

## Japan Silicon Wafer TC Chapter Meeting Summary and Minutes

SEMI Japan Standards Summer 2014 Meetings  
Thursday, September 11, 2014, 13:30-18:00  
SEMI Japan, Tokyo, Japan

### Next TC Chapter Meeting

Wednesday, December 3, 2014, 13:00-17:00  
SEMICON Japan 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)

<i>Company</i>	<i>Last</i>	<i>First</i>	<i>Company</i>	<i>Last</i>	<i>First</i>
Hitachi High Technologies	Ikota	Masami	Toshiba	Saito	Yoshihiko
The University of Tokyo	Kawai	Naoyuki	GlobalWafers Japan	Takeda	Ryuji
Acteon	Komatsu	Shoji	Takenaka Consulting	Takenaka	Takao
Kumai Consulting	Kumai	Sadao	Shinetsu-Handotai	Toda	Naohisa
Hitachi Kokusai Electric Inc.	Matsuda	Mitsuhiro	AIST	Yamamichi	Masaaki
SUMCO	Nakai	Tetsuya	-	Yoshise	Masanori
Miraial	Nagashima	Tsuyoshi	SEMI Japan	Tejima	Naoko
HST Vision	Sasaki	Kunihiko			

\* alphabetical order by last name

### Table 2 Leadership Changes

<i>Group</i>	<i>Previous Leader</i>	<i>New Leader</i>
Int'l 450mm Shipping Box Task Force (Approved by GCS of the Silicon Wafer and PIC on August 20)	Yasuhiro Shimizu (Shimizu Consulting)	Shoji Komatsu (Acteon)
JA Shipping Box Task Force	Yasuhiro Shimizu (Shimizu Consulting)	Tsuyoshi Nagashima (Miraial)

### Table 3 Ballot Results

None

### Table 4 Authorized Ballots

<i>Document #</i>	<i>When</i>	<i>SC/TF/WG</i>	<i>Details</i>
5771	Cycle 7, 2014	International 450mm Shipping Box TF	Revision to SEMI M80-0514, Mechanical Specification for Front-Opening Shipping Box used to Transport and Ship 450 mm Wafers with Title Change to Specification for Front-Opening Shipping Box used to Transport and Ship 450mm Wafers.

**Table 5 Authorized Activities**

<i>Document #</i>	<i>Type</i>	<i>SC/TF/WG</i>	<i>Details</i>
5769	SNARF	JA Test Method Task Force	New Standard: Test Method for Nitrogen Content in Silicon by Infrared Absorption
5770	SNARF	JA Test Method Task Force	New Standard: Test Methods for Bulk Micro Defect Density and Denuded Zone Width in Annealed Silicon Wafers
5771	SNARF	International 450mm Shipping Box TF	Revision to SEMI M80-0514, Mechanical Specification for Front-Opening Shipping Box used to Transport and Ship 450 mm Wafers with Title Change to Specification for Front-Opening Shipping Box used to Transport and Ship 450mm Wafers.
5772	SNARF	JA Test Method Task Force	Revision of MF391-0310: Test Methods for Minority Carrier Diffusion Length in Extrinsic Semiconductors by Measurement of Steady-state Surface photovoltage
5774	SNARF	JA Test Method Task Force	New Standard: Sample Preparation Method for Minority Carrier Diffusion Length Measurement in Silicon Wafers by Surface Photovoltage Method

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**

<i>Item #</i>	<i>Assigned to</i>	<i>Details</i>
SiW140911-01	International 450mm Shipping Box Task Force	To submit Doc.#5771 “Revision to SEMI M80-0514, Mechanical Specification for Front-Opening Shipping Box used to Transport and Ship 450 mm Wafers with Title Change to Specification for Front-Opening Shipping Box used to Transport and Ship 450mm Wafers.” for Cycle 7
SiW140911-02	All TF Leaders	To re-check the TF members name, company and contact.

### 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 June 12, 2014.

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

**By / 2<sup>nd</sup>:** Tetsuya Nakai (SUMCO) / Masanori Yoshise (-)

**Discussion:** None.

**Vote:** 12 in favor and 0 opposed. **Motion passed.**

**Attachment:** 01\_JA\_SiW\_Previous\_Mtg\_Minutes\_140911

#### 4 SEMI Staff Report

Naoko Tejima gave the SEMI staff report. This report included PV Automation TC Transformation to Automation Technology TC, New Task Force Operation Guideline, SEMI Global 2014 & 2015 Calendar of Events, Global Standards Meeting Schedule, SEMICON Europa 2014 Meetings, NA Fall Standards Meetings, SEMICON Japan 2014 Information, 2014 Critical Dates for SEMI Standards Ballots, SEMI Standards Publication, A&R Ballot Review and Contact Information.

**Attachment:** 02\_SEMI\_Staff\_Report\_140911

#### 5 Liaison Reports

##### 5.1 Japan Regional Standards Committee (JRSC)

Naoyuki Kawai reported for the Japan Regional Standards Committee (JRSC) on August 29. Of note:

- “Task Force Operation Guideline” was proposed by SEMI staff and approved.
- On behalf of SiW JA TC Chapter, Tetsuya Nakai was elected as a member of 2014 Candidates of the JRSC Award Selection Committee members.
- The meeting for exchange opinions about the future of standards activities between Osamu Nakamura, the New President of SEMI Japan, and JRSC members was held.
- Regulations are in the process of revising, and it will be effective at SEMCON Japan 2014.

##### 5.2 Global Coordinating Subcommittee (GCS)

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

- It was approved that Shoji Komatsu, Acteon takes up a post of the Task Force Leader of Int'l 450mm Shipping Box Task Force by GCS of the Silicon Wafer and PIC.

##### 5.3 North America Silicon Wafer Committee

Naoko Tejima reported for the North America Silicon Wafer Committee. This report included Meeting Information, Next Meetings, Leadership Changes, Ballot Results, New SNARFs, Ballots approved for next meetings, Task Forces Reports, and Contact Information.

**Attachment:** 03\_NA\_SiW\_Report\_Sep2014\_140911

##### 5.4 Europe Silicon Wafer Committee

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

**Attachment:** 04\_EU\_SiW\_Report\_June2014\_140911

##### 5.5 JEITA Report

Naoyuki Kawai reported for the JEITA activities. Of note:

- JEITA is requesting to METI to approve that the function of the secretariat office of JIS (Japanese Industrial Standards) will be transferred to JSNM (Japan Society of Newer Metals).
- JEITA is also discussing that all materials related to JIS and JEITA Standards will be transferred to AIST.

## 5.6 JSPS Report

Takao Takenaka reported for the JSPS activities. Of note:

- JSPS is working for writing the historical book “Technology Tradition” called “GIJYUTSU NO DENSHO”.
- JSPS committee meetings were held in February, May and July.
- “The 7<sup>th</sup> Forum on the Science and Technology of Silicon Materials 2014” will be held in Hamamatsu, and the registration is open.

**Attachment:** 05\_JSPS\_Report\_Sept11\_2014\_140911

**Attachment:** 06\_JSPS\_138th\_140911

**Attachment:** 07\_JSPS\_139th\_140911

**Attachment:** 08\_JSPS\_140th\_140911

**Attachment:** 09\_JSPS\_技術の伝承\_書籍目次\_140911

## 6 Subcommittee & Task Force Reports

### 6.1 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:

- Shoji Komatsu (Acteon) to take up a new co-leader of the International 450mm Shipping Box Task Force was approved by GCS of the Silicon Wafer and PIC on August 20
- Tsuyoshi Nagashima (Miraial) was appointed as a new co-leader of the Japan Shipping Box Task Force.
- A new SNARF was presented to the committee for approval.

**Motion:** To approve Tsuyoshi Nagashima to assume a co-leader’s position of the Japan Shipping Box Task Force.

**By / 2<sup>nd</sup>:** Shoji Komatsu (Acteon) / Tetsuya Nakai (SUMCO)

**Discussion:** None

**Vote:** 12 in favor and 0 opposed. **Motion passed.**

**Motion:** To approve a new SNARF for “*Revision to SEMI M80-0514, Mechanical Specification for Front-Opening Shipping Box used to Transport and Ship 450 mm Wafers with Title Change to Specification for Front-Opening Shipping Box used to Transport and Ship 450mm Wafers.*” (#5771)

**By / 2<sup>nd</sup>:** Shoji Komatsu (Acteon) / Tetsuya Nakai (SUMCO)

**Discussion:** None.

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

**Motion:** To approve to submit “*Revision to SEMI M80-0514, Mechanical Specification for Front-Opening Shipping Box used to Transport and Ship 450 mm Wafers with Title Change to Specification for Front-Opening Shipping Box used to Transport and Ship 450mm Wafers.*” (#5771) for Cycle 7.

**By / 2<sup>nd</sup>:** Shoji Komatsu (Acteon) / Tetsuya Nakai (SUMCO)

**Discussion:** None.

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

**Action Item:** International 450mm Shipping Box Task Force to submit Doc.#5771 “*Revision to SEMI M80-0514, Mechanical Specification for Front-Opening Shipping Box used to Transport and Ship 450 mm Wafers with Title Change to Specification for Front-Opening Shipping Box used to Transport and Ship 450mm Wafers.*” for Cycle 7.

**Attachment:** 10\_450mm SB-TF\_Report\_140911

**Attachment:** 11\_M80-0514\_Revsion\_SNARF\_140911

### 6.2 International Polished Wafer Task Force / International 450mm Wafer Task Force

No report was provided by the Task Force.

### 6.3 International Epitaxial Wafers Task Force

Naohisa Toda reported for the Epitaxial Wafers Task Force. Of note:

- TF compared the specification of Nanotopography between Epitaxial Wafers and Polished Wafers, and it was turned out that their site sizes are different. TF is checking why they are different to NA Epitaxial Wafers Task Force.
- TF is developing draft of M62-0514 revision to include 1) Specification guide for 16nm Technology node and 2) Other minor corrections and additions. Prior to the NA fall meeting on November 3, the JA TF will present their opinions to NA TF.

**Attachment:** 12\_Epi\_TF\_Report\_140911

### 6.4 International Annealed Wafers Task Force

No report was provided by the Task Force.

### 6.5 International SOI Wafers Task Force

Tetsuya Nakai reported for the International SOI Wafers Task Force. Of note:

- TF is working for Doc.5736 “Line Item Revision to M41-1213 Specification of Silicon-on-Insulator (SOI) for Power Device/ICs”. It will be submitted for approval for Cycle 7 at SEMICON Europa, and will be adjudicated at SEMICON Japan.

**Attachment:** 13\_SOI\_TF\_Report\_140911

### 6.6 International Terminology Task Force

Tetsuya Nakai reported for the International Terminology Task Force. The Task Force currently has no activities.

- Murray Bullis (Materials & Metrology) is stepping down of the TF co-leaders position. This information was brought for the first time by NA liaison report.
- When the TF thinks to need to add something to M59 as the new terminology, after the standards was published, the TF will request to include it to international Terminology TF accordingly.

### 6.7 International Test Method Task Force / Japan Test Method Task Force

Ryuji Takeda reported for the International Test Method Task Force. The Task Force meeting was held on September 5. Of note:

- Developing for Doc. #5737 “Revision of SEMI MF1391-1107, Test Method for Substitutional Atomic Carbon Content of Silicon by Infrared Absorption”. Some points should be revised were proposed by the NA TF.
- The following 4 new SNARFs were submitted.
- These documents will include reproduced copyrighted material and is only concerned with JEITA.

**Motion:** To approve a new SNARF for “*New Standard: Test Method for Nitrogen Content in Silicon by Infrared Absorption.*” (#5769)

**By / 2<sup>nd</sup>:** Ryuji Takeda (GlobalWafers Japan) / Takao Takenaka (Takenaka Consulting)

**Discussion:** None.

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

**Motion:** To approve a new SNARF for “*New Standard: Test Method for Bulk Micro Defect Density and Denuded Zone Width in Annealed Silicon Wafers*” (#5770)

**By / 2<sup>nd</sup>:** Ryuji Takeda (GlobalWafers Japan) / Takao Takenaka (Takenaka Consulting)

**Discussion:** None.

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

**Motion:** To approve a new SNARF for “*Revision of MF391-0310: Test Methods for Minority Carrier Diffusion Length in Extrinsic Semiconductors by Measurement of Steady-state Surface photovoltage*” (#5772)

**By / 2<sup>nd</sup>:** Ryuji Takeda (GlobalWafers Japan) / Takao Takenaka (Takenaka Consulting)

**Discussion:** None.

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

**Motion:** To approve a new SNARF for “*New Standard: Sample Preparation Method for Minority Carrier Diffusion Length Measurement in Silicon Wafers by Surface Photovoltage Method*” (#5774)

**By / 2<sup>nd</sup>:** Ryuji Takeda (GlobalWafers Japan) / Takao Takenaka (Takenaka Consulting)

**Discussion:** None.

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

**Attachment:** 14\_Progress\_of\_Japan\_TF\_with\_result\_140911

**Attachment:** 15\_Material\_for\_lifetime\_Japan\_TF\_140911

**Attachment:** 16\_SNARF\_New\_BMD\_140911

**Attachment:** 17\_SNARF\_NEW\_Nitrogen\_140911

**Attachment:** 18\_SNARF\_MF391-0310\_SPV\_Fe\_140911

**Attachment:** 19\_SNARF\_SPV\_140911

- TF will **request to** Metric Japan TC Chapter **about revision of SEMI E45 concern with Doc. #4844** New Standard: Guide for the Measurement of Trace Metal Contamination on Silicon Wafer Surface by Inductively Coupled Plasma Mass Spectrometry.

**Motion:** To **request to** Metric Japan TC Chapter **about revision of SEMI E45 concern with Doc. 4844.**

**By / 2<sup>nd</sup>:** Ryuji Takeda (GlobalWafers Japan) / Takao Takenaka (Takenaka Consulting)

**Discussion:** After 4844 will be published, TF will request it to Metrics Japan TC Chapter. The contents of letter will be left to the TF and Co-chairs’ discretion.

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

**Action Item:** TF to **request to** Metric Japan TC Chapter **about revision of SEMI E45 concern with Doc. 4844.**

**Attachment:** 20\_Letter\_for\_Metrics\_JA\_TC\_Chapter\_140911

#### 6.8 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.

- 2 presentations were made at the meeting during SEMICON West.
  - Monitoring Process-induced Wafer Distortions in Advanced CMOS nodes by Oleg Gluschenkov, IBM
  - Role of Process-Induced Wafer Geometry in Advanced Semiconductor Manufacturing by Kevin Turner of Univ. of Pennsylvania

**Attachment:** 21\_AWG\_TF\_Report\_140911  
**Attachment:** 22\_Japan\_Report\_Slip\_140911  
**Attachment:** 23\_Doc\_5654\_ballot\_results\_140911  
**Attachment:** 24\_AWG\_IBM\_Oleg\_Gluschenkov\_140911  
**Attachment:** 25\_Silicon\_Wafer\_Cycle\_5-14\_ballot\_results\_140911  
**Attachment:** 26\_SNARF\_Guide\_Areal\_Image\_Acquisition\_140911  
**Attachment:** 27\_Impact\_by\_Laser\_Mark\_Inscribe\_140911  
**Attachment:** 28\_LM\_exclusion\_draft\_for\_S-WEST\_140911

#### 6.9 International Advanced Surface Inspection Task Force

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

- *Doc. #5662, Revision of SEMI M35-1107, Guide for Developing Specifications for Silicon Wafer Surface Features Detected by Automated Inspection*, was passed committee review and A&R. It will be published soon.
- *ME 1392-1109* will be reapproved, since the HB-LED Committee and the 3DS-IC Committee does not offer any support.
- Hitachi-High Technologies and KLA will be present at the meeting at the SEMICON Europa.

#### 6.10 Fiducial Mark Interoperability Task Force

Mitsuhiro Matsuda reported for the Fiducial Mark Interoperability Task Force. Of note:

- The next TF meeting will be held on September 29 to review of revision draft of “SEMI T7-0709, Specification for Back Surface Marking of Double-Side Polished Wafers with a Two-Dimensional Matrix Code Symbol”.

## 7 Old Business

### 7.1 Previous Meeting Action Items

Naoko Tejima reviewed the previous meeting action items.

Item #	Assigned to	Details
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. ... <b>Close</b>
SiW140612-01	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.
SiW140612-02	SEMI Staff	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? ... <b>Close</b>
SiW140612-03	Co-Chairs	To discuss about the operation of Internationals Task Force and Regional Task Force at the GCS.... <b>Close</b>
SiW140612-04	SEMI Staff	To send the list showing the relation between with document 5173E and the existing standards (M1, M57, M62, M71) made by Naoyuki Kawai. ... <b>Close</b>

## 8 New Business

None.

## 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 Wednesday, December 3, 2014, 13:00-17:00, in conjunction with SEMICON Japan 2014, Tokyo, Big Site, Tokyo, Japan



Respectfully submitted by:  
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Minutes approved by:

Naoyuki Kawai (The University of Tokyo), Co-chair	September 28, 2014
Tetsuya Nakai (SUMCO), Co-chair	September 28, 2014

**Table 7 Index of Available Attachments #1**

#	Title
1	JA_SiW_Previous_Mtg_Minutes_140911
2	SEMI_Staff_Report_140911
3	NA_SiW_Report_Sep2014_140911
4	EU_SiW_Report_June2014_140911
5	JSPS_Report_Sept11_2014_140911
6	JSPS_138th_140911
7	JSPS_139th_140911
8	JSPS_140th_140911
9	JSPS_技術の伝承_書籍目次_140911
10	450mm_SB-TF_Report_140911
11	M80-0514_Revsion_SNARF_140911
12	Epi_TF_Report_140911
13	SOI_TF_Report_140911
14	Progress_of_Japan_TF_with_result_140911
15	Material_for_lifetime_Japan_TF_140911
16	SNARF_New_BMD_140911
17	SNARF_NEW_Nitrogen_140911
18	SNARF_MF391-0310_SPV_Fe_140911
19	SNARF_SPV_140911
20	Letter_for_Metrics_JA_TC_Chapter_140911
21	AWG_TF_Report_140911
22	Japan_Report_Slip_140911
23	Doc_5654_ballot_results_140911
24	AWG_IBM_Oleg_Gluschenkov_140911
25	Silicon_Wafer_Cycle_5-14_ballot_results_140911
26	SNARF_Guide_Areal_Image_Acquisition_140911
27	Impact_by_Laser_Mark_Inscribe_140911
28	LM_exclusion_draft_for_S-WEST_140911

#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](http://www.semi.org). For additional information or to obtain individual attachments, please contact Naoko Tejima at the contact information above.