

## NA Silicon Wafer TC Chapter Meeting Minutes

NA Spring Standards Meetings 2014  
 Tuesday, 1<sup>st</sup> April, 2014, 1:00 PM - 5:00 PM  
 Intel, Santa Clara, CA

### Next Committee Meeting

Tuesday, July 8, 2014, Marriott Marquis, San Francisco, CA in conjunction with SEMICON West Meetings. Check [www.semi.org/standards](http://www.semi.org/standards) for the latest update.

### Attendees:

#### SEMI Staff

Kevin Nguyen – SEMI HQ

**Co-chair** – Noel Poduje (SMS)

**Table 1 – Meeting Attendees**

<i>Last Name</i>	<i>First Name</i>	<i>Company</i>
Bullis	Murray	Materials & Metrology*
Goldstein	Mike	Intel
Gupta	Dinesh	STA
James	Lary	Global Semiconductor Materials
Lin	Pinyen	G450C
Mashiro	Supika	Tokyo Electron
Nakai	Tetsuya	SUMCO
Shimizu	Yasuhiro	Consultant*
Sinha	Jaydeep	KLA-Tencor*
Sinton	Ron	Sinton Instruments*

\*Attended via teleconference

**Table 2 – Task Force Changes**

<i>Previous Name</i>	<i>New Name</i>
Int'l Advanced Surface Inspection TF	Int'l <b>Automated</b> Advance Surface Inspection TF

**Table 3 – Ballot Summary**

**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.

<i>Document #</i>	<i>Document Title</i>	<i>Committee Action</i>
5663	Reapproval of SEMI M58-1109, Test Method for Evaluating DMA Based Particle Deposition Systems and Processes	Passed as balloted
5665	Line Item Revision of SEMI MF26-0305 (Reapproved 0211), Test Method for Determining the Orientation of a Semiconductive Single Crystal	See below
	Line Item 1: Delete Note 1 and correct Equations 8 and 9 as shown.	Pass as balloted

**Table 4 – Authorized Ballots**

#	When	SC/TF/WG	Details
5077	Cycle 3-14	Int'l Test Methods TF	Revision of SEMI M40-1109, Guide for Measurement of Roughness of Planar Surfaces on Silicon Wafers with title change to Guide for Measurement of Roughness of Planar Surfaces on Polished Wafers
5404	Cycle 3-14	Int'l Test Methods TF	Withdrawal of SEMI MF657-0707E, Test Method for Measuring Warp and Total Thickness Variation on Silicon Wafers by Noncontact Scanning
5539	Cycle 3-14	Int'l Advanced Wafer Geometry TF	Revision of SEMI MF1390-0707 (Reapproved 0512) With Title Change To: Test Method for Measuring Bow and Warp on Silicon Wafers by Automated NonContact Scanning
5604	Cycle 4-14	Int'l Polished Wafer TF	Line Item Revision to SEMI M1-0114, Specification for Polished Single Crystal Silicon Wafer and SEMI M20-0110, Practice for Establishing a Wafer Coordinate System (Re: Addition of Notchless 450 mm Wafers)
5662	Cycle 3-14	Int'l Automated Advance Surface Inspection TF	Revision of SEMI M35-1107, Guide for Developing Specifications for Silicon Wafer Surface Features Detected by Automated Inspection
5666	Cycle 4-14	Int'l Test Methods TF	Revision of SEMI MF928-314, Test Methods for Edge Contour of Circular Wafers and Rigid Disk Substrates

**Table 5 – Authorized Activities**

#	Type	SC/TF/WG	Details
5313	SNARF	Int'l Test Methods TF	SNARF was modified <b>From:</b> Line Item Revision of SEMI MF1535-0707, Test Method for Carrier Recombination Lifetime in Silicon Wafers by Noncontact Measurement of Photoconductivity Decay by Microwave Reflectance <b>To:</b> Revision of SEMI MF1535-0707, Test Method for Carrier Recombination Lifetime in Silicon Wafers by Noncontact Measurement of Photoconductivity Decay by Microwave Reflectance
5404	SNARF	Int'l Test Methods TF	SNARF was modified <b>From:</b> Reapproval of SEMI MF657-0707E, Test Method for Measuring Warp and Total Thickness Variation on Silicon Wafers by Noncontact Scanning <b>To:</b> Withdrawal of SEMI MF657-0707E, Test Method for Measuring Warp and Total Thickness Variation on Silicon Wafers by Noncontact Scanning
5604	SNARF	Int'l Polished Wafer TF	SNARF was modified <b>From:</b> Revision to SEMI M1-0114, Specification for Polished Single Crystal Silicon Wafer (Re: Addition of Notchless 450 mm Wafers) <b>To:</b> Line Item Revision to SEMI M1-0114, Specification for Polished Single Crystal Silicon Wafer and SEMI M20-0110, Practice for Establishing a Wafer Coordinate System (Re: Addition of Notchless 450 mm Wafers)
5701	SNARF	Int'l Polished Wafer TF	Line Item Revision of SEMI M1-0114, Specifications for Polished Single Crystal Silicon Wafers (To correct references to test methods for measurement of front surface chemistry)

#	Type	SC/TF/WG	Details
5702	SNARF	Int'l Advanced Wafer Geometry TF	Line Item Revision to M68-1108, Practice for Determining Wafer Near-Edge Geometry from a Measured Height Data Array using a Curvature Metric, ZDD
5703	SNARF	Int'l Test Methods TF	New Standard: Guide for Carrier Recombination Lifetime Measurements in Electronic Grade Silicon
5704	SNARF	Int'l Advanced Wafer Geometry TF	Reapproval of SEMI M43-1109, Guide for Reporting Wafer Nanotopography
5705	SNARF	Int'l Advanced Wafer Geometry TF	Reapproval of SEMI M67-1109, Practice for Determining Wafer Near-Edge Geometry from a Measured Thickness Data Array Using the ESFQR, ESFQD, and ESBIR Metrics
5706	SNARF	Int'l Advanced Wafer Geometry TF	Reapproval of SEMI M70-1109 Practice for Determining Wafer-Near-Edge Geometry Using Partial Wafer Site Flatness
5707	SNARF	Int'l Test Methods TF	Revision of SEMI M40-1109, Guide for Measurement of Roughness of Planar Surfaces on Silicon Wafers with title change to Guide for Measurement of Roughness of Planar Surfaces on Polished Wafers
		Int'l Test Methods TF	SEMI MF1723-1104, Practice for Evaluation of Polycrystalline Silicon Rods by Float-Zone Crystal Growth and Spectroscopy <b>Voted to be inactive</b>
		Int'l Test Methods TF	SEMI MF1724-1104, Test Method for Measuring Surface Metal Contamination of Polycrystalline Silicon by Acid Extraction-Atomic Absorption Spectroscopy <b>Voted to be inactive</b>
		Int'l Test Methods TF	SEMI MF1708-1104, Practice for Evaluation of Granular Polysilicon by Melter-Zoner Spectroscopies <b>Voted to be inactive</b>

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

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

**Table 6 – Previous Meeting Actions Items**

Item #	Assigned to	Details	Status
1013-1	Noel Poduje (SMS)	To provide Kevin Nguyen (SEMI Staff) an ADE patent (expired?) number related to gravity correction referenced in SEMI MF 1390	Closed

**Table 7 – New Actions Items**

No noticeable action item was captured.

## 1. Call to Order

Noel Poduje called the meeting to order and welcomed everyone who attended. A round of self introduction was made. All SEMI standards meetings are subjected to SEMI Anti-Trust Reminder and Guidelines concerning Patentable Technology. SEMI Regulations now require all attendees to be members of SEMI standards. Membership enrollment is at [www.semi.org/standardsmembership](http://www.semi.org/standardsmembership). Agenda was reviewed and proceed.

## 2. Review of Schedule for the Next Meeting (SEMICON West, July 7-8, 2014)

The next meeting is scheduled at SEMICON West on July 7-8, 2014 in San Francisco, CA. Check [www.semi.org/standards](http://www.semi.org/standards) on the calendar of entry for the latest schedule and meeting location. See attachment for tentative schedule.

[Attachment – 1, SchSiWfr 0714 Tentative](#)

### 3. Review and Approval of the Minutes from NA Fall Standards meetings, October 29, 2013 in Santa Clara, CA

The meeting minutes were reviewed. No correction was made.

**Motion:** Accept the minutes of the previous meeting as written.

**By / 2<sup>nd</sup>:** Dinesh Gupta (STA)/Mike Goldstein (Intel)

**Discussion:** None

**Vote:** 5/0 in favor. Motion passed

[Attachment – 2, Minutes NA SiWfr 20131029](#)

### 4. Liaison Reports

#### 4.1. Europe Committee

Kevin Nguyen reported since there is no meeting since October 2013 SEMICON Europa. The previous liaison report was given in the Fall last year. Thus, it was not necessary to present the identical report.

[Attachment – 3, EU Liaison report March 24, 2014](#)

#### 4.2. Japan Committee

Tetsuya Nakai (SUMCO) reported. Highlights.

- Last Meeting
  - March 6, 2014 during Japan Spring Meetings 2014 at SEMI Japan, Tokyo, Japan
- Next Meeting
  - June 12, 2014 during Japan Summer Meetings 2014 at SEMI Japan, Tokyo, Japan
- New SNARFs/TFOFs
  - Doc. #4844, Guide for the Measurement of Trace Metal Contamination on Silicon Wafer Surface by Inductively Coupled Plasma Mass Spectrometry SNARF was revised.
- Fiducial Mark Interoperability 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.
- Japan Test Method TF
  - 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.
  - Noel commented that it would be a good idea to provide an explicit report on the progress at the Int'l Test Methods TF meeting. Nakai-san will inform Takenaka-san for this request.

[Attachment: 4, 1403\\_JA\\_SiW\\_LiaisonR\\_for\\_NASpring\\_R1.0](#)

### 5. Staff Report

Report was given by Kevin Nguyen. Highlights:

- 2014 Event

<i>Event Name</i>	<i>Event Details</i>
SEMICON Singapore	April 23-25, 2014 Marina Bay Sands
SEMICON Russia	May 14-15, 2014 Moscow
SEMI Advanced Semiconductor Manufacturing Conference	May 19-21, 2014 Saratoga Springs, New York

<i>Event Name</i>	<i>Event Details</i>
SEMICON West	July 8-10, 2014 San Francisco, California
SEMICON Taiwan	September 3-5, 2014 Taipei
SEMICON Europa Plastic Electronics	October 7-9, 2014 Grenoble, France
SEMICON Japan	December 3-5, 2014 Tokyo

- NA Standards 2014 Meetings
  - NA Compound Semiconductor Materials TC Meeting 2014
    - May 21, 2014 [Sheraton Denver Downtown Hotel, Denver, Colorado]
  - NA Standards Meetings at SEMICON West 2014
    - July 7-10, 2014 [San Francisco, California]
  - NA Standards Fall 2014 Meetings
    - November 3-6, 2014 [SEMI HQ in San Jose, California]
- SEMICON West 2014 Visitor Registration (Register Today!)
  - <http://www.semiconwest.org/Participate/RegisterNow>
    - Complimentary [March 18 – May 9]
    - \$50 [May 10 – June 6]
    - \$100 [June 7 – July 4]
    - \$150 [July 5 – July 10]
- Technical Ballot Critical Dates
  - Cycle 3, 2014
    - Ballot Submission Date: April 11, 2014
    - Voting Period Starts: April 22, 2014
    - Voting Period Ends: May 22, 2014
  - Cycle 4, 2014
    - Ballot Submission Date: May 9, 2014
    - Voting Period Starts: May 23, 2014
    - Voting Period Ends: June 23, 2014
- Publication cycle - February 2014 Cycle
  - New Standards: 4
  - Revised Standards: 5
  - Reapproved Standards: 0
  - Withdrawn Standards: 1
- Total SEMI Standards in portfolio: 901
  - Includes 99 Inactive Standards

[Attachment – 5, SEMI Staff Report \(Spring 2014\) revE](#)

## 6.0 Ballot Review

6.1 Document 5663, Reapproval of SEMI M58-1109, Test Method for Evaluating DMA Based Particle Deposition Systems and Processes

- 6.1.1 Document passed technical review as balloted and was forwarded to the ISC Audits and Reviews Subcommittee for procedural review. See attachment below for detail of ballot adjudication.

[Attachment – 6, 5663ProceduralReview](#)

6.2 Document 5665, Line Item Revision of SEMI MF26-0305 (Reapproved 0211), Test Method for Determining the Orientation of a Semiconductive Single Crystal

- 6.2.1 Line Item 1: Delete Note 1 and correct Equations 8 and 9.

- Document also passed technical review as balloted and was forwarded to the ISC Audits and Reviews Subcommittee for procedural review. See attachment below for detail of ballot adjudication.

[Attachment – 7, 5665ProceduralReview](#)

## 7.0 Task Force Reports

### 7.1 Int'l 450 mm Wafer TF/Mike Goldstein (Intel)

Mike Goldstein reported.

- Two programs currently in progress for 450mm wafers
  - eliminating the notch and replacing it with backside fiducial marks
  - reducing the edge exclusion zone from 2mm to 1.5mm.
- The notch removal working group coordinated at G450C completed the tests of different laser mark design for fiducial marking and selected 3 designs. In this meeting we presented some of the data collected and the technical reasons behind the selection, in preparation for the Polished Wafer meeting which will address the M1 revised document. The Edge Exclusion reduction M49 ballot was reviewed in Int'l Advanced Wafer Geometry task force. With the withdrawal of the rejection the document will go to approval in the SF meeting in July. See attached 450mm notchless design technical presentation.

[Attachment – 8, SEMI NA International 450mm wafer TF report Spring 2014](#)

### 7.2 Int'l Advanced Wafer Geometry TF/Noel Poduje (SMS), Jaydeep Sinha (KLA-Tencor)

- Minutes were presented by Noel. Highlights:
- **Ballot review.**
  - Document 5564 - Line Item Revision to M49 - 1.5mm EE for 450mm wafers
    - Ballot received one reject (S. Mashiro) related to 1.5mm EE and laser marking. Mashiro-san withdrew the reject, changing her vote to “abstain”. Adjudication will take place in July 2014 as stated in its background statement.
- **Presentations.**
  - Akiyama-san presented Slip-Line Detection - a possible seed of wafer breakage. See attachment for presentation.
- **Ballot Development**
  - Doc5539 - Revision to SEMI MF1390 adding Bow Measurement
    - The ballot is ready for distribution

**Motion:** To authorize doc. 5539 for cycle 3-14 ballot for review in San Francisco meeting  
**By / 2<sup>nd</sup>:** Dinesh Gupta (STA)/Mike Goldstein (Intel)  
**Discussion:** None  
**Vote:** 5-0 in favor. Motion passed

- Doc5540 - Auxiliary Information Document on Geometry Parameters of SEMI M1
  - Peter Wagner will report at SEMICON West
- **New Business.**
  - Revision to *SEMI M68-1109, Practice for Determining Wafer Near-Edge Geometry from a Measured Height Data Array Using a Curvature Metric, ZDD* - 5 year review
    - The SNARF was presented.  
**Motion:** To approve the M68 revision SNARF  
**By / 2<sup>nd</sup>:** Dinesh Gupta (STA)/Mike Goldstein (Intel)  
**Discussion:** None  
**Vote:** 5-0 in favor. Motion passed
  - *SEMI M43-1109 - Guide for Reporting Wafer Nanotopography* - 5-year review  
**Motion:** To approve M43 SNARF with minor changes  
**By / 2<sup>nd</sup>:** Dinesh Gupta (STA)/Pinyen Lin (G450C)  
**Discussion:** None  
**Vote:** 5-0 in favor. Motion passed
  - *SEMI M67-1109 - Practice for Determining Wafer Near-Edge Geometry from a Measured Thickness Data Array Using the ESFQR, ESFQD, and ESBIR Metrics* - 5 year review  
**Motion:** To approve M67 SNARF with minor changes  
**By / 2<sup>nd</sup>:** Dinesh Gupta (STA)/Pinyen Lin (G450C)  
**Discussion:** None  
**Vote:** 5-0 in favor. Motion passed
  - *SEMI M70-1109 - Practice for Determining Wafer-Near-Edge Geometry Using Partial Wafer Site Flatness* - 5 year review  
**Motion:** To approve M70 SNARF with minor changes  
**By / 2<sup>nd</sup>:** Dinesh Gupta (STA)/Pinyen Lin (G450C)  
**Discussion:** None  
**Vote:** 5-0 in favor. Motion passed

[Attachment – 9, AWG Spring 2014 NA Meeting minutes](#)  
[Attachment – 10, AWG Attachments](#)

### 7.3 Int'l Advanced Surface Inspection TF/Kurt Haller (KLA-Tencor)

- Noel reported on Kurt's behalf. It was noted the name of the Int'l Advanced Surface Inspection TF should be Int'l **Automated** Advance Surface Inspection TF. The correction was noted.
- Doc #5663, Reapproval of SEMI M58-1109, Test Method for Evaluating DMA Based Particle Deposition Systems and Processes, passed TC review and was forwarded to ISC Audits & Reviews Subc.
- Doc #5662, Revision of SEMI M35-1107, Guide for Developing Specifications for Silicon Wafer Surface Features Detected by Automated Inspection, is ready for ballot.  
**Motion:** To approve SEMI M35 revision for cycle 3-2014 for review in San Francisco, CA.  
**By / 2<sup>nd</sup>:** Dinesh Gupta (STA)/Mike Goldstein (Intel)  
**Discussion:** None  
**Vote:** 5-0 in favor. Motion passed

[Attachment – 11, NA\\_ASI\\_TF\\_31\\_Mar\\_2014\\_Meeting minutes](#)



#### 7.4 Int'l SOI TF/Bich-Yen Nguyen (SOITEC USA)

- Dinesh Gupta reported for Bich-Yen Nguyen.
  - Communication with Michael Hochberg-Director, OpSIS, is exchanged. A possible presentation at West will be conducted on photonics
  - Collaboration with MEMS and 3DSIC for SOI needs.

[Attachment – 12, Agenda SOI TF 033114](#)

#### 7.5 Int'l Annealed Wafer TF/Dinesh Gupta (STA)

- Dinesh Gupta reported doc. 5583, Line Items Revision to SEMI M57-0413, Specifications for Silicon Annealed Wafers, was approved at SEMICON Japan 2013. However, the new version is not yet published. Dinesh will look at the new version and possibly make minor modification and send to Japan task force for review if additional revision is needed.

#### 7.6 Int'l Epitaxial Wafer TF/ Dinesh Gupta (STA)

- Dinesh reported doc. 5542, Line Items Revision to SEMI M62-0413, Specifications for Silicon Epitaxial Wafers, was approved at SEMICON Japan 2013, but latest version is not yet published. Dinesh will make the revision by adding 16 nm technology.

[Attachment – 13, MinEpiTF0414](#)

#### 7.7 Int'l Test Methods TF/Dinesh Gupta (STA)

- Dinesh reported both doc. 5687 (from Japan) and doc. 5607 will be adjudicated in San Francisco.
  - Doc. #5687, Line Item Revision of SEMI M60-1113, Test Method for Time Dependent Dielectric Breakdown Characteristics of Amorphous SiO<sub>2</sub> Films for Silicon Wafer Evaluation
  - Doc. #5607, Line Items Revision of SEMI MF673-0305 (Reapproved 0611), Test Methods for Measuring Resistivity of Semiconductor Wafers or Sheet Resistance of Semiconductor Films with a Noncontact Eddy-Current Gauge
- The Int'l AWG TF is drafting doc. 5539, Revision of SEMI MF1390-0707 (Reapproved 0512) With Title Change To: Test Method for Measuring Bow and Warp on Silicon Wafers by Automated NonContact Scanning.
  - Doc. 5539 will include the test method for warp. Therefore, it is not necessary to reapprove doc. 5404, Reapproval of SEMI MF657-0707E - Test Method for Measuring Warp and Total Thickness Variation on Silicon Wafers by Noncontact Scanning.

**Motion:** To approve revised SNARF (Doc. 5404) from **reapproval** to **withdrawal** of MF657  
**By / 2<sup>nd</sup>:** Dinesh Gupta (STA)/Lary James (Global Semiconductor Materials)

**Discussion:** None

**Vote:** 5/0 in favor. Motion passed

**Motion:** To authorize doc. 5404 for cycle 3-2014 ballot for reviewing in San Francisco, CA.

**By / 2<sup>nd</sup>:** Dinesh Gupta (STA)/Lary James (Global Semiconductor Materials)

**Discussion:** None

**Vote:** 5/0 in favor. Motion passed

- Doc. 5666, Revision of SEMI MF928-0314, Test Methods for Edge Contour of Circular Wafers and Rigid Disk Substrates [*Scope: Change the scope to cover only those wafers whose edge profiles are specified in accordance with a SEMI Edge Profile Template (as shown in Figure 7 of both SEMI M1 and M9) and modify ¶6.2 to improve the statement of how to obtain the desired magnification*] is ready for cycle 4-2014 ballot.



**Motion:** To authorize doc. 5666 for cycle 4-2014 ballot for reviewing in San Francisco, CA.  
**By / 2<sup>nd</sup>:** Dinesh Gupta (STA)/Tetsuya Nakai (SUMCO)  
**Discussion:** None  
**Vote:** 5/0 in favor. Motion passed

- SEMI M40-1109 - Guide for Measurement of Roughness of Planar Surfaces on Silicon Wafers, is due for 5 year review. The SNARF was presented.

**Motion:** To approve M40 revision SNARF  
**By / 2<sup>nd</sup>:** Dinesh Gupta (STA)/Tetsuya Nakai (SUMCO)  
**Discussion:** None  
**Vote:** 5/0 in favor. Motion passed

**Motion:** To authorize M40 revision for cycle 3-2014 ballot for review in San Francisco, CA.  
**By / 2<sup>nd</sup>:** Dinesh Gupta (STA)/Tetsuya Nakai (SUMCO)  
**Discussion:** None  
**Vote:** 5/0 in favor. Motion passed

- Doc. 5313B, Line Item Revisions of SEMI MF1535-0707 Test Method for Carrier Recombination Lifetime in Silicon Wafers by Noncontact Measurement of Photoconductivity Decay by Microwave Reflectance, has not reached consensus. A new approach was proposed. Murray presented a revision to SNARF 5313. Ron Sinton reviewed the scope and was ok with the proposal.

**Motion:** To approve revised SNARF for doc. 5313  
**By / 2<sup>nd</sup>:** Dinesh Gupta (STA)/Tetsuya Nakai (SUMCO)  
**Discussion:** None  
**Vote:** 4/0 in favor. Motion passed

- Murray also presented a new SNARF for Guide for Carrier Recombination Lifetime Measurements in Electronic Grade Silicon

**Motion:** To approve new SNARF  
**By / 2<sup>nd</sup>:** Dinesh Gupta (STA)/Tetsuya Nakai (SUMCO)  
**Discussion:** None  
**Vote:** 5/0 in favor. Motion passed

- [Attachment – 14, doc. 5404 snarf](#)
- [Attachment – 15, Doc xxxx SNARF for Revision of SEMI M40-1109 140305](#)
- [Attachment – 16, Doc 5313C Revised SNARF for MF1535 140217](#)
- [Attachment – 17, Doc xxxx SNARF for Lifetime Guide 140224](#)
- [Attachment – 18, MinTestMethodsMtg0414](#)

#### 7.8 Int'l Polished Wafer TF/Murray Bullis (Materials & Metrology)

- Murray reported.
- Doc 5655 Line item M1-1013 update 450mm wafers edge exclusion for approval for ballot
  - At the April 1, 2014 meeting in Santa Clara this action was postponed until the completion of work on notchless 450 mm diameter wafers
- A revised SNARF for document 5604, Line Item Revision to SEMI M1-0114, Specification for Polished Single Crystal Silicon Wafer and SEMI M20-0110, Practice for Establishing a Wafer Coordinate System (Re: Addition of Notchless 450 mm Wafers) with balloting in Cycle 4 and review at West

**Motion:** To approve the revised SNARF 5604  
**By / 2<sup>nd</sup>:** Dinesh Gupta (STA)/Mike Goldstein (Intel)

**Discussion:** Tetsuya Nakai has a concern whether one ballot can cover multiple standards revisions. Supika Mashiro responded that as long as these revisions are related, revising multiple standards is allowed.

**Vote:** 5/0 in favor. Motion passed

**Motion:** To authorize ballot 5604 for cycle 4-2014 for review at SEMICON West

**By / 2<sup>nd</sup>:** Dinesh Gupta (STA)/Mike Goldstein (Intel)

**Discussion:** None

**Vote:** 5/0 in favor. Motion passed

- Murray also presented another SNARF for revision of M1, a separate issue covering Correction of Citations to Test Methods for Surface Chemistry.

**Motion:** To approve revision of M1 SNARF

**By / 2<sup>nd</sup>:** Dinesh Gupta (STA)/Mike Goldstein (Intel)

**Discussion:** None

**Vote:** 6/0 in favor. Motion passed

[Attachment – 19, Doc 5604 M1 rev SNARF](#)

[Attachment – 20, SNARF L I M1 revision \(front surface chemistry\)](#)

[Attachment – 21, P W Minutes](#)

#### 7.9 Int'l Terminology TF/Murray Bullis (Materials and Metrology)

- Murray reported the meeting was not held until SEMICON West. The TF has a ballot Doc. #5564, Line Items Revision to SEMI M59-0211, Terminology for Silicon Technology, which will be reviewed in July 2014.

[Attachment – 22, Terminology Report](#)

## 8.0 Old Business

None

## 9.0 New Business

Kevin Nguyen provided the remaining standards due for 5 year review. See below.

- SEMI MF1723-1104, Practice for Evaluation of Polycrystalline Silicon Rods by Float-Zone Crystal Growth and Spectroscopy
- SEMI MF1724-1104, Test Method for Measuring Surface Metal Contamination of Polycrystalline Silicon by Acid Extraction-Atomic Absorption Spectroscopy
- SEMI MF1708-1104, Practice for Evaluation of Granular Polysilicon by Melter-Zoner Spectroscopies

At the moment, the committee has no interest in revising these standards until further notice. A motion was made to allow these standards to go inactive.

**Motion:** To authorize MF1723, MF1724, and MF1708 to go inactive

**By / 2<sup>nd</sup>:** Dinesh Gupta (STA)/Mike Goldstein (Intel)

**Discussion:** None

**Vote:** 4/0 in favor. Motion passed

## 10.0 Action Item Reviews

Kevin Nguyen reviewed the old action items. There were two new actions items at this meeting noted in **table 7**.

## 11.0 Adjourn

The meeting was adjourned at 4:00 PM.

These minutes are respectfully submitted by:

Kevin Nguyen,  
SEMI Int'l Standards Operation Manager  
Phone: 408-943-7997  
Email: [knguyen@semi.org](mailto:knguyen@semi.org)

Minutes approved by:

Noel Poduje (SMS) – Co-chair  
Dinesh Gupta (STA) – Co-chair

Date:

Date:

**Table 8 – Index of Attachment Summary**

#	<i>Title</i>	#	<i>Title</i>
1	<a href="#">SchSiWfr 0714 Tentative</a>	12	<a href="#">Agenda SOI TF 033114</a>
2	<a href="#">Minutes NA SiWfr 20131029</a>	13	<a href="#">MinEpiTF0414</a>
3	<a href="#">EU Liaison report March 24, 2014</a>	14	<a href="#">doc. 5404 snarf</a>
4	<a href="#">1403_JA_SiW_LiaisonR_for_NASpring_R1.0</a>	15	<a href="#">Doc xxxx SNARF for Revision of SEMI M40-1109 140305</a>
5	<a href="#">SEMI Staff Report (Spring 2014) revE</a>	16	<a href="#">Doc 5313C Revised SNARF for MF1535 140217</a>
6	<a href="#">5663ProceduralReview</a>	17	<a href="#">Doc xxxx SNARF for Lifetime Guide 140224</a>
7	<a href="#">5665ProceduralReview</a>	18	<a href="#">MinTestMethodsMtg0414</a>
8	<a href="#">SEMI NA International 450mm wafer TF report Spring 2014</a>	19	<a href="#">Doc 5604 M1 rev SNARF</a>
9	<a href="#">AWG Spring 2014 NA Meeting minutes</a>	20	<a href="#">SNARF L I M1 revision (front surface chemistry)</a>
10	<a href="#">AWG Attachments</a>	21	<a href="#">P W Minutes</a>
11	<a href="#">NA_ASI_TF_31_Mar_2014_Meeting minutes</a>	22	<a href="#">Terminology Report</a>

#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 Kevin Nguyen at the contact information above