

Japan Silicon Wafer TC Chapter Meeting Summary and Minutes

Standards Meeting during SEMICON Japan 2016

Thursday, December 15, 2016, 13:00-17:00

Tokyo Big Sight, Tokyo, Japan

Next TC Chapter Meeting

Friday, March 10, 2016, 14:00-17:00,

Meeting Room, SEMI Japan Office, Tokyo, Japan

Table 1 Meeting Attendees

Co-Chairs: Naoyuki Kawai (University of Tokyo), Tetsuya Nakai (SUMCO)

SEMI Staff: Junko Collins (SEMI Japan)

<i>Company</i>	<i>Last</i>	<i>First</i>	<i>Company</i>	<i>Last</i>	<i>First</i>
University of Tokyo	Kawai	Naoyuki	Global Wafers Japan	Takeda	Ryuji
SUMCO	Nakai	Tetsuya	Shin'Etsu-Handotai	Toda	Naohisa
Kumai Consulting	Kumai	Sadao	-	Yoshise	Masanori
Hitachi High Technologies	Ikota	Masami	Siltronic AG	Passek	Friedrich
Global Wafers Japan	Takamori	Yasutoshi	AIST	Yamamichi	Masaaki
Kuroda Precision Industries	Ito	Shinji	Meiji University	Ogura	Atsushi
			SEMI Japan	Collins	Junko

Table 2 Leadership Changes

No Leadership changes

Table 3 Ballot Results

Passed ballots and line items will be submitted to the ISC Audit & Review Subcommittee for procedural review.

Failed ballots and line items were returned to the originating task forces for re-work and re-balloting.

No ballot review

<i>Document #</i>	<i>Document Title</i>	<i>Committee Action</i>
6042	LINE ITEM REVISION OF SEMI MF1763-0706 (Reapproved 1111) TEST METHOD FOR MEASURING CONTRAST OF A LINEAR POLARIZER Line Item 1: Correct title and concomitant text	Failed
6043	LINE ITEM REVISION OF SEMI MF28-0707 (Reapproved 0912) TEST METHOD FOR MINORITY CARRIER LIFETIME IN BULK GERMANIUM AND SILICON BY MEASUREMENT OF PHOTOCONDUCTIVITY DECAY Line Item 1: Correct title and concomitant text	Passed as is
6044	LINE ITEM REVISION OF SEMI MF673-1014 TEST METHOD\$ FOR MEASURING RESISTIVITY OF SEMICONDUCTOR WAFERS OR SHEET RESISTANCE OF SEMICONDUCTOR FILMS WITH A NONCONTACT EDDY-CURRENT GAUGE Line Item 1: Correct title and concomitant text	Passed as is
6045	LINE ITEM REVISION OF SEMI MF928-1014 TEST METHOD\$ FOR EDGE CONTOUR OF CIRCULAR SEMICONDUCTOR WAFERS AND RIGID DISK SUBSTRATES Line Item 1: Correct title and concomitant text	Passed as is
6046	Line Item Revision to SEMI MF1982-0714 Test Methods For Analyzing Organic Contaminants On Silicon Wafer Surfaces By Thermal Desorption Gas Chromatography Line Item 1: Correct title and concomitant text	Passed as is
6047	Reapproval of SEMI MF728-1106 (Reapproved 1111) Practice for Preparing an Optical Microscope for Dimensional Measurements	Passed as is (Super Clean)
6048	Reapproval of SEMI MF978-1106 (Reapproved 1111)Test Method for Characterizing Semiconductor Deep Levels by Transient Capacitance Techniques	Passed as is (Super Clean)

Table 4 Authorized Ballots

No authorized ballot

<i>Document #</i>	<i>When</i>	<i>SC/TF/WG</i>	<i>Details</i>
5915	Cycle2 or 3	Int'l AWG	Line Item Revision to SEMI M1-0215, Addition to Related Information : Illustration of Flatness and Shape Metrics for Silicon Wafers

Table 5 Authorized Activities

No authorized activity

<i>Document #</i>	<i>Type</i>	<i>SC/TF/WG</i>	<i>Details</i>
TBD	SNARF	Int'l AWG	Line Item Revision to SEMI M1, MF-1390 and M 59, to be consistency among these three document for Bow Metrics and add illustration of Shape Metrics in M1

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>
SiW161215-01	Junko Collins	To check a mechanism how to maintain COT including its frequency and report it at the next TC Chapter meeting.
SiW161215-02	Tetsuya Nakai Junko Collins	To submit Doc. 5915 to ballot cycle 2 or 3 2017 To make sure the ballot review date of this ballot to NA responsible staff
SiW161215-03	Junko Collins	To make sure the meeting minutes of EU TC Chapter meeting during SEMICON EU 2016 and make responsible staff work on it if it is not
Action Items from Previous meetings		
none		



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.

2 Required Meeting Elements

The meeting reminders on program membership requirement, antitrust issues, intellectual property issues and international effective meeting guidelines, were reviewed by Junko Collins.

Attachment: Required_Elements_Reg_20150327_E+J_2016StdTemplate

3 Review of Previous Meeting Minutes

The committee reviewed the minutes of the previous meeting held on June 10, 2016.

Motion: To approve the minutes of the previous meeting.

By / 2nd: T. Nakai (SUMCO) / F. Passek (Siltronic AG)

Discussion: None

Vote: 8 in favor and 0 opposed. **Motion passed.**

4 SEMI Staff Report

Junko Collins gave the SEMI staff report. This report included Global SEMI Events, Global Standards Meetings Schedule, Ballot Critical Dates, Publication Update, A&R Ballot Review and Contact Information.

Of not, the meeting schedule during SEMICON Japan was reviewed and all participants agreed upon the attached schedule.

Attachment: SEMI Staff Report 20161211_v1.1

5 Liaison Reports

5.1 Japan Regional Standards Committee (JRSC)

Some high lights were included in the staff report and no other special report from the last JRSC meeting.

Attachment: None

5.2 Global Coordinating Subcommittee (GCS)

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

- GCS members held a meeting and suggested plan to remove terms out of M59, Terminology for Silicon Technology, and place them back to the original standards when they are due for 5 year review, also new idea to maintain terminology within COT.
- ✓ AI: Staff to check the mechanism how to maintain the COT including frequency and report it at the next meeting. .

Attachment: None

5.3 North America Silicon Wafer TC Chapter

No report since the North America Silicon Wafer TC Chapter did not have meeting during NA Fall Standards Meetings.

Attachment: none

5.4 Europe Silicon Wafer Committee

Europe Silicon Wafer TC Chapter liaison report was presented by F. Passek.

Please see details in the attachments.

Attachment: Europe Si Wafer Liaison Report Dec 2016 v2
Japan_Status_Si_Wafer_Dec_2016

5.5 JSNM Report

Masayoshi Yoshise (SEMI liaison member for M4S (Material Standards Study Group for Semiconductor Supply-Chain)) reported.

- Focusing Standardization for Evaluation Method of Material Characteristics.
- Activity: “Standardization for low carbon concentration in silicon by FT-IR measurement” Improve detection limit from 2×10^{15} atoms/cm³ to 1×10^{14} atoms/cm³
- Future plans for
 - “Standardization for low carbon concentration in silicon by PL method for 1×10^{13} atoms/cm³”
 - “Standardization for epitaxial layer resistivity”.

Attachment: None

6 Ballot Review

6.1 6042: *LINE ITEM REVISION OF SEMI MF1763-0706 (Reapproved 1111) TEST METHOD FOR MEASURING CONTRAST OF A LINEAR POLARIZER LII: Correct title and concomitant text*

Motion: Line item(s) 1 failed TC Chapter review and will be returned to the TF for rework.

By / 2nd: R. Takeda (GWJ) / T. Otsuki (SEH)

Discussion: None

Vote: 8 in favor and 0 opposed. **Motion passed.**

Attachment: 6042_Ballot report 20161215

6.2 6043: *LINE ITEM REVISION OF SEMI MF28-0707 (Reapproved 0912) TEST METHOD FOR MINORITY CARRIER LIFETIME IN BULK GERMANIUM AND SILICON BY MEASUREMENT OF PHOTOCONDUCTIVITY DECAY LII: Correct title and concomitant text*

Motion: Line item(s) 1 passed TC Chapter review as balloted and will be forwarded to the ISC A&R SC for procedural

By / 2nd: R. Takeda (GWJ) / T. Otsuki (SEH)

Discussion: None

Vote: 9 in favor and 0 opposed. **Motion passed.**

Attachment: 6043_Ballot report 20161215

6.3 6044: *LINE ITEM REVISION OF SEMI MF673-1014 TEST METHODS FOR MEASURING RESISTIVITY OF SEMICONDUCTOR WAFERS OR SHEET RESISTANCE OF SEMICONDUCTOR FILMS WITH A NONCONTACT EDDY-CURRENT GAUGE LII: Correct title and concomitant text*

Motion: Line item(s) 1 passed TC Chapter review as balloted and will be forwarded to the ISC A&R SC for procedural

By / 2nd: R. Takeda (GWJ) / T. Otsuki (SEH)

Discussion: None

Vote: 9 in favor and 0 opposed. **Motion passed.**

Attachment: 6044_Ballot report 20161215

6.4 6045: *LINE ITEM REVISION OF SEMI MF928-1014 TEST METHODS FOR EDGE CONTOUR OF CIRCULAR SEMICONDUCTOR WAFERS AND RIGID DISK SUBSTRATES LII: Correct title and concomitant text*

Motion: Line item(s) 1 passed TC Chapter review as balloted and will be forwarded to the ISC A&R SC for procedural

By / 2nd: R. Takeda (GWJ) / T. Otsuki (SEH)

Discussion: None

Vote: 8 in favor and 0 opposed. **Motion passed.**

Attachment: 6045_Ballot report 20161215

6.5 6046: *Line Item Revision to SEMI MF1982-0714 Test Methods For Analyzing Organic Contaminants On Silicon Wafer Surfaces By Thermal Desorption Gas Chromatography LII: Correct title and concomitant text*

Motion: Line item(s) 1 passed TC Chapter review as balloted and will be forwarded to the ISC A&R SC for procedural

By / 2nd: R. Takeda (GWJ) / T. Otsuki (SEH)

Discussion: None

Vote: 9 in favor and 0 opposed. **Motion passed.**

Attachment: 6046_Ballot report 20161215

6.6 6047: Reapproval of SEMI MF728-1106 (Reapproved 1111) Practice for Preparing an Optical Microscope for Dimensional Measurements

Motion: This Document passed TC Chapter review as balloted and will be forwarded to the ISC A&R SC for procedural

By / 2nd: R. Takeda (GWJ) / T. Otsuki (SEH)

Discussion: None

Vote: 9 in favor and 0 opposed. **Motion passed.**

Attachment: 6047_Ballot report 20161215

6.7 6048: Reapproval of SEMI MF978-1106 (Reapproved 1111) Test Method for Characterizing Semiconductor Deep Levels by Transient Capacitance Techniques

Motion: This Document passed TC Chapter review as balloted and will be forwarded to the ISC A&R SC for procedural

By / 2nd: R. Takeda (GWJ) / T. Otsuki (SEH)

Discussion: None

Vote: 9 in favor and 0 opposed. **Motion passed.**

Attachment: 6048_Ballot report 20161215

7 Task Force Reports

7.1 International 450mm Shipping Box Task Force / JA Shipping Box Task Force

No report to this meeting.

Attachment: none

7.2 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. Please see the attachment for details.

Ballot Submission

Motion: To submit Doc. 5915: Line Item Revision to SEMI M1-0215, Addition to Related Information : Illustration of Flatness and Shape Metrics for Silicon Wafers to Cycle 2 or 3 2017

By / 2nd: T. Nakai (SUMCO) / F. Passek (Siltronic AG)

Discussion: None

Vote: 9 in favor and 0 opposed. **Motion passed.**

SNARF Approval

Motion: To approve Line Item Revision to SEMI M1-0215, MF-1390 and M 59, to be consistency among these three document for Bow Metrics and add illustration of Shape Metrics in M1

By / 2nd: M. Yoshise (SUMCO) / F. Passek (Siltronic AG)

Discussion: None

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

Attachment: AWG Meeting Minute 20161215
AWG_SNARF for Bow M1 MF1390 R1.2

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

Y. Takamori reported. See details in attachment.

Attachment: PW_SNARF M1 fiducials figures clean-up
PW_SEMICON Europa 2016 IPWTF – Valley
PW_SEMI standards for TEM grids - Kwakman

7.4 International Epitaxial Wafers Task Force

There was no particular report.

Attachment: None

7.5 International Annealed Wafers Task Force

There no particular report.

Attachment: None

7.6 International Terminology Task Force

See GCS Report..

Attachment: None

7.7 International SOI Wafers Task Force

There was no meeting and no particular report.

Attachment: None

7.8 International Test Method Task Force / Japan Test Method Task Force

Ryuji Takeda reported for the International Test Method Task Force. See the details in the attachment.

Attachment: TEST_TF Meeting Minutes_int'l Test Method 12142016.pdf
TEST_Meeting Minuets of Japan Test Method TF on Dec 12th 2016_v0.pdf

7.9 International Advanced Surface Inspection Task Force

Masami Ikota reported for the International Advanced Surface Inspection Task Force. Of note,

- The first draft of Doc. 6096 will be circulated among the task force members.

Attachment: IAASI TF SemiconJapan2016 Minutes.pdf

7.10 Fiducial Mark Interoperability Task Force

No special report.

Attachment: None

7.11 TC Chapter Project

The following items are reviewed at the meeting.

- 3-year Project Period
No documents to be expanded the project period.
- Consideration of 5-year review
Currently no document has to be considered.

Attachment:

8 Old Business

8.1 Previous Meeting Action Items

Junko Collins reviewed the previous meeting action items.

Item #	Assigned to	Details	
SiW160909-01	Ryuji Takeda, Tetsuya Nakai	<p>Background: GCS members held a meeting and suggested plan to remove terms out of M59, Terminology for Silicon Technology, and place them back to the original standards when they are due for 5 year Review</p> <p>For effective discussion, Japan Chapter will propose a counter suggestion.</p> <p>Ryuji Takeda to create a counter proposal</p> <p>Tetsuya Nakai to bring it up at the appropriate meeting during SEMICON Europa in October.</p>	closed

9 New Business

9.1 TEM Grid Standardization

Meeting to introduce of a proposal of a new standard, Specification for Lamella Carriers Used in Transmission Electron Microscopes was held on December 13 at SEMI Japan office. Thermo Fisher Scientific introduced back ground of this standardization including why TEM grid standardization is needed. See meeting agenda, presentation and proposed drafts of SNARF and TFOF at that meeting. All attendees also reviewed the scope of PI&C, 3DS-IC and Silicon Wafer Global Technical Committees for finding suitable place to be addressed on this topic. In the event, all participants agreed that PI&C should be right place. PI&C supported this standard activity. At the Japan PI&C TC Chapter meeting on December 14, the TC chapter decided to support this activity. It was also pointed out that conducting a survey should be useful. SEMI HQ will conduct the survey created by Thermo Fisher.

Attachment: 2016.12.13_TEM Grids

10 Action Item Review

10.1 New Action Items

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

Item #	Assigned to	Details	
SiW161215-01	Junko Collins	To check a mechanism how to maintain COT including its frequency and report it at the next TC Chapter meeting.	
SiW161215-02	Tetsuya Nakai Junko Collins	To submit Doc. 5915 to ballot cycle 2 or 3 2017 To make sure the ballot review date of this ballot to NA responsible staff	
SiW161215-03	Junko Collins	To make sure the meeting minutes of EU TC Chapter meeting during SEMICON EU 2016 and make responsible staff work on it if it is not	

11 Next Meeting and Adjournment

The next meeting of the Japan Chapter of Global Silicon Wafer Technical Committee is scheduled for Friday, March 10, 2017, 14:00-17:00, SEMI Japan, Tokyo Japan

Having no further business, a motion was made to adjourn the Japan Chapter of Global Silicon Wafer Technical Committee meeting on December 15. Adjournment was at 17:00.

Minutes respectfully submitted by:

Junko Collins

Director, Standards & EHS

SEMI Japan

jcollins@semi.org

Minutes approved by:

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

#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 Junko Collins at the contact information above.