Meeting Summary and Minutes

Taiwan Spring Standards Meeting 2018
Thursday, March 22, 2018, 14:00 – 16:00
SEMI Taiwan Office, Zhubei City, Hsinchu County, Taiwan

TC Chapter Announcements

Next TC Chapter Meeting
October 4, 2018
Venue: SEMI Taiwan Zhubei City, Hsinchu County, Taiwan

Table 1 Meeting Attendees

Co-Chairs: Shuh Woei Yu (SAHTECH)
SEMI Staff: Dean Chang

<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>TSMC</td>
<td>Hsu</td>
<td>Fang-Ming</td>
<td>NCREE</td>
<td>Chai</td>
<td>Jun-Fu</td>
</tr>
<tr>
<td>MXIC</td>
<td>Shen</td>
<td>Colin</td>
<td>UMC</td>
<td>Cheng</td>
<td>Emily</td>
</tr>
<tr>
<td>Safe World Engineering</td>
<td>lin</td>
<td>Bruce</td>
<td>TUV</td>
<td>Wang</td>
<td>Vincent</td>
</tr>
<tr>
<td>Flagship International</td>
<td>Tuan</td>
<td>Andy</td>
<td>TUV</td>
<td>Jow</td>
<td>Vincent N.C.</td>
</tr>
<tr>
<td>Innolux</td>
<td>Yang</td>
<td>Vincent</td>
<td>RCI</td>
<td>Jang</td>
<td>Shawn</td>
</tr>
<tr>
<td>ITRI</td>
<td>Suen</td>
<td>Theresa</td>
<td>SGS</td>
<td>Lu</td>
<td>Chungyin</td>
</tr>
<tr>
<td>ITRI</td>
<td>Wu</td>
<td>Yuhsin</td>
<td>Applied Materials</td>
<td>Liu</td>
<td>Shane</td>
</tr>
<tr>
<td>Gallant Precision Machining</td>
<td>Hsiao</td>
<td>Stone</td>
<td>FTIS</td>
<td>Wang</td>
<td>Bernt</td>
</tr>
<tr>
<td>Gallant Precision Machining</td>
<td>Chang</td>
<td>Shu Sheng</td>
<td>CHiFF Technology</td>
<td>Wei</td>
<td>Chih-An</td>
</tr>
<tr>
<td>Neo Solar Power</td>
<td>Hsieh</td>
<td>Ken</td>
<td>Hermes</td>
<td>Huang</td>
<td>Stanley</td>
</tr>
<tr>
<td>Edwards</td>
<td>Liu</td>
<td>Ariel</td>
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</table>

Table 2 Leadership Changes

<table>
<thead>
<tr>
<th>WG/TF/SC/TC Name</th>
<th>Previous Leader</th>
<th>New Leader</th>
</tr>
</thead>
<tbody>
<tr>
<td>None.</td>
<td></td>
<td></td>
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</tbody>
</table>

Table 3 Committee Structure Changes

<table>
<thead>
<tr>
<th>Previous WG/TF/SC Name</th>
<th>New WG/TF/SC Name or Status Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
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</table>

Table 4 Ballot Results

<table>
<thead>
<tr>
<th>Document #</th>
<th>Document Title</th>
<th>Committee Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
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</tr>
</tbody>
</table>

#1 Passed ballots and line items will be submitted to the ISC Audit & Review Subcommittee for procedural review.
#2 Failed ballots and line items were returned to the originating task forces for re-work and re-balloting or abandoning.

### Table 5 Activities Approved by the GCS between meetings of the TC Chapter

<table>
<thead>
<tr>
<th>#</th>
<th>Type</th>
<th>SC/TF/WG</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
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</table>

### Table 6 Authorized Activities

Listing of all revised or new SNARF(s) approved by the Originating TC Chapter.

<table>
<thead>
<tr>
<th>#</th>
<th>Type</th>
<th>SC/TF/WG</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
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</table>

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

### Table 7 Authorized Ballots

<table>
<thead>
<tr>
<th>#</th>
<th>When</th>
<th>TF</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
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</tbody>
</table>

### Table 8 SNARF(s) Granted a One-Year Extension

<table>
<thead>
<tr>
<th>#</th>
<th>TF</th>
<th>Title</th>
<th>Expiration Date</th>
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</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
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</tbody>
</table>

### Table 9 SNARF(s) Abolished

<table>
<thead>
<tr>
<th>#</th>
<th>TF</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
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</tbody>
</table>

### Table 10 Standard(s) to receive Inactive Status

<table>
<thead>
<tr>
<th>Standard Designation</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

### Table 11 New Action Items

<table>
<thead>
<tr>
<th>Item #</th>
<th>Assigned to</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dean Chang</td>
<td>SEMI Taiwan will support FTIS to promote Taiwan IDB’s project “Industrial Green Growth Promotion Plan” and will held a Circular Economy Seminar on April 16 at Hsinchu.</td>
</tr>
<tr>
<td>2</td>
<td>Vincent Wang</td>
<td>The EHS training course with TUV for SEMI members will be held on April 27 at SEMI Taiwan office</td>
</tr>
<tr>
<td>3</td>
<td>Dean Chang</td>
<td>2018 SEMI Taiwan Sustainable Manufacturing Forum will be held on September 5.</td>
</tr>
<tr>
<td>4</td>
<td>Dean Chang</td>
<td>EHS Taiwan Chapter would like to get the authorization from headquarter to translate the S2 Standards (latest version) to Chinese version.</td>
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<table>
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<tr>
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<th>Assigned to</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Dean Chang</td>
<td>Study how to promote the SEMI EHS Standards in school.</td>
</tr>
</tbody>
</table>

Table 12 Previous Meeting Action Items

<table>
<thead>
<tr>
<th>Item #</th>
<th>Assigned to</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dr. Juin-Fu Chai (NCREE)</td>
<td>Suggest Juin-Fu Chai (NCREE) to contact the leader of Japan Seismic Protection Task Force to discuss how to protect mobile robots and equipment such as quartz tubes when earthquake takes place before attending SEMICON Japan 2017</td>
</tr>
</tbody>
</table>

1 Welcome, Reminders, and Introductions

Committee Co-Chair Shuh Woei Yu (SAHTECH) called the meeting to order at 14:00. The meeting reminders on antitrust issues, intellectual property issues and holding meetings with international attendance were reviewed. Attendees introduced themselves.

Attachment: SEMI Standards Required Elements

2 Review of Previous Meeting Minutes

The TC Chapter reviewed the minutes of the previous meeting.

Motion: Approve previous meeting minute
By / 2nd: Colin Shen (MXIC) / Juin-Fu Chai (NCREE)
Discussion: After review, all TC members agreed to approve it
Vote: 18-0 in favor. Motion passed

Attachment: 20171025_EHS Meeting Minutes

3 Liaison Reports

3.1 EHS Japan TC Chapter

Dean Chang (SEMI TW) reported for the EHS Japan TC Chapter. Of note:

Action Item:
- Passed as balloted
  - Doc6288 Line Item Revision to SEMI S21-1106E, SAFETY GUIDELINE FOR WORKER PROTECTION
  - SEMI S21-1106E, SAFETY GUIDELINE FOR WORKER PROTECTION
- Authorized Ballots
  - Doc6289 Revision to SEMI S18-0312: ENVIRONMENTAL, HEALTH AND SAFETY GUIDELINE FOR FLAMMABLE SILICON COMPOUNDS
- Five-year review
  - SEMI S13-0113 Environmental, Health and Safety Guideline for Documents Provided to the Equipment User for Use With Manufacturing Equipment
  - SEMI S17-0113 Safety Guideline for Unmanned Transport Vehicle (UTV) Systems
3.2 EHS NA TC Chapter
Dean Chang (SEMI TW) reported for the EHS NA TC Chapter. Of note:

Action Item:

- Leadership Changes
  - Changed from Mark Fessler (ASM) to Glenn Holbrook (ASM)

- New SNARF
  - #6309: Line Item Revision to S8-0915, Safety Guideline for Ergonomics Engineering of Semiconductor Manufacturing Equipment

- Ballot review
  - Doc# 5761B & Doc# 6204: Failed and returned to TF for reballot.
  - LI1 & LI2 & LI3 & LI4: Passed as balloted.

- Ballots Authorized
  - R6204: Ratification Ballot - Line Item Revisions to SEMI S6-0707E Environmental, Health, and Safety Guideline for Exhaust Ventilation of Semiconductor Manufacturing Equipment
  - 6309: Line Item Revision to S8-0915, Safety Guideline for Ergonomics Engineering of Semiconductor Manufacturing Equipment
  - 5969A: Line Item Revisions to SEMI S2, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (pertaining to Fire)

- Next TC Meeting will be held on April 24, 2018 at SEMI Japan Office, Tokyo, Japan

Attachment: EHS Japan_NATW_20180316_v1.0
Attachment: EHS TC Staff report_20180322

4 Ballot Review
NOTE 1: TC Chapter adjudication on ballots reviewed is detailed in the Audits & Review (A&R) Subcommittee Forms for procedural review. The A&R forms are available as attachments to these minutes. The attachment number for each balloted document is provided under each ballot review section below.
None.

5 Task Force Reports

5.1 Seismic Task Force
Dean Chang (SEMI TW) reported for the Seismic Task Force. This report contained information on:

- Chai Juin-Fu (NCREE) will contact SEMI Japan TF leader to discuss the following issue:
  - In addition to preventing the process equipment and stocker systems from sliding, rocking and overturning by adequate design of anchorages, the design requirement for the structural integrity and functionality of such equipment and systems should be considered in the SEMI Standards.
  - The design requirement of the architecture components (such as ceiling, raised floor and partition wall) in a clean room and other critical areas should be considered in the SEMI Standards.
  - In addition to the seismic demand on the floor of a clean room, the in-cabinet seismic demand and design requirement for critical electrical and mechanical components within an equipment (e.g. the design of boat and tube in a furnace equipment) should be considered in the SEMI Standards.

5.2 Equipment Safety Task Force
Dean Chang (SEMI TW) reported for the Equipment Safety Task Force. This report contained information on:

- Robot Safety
  - Taiwan OSHA (Occupational Safety and Health Administration) announced Industrial Robots Hazard Prevention Standards” was updated by additional requirements for collaborative robots safety on Feb. 14, 2018.
  - This updated standard was adopted from ISO 10218-1 and ISO 10218-2.
  - Detailed safety guideline will be proposed by the end of year.

- Lithium battery safety
  - Safety standard for the Thermal runaway control of lithium batteries for OHT(Overhead Hoist Transfer), AGV(Automated Guided Vehicle) or collaborative robots suggested to be proposed.
  - Theresa Suen (ITRI) will study the Lithium battery safety issue.

6 Old Business

- Co-chair Fang-Ming Hsu (TSMC) suggested to study the feasibility of the following topics in the future:
  - Establish earthquake-related standards in consideration of manufacturing process:
    - suggest Juin-Fu Chai (NCREE) to contact the leader of Japan Seismic Protection Task Force to discuss how to protect mobile robots and equipment such as quartz tubes when earthquake takes place before attending SEMICON Japan 2017
  - Establish mobile robot related safety standards combining S17 and SEMI S28 in consideration of
    - clean/non-clean room circumstances
room with or w/o people circumstances
- lithium batteries used in robots (on going)
  - Modify energy conservation standards for ventilation equipment used in clean rooms in view of the power waste established by SEMI S2 and SEMI S23 (under study)
  - In order to establish standards for recycling different chemical substances from wet process tank, separate collection drains are suggested to be installed (under study)

7 New Business
- SEMI Taiwan will support FTIS to promote Taiwan IDB’s project “Industrial Green Growth Promotion Plan” and will held a Circular Economy Seminar on April 16 at Hsinchu.
- The EHS training course with TUV for SEMI members will be held on April 27 at SEMI Taiwan office.
- 2018 SEMI Taiwan Sustainable Manufacturing Forum will be held on September 5.
- EHS Taiwan Chapter would like to get the authorization from headquarter to translate the S2 Standards (latest version) to Chinese version.
- Study how to promote the SEMI EHS Standards in school.

8 Next Meeting and Adjournment
The next meeting is scheduled for October 4, 2018 at SEMI TW Office. See http://www.semi.org/standards-events for the current list of events.

Adjournment was at 16:00.

Respectfully submitted by:
Dean Chang
Senior Executive Consultant
SEMI Taiwan
Phone: 886-3-560-1777 #801
Email: dchang@semi.org

Minutes tentatively approved by:

<table>
<thead>
<tr>
<th>Name</th>
<th>Date Approved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shuh Woei Yu (SAHTECH), Co-chair</td>
<td>2018/10/04</td>
</tr>
<tr>
<td>&lt;Name&gt; (&lt;Company&gt;), Co-chair</td>
<td>&lt;Date approved&gt;</td>
</tr>
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</table>

Table 13 Index of Available Attachments

<table>
<thead>
<tr>
<th>Title</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1_SEMI Standards Required Elements</td>
<td>3.2_NA EHS TC Chapter Liaison report Nov 2017 v1</td>
</tr>
<tr>
<td>2_20171025_EHS Meeting Minutes</td>
<td>3.3_EHS TC Staff report_20180322</td>
</tr>
<tr>
<td>3.1_EHS Japan_NATW_20180316_v1.0</td>
<td></td>
</tr>
</tbody>
</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 [SEMI Staff Name] at the contact information above.