3D Packaging & Integration North America TC Chapter

Meeting Summary and Minutes

NA Standards Fall Meetings 2023
Thursday, November 9, 13:00–14:00 (Pacific) Hybrid
SEMI Global Headquarters, Milpitas, California, and via Official Virtual TC Chapter Meeting (OVTCCM)

TC Chapter Announcements

Next TC Chapter Meeting (tentative)

NA Standards Spring Meetings 2024
Thursday, March 28, 13:00 – 14:30 Pacific
SEMI Global Headquarters, Milpitas, California/USA

Table 1 Meeting Attendees

Co-Chairs: Bill Kerr (Evergreen Enhancement), Chris Moore (Consultant)
SEMI Staff: Laura Nguyen

Company	*Last*	*First*	*Company*	*Last*	*First*
American Semiconductor, Inc.	*Berg*	*Jack*	*Samsung Electronics Co., Ltd.*	*Dutta*	*Pavel*
Corning	*Schmidt*	*Ilona*	*Thermo Fisher Scientific*	*Biedrzycki*	*Mark*
Nordson SONOSCAN	*Martell*	*Steve*	*Wooptix*	*Gaudestad*	*Jan*
Retired	Takahashi	Mark	SEMI	Nguyen	Laura

Table 2 Leadership Changes

None

Table 3 Committee Structure Changes

None

Table 4 Ballot Results

Document #	*Document Title*	*Committee Action*
7101	Revision to SEMI 3D5-0314 (Reapproved 1218), Guide for Metrology Techniques to be Used in Measurement of Geometrical Parameters of Through-Silicon Vias (TSVs) in 3DS-IC Structures	**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 Activities Approved by the GCS between meetings of the TC Chapter

None

Table 6 Authorized Activities

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

None

Table 7 Authorized Ballots

#	*When*	*TF*	*Details*
7100	Cycle 1- or 2-2024	3DP&I Inspection and Metrology Task Force	Revision to SEMI 3D4-0915 (Reapproved 0222), Guide for Metrology for Measuring Thickness, Total Thickness Variation (TTV), Bow, Warp/Sori, and Flatness of Bonded Wafer Stacks

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

None

Table 12 Previous Meeting Action Items

Item #	*Assigned to*	*Details*
2022Nov#01	Steve Martell	Talk to Masahiro Tsuriya about new docs from the encapsulation task force and connect with Cristina Chu on the 3D panel standard. None of the standards affect 3D20. Completed.

1 Welcome, Reminders, and Introductions

Steve Martell (Nordson SONOSCAN) called the meeting to order at 13:05 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 (File name: Required Meeting Elements Nov 2022)

2 Review of Previous Meeting Minutes

The TC Chapter reviewed the minutes of the previous meeting.

Motion:	Approve the minutes as written.
By / 2nd:	By: Mark Biedrzycki / ThermoFisher Scientific Second: Mark Takahashi / retired
Discussion:	None.
Vote:	5-0 in favor. Motion passed.

Attachment: [2023West] 3DP&I NA TC Chapter Meeting Minutes FINAL

3 Liaison Reports

3.1 *3D Packaging & Integration Japan TC Chapter*

Laura Nguyen (SEMI HQ) reported for the Japan TC Chapter. Of note:

Meeting Information

- Last meeting: Tuesday, September 5, 2023, online via OVCTTM
- Next meeting: Friday, January 26, 2024, online via OVCTTM

Refer to the attachment for Org Chart

Ballot Results

Doc#	*Document Title*	*TC Chapter Action*
7019	Reapproval of SEMI G64-1118,Specification for Full-Plated Integrated Circuit Leadframes (Au, Ag, Cu, Ni, Pd/Ni, Pd)	Passed as balloted
7020	Reapproval of SEMI G94-0113 (Reapproved 1118) Specification for Coin-Stack Type Tape Frame Shipping Container for 300 mm Wafer	Passed as balloted

Task Force Highlights

- Five Years Review TF
  - Task Force activity period: Continues TF program
  - Meeting Frequency: As needed
  - Review Status:
    - 2 ballots were approved at 2023-Cy5. Sept-5 TC meeting will review these letters of ballots.
    - Completed all reviews for 2022-2023 documents
  - Next Step:
    - Will start the reviews next year.
  - Refer to the attachment for Five-Year list

- 3DS IC Bonded Layer Inspection Metrology TF
  - In the process of tested inspection ability study for bonded layer inspection of 2nd trial sample is undergoing at two measurement sites.
  - Also, under study whether current ID mark at each layer can be detectable through the inspection.
  - Draft version of guideline is under preparation.

- 3D Packaging & Integration Steering Group WG
    - Proposed to decide the direction of future activities by the next committee meeting.
    - Expects to call for the Steering Group members via SEMI newsletters and workshop.

- Panel Level Packaging (PLP) Glass Carrier TF
    - Ballot 6590, New Standard: Specification for Glass Carrier Characteristics for Panel Level Packaging (PLP) Applications
    - Published as 3D023-0721 in July 2021
    - Panel Level Packaging (PLP) Glass Carrier ID Marking TF established under Traceability TC

3DP&I Five-Year Review

Designation#	*Standard Title*	*Action By*	*Assigned to*
SEMI G94-0113	Specification for Coin-Stack Type Tape Frame Shipping Container for 300 mm Wafer	11/2023	3D Packaging & Integration 5 Year Review Task Force
SEMI G64-1118	Specification for Full-Plated Integrated Circuit Leadframes (Au, Ag, Cu, Ni, Pd/Ni, Pd)	11/2023	3D Packaging & Integration 5 Year Review Task Force

Staff Contact: Mami Nakajo, mnakajo@semi.org

Attachment: JA 3DP&I TC Chapter Liaison Report October 2023_r0_LNN

3.2 *3D Packaging & Integration Taiwan TC Chapter (no update)*

3.3 *SEMI Staff Report*

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

SEMI Global 2023 & 2024 Calendar of Events

- [2023] SEMICON Europa (Nov 14-17; Munich, Germany), SEMICON Japan (December 13-15; Tokyo)
- [2024] SEMICON Korea (Jan 31-Feb 2; Seoul, Korea), SEMICON China (Mar 20-22; Shanghai, China), SEMICON SEA (May 28-30; Kuala Lumpur, Malaysia), SEMICON West (July 9-11; San Francisco, CA)

Upcoming NA Meetings

- NA Standards Spring Meetings: March 25-28, 2024, at SEMI HQ, Milpitas, California/USA
- SEMICON West Standards Meetings: July 8-11, 2024, at Moscone Center, San Francisco, CA/USA

Critical Dates for SEMI Standards Ballots

- Cycle dates can be found here: http://www.semi.org/en/Standards/Ballots

Standards Publications Report

Cycle	*New*	*Revised*	*Reapproved*	*Withdrawn*
July 2023	0	5	1	0
August 2023	3	8	8	0
September 2023	3	14	11	0
October 2023	0	5	25	0

Total in portfolio – 1,085 (includes 335 Inactive Standards)

New Standards

Cycle	*Designation*	*Title*	*Committee*	*Region*
August 2023	SEMI P49 (Preliminary)	Specification for Experimental Curvilinear Multigon Extension to SEMI P39	Micropatterning	NA
August 2023	SEMI PV101	Guide for Scrap Judgement of Photovoltaic Modules in Building	Photovoltaic	CH
August 2023	SEMI D84	Test Method for Warm-Up Properties of Display Picture Quality	FPD – Metrology	JA
September 2023	SEMI F121	Guide for Evaluating Metrology for Particle Precursors in Ultrapure Water	Liquid Chemicals	NA
September 2023	SEMI C105	Guide for Trace Iron Analysis in High Purity 2-Propanol (IPA)	Process Chemicals	NA
September 2023	SEMI M93	Test Method for Quantifying Basal Plane Dislocation Density in 4H-SiC by X-Ray Diffraction Topography/Imaging	Compound Semiconductor Materials	EU

NEW! Online Balloting System

SVM – Addressing Critical Issues

- User Data Quality
    - Problem – User Data in SVM shows incorrect information
    - Cause – The SVM Login process has a separate User Database than the existing Online Ballot System and requires ongoing synchronization. Also affects https://connect.semi.org
    - Progress
        - Completed internal testing
        - Documentation and Training in development
    - Open Community Preview of the New Online Ballot System during Cycle 9, 2023
        - Committee Members to become familiar with new interface and provide feedback
    - Open New Online Ballot System for Live Ballot voting for Cycle 1, 2024
- Refer to the attachment for graphics

Five-Year Review

Designation #	Standard Title	Action By	Assigned to
SEMI 3D1-0519	Terminology for Through Silicon via Geometrical Metrology	05/2024	Inspection and Metrology
SEMI 3D21-1019	Guide for Describing Glass-Based Material for Use in 3DS-IC Process	10/2024	Bonded Wafer Stacks Task Force

Attachment: Staff Report Nov 2023 v3_3DPI

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 file name for each balloted document is provided under each ballot review section below.

4.1 Document # 7100, Revision to SEMI 3D4-0915 (Reapproved 0222), Guide for Metrology for Measuring Thickness, Total Thickness Variation (TTV), Bow, Warp/Sori, and Flatness of Bonded Wafer Stacks

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

Attachment: 7101_ProceduralReview

5 Subcommittee and Task Force Reports

5.1 *Panel Level Packaging (PLP) Panel Task Force – did not meet*

The PLP Panel TF did not meet at Fall 2023 Meetings. Of note, there are no planned meetings on the 2024 calendar. The TF leader continues to liaise with the PIC PLP activities to ensure both documents don't overlap and complement each other.

5.2 *3DP&I Inspection & Metrology and Bonded Wafer Stacks Task Force*

Task Force Leader Steve Martell (Nordson SONOSCAN) reported for both the 3DP&I Inspection & Metrology and 3DP&I Bonded Wafer Stacks Task Forces.

Of note, the TF will plan to ballot in Cycle 1 or 2, 2024, a revision for SEMI 3D4-0915 (Reapproved 0222), Guide for Metrology for Measuring Thickness, Total Thickness Variation (TTV), Bow, Warp/Sori, and Flatness of Bonded Wafer Stacks.

Motion:	Authorize the Document 7100 for Letter Ballot in Cycle 1 or 2-24: Revision to SEMI 3D4-0915 (Reapproved 0222), Guide for Metrology for Measuring Thickness, Total Thickness Variation (TTV), Bow, Warp/Sori, and Flatness of Bonded Wafer Stacks
By / 2nd:	By: Mark Biedrzycki / ThermoFisher Scientific Second: Mark Takahashi / retired
Discussion:	None.
Vote:	5-0 in favor. Motion passed.

6 Old Business

None

7 New Business

None

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 meeting is tentatively scheduled for the week of March 25-28, in conjunction with SEMI Standards NA Spring Meetings 2024. Schedule details TBD. Please check www.semi.org/standards for updates.

Tentative Schedule:

- Thursday, March 28, 2024
    - TBD, Panel Level Packaging (PLP) Panel TF
    - 11:00-12:00, Joint 3DP&I Bonded Wafer Stacks Task Force, and 3DP&I Inspection & Metrology Task Force
    - 13:00-14:30, 3DP&I NA TC Chapter

Adjournment: 13:53.

Respectfully submitted by:

Laura Nguyen

Sr. Coordinator, International Standards

SEMI Global Headquarters

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Minutes tentatively approved by:

Bill Kerr (Evergreen Enhancement), Co-chair	<Date approved>
Chris Moore (Consultant), Co-chair	<Date approved>

Minutes approved by: **3DP&I NA OVTCCM on XXXX.**

Table 13 Index of Available Attachments[#1]

Title	*Title*
SEMI Standards Required Elements	Staff Report Nov 2023 v3_3DPI
[2023West] 3DP&I NA TC Chapter Meeting Minutes FINAL	7101_ProceduralReview
JA 3DP&I TC Chapter Liaison Report October 2023_r0_LNN	

#3 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.