



MEMS/NEMS North America TC Chapter Meeting Summary and Minutes

NA Standards Spring 2017 Meetings

Monday, April 3, 2017, 15:30 – 17:30

SEMI Headquarters, Milpitas, California

TC Chapter Announcements

Next TC Chapter Meeting

SEMICON West 2017 Meetings

Thursday, July 13, 2017, 15:30 – 17:30

Marriott Marquis Hotel in San Francisco, California

Table 1 Meeting Attendees

Italics indicate virtual participants

Co-Chairs: Win Baylies (BayTech-Resor), Steve Martell (Sonoscan)

SEMI Staff: Laura Nguyen

<i>Company</i>	<i>Last</i>	<i>First</i>	<i>Company</i>	<i>Last</i>	<i>First</i>
Asahi Glass Company (AGC)	Takahashi	Mark	SEMI	Nguyen	Laura
<i>Diagnostic Biosensors</i>	<i>Tondra</i>	<i>Mark</i>	SEMI	Shemansky	Frank
NIST	Allen	Richard	SEMI	Weiss	Bettina
Sonoscan	Martell	Steve			

Table 2 Leadership Changes

None

Table 3 Committee Structure Changes

None

Table 4 Ballot Results

None

Table 5 Activities Approved by the GCS prior to the Originating TC Chapter meeting

None

Table 6 Authorized Activities

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

<i>#</i>	<i>Type</i>	<i>SC/TF/WG</i>	<i>Details</i>
5267	SNARF Revision	MEMS Microfluidics TF	New Standard, Specification for Microfluidic Port and Pitch Dimensions - <i>Revised SNARF, went out for two-week TC member review prior to TC Chapter meeting</i>

#	Type	SC/TF/WG	Details
6176	SNARF	MEMS/NEMS Committee for Five-Year Review	Reapproval of SEMI MS1-0307 (Reapproved 0812), Guide to Specifying Wafer-Wafer Bonding Alignment Target
6177	SNARF	MEMS/NEMS Committee for Five-Year Review	Reapproval of SEMI MS10-0912, Test Method to Measure Fluid Permeation Through MEMS Packaging Materials

#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
5267	Cycle 4, 2017	MEMS Microfluidics TF	New Standard, Specification for Microfluidic Port and Pitch Dimensions
6176	Cycle 4, 2017	MEMS/NEMS Committee for Five-Year Review	Reapproval of SEMI MS1-0307 (Reapproved 0812), Guide to Specifying Wafer-Wafer Bonding Alignment Target
6177	Cycle 4, 2017	MEMS/NEMS Committee for Five-Year Review	Reapproval of SEMI MS10-0912, Test Method to Measure Fluid Permeation Through MEMS Packaging Materials

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

Item #	Assigned to	Details
2017April#01	Rich Allen	To check if SEMI MS1 needs to be revised or looked at in conjunction with SEMI 3D15.
2017April#02	Laura Nguyen	To submit SEMIViews for 3D15 and MS1 to Rich, Mark, Win, and Steve.
2017April#03	Laura Nguyen	To create SNARFs for reapproval ballots.

Table 12 Previous Meeting Action Items

Item #	Assigned to	Details
2016Nov#01	Laura Nguyen	Follow-up with Mark Tondra on SNARF revision for Doc. 5267; send out prior to Spring Meetings 2017. CLOSED.
2016Nov#02	Mark Tondra	To send link of ISO/IWA. CLOSED.
2016Nov#03	Laura Nguyen	Find out about a possible face-to-face meeting at MSIG Technical Conference on May 9/10. CLOSED.



1 Welcome, Reminders, and Introductions

Steve Martell (Sonoscan) called the meeting to order at 15:36. The meeting reminders on antitrust issues, intellectual property issues and holding meetings with international attendance were reviewed. Attendees introduced themselves.

Attachment: SEMI Standards Required Meeting 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: Richard Allen (NIST) / Mark Takahashi (Asahi Glass Company)
Discussion: None.
Vote: 2-0 in favor. Motion passed.

Attachment: [2016Fall] MEMS NEMS NA FINAL

3 Liaison Reports

3.1 SEMI Staff Report

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

- SEMI Global 2017 Calendar of Events
 - LED Taiwan (April 12-15, 2017; Taipei, Taiwan)
 - SEMICON Southeast Asia (April 25-27, 2017; Penang, Malaysia)
 - Intersolar Europe (May 31-June 2, 2017; Munich, Germany)
 - SEMICON West (July 11-13, 2017, San Francisco, California)
 - SEMICON Taiwan (September 13-15, 2017; Taipei, Taiwan)
 - PV Taiwan (October 12-14, 2017; Taipei, Taiwan)
 - SEMICON Europa (November 14-17, 2017; Munich, Germany)
 - SEMICON Japan (December 13-15, 2017; Tokyo, Japan)
- Upcoming North America Standards Meetings
 - SEMICON West 2017 (July 10-13, 2017, San Francisco, California)
 - NA Standards Fall 2017 Meetings (November 6-9 [tentative], SEMI HQ in Milpitas, California)
- Letter Ballot Critical Dates for 2017
 - West 2017 adjudication
 - Cycle 4: ballot submission due: Apr 14/Voting Period: Apr 25 – May 25
 - Cycle 5: ballot submission due: May 12/Voting Period: May 26 – June 26

Critical Dates 2017; <http://www.semi.org/en/Standards/Ballots>

- Standards Publications Report

<i>Cycle</i>	<i>New</i>	<i>Revised</i>	<i>Reapproved</i>	<i>Withdrawn</i>
December 2016	0	2	0	0
January 2017	1	4	4	0
February 2017	1	9	2	0
March 2017	0	16	11	0

Total in portfolio – 972 (includes 170 Inactive Standards – *see attachment to see breakdown*)

- SEMI Standards Publications – New Standards

- SEMI PV76, Test Method for Durability of Low Light Intensity Organic Photovoltaic (OPV) and Dye-Sensitized Solar Cell (DSSC)
- SEMI HB8, Test Method for Determining Orientation of a Sapphire Single Crystal

- Nonconforming Titles {*None*}

- MEMS/NEMS Standards needing Five-Year Review

- SEMI MS10-0912, Test Method to Measure Fluid Permeation Through MEMS Packaging Materials
- SEMI MS1-0812, Guide to Specifying Wafer-Wafer Bonding Alignment Targets

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

Attachment: [2017Spring] Staff Report MEMS NEMS

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.

None

5 Subcommittee and Task Force Reports

The following task forces are currently inactive:

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

5.1 Microfluidics Task Force

Mark Tondra (Diagnostic Biosensors) reported for the Microfluidics Task Force. The task force reviewed Draft Document 5267 and would like to ask the committee to authorize the document for ballot. The following actions were taken below:

Motion: To approve revised SNARF for Doc. 5267.

By / 2nd: Richard Allen (NIST) / Mark Takahashi (Asahi Glass Company)

Discussion: None.

Vote: 2-0 in favor. Motion passed.

Attachment: SNARF 5267 MTondra2017-04-03

- Discussion (Mark Tondra)
 - Upcoming NIST Standards for NIST Workshop on Standards for Microfluidics June 1-2, 2017 - Deadline to register: May 1, 2017
 - <https://www.nist.gov/news-events/events/2017/06/nist-workshop-standards-microfluidics-2017Microfluidics>

Motion: Authorize to send Doc 5267 to ballot in Cycle 4 or 5, 2017.
By / 2nd: Mark Takahashi (Asahi Glass Company) / Richard Allen (NIST)
Discussion: None.
Vote: 2-0 in favor. Motion passed.

5.2 MEMS Substrate Task Force

Steve Martell (Sonoscan) reported for the MEMS Substrate Task Force. The task force worked on Draft Document 6108, New Standard: Specification for Silicon Substrates used in fabrication of MEMS Devices. There is no new activity.

5.3 Material Characterization Task Force

Rich Allen (NIST) reported for the Materials Characterization Task Force. The task force worked on Draft Document 6007, New Standard: Specification for a Test Pattern for Deep Reactive Ion Etching (DRIE) Process.

6 Old Business

6.1 Standards needing Five-Year Review

Steve Martell addressed the committee on this topic. The committee discussed these documents and decided to ballot them for reapproval. The following actions were taken below.

Motion: Authorize SEMI MS10 for reapproval ballot in Cycle 4 or 5, 2017.
By / 2nd: Richard Allen (NIST) / Mark Takahashi (Asahi Glass Company)
Discussion: None.
Vote: 2-0 in favor. Motion passed.

Motion: Authorize SEMI MS1 for reapproval ballot in Cycle 4 or 5, 2017.
By / 2nd: Richard Allen (NIST) / Mark Takahashi (Asahi Glass Company)
Discussion: None.
Vote: 2-0 in favor. Motion passed.

Action Item: 2017April#01, Rich Allen to see if MS1 needs to be revised or looked at in conjunction with 3D15.

Action Item: 2017April#02, Laura Nguyen to submit SEMIViews access for 3D15 and MS1 to Rich, Win and Steve.

Action Item: 2017April#03, Laura Nguyen to prepare SNARFs for reapproval ballots (MS10, MS1).

7 New Business

7.1 Activity updates between SEMI and the MEMS Industry Group (MSIG)

Steve Martell addressed the committee on this topic.

- Discussion of upcoming event(s)
 - MEMS & Sensors Industry Technical Congress, May 10-11, 2017, Stanford University
 - Hoping to get together a meeting to draw more members to attend the SEMI MEMS/NEMS Standards Meetings
 - Unfortunately, there is no slot open at the MSIG Technical Congress
 - Rich will be attending and try to bring in new members
 - Laura/James to present the MEMS/NEMS Committee at the TAC (Technical Advisory Committee) Dinner happening the day before the event
 - Possible outcome to join the two meetings (SEMI/MSIG) at events that make sense in the future

8 Next Meeting and Adjournment

The next meeting is scheduled for Thursday, July 13, 2017 at the SEMICON West 2017 Standards Meetings in San Francisco, California. See <http://www.semi.org/en/events> for the current list of meeting schedules.

The tentative schedule is provided below:

Thursday, July 13 (Tentative)

- Microfluidics Task Force (13:00-13:30)
- Joint MSIG, MEMS Substrate and Materials Characterization Task Force (13:30 – 15:30)
- MEMS/NEMS TC Chapter (15:30 – 17:30)

Having no further business, a motion was made to adjourn. Adjournment was at 16:45.

Respectfully submitted by:

Laura Nguyen

SEMI International Standards Coordinator

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Email: lnguyen@semi.org

Minutes tentatively approved by:

Win Baylies (BayTech-Resor), Co-chair	<Date Approved>
Steve Martell (Sonoscan), Co-chair	July 13, 2017

Table 13 Index of Available Attachments^{#1}

<i>Title</i>	<i>Title</i>
SEMI Standards Required Meeting Elements	[2017Spring] Staff Report MEMS NEMS
[2016Fall] MEMS NEMS NA Minutes FINAL	SNARF 5267 MTondra2017-04-03

^{#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.