MEMS/NEMS North America TC Chapter

Meeting Summary and Minutes

SEMI Standards NA Summer (June) Meetings 2025
Monday, June 2, 10:00 – 11:30 Pacific
SEMI Global Headquarters, Milpitas, California, and via Official Virtual TC Chapter Meeting (OVTCCM)

TC Chapter Announcements

Next TC Chapter Meeting

SEMICON West 2025
Monday, October 6, 13:00 – 14:30 Mountain
Phoenix Convention Center, Phoenix, Arizona/USA

Table 1 Meeting Attendees

Co-Chairs: Michelle Bourke (Lam Research), Steve Martell (Nordson SONOSCAN)
SEMI Staff: Laura Nguyen

Company	*Last*	*First*	*Company*	*Last*	*First*
NAURA	*Cao*	*Clark*	*SoftMEMS LLC*	*Maher*	*Mary Ann*
Nordson SONOSCAN	*Martell*	*Steve*	*Teledyne Micralyne Inc*	*Harrison*	*Tyler*
Okmetic	*Santala*	*Petri*	SEMI	Nguyen	Laura

Table 2 Leadership Changes

None

Table 3 Committee Structure Changes

None

Table 4 Ballot Results

Document #	*Document Title*	*Committee Action*
7340	Reapproval of SEMI MS2-1113 (Reapproved 0819), Test Method for Step Height Measurements of Thin Films	**Passed**, as balloted.
7341	Reapproval of SEMI MS5-0813 (Reapproved 0819), Test Method for Wafer Bond Strength Measurements Using Micro-Chevron Test Structures	**Passed**, as balloted.
7342	Reapproval of SEMI MS12-0220, Specification for Silicon Substrates Used in Fabrication of MEMS Devices	**Passed**, as balloted.

#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 Ratification Ballot Results

None

Table 6 Activities Approved by the GCS between meetings of the TC Chapter

None

Table 7 Authorized Activities

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

#	*Type*	*SC/TF/WG*	*Details*
7370	SNARF	NA MEMS / NEMS TC	Reapproval of SEMI MS13-0221, Guide for Use of Test Patterns for Characterizing a Deep Reactive Ion Etching (DRIE) Process

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

Table 8 Authorized Ballots

Listing of documents authorized by the Originating TC Chapter for Letter Ballot.

#	*When*	*TF*	*Details*
7370	Cycle 9-2025, or 1-2026	NA MEMS / NEMS TC	Reapproval of SEMI MS13-0221, Guide for Use of Test Patterns for Characterizing a Deep Reactive Ion Etching (DRIE) Process

Table 9 SNARF(s) Granted a One-Year Extension

None

Table 10 SNARF(s) Canceled

None

Table 11 Standard(s) to receive Inactive Status

None

Table 12 New Action Items

None

Table 13 Previous Meeting Action Items

Item #	*Assigned to*	*Details*
2021Dec#01	Steve Martell	Provide Laura N. a list of MEMS/Sensors conferences/symposium to potentially present a MSIG WGs and SEMI Standards Update. Ongoing.
2024Nov#01	SEMI, MSIG	How to increase participants in SEMI Standards, WGs, WG meeting, and to other events? Ongoing.
2025Feb#01	SEMI/Chairs	Review existing MEMS TFs with MSIG (plan to disband, rename, and change leadership) Ongoing.
2025Feb#02	TC	Review potential topics (top 5-10 issues industry needs support on) Completed.

1 Welcome, Reminders, and Introductions

Steve Martell (Nordson SONOSCAN), called the meeting to order at 10:06 Pacific. The meeting reminders on antitrust issues, intellectual property issues and holding meetings with international attendance were reviewed. Attendees introduced themselves.

Attachment: SEMI Standards Required 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: By: Mary Ann Maher / SoftMEMS LLC
Second: Tyler Harrison / Teledyne Micralyne Inc
Discussion: None.
Vote: 4-0 in favor. Motion passed.

Attachment: [2025Winter] MEMS NEMS NA TC Chapter Meeting Minutes FINAL

3 Liaison Reports

3.1 *SEMI Staff Report*

SEMI Global 2025 Calendar of Events

- SEMICON India (Sept 1-3; New Delhi, India)
- SEMICON Taiwan (Sept 10-12; Taipei, Taiwan)
- SEMCON West (Oct 7-9; Phoenix, Arizona)
- SEMICON Europa (Nov 18-21; Munich, Germany)
- SEMICON Japan (December 17-19; Tokyo, Japan)

SEMICON West 2025-2030 ← **NEW!**

- **2025—October 7-9 | Phoenix Convention Center | Phoenix, AZ**
- 2026—October 13-15 | Moscone Center | San Francisco, CA
- **2027—October 12-14 | Phoenix Convention Center | Phoenix, AZ**
- 2028—October 10-12 | Moscone Center | San Francisco, CA
- **2029—October 9-11 | Phoenix Convention Center | Phoenix, AZ**
- 2030—October 29-31 | Moscone Center | San Francisco, CA

Upcoming NA Meetings 2025

- SEMICON West: Oct 6-9, 2025, at Phoenix Convention Center, Phoenix, Arizona/USA
- NA Standards Winter Meetings: Feb 23-26, 2026, at SEMI HQ, Milpitas, California/USA

2025 Critical Dates for SEMI Standards Ballots

- Cycle 5-2025: Ballot Submission Due: May 8/Voting Period: May 28 – June 27
- Cycle 6-2025: Ballot Submission Due: June 19/Voting Period: July 9 – Aug 8
- Cycle 7-2025: Ballot Submission Due: July 24/Voting Period: Aug 13 – Sep 12
- Cycle 8-2025: Ballot Submission Due: Sept 3/Voting Period: Sept 24 – Oct 24
- (Current) Cycle 9-2025: Ballot Submission Due: ~~Oct 1~~/Voting Period: ~~Oct 21 – Nov 20~~
- (Revised) Cycle 9-2025: Ballot Submission Due: Oct 14/Voting Period: Oct 29 – Nov 28

2026 Critical Dates for SEMI Standards Ballots

- Cycle 1-2026: Ballot Submission Due: Dec 16/Voting Period: Jan 7 – Feb 6
- Cycle 2-2026: Ballot Submission Due: Jan 23/Voting Period: Feb 11 – Mar 13
- Cycle 3-2026: Ballot Submission Due: Mar 5/Voting Period: Mar 18 – Apr 17
- Cycle 4-2026: Ballot Submission Due: Mar 30/Voting Period: Apr 14 – May 14

- Cycle 5-2026: Ballot Submission Due: May 8/Voting Period: May 27 – June 26

https://www.semi.org/en/collaborate/standards/ballots

Standards Publications Report

Cycle	*New*	*Revised*	*Reapproved*	*Withdrawn*
February 2025	1	9	0	0
March 2025	2	11	6	0
April 2025	1	2	2	0

Total in portfolio – 1,101 (includes 356 Inactive Standards)

New Standards

Cycle	*Designation*	*Title*	*Committee*	*Region*
February 2025	SEMI F122	Guide for Facilities Data Package for Manufacturing Equipment Installation and Building Information Modeling	Facilities	NA
March 2025	SEMI D88	Specification for Electrostatic Properties of FPD Photomasks and Blanks Package	FPD - Materials & Components	JA
March 2025	SEMI MS15	Guide to MEMS Manufacturing Readiness Levels	MEMS/NEMS	NA
April 2025	SEMI E193	Specification for 300 mm Film Frame FOUP (FFF)	Physical Interfaces & Carriers	NA

Style Manual / Formatting Reminders

- Style Manual: Revision 10 (draft proposal) being reviewed with the Regs SC., Mid-End June estimated publishing timeframe.
- Formatting Reminders: Referenced Standards and Documents section: Refer to Procedure Manual A3-5 for content requirements, Terminology section: Refer to Procedure Manual A3-6 through A3-9 for content requirements.
- Formatting Questions? Contact your local staff coordinator or standardspublishing@semi.org for assistance.

Regulations & Procedure Manual

- Regulations (Feb 20, 2024): https://www.semi.org/sites/semi.org/files/2024-02/Standards%20Regulations%20February%2020%202024.pdf
- Procedure Manual (Sept 27, 2024): https://www.semi.org/sites/semi.org/files/2024-09/Procedure%20Manual%20September%2027%2C%202024.pdf

Connect@SEMI Communities for all SEMI Standards Task Forces

- All program members may log in at: https://connect.semi.org (username and password is same as program membership log-in)
- Training materials are available at: https://www.semi.org/standards
  - Under Standards Developer Resources → Collaboration Tools (scroll to the bottom)

Five-Year Review

- SEMI MS13-0222, Guide for Use of Test Patterns for Characterizing a Deep Reactive Ion Etching (DRIE) Process

Staff Contact: Laura Nguyen, Lnguyen@semi.org

Attachment: Staff Report June 2025 v4_MEMS

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.

4.1 Document 7340 — Reapproval of SEMI MS2-1113 (Reapproved 0819), Test Method for Step Height Measurements of Thin Films

- The ballot passed TC Chapter review as balloted. Refer to the attachment for ballot adjudication.

Attachment: 7340_ProceduralReview

4.2 Document 7341 — Reapproval of SEMI MS5-0813 (Reapproved 0819), Test Method for Wafer Bond Strength Measurements Using Micro-Chevron Test Structures

- The ballot passed TC Chapter review as balloted. Refer to the attachment for ballot adjudication.

Attachment: 7341_ProceduralReview

4.3 Document 7342 — Reapproval of SEMI MS12-0220, Specification for Silicon Substrates Used in Fabrication of MEMS Devices

- The ballot passed TC Chapter review as balloted. Refer to the attachment for ballot adjudication.

Attachment: 7342_ProceduralReview

5 Subcommittee and Task Force Reports

The following task forces are currently inactive:

- Packaging TF
- Terminology TF
- Wafer Bond TF

5.1 *Joint MSIG (Manufacturing WG), MEMS Reliability, MEMS Substrate, and MEMS Material Characterization Task Force*

This Task Force reviewed standards for the upcoming Five-Year Review at the last meeting and decided to submit them for Reapproval Ballot in Cycle 9, 2025 or 1, 2026. Refer to § 4 for Ballot Review and adjudication of these standards.

5.2 *Joint MSIG (Device WG), MEMS and Miniaturized Gas Sensing Task Force*

Discussion on new topics were brought up in ‘New Business’.

5.3 *MEMS Microfluidics Task Force*

There is no update at this time.

6 Old Business

6.1 *Standards Due for Five-year Review*

Motion:	Approve the Reapproval SNARF for MS13 and authorize for Letter Ballot in Cycle 9, 2025 or Cycle 1, 2026, for review at Winter Meetings 2026
By / 2nd:	By: Petri Santala / Okmetic Inc Second: Tyler Harrison / Teledyne Micralyne Inc
Discussion:	None.
Vote:	3-0 in favor. Motion passed.

7 New Business

7.1 *Open Discussion*

A survey was completed by MSIG asking for top topics to work on. The top three are as follows:

- MEMS processing tutorials
- Heterogeneous integration
- White paper on diagnosing tests and reliability failures

8 Action Item Review

8.1 New Action Items are noted in Table 11. Previous action items are noted in Table 12 in ‘red’ and for recent updates in ‘blue’. There is no further business.

9 Next Meeting and Adjournment

9.1 The next in-person meeting is tentatively scheduled for the week of October 6-9, in conjunction with SEMICON West 2025 in Phoenix, Arizona. Please check the SEMICON West website for updates: https://www.semiconwest.org/special-features/standards.

Tentative Schedule:

- Monday, June 2
    - 13:00-14:30, MEMS/NEMS NA TC Chapter

Adjournment: 10:42.

Respectfully submitted by:

Laura Nguyen

Sr. Coordinator, International Standards

SEMI Global Headquarters

Phone: +1.408.943.7019

Email: lnguyen@semi.org

Minutes tentatively approved by:

Michelle Bourke (Lam Research), Co-chair	<Date approved>
Steve Martell (Nordson SONOSCAN), Co-chair	<Date approved>

Minutes approved by: **MEMS/NEMS NA OVTCCM on Monday, October 6, 2025.**

Table 14 Index of Available Attachments[#1]

Title	*Title*
SEMI Standards Required Elements	7340_ProceduralReview
[2025Winter] MEMS NEMS NA TC Chapter Meeting Minutes	7341_ProceduralReview
Staff Report June 2025 v4_MEMS	7342_ProceduralReview

#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.