Silicon Wafer NA TC Chapter
Meeting Summary and Minutes

SEMICON West Meetings
Tuesday, October 7, 2025
9:00 AM – 12:00 PM
Phoenix Convention Center, Phoenix, CA

TC Chapter Announcements

Next TC Chapter Meeting
TBD. Check www.semi.org/en/standards for the latest update.

Table 1 Meeting Attendees

Co-Chair: Noel Poduje (SMS)

SEMI Staff: Kevin Nguyen (SEMI HQ)

Company	*Last*	*First*	*Company*	*Last*	*First*
ASML	*Daware*	*Ajinkya*	*SMS*	*Poduje*	*Noel*
SUMCO	**Nakai**	**Tetsuya**	**Okmetic**	**Santala**	**Petri**
GlobalWafers	*Okano*	*Hirofumi*	*GlobalWafers*	*Takeda*	*Ryuji*
Siltronic	*Passek*	*Fritz*	*Daido Steel*	*Yoshiyuki*	*Otake*
Siltronic	*Riedel*	*Frank*			

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*
6579B	New Standard: Guide for Measuring Bulk Micro Defect Density and Denuded Zone Width in Annealed Silicon Wafers by a Laser-Scattering Tomography Technique	Failed and returned to TF for rework and reballot
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 Methods	
Line Item 1	To update website information where JEITA EM-3509 is available on footnote.	Passed as balloted
7320	Revision to SEMI M1-0924, Specification for Polished Single Crystal Silicon Wafers	Passed with editorial changes

#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*
7395	SNARF	Int'l AWG TF	Reapproval of SEMI M67-0720 - Test Method for Determining Wafer Near-Edge Geometry from a Measured Thickness Data Array Using the ESFQR, ESFQD, and ESBIR Metrics
7396	SNARF	Int'l AWG TF	Reapproval of SEMI M68-0720 - Test Method for Determining Wafer Near-Edge Geometry from a Measured Height Data Array Using a Curvature Metric, ZDD

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*
7395	Cycle 9-25	Int'l AWG TF	Reapproval of SEMI M67-0720 - Test Method for Determining Wafer Near-Edge Geometry from a Measured Thickness Data Array Using the ESFQR, ESFQD, and ESBIR Metrics
7396	Cycle 9-25	Int'l AWG TF	Reapproval of SEMI M68-0720 - Test Method for Determining Wafer Near-Edge Geometry from a Measured Height Data Array Using a Curvature Metric, ZDD
6579C	Cycle 9-25	Int'l Test Methods TF	New Standard: Guide for Measuring Bulk Micro Defect Density and Denuded Zone Width in Annealed Silicon Wafers by a Laser-Scattering Tomography Technique

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

#	*TF*	*Title*	*Expiration Date*
6983	Int'l AWG TF	Revision for M49 “Guide For Specifying Geometry Measurement Systems For Silicon Wafers For The 130 nm To 16 nm Technology Generations	11/16/2026

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*
None			

1 Welcome, Reminders, and Introductions

1.1 Noel Poduje 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: Tetsuya Nakai / SUMCO Corporation
Second: Friedrich Passek / Siltronic AG
Discussion: None
Vote: 5-0

3 Review of Schedule for the next meeting (TBD)

3.1 Draft schedule is attached.

Attachment: SiWafer Meeting Schedule

4 Liaison Reports

4.1 *Europe TC Chapter*

4.1.1 Fritz Passek 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.
- 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

4.2 *Japan TC Chapter*

4.2.1 Nakai-san reported for the Japan TC Chapter.

- Last meeting
    - Friday, August 29, 2025
- Next meeting
    - Thursday, December 18, 2025
    - OVTCCM/ SEMI Japan, Tokyo, Japan (Hybrid)
- Authorized Activities
    - 7392, Line-item revision to SEMI M89-0721, Test Method for Recombination Lifetime of the Epilayer of the Silicon Epitaxial Wafer (p/p+, n/n+) by the Short Wavelength Excitation Microwave Photoconductive Decay Method
- Authorized Ballot
    - 7392, Line-item revision to SEMI M89-0721, Test Method for Recombination Lifetime of the Epilayer of the Silicon Epitaxial Wafer (p/p+, n/n+) by the Short Wavelength Excitation Microwave Photoconductive Decay Method
- 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
        - Submitted for Cycle 7, 2025 to be adjudicated at SEMICON Europa
- International/Japan Test Methods Task Force
    - Doc.#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 TC review with editorial changes and subsequent procedural review by the ISC A&R.
        - Pending publication.
        - Once the document is published, the TF will revise the document to add Related Information.
    - Doc.#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 Methods
        - Ballot passed at SEMICON West in Oct 2025.
    - Doc.#6570B, New Standard: Guide for Measuring Bulk Micro Defect Density and Denuded Zone Width in Annealed Silicon Wafers by a Laser-Scatter Tomography Technique
        - Ballot failed at SEMICON West in Oct 2025 and was resubmitted for cycle 9-25.
    - 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. Draft SNARF was presented at the last meeting.

- International Polished Wafers Task Force
    - Doc.#7320, Revision to SEMI M1-0924, Specification for Polished Single Crystal Silicon Wafers
        - Ballot passed at SEMICON West in Oct 2025.

- International Epi Wafers Task Force
    - Doc.#7291, Revision to SEMI M62-0317, Specification For Silicon Epitaxial Wafers
        - Passed the TC review as balloted and subsequent procedural review by the ISC A&R SC. Pending publication.

Attachment: JA SiW_Liaison Report_October 2025_R1

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
    - Future Standards for Connected & Sustainable Semiconductor Manufacturing
        - Tuesday, October 7
    - Objective: The Global Standards Summit is a strategic forum dedicated to identifying standards-critical areas and advancing an industry-wide standardization roadmap for the next 3- and 7-year horizons. Building on the momentum of the inaugural Summit—which spotlighted essential topics such as environmental sustainability—this year's gathering continues that dialogue while expanding focus to include emerging challenges like supply chain traceability.
    - With increasing fragmentation across the global microelectronics supply chain driven by geopolitical and other disruptive forces, the need for unified standards is more critical than ever. This Summit provides a timely opportunity to convene, collaborate, and identify the standards that will address these challenges and foster greater industry alignment. We encourage you to join, engage, and help shape the future of standards.
    - Agenda:
        - Supply Chain Traceability
            - (2:05 PM to 2:20 PM) Semiconductor Chip Customer Perspective {Daniel O'Loughlin / Qualcomm}
            - (2:20 PM to 2:35 PM) Provenance (how to trace all the way up the supply chain) {Randy Hall / Provenance Chain Network}
            - (2:35 PM to 2:50 PM) Security (ensuring products are not tampered with or authentic/not counterfeit) {Neal Edwards / AMD}

- (2:50 PM to 3:05 PM) Preventing Supply Chain Disruption {Krish Dharma / SEMI}

  - Environmental Sustainability
    - (3:35 PM to 3:50 PM) PFAS - Transparency {Patrick Gottsacker / Intel}
    - (3:50 PM to 4:05 PM) Energy Efficient Manufacturing {Slava Libman / FTD solution}
    - (4:05 PM to 4:20 PM) Environmental Sustainability Considerations in Building Future Facilities {Nate Monosoff / Jacobs}

- Workshops
  - SEMI Liquid Chemicals Analytical Workshop
  - Enhancing Voltage Sag Immunity: SEMI F47 Standard Updates & Insights
  - Semiconductor Device Manufacturing in a Cleanroom (Best Practices to Improve Product Reliability and Yield) [SEMIU]
- Upcoming NA 2026 Meetings

NA Standards Winter Meetings	Feb 9-12, 2026 Virtual
NA Spring Meeting (In conjunction with ASMC)	May 11-14, 2026 Hilton Albany, New York
SEMICON West	October 12-15, 2026 San Francisco, California/USA

- 2025 and 2026 Critical Dates for SEMI Standards Ballots
  - https://www.semi.org/en/collaborate/standards/ballots
- 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 (July 7, 2025)
    - https://www.semi.org/sites/semi.org/files/2025-07/Procedure%20Manual%20July%2007%2C%202025%20v1.pdf
  - Noticeable updates:
    - Major revision to multiple Standards
    - New SNARF Form (July 2025)
    - Ballot checklist requirement for Revision to Primary Standard
- 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: TBD, May 2026 (2 sessions, EU & Asia friendly)
    - Status: 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.

- 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: 1,107
    - Includes 373 Inactive Standards

Attachment: Staff_HQ Report Oct 2025 v4

6 Regulations Change Report (if applicable)

6.1 No new update.

7 Ballot Review

7.1 Doc. 6570B, New Standard: Guide for Measuring Bulk Micro Defect Density and Denuded Zone Width in Annealed Silicon Wafers by a Laser-Scattering Tomography Technique

7.1.1 This ballot failed TC Chapter review and was sent back to TF for rework and reballot in cycle 9-2025.

7.2 Doc. 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 Methods

7.2.1 This ballot passed as balloted. Refer to attachment for full details.

Attachment: 7319_Ballot report

7.3 Doc. 7320, Revision to SEMI M1-0924, Specification for Polished Single Crystal Silicon Wafers

7.3.1 This ballot passed with editorial changes. Refer to attachment for full details.

Attachment: 7320_Ballot report

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
  - Preliminary review of ballot for Doc. 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
  - This ballot will be adjudicated at the EU meetings in Munich this November. There were no rejects and three comments. The comments were reviewed but no substantive discussion took place at this meeting.
- Ballot development

- None

- Old Business
  - Several 5-year reviews are either due or coming up soon:
    - 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
  - Motion: Authorize M67 and M68 for reapproval ballot for review at SEMICON Japan
    By: Friedrich Passek / Siltronic AG
    Second: TETSUYA NAKAI / SUMCO Corporation
    Discussion:
    Result: 7-Y 0-N Voting Result: Pass - 100.00%. Voting Rule: Majority

- Project Period Extension for SEMI M49 Revision (SNARF 6983)

  - Motion: Approve a 1 year extension of the project period for the SNARF 6983
    By: Friedrich Passek / Siltronic AG
    Second: TETSUYA NAKAI / SUMCO Corporation
    Discussion:
    Result: 6-Y 0-N Voting Result: Pass - 100.00%. Voting Rule: Majority

Attachment: AWG West 2025

8.2 *Int'l Automated Advanced Surface Inspection Task Force/ Kurt Haller*

8.2.1 Noel reported on Kurt's behalf. Of note:

- Status of AFM Roughness Working Group Activities
- Ballot Development/Reports
  - Kurt reviewed AFM WG's Round-Robin status. Measurements of 21 wafers at five of seven contributor sites are complete; four of the five contributors have uploaded data to SEMI.Connect. However, delays at two sites have pushed RR completion to the end of 2025 at best.
  - Kurt presented the results that have been uploaded in a graphic format suited to qualitative data exploration. In addition to galleries of the AFM images, so-called swarm charts plot the rms surface roughness (Rq) values for each wafer by each contributor.
  - The results file, being somewhat large (166 slides), is not embedded in these minutes. It has been uploaded to SEMIConnect, where it may be reviewed by members of the IAASI Community.
  - For a given wafer, the differences between measured Rq by each contributor can range up to 50 pm or more. The observed differences may be due to calibration of the AFM equipment at each site, marginal instrument noise floors, or a combination of both. Quantitative evaluation of the statistical significance of the differences is pending acquisition and upload of the final three data sets.
  - Finally, Kurt listed several questions and potential points of contention that impact a SNARF for a new AFM-measured surface roughness Standard and subsequent ballot development. The WG will discuss these points at their next meetings on Oct 15 and Nov 18. It's possible a SNARF may be presented to the Si Technical committee at Europa on Nov 20, but predictions being notoriously inaccurate, especially about the future, prudence calls for duly tempered of expectations.

Attachment: IAASI_Minutes_SEMIWest_20251006

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.

8.4 *Int'l Polished Wafer TF/TBD*

8.4.1 No meeting.

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

8.5.1 No meeting.

9 Old Business

9.1 None

10 New Business

10.1 Ballot Authorization, Doc. 6570C, New Standard: Guide for Measuring Bulk Micro Defect Density and Denuded Zone Width in Annealed Silicon Wafers by a Laser-Scattering Tomography Technique

10.1.1 Motion: Authorize the Doc. 6570C, New Standard: Guide for Measuring Bulk Micro Defect Density and Denuded Zone Width in Annealed Silicon Wafers by a Laser-Scattering Tomography Technique, for cycle 9 for review at Japan
By: Ryuji Takeda / GlobalWafers Japan co.,ltd.
Second: TETSUYA NAKAI / SUMCO Corporation
Discussion:
Result: 6-Y 0-N Voting Result: Pass - 100.00%. Voting Rule: Majority

10.2 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
  - ASI TF offered to review.

11 Next Meeting and Adjournment

11.1 The next meeting is to be determined. 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*
SiWafer Meeting Schedule	7319_Ballot report
EU SiW Liaison Report November 2024	7320_Ballot report
JA SiW_Liaison Report_October 2025_R1	AWG West 2025
Staff_HQ Report Oct 2025 v4	IAASI_Minutes_SEMIWest_20251006

#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.