Japan Silicon Wafer TC Chapter
Meeting Summary and Minutes

SEMI Japan Standards Spring 2014 Meetings
Thursday, March 6, 2014, 13:00-17:00
SEMI Japan, Tokyo, Japan

Next Committee Meeting
Thursday, June 12, 2014, 13:30-17:30
Japan Standards Summer Meetings 2014, SEMI Japan, Tokyo, Japan

Table 1 Meeting Attendees

Co-Chairs: Naoyuki Kawai (The University of Tokyo), Tetsuya Nakai (SUMCO)
SEMI Staff: Naoko Tejima (SEMI Japan)

Company	*Last*	*First*	*Company*	*Last*	*First*
Hitachi High Technologies	Ikota	Masami	Shimizu Consulting	Shimizu	Yasuhiro
Kuroda Precision Industries	Ito	Shinju	GlobalWafers Japan	Takeda	Ryuji
GlobalWafers Japan	Izunome	Koji	Takenaka Consulting	Takenaka	Takao
The University of Tokyo	Kawai	Naoyuki	-	Yoshise	Masanori
Cognex	Kawata	Masayuki	SEMI Japan	Collins	Junko
Kumai Consulting	Kumai	Sadao	SEMI Japan	Kanno	Hirofumi
Hitachi Kokusai Electric Inc.	Matsuda	Mitsuhiro	SEMI Japan	Tejima	Naoko
SUMCO	Nakai	Tetsuya			

** alphabetical order by last name*

Table 2 Leadership Changes

Group	*Previous Leader*	*New Leader*
International Epitaxial Wafers Task Force	Takao Takenaka (Consultant)	TBD

Table 3 Ballot Results

None

Table 4 Authorized Ballots

Document #	*When*	*SC/TF/WG*	*Details*
4844C	Cycle 3, 2014	Test Methods Task Force	Guide for the Measurement of Trace Metal Contamination on Silicon Wafer Surface by Inductively Coupled Plasma Mass Spectrometry

Table 5 Authorized Activities

Document #	*Type*	*SC/TF/WG*	*Details*
4844	Revised SNARF	Test Methods Task Force	Guide for the Measurement of Trace Metal Contamination on Silicon Wafer Surface by Inductively Coupled Plasma Mass Spectrometry

Note: SNARFs and TFOFs are available for review on the SEMI Web site at:
http://downloads.semi.org/web/wstdsbal.nsf/TFOFSNARF

Table 6 New Action Items

Item #	*Assigned to*	*Details*
SiW140306-01	Test Method TF	To finish drafting Doc. #4844C by April 11 to submit for Cycle 3, 2014.
SiW140306-02	SEMI Staff	To ask for some opinions about revision of SEMI M40, Guide for Measurement of Roughness of Planar Surfaces on Silicon Wafers, to Mr. Obara, the chair of the Compound Semiconductor Materials Committee.
SiW140306-03	Each member	To consider whether they can take on the role of the co-leader of the International Epitaxial Wafers TF in their company.
SiW140306-04	Co-chairs	To make a proposal about the relation between Doc. #5173D and SEMI M1 to the NA 3DS-IC Committee, working together the JA 3D-IC Study Group of the Packaging
SiW140306-05	SEMI Staff	To report the above discussion at JA 3D-IC Study Group on March 11.

1 Welcome, Reminders, and Introductions

Naoyuki Kawai, committee co-chair, called the meeting to order at 13:00. Self-introductions were made followed by the agenda review.

SEMI Staff, Hirofumi Kanno was transferred to the Customer Service Department as of March 1, and the tasks to the Silicon Wafer Committees were taken over by NAOKO TEJIMA.

2 Required Meeting Elements

The meeting reminders on program membership requirement, antitrust issues, intellectual property issues and international effective meeting guidelines, were reviewed by SEMI staff, Naoko Tejima.

3 Review of Previous Meeting Minutes

The committee reviewed the minutes of the previous meeting held on December 5, 2013.

Motion: To approve the minutes of the previous meeting as submitted.

By / 2nd: Tetsuya Nakai (SUMCO) / Sadao Kumai (Kumai Consulting)

Discussion: None.

Vote: 11 in favor and 0 opposed. **Motion passed.**

Attachment: 01_JA_SiW_Previous_Mtg_Minutes_140306

4 SEMI Staff Report

Naoko Tejima gave the SEMI staff report. This report included SEMI Global 2014 Calendar of Events, Global Standards Meeting Schedule, NA Standards Spring 2014 Meetings, 2014 Critical Dates for SEMI Standards Ballots, SEMI Standards Publication, A&R Ballot Review and Contact Information.

Attachment: 02_SEMI_Staff_Report_140306

5 Liaison Reports

5.1 *Japan Regional Standards Committee (JRSC)*

Naoyuki Kawai reported for the Japan Regional Standards Committee (JRSC) that there were no particular things should be reported.

5.2 *Global Coordinating Subcommittee (GCS)*

Tetsuya Nakai reported for the Global Coordinating Subcommittee (GCS).

- Ballot submission of Doc. #5069A "New Standard: Specification for 450 mm Wafer Shipping System" for Cycle 2 was approved by the Silicon Wafer and PI&C GCS.

5.3 *North America Silicon Wafer Committee*

Tetsuya Nakai reported for the North America Silicon Wafer Committee. This report included Meeting Information, Leadership, Organization Chart, Ballot Results, New SNARFs, Ballots approved for Cycle1-2014, Subcommittees & Task Forces Reports, and Contact Information.

Attachment: 03_NA_SiW_Report_February2014_140306

5.4 *Europe Silicon Wafer Committee*

No report was provided.

5.5 *JEITA Report*

Naoyuki Kawai reported for the JEITA activities. Of note:

- The SEMI and JEITA joint kick off meeting was held on January 31 with about 16-17 members, and transferring of JEITA Standards to SEMI Standards was discussed. Some of JEITA members will become to SEMI Standards Members and will work as the members of Test Methods TF from here on. (see: 6.7.4)

5.6 *JSPS Report*

Takao Takenaka reported for the JSPS that there were no particular things should be reported.

Attachment: 04_JSPS131212_140306

05_JSPS140117_140306

06_JSPS140210_140306

07_JSPS140303_140306

5.7 *Japan PV Committee*

No report was provided.

6 Subcommittee & Task Force Reports

6.1 *International Polished Wafer Task Force / International 450mm Wafer Task Force*

Masanori Yoshise reported for the International Polished Wafer Task Force and the International 450mm Wafer Task Force. Of note:

- The following 3 documents passed the committee review during SEMICON Japan 2013 and A&R SC review in January.
  - *Doc. #5500 "New Standard: Specifications for Polished Single Crystal Silicon Wafers for Gallium Nitride On Silicon Applications*"
    - ✓ The possibilities for 6 inch notched wafers and 6 & 8 inch wafers should be considered in future as new business
  - *Doc. #5653, "Line Item Revision of SEMI M1-1013, Specifications for Polished Single Crystal Silicon Wafers (Subj: To correct errors from previous ballot)"*
  - *Doc. #5605, "Line Item Revision to SEMI M1-1013, Specifications for Polished Single Crystal Silicon Wafers (Subj: Flatness/SFQR change for 16nm technology generation)"*
- The SNARF of *Doc. #5655 "Line Item Revision of SEMI M1-1013, Specifications for Polished Single Crystal Silicon Wafers, to update 450 mm wafers edge exclusion"* was withdrawn, and a new SNARF to cover both ballot *Doc. #5655* and *Doc. #5604, "Revision to SEMI M1-0413, Specification for Polished Single Crystal Silicon Wafer (Re: Addition of Notchless 450 mm Wafers)"* as a major revision will be submitted.

Attachment: 08_Polished_Wafer_&_450mm_Joint_Report_140306.

6.2 *International Epitaxial Wafers Task Force*

Takao Takenaka reported for the International Epitaxial Wafers Task Force. The Task Force currently has no activities. The Task Force will discuss about the followings which were proposed at the previous committee meeting as new business.

- Nanotopography measurement area.
- Removal of EDI code
- Expansion of M62 to include 16nm guide for 300mm & 450mm wafer diameter

6.3 *International Annealed Wafers Task Force*

No report was provided by the Task Force.

6.4 *International SOI Wafers Task Force*

Tetsuya Nakai reported for the International SOI Wafers Task Force. The Task Force meeting has not been held recently. Of note:

- The new SNARF about adjustment with SEMI M41 (Transfer from JEITA EM-3604A) will be submitted to NA Spring Meetings in April.

6.5 *International Terminology Task Force*

Tetsuya Nakai reported for the International Terminology Task Force. *Doc. #5664, "Line Item Revision to SEMI M59-0211, Terminology for Silicon Technology"* was submitted for Cycle 1, 2014.

6.6 *International Test Method Task Force*

Ryuji Takeda reported for the International Test Method Task Force. The Task Force meeting was held on February 27. Of note:

- *Doc. #5687, "Line Item Revision of SEMI M60-1113, Test Method for Time Dependent Dielectric Breakdown Characteristics of Amorphous SiO2 Films for Silicon Wafer Evaluation"* was submitted for Cycle 1 and the result was "Super clean".
- The draft document and the revised SNARF of *Doc. #4844C, "Guide for the Measurement of Trace Metal Contamination on Silicon Wafer Surface by Inductively Coupled Plasma Mass Spectrometry"* were reviewed. It was confirmed that it will be submitted for Cycle 3 or 4 with adjudication at SEMICON West
- The SNARF of the revision of SEMI MF1535-0707 Test Method for Carrier Recombination Lifetime in Silicon Wafers by Noncontact Measurement of Photoconductivity Decay by Microwave Reflectance, and the new document of "Guide" were reviewed. They will be discussed more at NA Spring Meetings.
- The line item 2 of *Doc. #5664, "Line Item Revision to SEMI M59-0211, Terminology for Silicon Technology"* was reviewed.

Attachment: 09_Mtg_Minutes_Int'l_Test_Method_TF_Feb27_140306

6.7 *Japan Test Method Task Force*

Ryuji Takeda reported for the Japan Test Methods Task Force. The Task Force meeting was held on February 27. Of note:

6.7.1 *GOI Working Group*

Doc. #5687, "Line Item Revision of SEMI M60-1113, Test Method for Time Dependent Dielectric Breakdown Characteristics of Amorphous SiO2 Films for Silicon Wafer Evaluation" was submitted for Cycle 1 and the result was "Super clean". It will be adjudicated at SEMICON West.

Attachment: 10_GOI-WG_Doc5687_Tally(140227)_140306

6.7.2 *Surface Chemical Analysis Working Group*

Working Group has been working for Doc. #4844 "Guide for the Measurement of Trace Metal Contamination on Silicon Wafer Surface by Inductively Coupled Plasma Mass Spectrometry".

Motion: To approve a revised SNARF for Doc.# 4844
By / 2nd: Ryuji Takeda (GlobalWafers Japan) / Takao Takenaka (Takenaka Consulting)
Discussion: None
Vote: 11 in favor and 0 opposed. **Motion passed.**

Motion: To submit Doc.# 4844C for Cycle 3.
By / 2nd: Ryuji Takeda (GlobalWafers Japan) / Takao Takenaka (Takenaka Consulting)
Discussion: None
Vote: 11 in favor and 0 opposed. **Motion passed.**

- Regarding "Method Blank" and "Detection Limit" items will be re-discussed after ballot cycle 3, for continuously improvement for the documents.

Action Item: Test Method Task Force to finish drafting Doc.#4844C by April 11 to submit for Cycle 3, 2014.

Attachment: 11_ICP-MS-WG_Doc4844C_140306
12_4844_SNARF(Rev_submitter)_140306

6.7.3 *Bulk Heavy Metal Analysis by Electrical Measurement Working Group Working Group*

Working Group has been discussing about the followings;

- The line item 2 of *Doc. #5664, "Line Item Revision to SEMI M59-0211, Terminology for Silicon Technology"*.
- The SNARF of the revision of SEMI MF1535-0707 Test Method for Carrier Recombination Lifetime in Silicon Wafers by Noncontact Measurement of Photoconductivity Decay by Microwave Reflectance, and the new document of "Guide".

NA Test Method TF proposed to revise SEMI M40 "Guide for Measurement of Roughness of Planar Surfaces on Silicon Wafers. This issue will be discussed at NA spring meeting.

Action Item: SEMI staff to ask for some opinions about revision of SEMI M40, Guide for Measurement of Roughness of Planar Surfaces on Silicon Wafers, to Mr. Obara, the chair of the Compound Committee.

Attachment: 13_M59_MF153_140306

6.7.4 *Transfer of JEITA Standards to SEMI Standards*

Transfer of JEITA Standards to SEMI Standards Kick Off meeting was held on January 31. JEITA activities were reported by JEITA and SEMI Standard Guideline was explained by SEMI.

Attachment: 14_20140131_Kick0off_Minute1_140306

6.8 *International 450mm Shipping Box Task Force / JA Shipping Box Task Force*

Yasuhiro Shimizu, Shimizu Consulting reported for the *International 450mm Shipping Box Task Force / JA Shipping Box Task Force*. The Task Force meeting was held on January 9. Of note:

- The Task Force has been working for *Doc. #5069A,"New Standard: Specification for 450 mm Wafer Shipping System"* and it is balloting for Cycle 2. The ballot result will be adjudicated at SEMI NA Spring meeting

Attachment: 15_Shipping_Box_TF_Report_140306

6.9 *International 450mm Wafer Task Force*

(See 6.1)

6.10 *International Advanced Wafer Geometry Task Force / Japan AWG Task Force*

Masanori Yoshise reported for the International Advanced Wafer Geometry Task Force / the Japan AWG Task Force. Of note:

- The Task Force has been working for *Doc. #5654," Line Item Revision to SEMI M49-0613, Guide for Specifying Geometry Measurement Systems for Silicon Wafers for the 130 nm to 16 nm Technology Generations"* and it is balloting for Cycle 2. The ballot result will be adjudicated at SEMICON West.
- SEMI M67, M68 and M70 are up for 5 year review next year.

Attachment: 16_AWG_TF_Report_140306

6.11 *International Advanced Surface Inspection Task Force*

Masami Ikoda reported for the International Advanced Surface Inspection Task Force. There were no particular progress should be reported since the previous committee meeting.

6.12 *Fiducial Mark Interoperabiltiy Task Force*

Tetsuya Nakai reported for the Fiducial Mark Interoperabiltiy Task Force. There were no particular progress should be reported since the previous committee meeting. If some proposal about Notch-free will be made at the NA Spring meetings, the activities will start.

7 Old Business

7.1 *Previous Meeting Action Items*

There were no action items at the previous meeting.

8 New Business

8.1 *Leadership change of the International Epitaxial Wafers TF*

Takao Takenaka/ stepped down as a co-leader of the TF, and the replacement is TBD. Until the replacement will be found, co-chairs acts for the co-leader.

Action Item: Each member to consider whether they can take on the role of the co-leader of the International Epitaxial Wafers TF in their company.

8.2 *About Doc.5173D issued from 3DS-IC Committee*

Tetsuya Nakai raised concern about Doc. #5173D "New Standard: Guide for Describing Silicon Wafers for Use in a 300 mm 3DS-IC" which was written by the Bonded Wafer Stack Task Force of the 3DS-IC Committee and it has been submitted for Cycle 2. Of note:

- This document seems to be the double standards, for example, the table 2 is almost same as the table of SEMI M1.
- If SEMI M1 would be revised, this document should be also revised and the 3DS-IC committee should take care of it.
- If the table of SEMI M1 should be referred, they should make the difference list between Silicon Wafer and 3DS-IC.
- In SPI TF's point of view, the current regulations do not restrict the double standard.
- The similar discussion was done at the JA 3D-IC Study Group of the Packaging Committee before.

Action Item: Co-chairs to make a proposal about the relation between Doc. #5173D and SEMI M1 to the NA 3DS-IC Committee, working together the JA 3D-IC Study Group of the Packaging Committee.

Action Item: SEMI Staff to report the above discussion at JA 3D-IC Study Group on March 11.

9 Action Item Review

9.1 *New Action Items*

Naoko Tejima reviewed the new action items. These can be found in the New Action Items table at the beginning of these minutes.

10 Next Meeting and Adjournment

The next meeting of the Japan Silicon Wafer Committee is scheduled for Thursday, June 12, 2014 13:30-17:30 ,SEMI Japan, Tokyo, Japan.

Respectfully submitted by:
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Minutes approved by:

Naoyuki Kawai (The University of Tokyo), Co-chair	April 14, 2014
Tetsuya Nakai (SUMCO), Co-chair	April 10, 2014

Table 7 Index of Available Attachments [#1]

#	*Title*
1	JA_SiW_Previous_Mtg_Minutes_140306
2	SEMI_Staff_Report_140306
3	NA_SiW_Report_February2014_140306
4	JSPS131212_140306
5	JSPS140117_140306
6	JSPS140210_140306
7	JSPS140303_140306
8	Polished_Wafer_&_450mm_Joint_Report_140306
9	Mtg_Minutes_Int'l_Test_Method_TF_Feb27_140306
10	GOI-WG_Doc5687_Tally(140227)_140306
11	ICP-MS-WG_Doc4844C_140306
12	4844_SNARF(Rev_submitter)_140306
13	M59_MF153_140306
14	20140131_Kick0off_Minute1_140306
15	Shipping_Box_TF_Report_140306
16	AWG_TF_Report_140306

#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 Naoko Tejima at the contact information above.