Japan Silicon Wafer TC Chapter Meeting Summary and Minutes

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

Next Committee Meeting
Thursday, September 11, 2014, 13:30-17:30
Japan Standards Fall 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)

<table>
<thead>
<tr>
<th>Company</th>
<th>Last</th>
<th>First</th>
<th>Company</th>
<th>Last</th>
<th>First</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hitachi High Technologies</td>
<td>Ikota</td>
<td>Masami</td>
<td>Kuroda Precision Industries</td>
<td>Naoi</td>
<td>Kaoru</td>
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<td>Global Wafers Japan</td>
<td>Izunome</td>
<td>Koji</td>
<td>HST Vision</td>
<td>Sasaki</td>
<td>Kunihiko</td>
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<tr>
<td>The University of Tokyo</td>
<td>Kawai</td>
<td>Naoyuki</td>
<td>Global Wafers Japan</td>
<td>Takeda</td>
<td>Ryuji</td>
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<tr>
<td>Kumai Consulting</td>
<td>Kumai</td>
<td>Sadao</td>
<td>-(Telecon)</td>
<td>Yoshise</td>
<td>Masanori</td>
</tr>
<tr>
<td><em>STD</em> Precision Industrial (Telecon)</td>
<td>Leo</td>
<td>Lu</td>
<td>Acteon</td>
<td>Komatsu</td>
<td>Shoji</td>
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<tr>
<td>SUMCO</td>
<td>Nakai</td>
<td>Tetsuya</td>
<td>SEMI Japan</td>
<td>Tejima</td>
<td>Naoko</td>
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<tr>
<td>Miraial</td>
<td>Nagashima</td>
<td>Tsuyoshi</td>
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</table>

* alphabetical order by last name

Table 2 Leadership Changes

<table>
<thead>
<tr>
<th>Group</th>
<th>Previous Leader</th>
<th>New Leader</th>
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</thead>
<tbody>
<tr>
<td>Int’l Epitaxial Wafers Task Force</td>
<td>Takao Takenaka (Consultant)</td>
<td>Naohisa Toda (Shin-Etsu Handotai)</td>
</tr>
<tr>
<td>Int’l 450mm Shipping Box Task Force</td>
<td>Yasuhiro Shimizu (Shimizu Consulting)</td>
<td>TBD</td>
</tr>
<tr>
<td>JA Shipping Box Task Force</td>
<td>Yasuhiro Shimizu (Shimizu Consulting)</td>
<td>TBD</td>
</tr>
</tbody>
</table>

Table 3 Ballot Results

None

Table 4 Authorized Ballots

None
### Table 5 Authorized Activities

<table>
<thead>
<tr>
<th>Document #</th>
<th>Type</th>
<th>SC/TF/WG</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>5736</td>
<td>SNARF</td>
<td>Int’l SOI Wafers Task  Force</td>
<td>Line Item Revision to M41-1213 Specification of Silicon-on-Insulator (SOI) for Power Device/ICs</td>
</tr>
<tr>
<td>5737</td>
<td>SNARF</td>
<td>JA Test Method Task Force</td>
<td>Revision of SEMI MF1391-1107, Test method for substitutional atomic carbon content of silicon by infrared absorption</td>
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</table>

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

<table>
<thead>
<tr>
<th>Item #</th>
<th>Assigned to</th>
<th>Details</th>
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<tbody>
<tr>
<td>SiW140306-02</td>
<td>SEMI Staff</td>
<td>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.</td>
</tr>
<tr>
<td>SiW140612-01</td>
<td>Koji Araki</td>
<td>To check the status of M57 (What means “Reviewing new version of M57” in TF report of Liaison Report?) to the International Annealed Wafer TF.</td>
</tr>
<tr>
<td>SiW140612-02</td>
<td>SEMI Staff</td>
<td>To check how to make the TF report of Liaison Report. Should it be included “International” topics or should it be included only the specific topics to the own region?</td>
</tr>
<tr>
<td>SiW140612-03</td>
<td>Co-Chairs</td>
<td>To discuss about the operation of Internationals Task Force and Regional Task Force at the GCS.</td>
</tr>
<tr>
<td>SiW140612-04</td>
<td>SEMI Staff</td>
<td>To send the list showing the relation between with document 5173E and the existing standards (M1, M57, M62, M71) made by Naoyuki Kawai.</td>
</tr>
</tbody>
</table>

1 Welcome, Reminders, and Introductions

Naoyuki Kawai, committee co-chair, called the meeting to order at 13:30. Self-introductions were made followed by the agenda review.

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 March 6, 2014.

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

**By / 2nd:** Tetsuya Nakai (SUMCO) / Ryuji Takeda (GlobalWafers Japan)

**Discussion:** None.

**Vote:** 7 in favor and 0 opposed. **Motion passed.**

**Attachment:** 01_JA_SiW_Previous_Mtg_Minutes_140612

4 SEMI Staff Report


**Attachment:** 02_SEMI_Staff_Report_140612
5 Liaison Reports

5.1 International 450mm Shipping Box Task Force / JA Shipping Box Task Force (See at 6.8)

5.2 Japan Regional Standards Committee (JRSC)

Naoyuki Kawai reported for the Japan Regional Standards Committee (JRSC). Of note:

- “Task Force Operation Guideline” was proposed by SEMI staff and approved.
- This “Task Force Operation Guideline” will be proposed at the next ISC.

Attachment: 03_TF_Operation_Guideline_140612

5.3 Global Coordinating Subcommittee (GCS)

Tetsuya Nakai reported for the Global Coordinating Subcommittee (GCS) that there were no particular things should be reported.

5.4 North America Silicon Wafer Committee

Naoko Tejima reported for the North America Silicon Wafer Committee. This report included Meeting Information, Leadership, Organization Chart, Ballot Results, TFOF Changes, New SNARFs, Ballots approved for Cycle 3 & 4, 2014, Task Forces Reports, and Contact Information.

- Regarding the report from International Annealed Wafer TF, it has not been reported that the revising activities of M57-0414, Specifications for Silicon Annealed Wafers, has started.
- International Task Force activities and NA Task Force activities tend to be mixed up. It should be distinguished.

Action Item: Koji Araki to check the status of M57 (What means “Reviewing new version of M57” in TF report of Liaison Report?) to the International Annealed Wafer TF.

Action Item: SEMI to check how to make the TF report of Liaison Report. Should it be included “International” topics? or should it be included only the specific topics to the own region?

Action Item: Co-Chairs to discuss about the operation of Internationals Task Force and Regional Task Force at the GCS.

Attachment: 04_NA_SiW_Report_June2014_140612

5.5 Europe Silicon Wafer Committee

Naoko Tejima reported for the Europe Silicon Wafer Committee. This report included Meeting Information, Leadership Changes, Ballot Results, New SNARFs, Ballots approved for Cycle 7, 2013, Task Forces Reports and Contact Information.

Attachment: 05_EU_SiW_Report_June2014_140612

5.6 JEITA Report

Naoyuki Kawai reported for the JEITA activities. Of note:

- The previous JEITA meeting was held in March.
- They started transfer the JEITA Standards to SEMI Standards cooperating with SEMI JA Test Method TF intensively.
- They also discuss about transfer JIS Standard to JSMM Standards, however, they also must discuss with METI.

5.7 JSPS Report

No report was provided.

5.8 Japan PV Committee

No report was provided.
5.9 Japan Packaging Committee

No report was provided.

6 Subcommittee & Task Force Reports

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

Koji Izunome, reported for the International Polished Wafer Task Force and the International 450mm Wafer Task Force. Of note:

- The following documents were submitted for Cycle 4 and will be reviewed at the NA SiW TC Chapter meeting on July 8 during SEMICON West.
  - Doc. #5604, Line Item Revision to SEMI M1-0414 Specifications for Polished Single Crystal Silicon Wafers and SEMI M20-1110 Practice for Establishing a Wafer Coordinate System
  - Doc. #5701, Line Item Revision to SEMI M1-0414 Specifications for Polished Single Crystal Silicon Wafers

Attachment: 06_IPW_TF_Report_140612

6.2 International Epitaxial Wafers Task Force

Sadao Kumai, reported for the Epitaxial Wafers Task Force. Of note:

- At the previous meeting, Takao Takenaka, stepped down the co-leaders’ position. As the new co-leader, Naohisa Toda, Shinetsu Handotai, was recommended.

Motion: To approve Naohisa Toda, Shinetsu Handotai, as the co-leader of Epitaxial Wafers Task Force.
By / 2nd: Sadao Kumai (Kumai Consulting) / Tetsuya Nakai (SUMCO)
Discussion: None.
Vote: 7 in favor and 0 opposed. Motion passed.

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 of revision to SEMI M41 (Transfer from JEITA EM-3604A) was submitted and the document contents will be reviewed at SEMICON West.

Motion: To approve a new SNARF for “Line Item Revision to M41-1213 Specification of Silicon-on-Insulator (SOI) for Power Device/ICs”
By / 2nd: Tetsuya Nakai (SUMCO) / Koji Izunome (GlobalWafers Japan)
Discussion: None.
Vote: 7 in favor and 0 opposed. Motion passed.
Attachment: 07_SOI_TF_Report_140612
Attachment: 08_SOI_SNARF_M41_140612

6.5 International Terminology Task Force

No reported was provided.
6.6 International Test Method Task Force

Ryuji Takeda reported for the International Test Method Task Force. The Task Force meeting was held on June 6. Of note:

- Doc. #4844C, “Guide for the Measurement of Trace Metal Contamination on Silicon Wafer Surface by Inductively Coupled Plasma Mass Spectrometry” which was submitted for Cycle 3 was reviewed. The result was no reject and one accept with comment. It will be adjudicated at SEMICON West.
- The new SNARF for “Revision of SEMI MF1391-1107, Test method for substitutional atomic carbon content of silicon by infrared absorption” was submitted. This document was already discussed with NA Test Method Task Force and will be supported by them.

Motion: To approve a new SNARF for “Revision of SEMI MF1391-1107, Test method for substitutional atomic carbon content of silicon by infrared absorption”

By / 2nd: Ryuji Takeda (GlobalWafers Japan) / Tetsuya Nakai (SUMCO)

Discussion: None.

Vote: 7 in favor and 0 opposed. Motion passed.

Attachment: 09_Intl_Test_Method_TF_Mtg_Minutes_140612

6.7 Japan Test Method Task Force

Ryuji Takeda reported for the Japan Test Methods Task Force. The Task Force meeting was held on June 6. Of note:

- The lifetime and M59 issues will be discussed at the telephone meeting on June 19.

Attachment: 10_Progress_of_JA_Test_Method_TF_140612
Attachment: 11_JA_Test_Method_TF_Mtg_Minutes_140612
Attachment: 12_Test_Method_SNARF_MF1391_140612

6.8 International 450mm Shipping Box Task Force / JA Shipping Box Task Force (actually reported at 5.1)

Shoji Komatsu reported for the International 450mm Shipping Box Task Force / JA Shipping Box Task Force. Of note:

- Yasuhiro Shimizu stepped down the leader position of both the International 450mm Shipping Box TF and JA Shipping Box TF.
- Doc. #5069A, “New Standard: Specification for 450 mm Wafer Shipping System” was submitted for Cycle 2 and it failed at SEMI NA Spring meeting. TF is working for Doc. #5069B.
- TF started to develop for a new standard: Specification for 450 mm Wafer Shipping System.

Attachment: 13_Shipping_Box_TF_Report_140612

6.9 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:

- Doc. #5539, Revision to SEMI MF1390-0707 (Reapproved 0512) with Title Change To: Test Method for Measuring Bow and Warp on Silicon Wafers by Automated Noncontact Scanning, was submitted for Cycle 3 and will be reviewed at the NA SiW TC Chapter meeting on July 8 during SEMICON West.
- Start to work for SNARF 5702 Revision M68, Line item for ZDD calculation about edge area.
- SEMI M43 (Doc. 5704), M67 (Doc. 5705) and M70 (Doc. 5706) are up for 5 year review.
- Masanori Yoshise introduced the proposal about Exclusion Windows for M49 and it will be proposed as New Business at SEMICON West meeting.

Attachment: 14_AWG_TF_Report_140612
6.10 International Advanced Surface Inspection Task Force

Masami Ikoda reported for the International Advanced Surface Inspection Task Force. Of note:

- Doc. #5663, Reapproval of SEMI M58-1109, Test Method for Evaluating DMA Based Particle Deposition Systems and Processes, passed committee review and audit & review, and it will be published soon. (was published as 0614)
- Doc. #5662, Revision of SEMI M35-1107, Guide for Developing Specifications for Silicon Wafer Surface Features Detected by Automated Inspection, was submitted for Cycle 3 and reviewed at SEMICON West meeting.
- ME 1392-1109, Guide for Angle Resolved Optical Scatter Measurements on Specular or Diffuse Surfaces, will be discussed whether will be reapproved or reviewed at SEMICON West meeting, getting support of HB-LED Committee and 3DS-IC Committee.
- M40-1109, Guide for Measurement of Toughness of Planar Surfaces on Si Wafers, will be handled by International Test Method TF.

Attachment: 15_ASI_TF_Report_140612

6.11 Fiducial Mark Interoperability Task Force

Tetsuya Nakai reported for the Fiducial Mark Interoperability Task Force. The Task Force meeting was held on April 15. Of note:

- The TF discussed about the items which should be reflected to the Doc. #5604 (Line Item Revision to SEMI M1-0414 and SEMI M20-1110), and returned them to the International 450 mm Wafer TF and International Polished Wafer TF.

Attachment: 16_Fiducial_Mark_TF_140612

7 Old Business

7.1 Previous Meeting Action Items

Naoko Tejima reviewed the previous meeting action items.

<table>
<thead>
<tr>
<th>Item #</th>
<th>Assigned to</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>SiW140306-01</td>
<td>Test Method TF</td>
<td>To finish drafting Doc. #4844C by April 11 to submit for Cycle 3, 2014. … <strong>Close</strong></td>
</tr>
<tr>
<td>SiW140306-02</td>
<td>SEMI Staff</td>
<td>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. … <strong>Open</strong></td>
</tr>
<tr>
<td>SiW140306-03</td>
<td>Each member</td>
<td>To consider whether they can take on the role of the co-leader of the International Epitaxial Wafers TF in their company. … <strong>Close</strong></td>
</tr>
<tr>
<td>SiW140306-04</td>
<td>Co-chairs</td>
<td>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. … <strong>Close</strong></td>
</tr>
<tr>
<td>SiW140306-05</td>
<td>SEMI Staff</td>
<td>To report the above discussion at JA 3D-IC Study Group on March 11. … <strong>Close</strong></td>
</tr>
</tbody>
</table>

7.2 Supplemental Explanation about Old Business Item “SiW140306-04”

Naoyuki Kawai explained relation (different points and same points) between with document 5173E and the existing standards (M1, M57, M62, M71).

**Action Item:** SEMI to send the list showing the relation between with document 5173E and the existing standards (M1, M57, M62, M71) made by Naoyuki Kawai.
8 New Business

8.1 Meeting Schedule during SEMICON Japan 2014

- Event (Seminar, Workshop and so on) related to SiW JA TC Chapter will not be held this year.
- Meetings related to SiW JA TC Chapter are as follows:
  - 4 Task Forces will be held on Dec. 2, at SEMI Japan Office
  - 1 Task Force and TC Chapter will be held on Dec. 3, at Tokyo Big Sight

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, September 11, 2014 13:30-17:30, SEMI Japan, Tokyo, Japan.
Respectfully submitted by:
Naoko Tejima
Manager, Standards
SEMI Japan
Phone: +81.3.3222.5804
Email: ntejima@semi.org

Minutes approved by:
Naoyuki Kawai (The University of Tokyo), Co-chair August **, 2014
Tetsuya Nakai (SUMCO), Co-chair August **, 2014

Table 7 Index of Available Attachments

<table>
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<tr>
<th>#</th>
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<tr>
<td>1</td>
<td>JA_SiW_Previous_Mtg_Minutes_140612</td>
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<tr>
<td>2</td>
<td>SEMI_Staff_Report_140612</td>
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<td>3</td>
<td>TF_Operation_Guideline_140612</td>
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<td>NA_SiW_Report_June2014_140612</td>
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<td>16</td>
<td>Fiducial_Mark_TF_140612</td>
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</table>

#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.