3D Packaging & Integration Taiwan TC Chapter

Meeting Summary and Minutes

Taiwan Summer Standards Meeting 2021

Friday, Aug. 13, 2021, 13:30 – 15:30

OVTCCM

TC Chapter Announcements

Next TC Chapter Meeting

Friday, March 4, 2022, 13:30 – 15:30

SEMI Taiwan office(Hybrid)

Table 1 Meeting Attendees

Italics indicate virtual participants

Co-Chairs: Wendy Chen (KYEC)
SEMI Staff: Cher Wu, ULA Huang, Ada Tai

Company	*Last*	*First*	*Company*	*Last*	*First*
ASE Group	*Hwang*	*Roger*	*ITRI*	*Lee*	*Li-Heng*
EVERLIGHT CHEMICAL	*Chou*	*Der-Gun*	*ITRI*	*Chang*	*Hsiang-Hung*
FLAGSHIP INTERNATIONAL	*Tuan*	*Andy*	*ITRI*	*Lin*	*Wang-Hua*
IST Group	*Hung*	*Ray*	*ITRI*	*Wang*	*Jeffrey*
ITRI	*Chen*	*Arthur*	*SPIL*	*Su*	*James*
ITRI	*Chen*	*Chang-Sheng*			
ITRI	*Chen*	*Shang-Chun*			

Table 2 Leadership Changes

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

Table 3 Committee 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*
None		

#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

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

Table 6 Authorized Activities

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

#	*Type*	*SC/TF/WG*	*Details*
TBD	SNARF	Testing Task Force	Line Item Revision to SEMI 3D14-0615 Guide for Incoming/Outgoing Quality control and Testing Flow for 3DSIC Products
TBD	SNARF	Middle End Process Task Force	Reapproval of SEMI 3D15-0316 Guide for Overlay Performance Assessment for 3DS-IC Process.

#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*	*TF*	*Details*
TBD	Cycle 7-8, 2021	Testing Task Force	Line Item Revision to SEMI 3D14-0615 Guide for Incoming/Outgoing Quality control and Testing Flow for 3DSIC Products
TBD	Cycle 7-8, 2021	Middle End Process Task Force	Reapproval of SEMI 3D15-0316 Guide for Overlay Performance Assessment for 3DS-IC Process.

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

#	*TF*	*Title*	*Expiration Date*
None			

Table 9 SNARF(s) Abolished

#	*TF*	*Title*
None		

Table 10 Standard(s) to receive Inactive Status

Standard Designation	*Title*
None	

Table 11 New Action Items

Item #	*Assigned to*	*Details*
1	Middle End Process TF leader Hsiang Hung Chang	

Table 12 Previous Meeting Action Items

Item #	*Assigned to*	*Details*
1.	SEMI Staff-Cher	To invite TSMC to participate in the next TC meeting and share._ **Closed**
2.	Middle End Process TF leaders	Assign to 2 TF Leaders to call member meeting to study Japan team's presentation materials. _Closed

1. Welcome, Reminders, and Introductions

Committee Wendy Chen(KYEC) called the meeting to order at 13:30. The meeting reminders on antitrust issues, intellectual property issues and holding meetings with international attendance reviewed. Attendees introduced themselves.

Attachment: Required Element Nov 2020

2. Review of Previous Meeting Minutes

The TC Chapter reviewed the minutes of the previous meeting.

Motion: Approve previous meeting minute
By / 2nd: Chao-Chang Arthur CHEN (ITRI) / Roger Hwang(ASE)
Discussion: After review, all TC members agreed to approve it
Vote: 7-0 in favor, Motion passed

Attachment: 20210302_3D PI Meeting Minutes v4

3. Liaison Reports

3.1 3D Packaging & Integration North America TC Chapter

Cher Wu (SEMI) reported for the 3D Packaging & Integration North America TC Chapter. Of note:

- Summer Meeting 2021, Thursday, July 15, 2021, via OVTCCM
- Next TC meeting : SEMICON West 2021, schedule TBD

3.1.1 Ballot Results

Doc #	Document Title	TC Chapter Action
R6641	Revision to SEMI 3D8-0514, Guide for Describing Silicon Wafers for Use as 300 mm Carrier Wafers in a 3DS-IC Temporary Bond-Debond (TBDB) Process	Passed, A&R Cycle 7-2021
6810	Reapproval of SEMI 3D13-0715, Guide for Measuring Voids in Bonded Wafer Stacks	Passed, as balloted

6811	Reapproval of SEMI 3D2-0216, Specification for Glass Carrier Wafers for 3DS-IC Applications	Passed, as balloted
6812	Reapproval of SEMI 3D4-0915, Guide for Metrology for Measuring Thickness, Total Thickness Variation (TTV), Bow, Warp/Sori, and Flatness of Bonded Wafer Stacks	Passed, as balloted
SEMI 3D13	SEMI 3D13-0715, Guide for Measuring Voids in Bonded Wafer Stacks (Editorial Changes Type 2)	Passed, to be submitted to ISC A&R SC
SEMI 3D2	SEMI 3D2-0216, Specification for Glass Carrier Wafers for 3DS-IC Applications (Editorial Changes Type 2)	Passed, to be submitted to ISC A&R SC
SEMI 3D4	SEMI 3D4-0915, Guide for Metrology for Measuring Thickness, Total Thickness Variation (TTV), Bow, Warp/Sori, and Flatness of Bonded Wafer Stacks (Editorial Changes Type 2)	Passed, to be submitted to ISC A&R SC

#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.

3.1.2 Authorized Activities

Doc #	Type	SC/TF/CFG	Document Title/Details
6829	SNARF	Bonded Wafer Stacks TF	Line Item Revision to SEMI 3D16-1116, Specification for Glass Base Material for Semiconductor Packaging

Note 1: SNARFs and TFOFs are available for review on the SEMI Web site at:

http://downloads.semi.org/web/wstdsbal.nsf/TFOFSNARF

3.1.3 Authorized Ballots

Doc #	Type	SC/TF/CFG	Document Title/Details
6829	Cycle 6 or 7-2021	Bonded Wafer Stacks TF	Line Item Revision to SEMI 3D16-1116, Specification for Glass Base Material for Semiconductor Packaging

3.1.4 Taskforce Highlights

- Bonded Wafer Stacks TF and Inspection & Metrology TF met jointly
  - Reviewed Five-Year Review list and asked TC Chapter to authorize to ballot in Cycle 6 or 7-2021.
  - New topics for Fall 2021 meetings: cleaning of glass wafers, local flatness
- Panel Level Packaging (PLP) Panel TF
  - Reviewed SEMI 3D20, Specification for Panel Characteristics for Panel Level Packaging (PLP) Applications
    - TF met to discuss outcome of the SEMI 3D20 ballot
    - Target next TF meeting in 6-9 months
    - Will look at what optional parameters can be moved to Requirements section from Appendix 1

Attachment: NA 3DP&I Liaison Report July2021 v1

3.2 3D Packaging & Integration Japan TC Chapter

Cher Wu (SEMI) reported for the 3D Packaging & Integration Japan TC Chapter. Of note:

- Meeting information:

  Last meeting, Friday, May 28, 2021 at the SEMI Standards Japan Spring Meetings, Web Conference

- Next meeting, Friday, Oct. 22, 2021, SEMI Japan office, Tokyo, Web Conference

3.2.1 Committee Structure Changes

Previous WG/TF/SC Name	New WG/TF/SC Name or Status Change
Thin Chip Handling TF	Disband

3.2.2 Ballot Results

Doc #	Document Title	TC Chapter Action
6703	Revision to SEMI G63-95 (Reapproved 0811) “Test Method for Measurement of Die Shear Strength”	Failed due to insufficient rate and return to TF for rework

#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.

3.2.3. Activities Approved via GCS between Meetings

Doc #	Type	SC/TF/CFG	Title/Details
None			

3.2.4 Authorized Activities

Doc #	Type	SC/TF/CFG	Document Title/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

3.2.4 Other Activities Outside the Letter Ballot Process : None

3.2.5 Authorized Ballots

Doc #	When	TF	Document Title/Details
6703A	Cycle 8/9-2021	3D Packaging & Integration 5 Year Review TF	Revision to SEMI G63-95 (Reapproved 0811) “Test Method for Measurement of Die Shear Strength”

3.2.6 Task Force Highlights

- Encapsulation Characteristics for Wafer Level Package and Panel Level Packaging TF

  -Taskforce Kick-off: November 18, 2020

  -Under development of standard document drafts for 8 encapsulate materials characteristics and 3 items for performances

  -SNARFs approval requests for 8 material characteristics

  -Ballot6706,6707,6708,6709,6710,6711,6712

  -Plan to develop final ballot draft by the end of Q3.

- Panel Level Packaging (PLP) Glass Carrier TF

  -Reviewed ballot 6590, New Standard: Specification for Glass Carrier Characteristics for Panel Level Packaging (PLP) Applications

- Five Years Review TF

  -Completed the review and submitted the ballots for 2020 required review documents.

  -Will start for 2021 review needed

- 3DS IC Bonded Layer Inspection Metrology TF

-Pre-trial using the SEMATECH sample was done by Aug. 2020.

-Detectable void size by the nominal frequency of the transducer was defined.

-A sample for the feasibility study was designed by Sept. 2020.

-Manufacturing the sample for the feasibility study is delayed due to COVID and equipment trouble.

- 3D Packaging & Integration Steering Group WG

-Continue to brainstorm the potential areas of SEMI Standard.

•Example: RDL Adhesion Strength Measurement/Metrology Proposal

-Share the taskforce activities progress

-Work on the joint discussion with TWN TC (held meeting on August 2020)

-Displayed 3 posters at SEMICON Japan 2020

Attachment: 20210625_3DPI-Japan_LiaisonR_v1.1

3.3 SEMI Staff Report

Cher Wu (SEMI) gave the SEMI Staff Report. Of note:

- SEMI Global 2021 Calendar of Events
- 2021 Critical Dates for SEMI Standards Ballots

Attachment: 3D P&I TC Staff Report 20210813

4 Ballot Review

NOTE 1: TC Chapter adjudication on ballots reviewed is detail 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 provided under each ballot review section below.

Doc #	*Document Title*	*TC Chapter Action*
None		

5 Subcommittee and Task Force Reports

5.1 Testing Task Force

Task Force Leaders Chang-Sheng Chen (ITRI) reported for this Task Force. Of note, during the task force meeting, the task force reviewed the CCC New Topic and 5 year review as below attachment.

The Task Force plans to hold a TF meeting next month. Please reach out to Cher Wu (SEMI) to get involved.

Attachment: Testing TF Report_20210813

5.2 Middle-End Process Task Force

Task Force Leader Mike Chang(ITRI) and WH Lin, (ITRI) reported for this Task Force. Of note, during the task force meeting, the task force reviewed the CMP Standard for hybrid bonding New Topic and 5 year review as below attachment.

Attachment: Middle End TF Repord_20210813

6 Old Business

6.1 Standards due for Five-Year Review

The committee reviewed the Standards due for Five-Year Review. The committee discussed these documents and decided to submit Reapproval Ballots and Line Item revision.

Motion: To approve SNARFs for Five-Year Review Reapproval for the following docs:

SEMI 3D15-0316 Guide for Overlay Performance Assessment for 3DS-IC Process.

And authorize for ballot in Cycle 7, or 8-2021.

By / 2nd: By: Roger Hwang / Advanced Semiconductor Engineering Inc. (ASE Group)

Second: Shang-Chun Chen / Industrial Technology Research Institute - ITRI

Discussion: None.

Vote: 10-0 in favor. Motion passed

Motion: To approve SNARFs for Five-Year Review Line item revision for the following docs:

SEMI 3D14-0615 Guide for Incoming/Outgoing Quality control and Testing Flow for 3DSIC Products

And authorize for ballot in Cycle 7, or 8-2021.

By / 2nd: By: Chao-Chang Arthur CHEN / National Taiwan University of Science and Technology

Second: Shang-Chun Chen / Industrial Technology Research Institute – ITRI

Discussion: None.

Vote: 10-0 in favor. Motion passed

7 New Business

7.1 Assign SEMI Staff to find more new members from TSMC/ASE/PTI as Dr. Kang has his own retire plan, will not perform TF member anymore. New more new blood.

8 Action Item Review

None

Next Meeting and Adjournment

The next meeting is scheduled on March 04, 2022 (13:30) at SEMI Taiwan Office(Hybrid).

See http://www.semi.org/standards-events for the current list of events.

Adjournment was at 15:30

Respectfully submitted by:

Cher Wu

Senior Executive Consultant

SEMI Taiwan

Phone: 886-3-560-1777 #510

Email: cherwu@semi.org

Minutes tentatively approved by:

Co-chair	*Date Approved*
Wendy Chen (KYEC)	2021/8/24

Table 13 Index of Available Attachments#1

Title	*Title*
1_ Required Element Nov 2020	5._ 3D P&I TC Staff Report 20210813
2_ 20210302_3D PI Meeting Minutes v4	6._ Testing TF Report_20210813
3._ NA 3DP&I Liaison Report July2021 v1	7._Middle End TF Repord_20210813
4_ 20210625_3DPI-Japan_LiaisonR_v1.1	

#1

#2 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.