloted in Cycle 7, 2017. The ballot passed TC Chapter review as balloted.

Please see Section 4.1 for additional information.

Mark Tondra also provided an update for the ISO standard (mentioned in Fall 2016 meetings). Document 5267 has some relevant activity to an ISO/IWA23 (International Workshop Agreement 23) working group. The IWA 23 is a consensus document developed by the workshop participants and observers in response to the need for standardization and harmonization of pitch spacing dimension, initial device classification and terminology of relevance. The
ISO/IWA 23 was published recently and references some of SEMI’s MS Standards. The link below points to more information regarding ISO/IWA 23, Interoperability of microfluidic devices — Guidelines for pitch spacing dimensions and initial device classification.

The MEMS Microfluidics Task Force will not meet during the NA Standards Spring 2018 Meetings, but will have a report prepared for any updates.


5.2 Joint MSIG, MEMS Substrate, and MEMS Material Characterization Task Force
The task force did not meet, as Rich Allen (NIST), task force leader, was unable to be present.

6 Old Business
6.1 Previous Action Items
Previous action items are noted in Table 12 in ‘red’ and for recent updates in ‘blue’. There is no further old business.

7 New Business
7.1 Discussion: MSIG Working Groups/SEMI MEMS/NEMS NA TC Chapter
Steve Martell (Sonoscan) and Frank Shemansky (SEMI) held a discussion on this topic. The key items are as follows:

- Propose a plan to combine the two groups under MSIG to one meeting with the SEMI MEMS/NEMS task forces.
- Work on co-locating SEMI MEMS meetings with MSIG events.
  - 2018 FLEX/MSTC
  - SEMICON West 2018

Action Item: 2017Nov#03, Pull notes from MSIG work shop during West 2016 (Bettina)

8 Next Meeting and Adjournment
The next meeting is scheduled for April 9 at the SEMI Standards North America Spring 2018 Meetings located at SEMI Headquarters in Milpitas, California. See http://www.semi.org/standards-events for the current list of events.

Tentative Schedule:
Monday, April 9
13:30-16:00 MEMS / NEMS (C) and Joint SEMI MSIG, MEMS Characterization, MEMS Substrate (TF)s

Adjournment: 16:42

Respectfully submitted by:
Laura Nguyen
Coordinator, International Standards
SEMI Headquarters
Phone: 1.408.943.7019
Email: ln Nguyen@semi.org
Minutes tentatively approved by:

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steve Martell (Sonoscan), Co-chair</td>
<td>2/7/18</td>
</tr>
<tr>
<td>Win Baylies (Bay-Tech Resor), Co-chair</td>
<td>&lt;Date approved&gt;</td>
</tr>
</tbody>
</table>

Table 13 Index of Available Attachments#1

<table>
<thead>
<tr>
<th>Title</th>
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<tbody>
<tr>
<td>SEMI Standards Required Meeting Elements</td>
<td>[2017Fall] Staff Report MEMSNEMS</td>
</tr>
<tr>
<td>[2017West] MEMS Minutes FINAL v2</td>
<td>5267AProceduralReview</td>
</tr>
</tbody>
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#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 Laura Nguyen at the contact information above.