Silicon Wafer NA TC Chapter
Meeting Summary and Minutes

NA Summer Meetings
Tuesday, June 3rd, 2025
9:00 AM – 12:00 PM
SEMI HQ, Milpitas, CA

TC Chapter Announcements

Next TC Chapter Meeting
Tuesday, October 7, 2025 in conjunction with SEMICON West Standards Meetings at the Phoenix Convention Center, Arizona. Check www.semi.org/en/standards for the latest update.

Table 1 Meeting Attendees

Co-Chairs: Noel Poduje (SMS), Dinesh Gupta (STA)
SEMI Staff: Kevin Nguyen (SEMI HQ)

Company	*Last*	*First*	*Company*	*Last*	*First*
STA	**Gupta**	**Dinesh**	*Siltronic*	*Riedel*	*Frank*
KLA	*Haller*	*Kurt*	*Okmetic*	*Santala*	*Petri*
Nordson	*Martell*	*Steve*	*GlobalWafers*	*Takeda*	*Ryuji*
SUMCO	**Nakai**	**Tetsuya**	*Self*	*Wagner*	*Peter*
SMS	*Poduje*	*Noel*			

Italic indicates remote participant. Bold indicates in person participant.

Table 2 Leadership Changes

WG/TF/SC/TC Name	*Previous Leader*	*New Leader*
None		

Table 3 Ballot Results

Document #	*Document Title*	*Committee Action*
M52-0525	Guide for Specifying Scanning Surface Inspection Systems for Silicon Wafers for the 130 nm to 5 nm Technology Generations (Type 2 Editorial Changes)	Approved

#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 4 Ratification Ballot Results

Document #	*Document Title*	*ISC A&R Action*	*A&R Forms*
None			

Table 5 Activities Approved by the GCS between meetings of the TC Chapter

#	*Type*	*SC/TF/WG*	*Details*
None			

Table 6 Authorized Activities

#	*Type*	*SC/TF/WG*	*Details*
None			

NOTE 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*	*SC/TF/WG*	*Details*
6983A	Cycle 7-2025	Int'l AWG TF	Revision to SEMI M49-0918, Guide for Specifying Geometry Measurement Systems for Silicon Wafers for the 130 nm to 3 nm Technology Generations

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

#	*TF*	*Title*	*Expiration Date*
6583	Int'l SOI TF	New Standard: Specification for SOI Wafers for RF Device Applications	July 2026

Table 9 SNARF(s) Cancelled

#	*TF*	*Title*
None		

Table 10 Standard(s) to receive Inactive Status

Standard Designation	*Title*
None	

Table 11 New Action Items

Item #	*Assigned to*	*Details*
None		

Table 12 Previous Meeting Action Items

Item #	*Assigned to*	*Details*	*Status*
Feb25-2025	GCS	Request the GCS to work out a routine schedule for international meeting in the future as SEMICON West is now moved to Oct.	Completed

1 Welcome, Reminders, and Introductions

1.1 Dinesh Gupta called the meeting to order at 9:00 AM. The meeting reminders on antitrust issues, intellectual property issues and holding meetings with international attendance were reviewed. Attendees introduced themselves. Noel requested staff to investigate ways for members to introducing themselves since there are people in person as well as online.

2 Review of Previous Meeting Minutes

2.1 The TC Chapter reviewed the minutes of the previous meeting.

Motion:	Accept the minutes as written.
By / 2nd:	By: Steve Martell / Nordson SONOSCAN Second: Tetsuya Nakai / SUMCO Corporation
Discussion:	None
Vote:	6-0

3 Review of Schedule for the next meeting (SEMICON West Meetings, October 2025)

3.1 Draft schedule is attached.

Attachment: West2025_CommitteeDetails_v01

4 Liaison Reports

4.1 GCS

4.1.1 Noel Poduje reported the GCS held the meeting. The GCS decided that NA Winter (Feb) and SEMICON West (Oct) are international meetings. For Japan, all meetings are considered international. For Europe, it would just be at SEMICON Europa.

4.2 *Europe TC Chapter*

4.2.1 Peter Wagner reported. Of notes

- Last meeting
    - November 14, 2024
- Next meeting
    - SEMICON Europa, November 2025
    - Check www.semi.org/standards for the latest update
- Ballot Results
    - 7192 Revision of SEMI M73-1013E (Reapproved 1019), Test Method for Extracting Relevant Characteristics from Measured Wafer Edge Profiles
    - 7261 Reapproval of SEMI M53-0220, Practice for Calibrating Scanning Surface Inspection Systems Using Certified Depositions of Monodisperse Reference Spheres on Unpatterned Semiconductor Wafer Surfaces
    - 7262 Reapproval of SEMI M58-1109 (Reapproved 0320) Test Method For Evaluating DMA Based Particle Deposition Systems And Processes
    - 7263 Line-Item Revision of SEMI M35-1114 (Reapproved 1019) Guide For Developing Specifications For Silicon Wafer Surface Features Detected By Automated Inspection

- 7264 Line-Item Revision of SEMI M52-0923 Guide for Specifying Scanning Surface Inspection Systems for Silicon Wafers for the 130 nm to 5 nm Technology Generations
- All ballots passed

- Int'l Advanced Wafer Geometry TF
  - Ballot Development
    - 6983, Revision for SEMI M49, Guide for Specifying Geometry Measurement Systems for Silicon Wafers for the 130 nm to 16 nm Technology Generation
  - 5 Years Review
    - SEMI M67-0720 - Test Method for Determining Wafer Near-Edge Geometry from a Measured Thickness Data Array Using the ESFQR, ESFQD, and ESBIR Metrics
    - SEMI M68-0720 - Test Method for Determining Wafer Near-Edge Geometry from a Measured Height Data Array Using a Curvature Metric, ZDD
- Int'l Automated Advanced Surface Inspection TF
  - Status of AFM Roughness Working Group Activities
- Int'l Polished Wafer TF
  - Ballot Development
    - Doc. 7320, Revision to SEMI M1-0924, Specification for Polished Single Crystal Silicon Wafers, was issued in cycle in cycle 2-2025. The results will be adjudicated at SEMICON West 2025 in October.
- Int'l Test Methods TF
  - SEMI Working Group – Phase Out of Mercury
    - A generic project plan was generated and is updated in each meeting.
      - Collect wafers for the round robin test, Carry-out RR and evaluate data, summarize developments in a SEMI standard form.
    - Drafting doc. 7162, New Standard: Test Method for epi-resistivity determination in Si wafers by Surface Charge Profiling
  - New Japan Working Group: Epi resistivity measurement using hard (solid) metal contact CV method (Naoyuki J. Kawai, Ryuji Takeda reported on status)
    - Review of related SNARF for New Standard: Test Method for net carrier density and resistivity of silicon epitaxial layer by capacitance-voltage measurements with an evaporated metal Schottky diode

Attachment: EU SiW Liaison Report November 2024

4.3 *Japan TC Chapter*

4.3.1 Nakai-san reported for the Japan TC Chapter.

- Last meeting
  - April 18, 2025
- Next meeting
  - Friday, August 29, 2025
  - OVTCCM/ SEMI Japan, Tokyo, Japan (Hybrid)

- Leadership Changes
    - Int'l Epitaxial Wafers TF (New leader, Takeshi Kobayashi/ Shin-Etsu Handotai)
- Ballot result
    - 7318, New Standard: Test Method for Net Carrier Density And Resistivity Of Silicon Epitaxial Layer By Capacitance-Voltage Measurements With An Evaporated Metal Schottky Diode
        - Passed with editorial changes.
- International Advanced Wafer Geometry Task Force
    - Developing Doc.#6983A, Revision to SEMI M49-0918 With Title Change To: Guide for Specifying Geometry Measurement Systems for Silicon Wafers for the 130 nm to 3 nm Technology Generations
- International/Japan Test Methods Task Force
    - Drafting Doc.#6687, Revision to M51, Revision to M51-1012, Test Method for Characterizing Silicon Wafer by Gate Oxide Integrity
        - Work in progress. Plan to go to ballot in April 2026.
    - Drafting Doc.#6702, Revision to M60-1014, Test Method for Time Dependent Dielectric Breakdown Characteristics of SiO2 Films for Si Wafer Evaluation
        - Work in progress. Plan to go to ballot in the future.
    - Revision work of M85-0120, Guide for the Measurement of Trace Metal Contamination on Silicon Wafer Surface by Inductively Coupled Plasma Mass Spectrometry
        - Due for 5-year review. Surface Metal Chemical Analysis WG will start drafting the document and prepare SNARF from May, 2025.
- International Polished Wafers Task Force
    - Doc.#7320, Revision to SEMI M1-0924, Specification for Polished Single Crystal Silicon Wafers
        - Will be adjudicated at SEMICON West in Oct 2025.
- International Epi Wafers Task Force
    - Hitoshi Tsunoda (Shin-Etsu Handotai) stepped down from co-leader position.
    - Takeshi Kobayashi (Shin-Etsu Handotai) was approved to be a co-leader.

Attachment: **JA SiW_Liaison Report_June 2025_R0**

5 SEMI Staff Report

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

- SEMI upcoming event
- SEMICON West 2025-2030
    - 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

- Global Standards Summit (GSS) 2025
  - Planned for SEMICON West 2025
    - *Tentative Date:* Tuesday, October 7
  - Objective: Identify standards-critical areas and work towards an industry standardization strategy for the next 3- and 7-year time horizons.
  - Agenda:
    - Continue discussion on standards-critical topics covered in GSS 2024:
    - Smart Manufacturing for Future Factories
    - Packaging Architectures & Materials
    - Environmental Sustainability
    - Highlight additional, new topics needing standards.

- SEMICON West Registration
  - SEMI Standards Members receive a complimentary Expo Plus Pass only
  - Please use same email used for Standards Membership to register
  - https://bit.ly/SW_25_Standards
- Upcoming NA 2025 & 2026 Meetings

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

- 2025 Critical Dates for SEMI Standards Ballots
  - https://www.semi.org/en/collaborate/standards/ballots
- Style Manual /Formatting Reminders
  - Formatting Questions?
  - Contact your local staff coordinator or standardspublishing@semi.org for assistance.
- The Use of Connect@SEMI for TF Management and Document Development Depository
  - All program members may log in at:
    - https://connect.semi.org
    - Enter their username and password (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)

- Educational Courses under Development
  - {Subfab} ***Intro to Sub-fab Course***
    - Objective: Gain a comprehensive understanding of SubFAB operations, including system components, facility layouts, environmental and sustainability considerations, organizational structure, safety and maintenance best practices, and incident-response preparedness within the semiconductor manufacturing ecosystem.
    - Course Date: October 30, 2025 (2 sessions, EU & Asia friendly)

        - Status: Confirmed, under development
    - {Parts Clean} ***Parts Cleaning***
        - Objective: Provide cleanroom users with foundational knowledge and strategies to navigate the complexities of semiconductor manufacturing, enhance production reliability, and improve yield.
        - Course Date: October 9, 2025, in conjunction with SEMICON West
        - Status: Confirmed, under development
    - {Cybersecurity} ***Implementing Basic Cybersecurity Principles in Semiconductor Manufacturing***
        - Objective: Introduce foundational cybersecurity principles, risk management strategies, and best practices tailored to securing semiconductor manufacturing systems and data.
        - Course Date: November 5, 2025
        - Status: Pending confirmation
    - Other courses being considered: Equipment Data Acquisition (EDA), SECS/GEM, Seals
    - Please contact staff if interested in developing SEMI Standards courses.
- SEMI Standards Publications
    - Total SEMI Standards in portfolio: 1,101
        - Includes 356 Inactive Standards

Attachment: Staff_HQ Report June 2025 v4.2

6 Regulations Change Report (if applicable)

6.1 No new update.

7 Ballot Review

7.1 None

8 Task Force Reports

8.1 *Int'l Advanced Wafer Geometry Task Force /Noel Poduje (SMS)*

8.1.1 Noel reported. Of note:

- Ballot Review
    - None
- Ballot development
    - 6983A - Revision of SEMI M49-0918 With Title Change To: Guide for Specifying Geometry Measurement Systems for Silicon Wafers for the 130 nm to 3 nm Technology Generations
        - The meeting's main topic was the new draft of the M49 revision. Peter has provided this, including a cleanup of the body of the document and a new Related Information section. Yoshi also submitted his simplified version of the Related Information, per last meeting's Action Item.
        - The discussion proceed with Peter taking us through the Background Statement and the body of the document. Some essentially editorial changes were found which Kevin kept track of.
        - Peter then took us through his propose Related Information which was intended to describe the rationale for SFQR reference values. It is important to note that the latest proposed document does not explicitly provide reference values for the smaller nodes, leaving them

to be agreed upon between supplier and user, as decided at previous meetings. However, the Related Information section provides a means of calculating these values based on lithographic parameters, etc. Peter's proposal comes to such values not on a node (technology generation) basis but from theoretical values such as resolution, wavelength, numerical aperture, etc. and several constants. He does not elaborate on enhancements such as multiple patterning.

- Yoshi then discussed his revised Related Information. His approach is node-based as well as parameter-based. He also states resolution numbers given in manufacturer's literature (Nikon and ASML). Various enhancements such as double exposure, double patterning, self-align quadruple patterning, etc. are mentioned.
- The results of these two approaches regarding SFQR values are similar.
- With time running short, the TF decided to have Peter present his draft to the TC for approval to ballot. Yoshi suggested a one-week or so delay in ballot approval to allow for more discussion. This was thought to be impractical. Yoshi is free to vote negative on what he thinks could be improved, e.g., Related Information.
    - **Motion**: Authorize the Document M49 for Letter Ballot in cycle 7
      By: Kurt Haller / KLA-Tencor
      Second: Frank Riedel / Siltronic AG
      Discussion: The ballot will be adjudicated at SEMICON Europa.
      Result: 7-Y 0-N Voting Result: Pass - 100.00%. Voting Rule: Majority

Attachment: **AWG NA Summer 2025 minutes draft**

8.2 *Int'l Automated Advanced Surface Inspection Task Force/ Kurt Haller (KLA-Tencor)*

8.2.1 Kurt reported. No meeting held. Of note:

- Status of AFM Roughness Working Group Activities
    - WG leader Judith Wittmann (Siltronic AG) current status:
  - AFM roughness, LLS haze working group started in Q2/2023
- A publication change request (PCR) was presented to correct an editorial change to recently published SEMI M52.
- Motion: Approve editorial changes as shown in the PCR form
  By: Kurt Haller / KLA-Tencor
  Second: Tetsuya Nakai / SUMCO Corporation
  Discussion:
  Result: 7-Y 0-N Voting Result: Pass - 100.00%.Voting Rule: Majority

Attachment: **PCR Form_M52**

Attachment: **M52_Type 2 Editorial Changes**

8.3 *Int'l SOI Wafers TF/Gerd Pfeiffer (SOITEC)*

8.3.1 Gerd reported the status of ballot development Doc. 6583, New Standard: Specification for SOI Wafers for RF Device Applications. The SNARF is expiring.

Motion: Approve a 1 year extension of the project period for the SNARF 6583
New Standard: Specification for SOI Wafers for RF Device Applications
By: Tetsuya Nakai / SUMCO Corporation
Second: Kurt Haller / KLA-Tencor
Discussion: None
Result: 7-Y 0-N Voting Result: Pass - 100.00%. Voting Rule: Majority

8.4 *Int'l Polished Wafer TF/TBD*

8.4.1 Dinesh reported. Of note:

- 7320 - Revision to SEMI M1-0924, Specification for Polished Single Crystal Silicon Wafers (removal of 450 mm wafer references)
    - The ballot is issued in cycle 2-25 for review at SEMICON West in October 2025.

8.5 *Int'l Test Methods TF/ Dinesh Gupta (STA)*

8.5.1 Dinesh reported. Of note:

- 7319 - Line-item revision to SEMI M88-0119, Practice for Sample Preparation Methods for Measuring Minority Carrier Diffusion Length in Silicon Wafers by Surface Photovoltage Method
    - The ballot is issued in cycle 2-25 for review at SEMICON West in October 2025.
- 6570B - New Standard: Guide for Measuring Bulk Micro Defect Density and Denuded Zone Width in Annealed Silicon Wafers by a Laser-Scattering Tomography Technique
    - The ballot is issued in cycle 2-25 for review at SEMICON West in October 2025.

9 Old Business

9.1 None

10 New Business

10.1 5 Year Review. The following standards are due for 5 year review.

- SEMI MF1451-0707 (Reapproved 0421) Test Method for Measuring Sori on Silicon Wafers by Automated Noncontact Scanning
    - Noel Poduje stated AWG TF can review.
- SEMI M20-0215 (Reapproved 0421) Practice for Establishing a Wafer Coordinate System
    - Dinesh Gupta stated Polished Wafer TF can review.
- SEMI M44-0305 (Reapproved 0211) Guide to Conversion Factors for Interstitial Oxygen in Silicon
    - Dinesh Gupta stated Test Methods TF can review.

11 Next Meeting and Adjournment

11.1 The next meeting is scheduled for SEMICON West Meeting, October 7 in Arizona. Refer http://www.semi.org/standards for the current list of meeting schedules.

Respectfully submitted by:

Kevin Nguyen,
SEMI Standards Operations Manager
Phone: 408-943-7997
Email: knguyen@semi.org

Minutes approved by:

Dinesh Gupta (STA)	<Date approved>
Noel Poduje (SMS)	<Date approved>

Table 13 Index of Available Attachments[#1]

Title	*Title*
West2025_CommitteeDetails_v01	AWG NA Summer 2025 minutes draft
EU SiW Liaison Report November 2024	PCR Form_M52
JA SiW_Liaison Report_June 2025_R0	M52_Type 2 Editorial Changes
Staff_HQ Report June 2025 v4.2	

#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.