Silicon Wafer Japan TC Chapter

Meeting Summary and Minutes

In conjunction with SEMICON Japan 2025
Thursday, December 18, 2025 9:00 AM – 12:15 PM JST
TFT Building, Tokyo, Japan/ Official Virtual TC Chapter Meeting (Hybrid)

TC Chapter Announcements

Next TC Chapter Meeting

Friday, April 17, 2026 1:00 PM – 4:00 PM JST
SEMI Japan, Tokyo, Japan/ Official Virtual TC Chapter Meeting (Hybrid)

Table 1 Meeting Attendees

Italic indicates virtual participants

Co-Chairs: Tetsuya Nakai (SUMCO), Ryuji Takeda (GlobalWafers Japan)
SEMI Staff: Akiko Yoshida (SEMI Japan)

Company	*Last*	*First*	*Company*	*Last*	*First*
Advanced Silicon Technology	*Hu*	*Hao*	*SELF*	*Yoshise*	*Masanori*
GlobalWafers Japan	Takeda	Ryuji	Sumika Chemical Analysis Service	Omata	Mikako
Hitachi High-Tech	*Oka*	*Kenji*	*Shin-Etsu Handotai*	*Nakasugi*	*Tadashi*
KLH	*Haller*	*Kurt*	*SUMCO*	*Iwanaga*	*Kazuhisa*
Kobelco Research Institute	Tsunaki	Hidetoshi	SUMCO	Masada	Ayumi
Meiji University	Ogura	Atsushi	SUMCO	Nakai	Tetsuya
Nanoverse Technologies	Akiyama	Satoshi	SEMI HQ	Nguyen	Kevin
SELF	Kawai	Naoyuki	SEMI Japan	Yoshida	Akiko

Table 2 Leadership Changes

WG/TF/SC/TC Name	*Previous Leader*	*New Leader*
Silicon Wafer Japan TC Chapter	Tetsuya Nakai (SUMCO)	Satoshi Akiyama (Nanoverse Technologies)
International Terminology TF	Tetsuya Nakai (SUMCO)	Open
International SOI Wafers TF	Tetsuya Nakai (SUMCO)	Open

Table 3 TC Chapter Structure Changes

Previous WG/TF/SC Name	*New WG/TF/SC Name or Status Change*
None	

Table 4 Ballot Results

Document #	*Document Title*	*Committee Action*
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	
Line Item 1	To update JSNM information	**Passed** as balloted
7395	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	Failed
7396	Reapproval of SEMI M68-0720 - Test Method for Determining Wafer Near-Edge Geometry from a Measured Height Data Array Using a Curvature Metric, ZDD	Failed
6570C	New Standard: Guide for Measuring Bulk Micro Defect Density and Denuded Zone Width in Annealed Silicon Wafers by a Laser-Scattering Tomography Technique	Failed

#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

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

Note 1: **Passed** Ratification ballots will be submitted to SEMI publication for final processing.

Note 2: **Failed** Ratification ballots were returned to the originating task forces for re-work and re-balloting or abandoning.

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

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

Table 7 Authorized Activities

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

#	*Type*	*SC/TF/WG*	*Details*
7437	SNARF	Int'l Test Method TF	Revision to SEMI M85-0120, Guide for the Measurement of Trace Metal Contamination on Silicon Wafer Surface by Inductively Coupled Plasma Mass Spectrometry
7438	SNARF	Int'l Test Method TF	Line Item Revision to SEMI M95-0925, Test Method for Net Carrier Density and Resistivity of Silicon Epitaxial Layer by Capacitance-Voltage Measurements with an Evaporated Metal Schottky Diode
7439	SNARF	Int'l Test Method TF	Auxiliary Information: Background, Rationale, and Application Guidelines for SEMI M95: Test Method for Net Carrier Density and Resistivity of Silicon Epitaxial Layer by Capacitance-Voltage Measurements with an Evaporated Metal Schottky Diode
7434	SNARF	Int'l Automated Advanced Surface Inspection TF	New Standard: Guide for AFM Roughness Measurement on Silicon Wafer Surfaces

#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

#	When	TF	Details
6570D	Cycle 2, 2026	Int'l Test Method TF	New Standard: Guide for Measuring Bulk Micro Defect Density and Denuded Zone Width in Annealed Silicon Wafers by a Laser-Scattering Tomography Technique
7438	Cycle 2, 2026	Int'l Test Method TF	Line Item Revision to SEMI M95-0925, Test Method for Net Carrier Density and Resistivity of Silicon Epitaxial Layer by Capacitance-Voltage Measurements with an Evaporated Metal Schottky Diode

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

#	TF	Title	Expiration Date
None			

Table 10 SNARF(s) Abolished

#	TF	Title
None		

Table 11 Standard(s) to receive Inactive Status

Standard Designation	Title
None	

Table 12 New Action Items

Item #	Assigned to	Details
SW20251218-01	Int'l Test Method TF	To submit M95 Line Item Revision Ballot for Cycle 2, 2026.
SW20251218-02	Int'l Test Method TF	To submit Doc.#6570D for Cycle 2, 2026.
SW20251218-03	Int'l AWG TF	To prepare SNARFs for Line Item Revision to SEMI M67 and M68.
SW20251218-04	SEMI Staff	To forward the ballot adjudication results of Doc.#7392 to the ISC A&R SC for procedural review.

Table 13 Previous Meeting Action Items

Item #	Assigned to	Details
SW20240829-01	SEMI Staff	To have a training session of Connect@SEMI for TF leaders. →Open
SW20250829-01	Int'l Test Method TF	To submit M89 Line Item Revision Ballot for Cycle 8,2025. →Closed
SW20250829-02	SEMI Staff	To send SNARF for M85 Major Revision to Silicon Wafer Global TC members for 2 weeks review. →Closed
SW20250829-03	SEMI Staff	To request Int'l ASI TF to report their activities at TC Chapter meeting. →Closed

1 Welcome, Reminders, and Introductions

Ryuji Takeda (GlobalWafers Japan), called the meeting to order at 9:00 AM JST. The meeting reminders on antitrust issues, intellectual property issues and holding meetings with international attendance were reviewed. Attendees introduced themselves.

Attachment: 01_Required Meeting Elements March 2024_J

2 Review of Previous Meeting Minutes

The TC Chapter reviewed the minutes of the previous meeting.

Motion:	Approve the minutes with one correction.
By / 2nd:	Tetsuya Nakai (SUMCO)/ Naoyuki Kawai (Self)
Discussion:	None.
Vote:	Result: 7-Y 0-N. **Motion Passed.**

Attachment: 02_SW JA TC Minutes_20250829_R1

3 Technical Committee Awards

Technical Committee Award recognizes leadership in document development, committee management, task force coordination, and Standards dissemination. The following members received the awards for their outstanding leadership and active contributions:

- Naoyuki J. Kawai (Self)
- Hirofumi Okano (GlobalWafers Japan)
- Hidetoshi Tsunaki (Kobelco Research Institute)

4 Liaison Report

4.1 *Japan Regional Standards Committee (JRSC)*

Tetsuya Nakai (SUMCO) reported for the JRSC that the previous meeting was held on December 15, 2025. There were no topics specifically relevant to the Silicon Wafer Japan TC Chapter.

4.2 *Global Coordinating Subcommittee (GCS)*

Tetsuya Nakai (SUMCO) reported for the Silicon Wafer GCS that there had been no voting or discussion in GCS between meetings of the Silicon Wafer Japan TC Chapter.

4.3 *Silicon Wafer Europe TC Chapter*

Kevin Ngyuen (SEMI HQ) reported for the Silicon Wafer EU TC Chapter. Of note:

- The last meeting was held on November 20, 2025 in conjunction with SEMICON Europa, and the next meeting will be held in November, 2026 in conjunction with SEMICON Europa.
- After many years of service, Peter Wagner (Self) resigned from his position as TC co-chair, and Frank Riedel (Siltronic) was confirmed as the new TC co-chair.
- Doc.#6983A, Revision for 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, passed as balloted.

- SNARF 7418, Reapproval of SEMI M20-0215 (Reapproved 0421) Practice for Establishing a Wafer Coordinate System was approved and its ballot submission for Cycle 1 or Cycle 2, 2026 was authorized.

Attachment: 03_EU SiW Liaison Report November 2024

4.4 *Silicon Wafer North America TC Chapter*

Kevin Nguyen (SEMI HQ) reported for the Silicon Wafer North America TC Chapter. Of notes:

- The last meeting was held on October 7, 2025 at SEMICON West and the next meeting is TBD.
- Doc.#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 whereas Line Item 1 of 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, as well as Doc.#7320, Revision to SEMI M1-0924, Specification for Polished Single Crystal Silicon Wafers passed with or without editorial changes.
- Project period f for SNARF 6983, Revision for M49 "Guide For Specifying Geometry Measurement Systems For Silicon Wafers For The 130 nm To 16 nm Technology Generations was extended to November 16, 2026.
- SNARF 7395 (Reapproval of SEMI M67-0720) and SNARF 7396 (Reapproval of SEMI M68-0720) as well as their ballot submission for Cycle 1 or 2, 2026 were approved. Ballot submission of Doc.#6570C for Cycle 9, 2025 was also approved.

Attachment: 04_NA Si Wafer TC Chapter Liaison Report Nov 2025

5 SEMI Staff Report

Akiko Yoshida (SEMI Japan) gave the SEMI Staff Report. Of notes:

- At SEMICON West 2025, for the first time in Phoenix, Arizona in October, the second round of SEMI Global Standards Summit (GSS) was held in the afternoon on Tuesday, October 7. The GSS 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. The theme was "Future Standards for Connected & Sustainable Semiconductor Manufacturing."
- As for upcoming NA Standards meetings 2026, NA Winter Meetings will be held in February in a full virtual format, NA Spring Meetings will be held in Albany, New York in May in conjunction with ASMC, and SEMICON West Meetings in October in San Francisco.
- SEMICON Japan 2025 taking place this week have irregular venue arrangements because of renovations at Tokyo Big Sight. Friendship party and awards ceremony will be held at TFT Building as well.

Attachment: 05_Staff Report_December 2025_R4

6 Ballot Review

NOTE 1: TC Chapter adjudication of ballots 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 file name for each balloted document is provided.

6.1 *Doc.#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*

- This Document passed as balloted and will be forwarded to the ISC A&R SC for procedural review.

6.2 *Doc.#7395, 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*

- This Document failed and will be returned to the TF for rework.

6.3 *Doc.#7396, Reapproval of SEMI M68-0720 - Test Method for Determining Wafer Near-Edge Geometry from a Measured Height Data Array Using a Curvature Metric, ZDD*

- This Document failed and will be returned to the TF for rework.

6.4 *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*

- This Document failed and will be returned to the TF for rework.

Attachment: 06_7392_Ballot Review

07_7395_Ballot Review

08_7396_Ballot Review

09_6570C_Ballot Review

7 Subcommittee and Task Force Reports

7.1 *International Advanced Wafer Geometry Task Force*

Satoshi Akiyama (Nanoverse Technologies) reported for the International Advanced Wafer Geometry TF. Of notes:

- The TF meeting originally scheduled for December 17 was canceled.
- Doc.#7395 (M67 ESFQR) and Doc.#7390 (M68 ZDD) which were submitted for Cycle 9, 2025 received a negative respectively, however, both are regulation related and not technical matter. As those documents failed the TC review (refer to 6.2 and 6.3 above), the TF will revise those documents instead of reapproval.
- Regarding 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, which was submitted for Cycle 7, 2025 and passed the TC Chapter review at SEMICON Europa, the TF will discuss the comment from Tetsuya Nakai (SUMCO) as a new business.
- The TF will send the SNARF for Revision to SEMI MF2074 for two weeks review by the global Silicon Wafer TC members.

Attachment: 10_AWG TF Japan Report_20251217

7.2 *International/ Japan Test Method Task Force*

Ryuji Takeda (GlobalWafers Japan) reported for the International/ Japan Test Method TF. Of notes:

- The TF meeting was held on December 16, 2025.
- Voting results of the below documents were reviewed (refer to 6.1 and 6.4 above for the details of the ballot review).
    - Doc.#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.
    - 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 failed and was retuned to the TF for rework.
- The Chemical Analysis WG started drafting M85 Revision after completion of two weeks review of the SNARF.
- The Epi Resistivity WG completed the draft for Line Item Revision to M95, focusing on correcting formulas, improving clarity, and resolving editorial issues. The WG is also working on Auxiliary Information to help users better understand the background, rationale, and application considerations that are not fully covered in SEMI M95.

Motion:	Approve the SNARF for Revision to SEMI M85-0120, Guide for the Measurement of Trace Metal Contamination on Silicon Wafer Surface by Inductively Coupled Plasma Mass Spectrometry.
By / 2nd:	Ryuji Takeda (GlobalWafers Japan)/ Satoshi Akiyama (Nanoverse Technologies)
Discussion:	None.
Vote:	Result: 10-Y 0-N. **Motion Passed.**

Motion:	Approve the SNARF for Line Item Revision to SEMI M95-0925, Test Method for Net Carrier Density and Resistivity of Silicon Epitaxial Layer by Capacitance-Voltage Measurements with an Evaporated Metal Schottky Diode.
By / 2nd:	Ryuji Takeda (GlobalWafers Japan)/ Naoyuki Kawai (Self)
Discussion:	None.
Vote:	Result: 10-Y 0-N. **Motion Passed.**

Motion:	Authorize the Line Item Revision to SEMI M95-0925, Test Method for Net Carrier Density and Resistivity of Silicon Epitaxial Layer by Capacitance-Voltage Measurements with an Evaporated Metal Schottky Diode, for Letter Ballot in Cycle 2, 2026 for review at the next Silicon Wafer Japan TC Chapter meeting.
By / 2nd:	Ryuji Takeda (GlobalWafers Japan)/ Naoyuki Kawai (Self)
Discussion:	None.
Vote:	Result: 10-Y 0-N. **Motion Passed.**

Motion:	Approve the SNARF for Auxiliary Information for SEMI M95-0925, Test Method for Net Carrier Density and Resistivity of Silicon Epitaxial Layer by Capacitance-Voltage Measurements with an Evaporated Metal Schottky Diode.
By / 2nd:	Naoyuki Kawai (Self)/ Ryuji Takeda (GlobalWafers Japan)
Discussion:	None.
Vote:	Result: 10-Y 0-N. **Motion Passed.**

Motion:	Authorize Doc.#6570D, New Standard: Guide for Measuring Bulk Micro Defect Density and Denuded Zone Width in Annealed Silicon Wafers by a Laser-Scattering Tomography Technique, for Letter Ballot in Cycle 2, 2026 for review at the next Silicon Wafer Japan TC Chapter meeting.
By / 2nd:	Ryuji Takeda (GlobalWafers Japan)/ Satoshi Akiyama (Nanoverse Technologies)
Discussion:	None.
Vote:	Result: 9-Y 0-N. **Motion Passed.**

Attachment: 11_International_Japan Test Method TF meeting Dec 17 2025 rev01

12_STANDARDS NEW ACTIVITY REPORT FOR1 for M85_R2

13_SNARF for M095 Line-item Revision

14_SNARF for Auxiliary Information for SEMI M95

7.3 *International Advanced Automated Surface Inspection Task Force*

Kenji Oka (Hitachi High-Tech) reported for the International Advanced Automated Surface Inspection TF. Of notes:

- The TF is making steady progress toward establishing a unified AFM surface roughness measurement standard.
- The Round Robin test is nearly complete, and document drafting will begin soon. Standardization is expected to reduce cost and variability by aligning methods, conditions, and calibration practices across the industry.

Kurt Haller (KLH), another co-leader of the TF, made additional comments highlighting technical realities of AFM-based roughness measurement, especially the variability observed in the ongoing Round Robin test. He stressed the importance of establishing baseline guidance (rather than a strict test method), acknowledging current limitations while setting a foundation for future refinement. Then, he proposed the SNARF for New Standard: Guide for AFM

Roughness Measurement on Silicon Wafer Surfaces, noting that the TF had completed two weeks review of the SNARF by the global Silicon Wafer TC members.

Motion:	Approve the SNARF for New Standard: Guide for AFM Roughness Measurement on Silicon Wafer Surfaces.
By / 2nd:	Kurt Haller (KLH)/Tetsuya Nakai (SUMCO)
Discussion:	Hao Hu: Does this cover SOI wafer besides Epi silicon wafer? Kurt Haller: The SOI wafer is not included, but the TF plans to cover if it's necessary.
Vote:	Result: 10-Y 0-N. **Motion Passed.**

Attachment: 15_ASI TF_Report_20251208

16_AFM SNARF

7.4 *International Polished Wafers Task Force*

Ryuji Takeda (GlobalWafers Japan) reported for the International Polished Wafers TF. Of notes:

- Doc.#7320, Revision to SEMI M1-0924, Specification for Polished Single Crystal Silicon Wafers passed ballot review at SEMICON West and now is pending for publication.
- The TF will discuss OSF/OISF terminology consistency and high-thickness specification issues as new business.

Attachment: 17_IPW TF Report_Semicon JPN_12December2025 Rev1_2

7.5 *International Epitaxial Wafers Task Force*

No report was provided by the International Epitaxial Wafers TF.

7.6 *International Annealed Wafers Task Force*

No report was provided by the International Annealed Wafers TF.

7.7 *International SOI Wafers Task Force*

Tetsuya Nakai (SUMCO) reported for the International SOI TF that they are working on Doc. #6583, New Standard: Specification for SOI Wafers for RF Device Applications. He also announced his resignation from the TF co-leader position.

7.8 *International Terminology Task Force*

Tetsuya Nakai (SUMCO) reported that there were no activities and also announced his resignation from the TF co-leader position.

8 Old Business

8.1 *Project Period Review*

There are no SNARFs to be expiring soon.

8.2 *5 Year Review Check*

- SEMI M90-0821, Test Method for Bulk Micro Defect Density and Denuded Zone Width in Annealed Silicon Wafers by Optical Microscopy After Preferential Etching
    - It was confirmed that the Int'l Test Method TF will review the document.

9 New Business

9.1 *Leadership Change*

Following years of dedicated work, Tetsuya Nakai (SUMCO) stepped down as TC co-chair ahead of his retirement from the company. He recommended Satoshi Akiyama (Nanoverse Technologies) as his successor for the TC co-chair role.

Motion:	Propose Satoshi Akiyama (Nanoverse Technologies) to be a co-chair of the Silicon Wafer Japan TC Chapter.
By / 2nd:	Ryuji Takeda (GlobalWafers Japan)/ Naoyuki Kawai (Self)
Discussion:	Confirmed well balanced TC co-chairs from equipment and materials categories.
Vote:	Result: 10-Y 0-N. **Motion Passed.**

Based on the above approval, a recommendation will be made to the JRSC to appoint Satoshi Akiyama as a co-chair of the Silicon Wafer Japan TC Chapter.

Staff Note: The co-chairs are appointed by the responsible RSC per Regulations 5.7.5.

10 Action Item Review

10.1 *Open Action Item*

Item #	*Assigned to*	*Details*
SW20240829-01	SEMI Staff	To have a training session of Connect@SEMI for TF leaders. → Open
SW20250829-01	Int'l Test Method TF	To submit M89 Line Item Revision Ballot for Cycle 8,2025. →Closed
SW20250829-02	SEMI Staff	To send SNARF for M85 Major Revision to Silicon Wafer Global TC members for 2 weeks review. →Closed
SW20250829-03	SEMI Staff	To request Int'l ASI TF to report their activities at TC Chapter meeting. →Closed

10.2 *New Action Item*

Item #	*Assigned to*	*Details*
SW20251218-01	Int'l Test Method TF	To submit M95 Line Item Revision Ballot for Cycle 2, 2026.
SW20251218-02	Int'l Test Method TF	To submit Doc.#6570D for Cycle 2, 2026.
SW20251218-03	Int'l AWG TF	To prepare SNARFs for Line Item Revision to SEMI M67 and M68.
SW20251218-04	SEMI Staff	To forward the ballot adjudication results of Doc.#7392 to the ISC A&R SC for procedural review.

11 Next Meeting and Adjournment

The next meeting is scheduled for Friday, April 17, 2026 1:00 PM – 4:00 PM JST at SEMI Japan, Tokyo, Japan and via Official Virtual TC Chapter Meeting (Hybrid). Refer to http://www.semi.org/standards for the current list of events.

Adjournment: 12:15 PM JST

Respectfully submitted by:

Akiko Yoshida
SEMI Japan
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Minutes tentatively approved by:

Tetsuya Nakai (SUMCO), Co-chair	January 9, 2026
Ryuji Takeda (GlobalWafers Japan), Co-chair	January 9, 2026

Table 14 Index of Available Attachments#1

Title	*Title*
01_Required Meeting Elements March 2024_J	10_AWG TF Japan Report_20251217
02_SW JA TC Minutes_20250829_R1	11_International_Japan Test Method TF meeting Dec 17 2025 rev01
03_EU SiW Liaison Report November 2025 2	12_STANDARDS NEW ACTIVITY REPORT FOR1 for M85_R2
04_NA Si Wafer TC Chapter Liaison Report Nov 2025	13_SNARF for M095 Line-item Revision
05_Staff Report_December 2025_R4	14_SNARF for Auxiliary Information for SEMI M95
06_7392_Ballot Review	15_ASI TF_Report_20251208
07_7395_Ballot Review	16_AFM SNARF
08_7396_Ballot Review	17_IPW TF Report_Semicon JPN_12December2025 Rev1_2
09_6570C_Ballot Review	

#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 Akiko Yoshida at the contact information above.