

North America MEMS / NEMS Committee Meeting Summary and Minutes

North America Standards Fall 2013 Meetings
Monday, October 28, 2013, 2:30 – 4:30 PST
SEMI Headquarters in San Jose, California

Next Committee Meeting

The next N.A. MEMS / NEMS standards meetings are tentatively scheduled for March 31, 2014 at SEMI Headquarters in San Jose, California in conjunction with the NA Standards Spring 2014 Meetings.

For meeting details, registration, the latest schedule, and travel information, please visit <http://www.semi.org/node/47781>

Table 1 Meeting Attendees

Co-Chairs: Mark Crockett (MEMSMART) / Win Baylies (BayTech Group) / Janet Cassard (NIST)

SEMI Staff: Michael Tran

| <i>Company</i> | <i>Last</i> | <i>First</i> | <i>Company</i> | <i>Last</i> | <i>First</i> |
|-----------------------|-------------|--------------|----------------|-------------|--------------|
| BayTech Group | Baylies | Winthrop | NIST | Cassard | Janet |
| Bevan Wu & Associates | Wu | Bevan | | | |
| NIST | Allen | Richard | SEMI N.A. | Tran | Michael |

**Italics indicate virtual participants*

Table 2 Leadership Changes

There were no leadership changes.

Table 3 Ballot Results

There were no ballots reviewed.

Table 4 Authorized Activities

There were no new activities.

Table 5 Authorized Ballots

There were no authorized ballots.

Table 6 New Action Items

| <i>Item #</i> | <i>Assigned to</i> | <i>Details</i> |
|---------------|--------------------|--|
| 2013Oct#01 | Michael Tran | Share feedback from the committee regarding the SEMI Standards Twitter account to SEMI |
| 2013Oct#02 | Steve Martell | Work on Document 4719A, Terminology for MEMS / NEMS Technology now that SEMI MS5 (Wafer Bond Strength Measurements Using Micro-Chevron Test Structures) was published. |
| 2013Oct#03 | Michael Tran | Let SEMI Standards Publications know to send the publication proofs for documents 5586 and 5587. |
| 2013Oct#04 | Michael Tran | Let Steve Martell know about the Japan Packaging committee's interest in the Packaging TF. |

Table 7 Old Action Items

| <i>Item #</i> | <i>Assigned to</i> | <i>Details</i> | <i>Status</i> |
|---------------|--------------------|--|-------------------------------|
| 2013Jul#01 | Steve Martell | Send Michael Tran the contact information of potential outgassing members. | Open |
| 2013Jul#02 | Mariam Sodaka | Send a table from an SOI document to the Wafer Bond TF to create a survey for an SOI related MEMS standard. | Open |
| 2013Apr#01 | Jason Gorman | To draft a dynamic characterization interest survey and send it to the committee chairs for review and launch it before SEMICON West 2013. | Open; on hold until 2014 |
| 2012Oct#01 | Steve Martell | Reach out to the Japan Assembly & Packaging committee for possible TF leader candidates and related MEMS packaging activities. | Open |
| 2012Oct#03 | Mark Crockett | Submit a SNARF to prepare for the 5 year review of SEMI MS6-0308, Guide for Design and Materials for Interfacing Microfluidic Systems | Open; Mark has been too busy. |

1 Welcome, Reminders, and Introductions

1.1 Janet Cassard (NIST) called the meeting to order at 2:36 PM PST. The meeting reminders on antitrust issues, intellectual property issues and holding meetings with international attendance were reviewed. Attendees introduced themselves.

Attachment: 01, SEMI Standards Required Meeting Elements

2 Review of Previous Meeting Minutes

2.1 The committee reviewed the minutes of the previous meeting.

Motion: To approve the previous meeting minutes as amended.

By / 2nd: Richard Allen (NIST) / Bevan Wu (BW & Associates)

Discussion: Mariam Sodaka's name is misspelled on Page 2. Michael Tran will correct and amend the minutes of the previous meeting.

Vote: 3-0 in favor. Motion passed.

Attachment: 02, MEMS / NEMS Meeting Amended Minutes (SEMICON West 2013)

3 Liaison Reports

3.1 SEMI Staff Report

3.1.1 Michael Tran (SEMI N.A.) gave the SEMI N.A. Staff Report. The key items were as follows:

- SEMI Major Events in 2013
 - Completed:
 - SEMICON Europa in conjunction with Plastic Electronics Exhibition 2013
 - October 8-10, 2013 in Dresden, Germany
 - Strategic Materials Conference
 - October 16-17, 2013 in Santa Clara, California
 - PV Taiwan 2013
 - October 30-November 1, 2013 in Taipei
 - SEMICON Japan

- December 4-6, 2013 in Chiba
- SEMI Major Events in 2014
- European 3D TSV Summit
 - January 21-22, 2014 in Grenoble, France
- SEMICON Korea / LED Korea
 - February 12-14, 2014 in Seoul
- SEMICON China
 - March 18-20, 2014 in Shanghai
- SEMICON Singapore
 - April 23-25, 2014 in Marina Bay Sands
- SEMICON West
 - July 8-10, 2014 in San Francisco, California
- SEMI Standards Publications
 - Standards published from July 2013 to September 2013:
 - New Standards: 5
 - Revised Standards: 19
 - Reapproved Standards: 9
 - Withdrawn Standards: 0
 - There are a total of 892 SEMI Standards in portfolio and that includes 98 Inactive standards
- New Cycle 8 Voting Period (tentative)
 - Cycle 8, 2013
 - Ballot Submission Date: Nov 15, 2013
 - Voting Period Starts: Nov 29, 2013
 - Voting Period Ends: Dec 31, 2013
- Upcoming North America Standards Meetings in 2014
 - NA Liquid Chemicals Fall 2013 Meetings
 - November 5, 2013, SEMI HQ in San Jose
 - NA Compounds Semiconductor Materials Committee Fall 2013 Meeting
 - November 15, 2013 - Teleconference & Web Meeting Only
 - NA Standards Spring 2014 Meetings
 - March 31 – April 3, 2014 at SEMI HQ in San Jose, California
- Standards Usage Interview
 - Looking for details on how standards are actually used:
 - Development/Engineering
 - Procurement
 - Manufacturing
 - Interview should take less than 30 minutes – contact James Amano (jamano@semi.org)

- Official SEMI Standards Groups
 - LinkedIn
 - <http://www.linkedin.com/groups/Official-SEMI-Standards-Group-1774298/about>
 - Twitter
 - @SEMI_standard
- SEMI N.A. Standards staff contact: Michael Tran, mtran@semi.org

Discussion: Bevan Wu asked how active is the Compound Semiconductor Materials committee? Win Baylies said they meet every year during the CS MANTECH event and silicon is still very much the focus for power transistors used in HB-LED and such for example.

Win also added the staff report didn't have dates for the HB-LED TF Meetings during the Strategies in Light event in Santa Clara, California. The dates are February 25-27, 2014.

Richard Allen commented that the SEMI Standards Twitter account feed is bland and could use more activity.

Action Item: 2013Oct#01, Michael Tran to share feedback from the committee regarding the SEMI Standards Twitter account to SEMI.

Attachment: 03, SEMI N.A. Standards Staff Report (Fall 2013)

4 Ballot Review

4.1 There were no ballots to review.

5 Subcommittee & Task Force Reports

5.1 *International Terminology TF*

5.1.1 There was no TF report given.

Action Item: 2013Oct#02, Steve Martell to work on Document 4719A, Terminology for MEMS / NEMS Technology now that SEMI MS5 (Wafer Bond Strength Measurements Using Micro-Chevron Test Structures) was published.

5.2 *Materials Characterization TF*

5.2.1 Janet Cassard (NIST) reported for the Materials Characterization TF. The TF is waiting for the publication proofs of Document 5586 (Step Height Measurements of Thin, Reflecting Films) and Document 5587 (Young's Modulus Measurements of Thin, Reflecting Films Based on the Frequency of Beams in Resonance). The TF gave an update on the stability test results for Reference Materials (RMs) 8096, 8097 Lot 95, and 8097 Lot 98. The TF also updated the committee on the status of the RMs.

Action Item: 2013Oct#03, Michael Tran to let SEMI Standards Publications know to send the publication proofs for documents 5586 and 5587.

Attachment: 04, Materials Characterization TF Minutes (Fall 2013)

5.3 *Microfluidics TF*

5.3.1 There was no TF report given.

5.4 Packaging TF

5.4.1 The committee reported for the Packaging TF. The TF is still looking for an expert in the area of outgassing to serve as TF leaders.

Action Item: 2013Oct#04, Michael Tran to let Steve Martell know about the Japan Packaging committee's interest in the Packaging TF.

5.5 Reliability TF

5.5.1 The committee reported for the Reliability TF. The TF is still looking for a leader and the position is still open.

5.6 Wafer Bond TF

5.6.1 Richard Allen (NIST) reported for the Wafer Bond TF. Mariam Sodaka (SOITEC) sent some information to Richard regarding the Silicon on Insulators (SOI) wafers for MEMS applications. The TF will use the information to draft a survey for SOI on MEMS needs. The TF has already identified key people for the survey.

6 Old Business

6.1 5-Year Review Documents Update

| # | Details | Status |
|---------------|---|--|
| SEMI MS3-0307 | Terminology for MEMS Technology | Steve Martell working on Document 4719A, Revision to SEMI MS03-07, Terminology for MEMS Technology with title change to: Terminology for MEMS / NEMS Technology. |
| SEMI MS6-0308 | Guide for Design and Materials for Interfacing Microfluidic Systems | On hold as Mark Crockett is working MS7 and Document #5267. |
| SEMI MS7-0708 | Specification for Microfluidic Interfaces to Electronic Device Packages | Mark Crockett is still working on it. |

7 New Business

7.1 There was no new business.

8 Action Item Review

8.1 Old Action Items

8.1.1 Michael Tran (SEMI N.A.) reviewed the old action items. These can be found in the Old Action Items table at the beginning of these minutes.

8.2 New Action Items

8.2.1 Michael Tran (SEMI N.A.) reviewed the new action items. These can be found in the New Action Items table at the beginning of these minutes.

9 Next Meeting and Adjournment

9.1 The next N.A. MEMS/NEMS standards meetings are tentatively scheduled for March 31, 2014 at SEMI Headquarters in San Jose, California in conjunction with the North America Standards Spring 2014 Meetings.

Tentative Schedule

Monday, March 31

- Wafer Bond TF (9:00 AM - 10:00 AM)
- Microfluidics TF (10:00 AM - 11:00 AM)
- Packaging TF (11:00 AM - 11:30 AM)
- Terminology TF (11:30AM - 12:30 PM)
- Materials Characterization TF (1:30 PM - 2:30 PM)
- N.A. MEMS / NEMS Committee (2:30 PM - 4:30 PM)

*All times are in PST. Times and dates are subject to change without notice. For meeting details, registration, the latest schedule, and travel information, please visit: <http://www.semi.org/node/47781>

Having no further business, a motion was made to adjourn the N.A. MEMS / NEMS committee meeting on October 28, 2013 in conjunction with the N.A. Standards Fall 2013 Meetings at SEMI Headquarters in San Jose, California.

Motion: To adjourn the committee meeting.
By / 2nd: Win Baylies (BayTech Group) / Bevan Wu (BW & Associates)
Discussion: None.
Vote: Unanimous in favor. Motion passed.

Respectfully submitted by:

Michael Tran
 Senior Standards Engineer
 SEMI North America
 Phone: 1-408-943-7019
 Email: mtran@semi.org

Minutes approved by:

| | |
|---------------------------------------|-------------------|
| Mark Crockett (MEMSMART), Co-chair | |
| Win Baylies (BayTech Group), Co-chair | |
| Janet Cassard (NIST), Co-chair | December 16, 2013 |

Table 8 Index of Available Attachments #1

| # | Title | # | Title |
|----|---|----|---|
| 01 | SEMI Standards Required Meeting Elements | 03 | SEMI N.A. Standards Staff Report (Fall 2013) |
| 02 | MEMS / NEMS Meeting Amended Minutes (SEMICON West 2013) | 04 | Materials Characterization TF Minutes (Fall 2013) |

#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 Michael Tran at the contact information above.