



# Compound Semiconductor Materials North America Technical Committee Chapter Meeting Summary and Minutes

**Summer 2022**  
June 15, 2022,  
09:00 – 11:00 AM Pacific  
Online

**Committee Announcements**

*Next Committee Meeting*  
November 2, 2022

**Table 1 Meeting Attendees**

*Italics indicate virtual participants*

**Co-Chairs:** Jim Oliver, Russ Kremer

**SEMI Staff:** Kevin Nguyen

<i>Company</i>	<i>Last</i>	<i>First</i>
<i>Self</i>	<i>Kremer</i>	<i>Russ</i>
<i>Self</i>	<i>Kronwasser</i>	<i>Judy</i>
<i>Nordson Sonoscan</i>	<i>Martell</i>	<i>Steve</i>
<i>Northrop Grumman</i>	<i>Oliver</i>	<i>Jim</i>

**Table 2 Leadership Changes**

None

**Table 3 Committee Structure Changes**

<i>New WG/TF/SC Name or Status Change</i>
M9 Revision TF was disbanded

**Table 4 Ballot Results**

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

<i>Document #</i>	<i>Document Title</i>	<i>Committee Action</i>
6915	Withdrawal of SEMI M65-0816 - Specification for Sapphire Substrates to use for Compound Semiconductor Epitaxial Wafers	Passed as balloted

**Table 5 Authorized Activities**

<i>#</i>	<i>Type</i>	<i>SC/TF/WG</i>	<i>Details</i>
6952	SNARF	TC Chapter	Reapproval of SEMI M10-0218, Terminology for Identification of Structures and Features Seen on Gallium Arsenide Wafers
6953	SNARF	TC Chapter	Line Item Revision of SEMI M79-0218, Specification for Round 100 mm Polished Monocrystalline Germanium Wafers for Solar Cell Applications
6954	SNARF	TC Chapter	Line Item Revision of SEMI M23-0811 (Reapproved 0218), Specification for Polished Monocrystalline Indium Phosphide Wafers

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

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

**Table 6 Authorized Ballots**

#	When	SC/TF/WG	Details
6952	Cycle 6 or 7-2022	TC Chapter	Reapproval of SEMI M10-0218, Terminology for Identification of Structures and Features Seen on Gallium Arsenide Wafers
6953	Cycle 6 or 7-2022	TC Chapter	Line Item Revision of SEMI M79-0218, Specification for Round 100 mm Polished Monocrystalline Germanium Wafers for Solar Cell Applications
6954	Cycle 6 or 7-2022	TC Chapter	Line Item Revision of SEMI M23-0811 (Reapproved 0218), Specification for Polished Monocrystalline Indium Phosphide Wafers

**Table 7 New Action Items**

Item #	Assigned to	Details
None		

**Table 8 Previous Meeting Actions Items**

Item #	Assigned to	Details	Status
2021May #01	Jim Oliver and Mike Seacrist (GlobalWafer)	To research on who makes sapphire substrates and ask them to review SEMI M65-0816, Specification for Sapphire Substrates to use for Compound Semiconductor Epitaxial Wafers	Completed

**1 Welcome, Reminders, and Introductions**

1.1 Jim Oliver, committee co-chair, called the meeting to order at 9:15 AM. The SEMI meeting reminders on membership requirements, antitrust, patentable technology, and meeting guidelines were briefly presented and explained.

**2 Review of Previous Meeting Minutes**

2.1 The committee reviewed the minutes of the previous meeting held in November 2021.

**Motion:** Approve the minutes as written

**By:** Russ Kremer / NONE

**Second:** Steve Martell / Nordson SONOSCAN

**Discussion:**

**Result:** 3-Y 0-N Voting Result: Pass - 100.00%

**3 Liaison Reports**

3.1 *China Compound Semiconductor Materials Committee*

3.1.1 Kevin Nguyen presented the Europe CSM liaison report. Of note:

- Last meeting
  - Apr 27th, Spring 2022 Meeting
  - Online
- Next meeting
  - TBD
- SiC Substrate TF.
  - Doc. 6767, New Standard: Test Method for Flatness of Silicon Carbide Wafers by Optical Interference
  - Doc. 6768, New Standard: Test Method for Micropipe Density of Silicon Carbide Wafer by Laser Reflection

- Doc. 6769, New Standard: Test Method for Residual Stress of Silicon Carbide Wafers by Photoelastic
- All ballots failed.
- SiC Epitaxial Wafer TF
  - Doc. 6693, New Standard: Specification for 4H-SiC Homo-Epitaxial Wafer
    - Passed with Technical Changes. Ratification ballot to be issued.

**Attachment:** 01, China CSM Committee Chapter Liaison Report

### 3.2 Europe Compound Semiconductor Materials Committee

3.2.1 Kevin Nguyen presented the Europe CSM liaison report. Of note:

- Leadership
  - Arnd Weber (SiCrystal)
- Meetings
  - Last meeting
    - November 17, 2021
    - Online via Official Virtual TC Chapter Meeting
    - 11:00 – 1:00 PM CET
  - Next meeting
    - TBD
- Ballot Result
  - Doc. 6717, New Standard: Test Method For Determination Of Threading Screw Dislocation Density In 4H-SiC By X-Ray Topography
    - Passed and published as SEMI M91-0622
- SiC TF
  - Leader: Arnd Weber (SiCrystal)
  - Doc. 6615, Revision of M55-0817 Specification for Polished Monocrystalline Silicon Carbide Wafers (To include 200 mm wafer for Silicon Carbide)
    - Published in September as M55-0921
- Test Methods TF
  - Leader: Christian Kranert (Fraunhofer)
  - Doc. 6870, New Standard: Test Method for Quantifying Basal Plane Dislocations in 4H-SiC by X-ray Topography
- 5 Year Review TF
  - SEMI M46 - Test Method for Measuring Carrier Concentrations in Epitaxial Layer Structures by ECV Profiling
    - Needs experts to review
  - SEMI M63 - Test Method for Measuring the Al Fraction in AlGaAs on GaAs Substrates by High Resolution X-Ray Diffraction
    - Needs experts to review
  - SEMI M75 - Specification for Polished Monocrystalline Gallium Antimonide Wafers
    - Needs experts to review

**Attachment:** 02, Eu CSM Liaison Report November 2021 v1

### 3.3 Japan Compound Semiconductor Materials Committee

3.3.1 Kevin Nguyen presented the Europe CSM liaison report. Of note:

- Last meeting
  - Jan. 19, 2022
  - Web Conference
- Next meeting
  - 2023 Spring, Exact date and time will be determined.
- SiC Epitaxial Wafer liaison TF (New)
  - Charter: Discussions will be held in Japan to support and complement Silicon Carbide Epitaxial Wafer revision and new standards development activities in other regions.
  - Scope: To cover the scope of the SiC Epitaxial Wafer Task Force for its on existing SEMI Silicon Carbide Standards and new Standards as such become necessary.

**Attachment:** 03, Japan CSM Liaison Report Feb2022 v1

## 4 Staff Report

4.1 Kevin Nguyen presented the report. Of notes,

- SEMICON West
  - July 11-14, 2022
  - San Francisco, CA
- 2022 Critical Dates for SEMI Standards Ballots
- SEMI Standards Publications
  - Total SEMI Standards in portfolio: 1,063
    - Includes 309 Inactive Standards

**Attachment:** 04, Staff Report March 2022 v5 SA

## 5 Ballot Review

5.1 Doc. 6915, Withdrawal of SEMI M65-0816 - Specification for Sapphire Substrates to use for Compound Semiconductor Epitaxial Wafers

5.1.1 It **passed** TC Chapter review.

**Attachment:** 05, 6915 A&R

## 6 Task Force Reports

6.1 *Silicon Carbide Task Force*

6.1.1 This is a liaison Task Force. All activities were reported under the Europe Liaison report.

6.2 *M86 (GaN) Revision Task Force*

6.2.1 Kevin Nguyen reported Troy Baker still plans to issue another revision to SEMI M86. But he is not present in this meeting, more will be updated at the next meeting.

## 7 Old Business

7.1 None



**8 New Business**

*8.1 Documents Due for Five Year Review*

8.1.1 The following documents are due for 5 year review. Jim Oliver reported that he is not able to find any volunteers to review M10 and M79. For M23, there is a market for 6” Indium Phosphide wafer. Steve Martell said it is probably best to issue these ballots for reapproval. If anyone has any comment, we can ask them to provide input.

- Reapproval of SEMI M10-0218, Terminology for Identification of Structures and Features Seen on Gallium Arsenide Wafers
- Line Item Revision of SEMI M23-0811 (Reapproved 0218), Specification for Polished Monocrystalline Indium Phosphide Wafers
- Line Item Revision of SEMI M79-0218, Specification for Round 100 mm Polished Monocrystalline Germanium Wafers for Solar Cell Applications

**Motion:** Authorize M10 for reapproval and M23 and M79 line item revision ballots

**By:** Steve Martell / Nordson SONOSCAN

**Second:** Russ Kremer / NONE

**Discussion:**

**Result:** 3-Y 0-N Voting Result: Pass - 100.00%

*8.2 M9 Revision TF*

8.2.1 Kevin Nguyen reported the TF completed its goal. So, it should be disbanded.

**Motion:** Disband the M9 Revision TF

**By:** Russ Kremer / NONE

**Second:** Judy Kronwasser / Novasic

**Discussion:** None

**Result:** 3-Y 0-N Voting Result: Pass - 100.00%

**9 Action Item Review**

*9.1 Open Action Items*

None

*9.2 New Action Items*

Refer to table 7.

**10 Next Meeting**

10.1 Tentatively set for November 2, 2022 (9 AM – 11 AM Pacific) online.

**11 Adjournment**

Having no further business, a motion was made to adjourn the Compound Semiconductor Materials NA TC Chapter. Adjournment was at 10:00 AM.

**Respectfully submitted by:**

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**Minutes approved by:**

Russ Kremer, Cochair	
Jim Oliver, Cochair	



**Table 9 Index of Available Attachments #1**

<i>#</i>	<i>Title</i>	<i>#</i>	<i>Title</i>
1	China CSMCommittee Chapter Liaison Report	4	Staff Report March 2022 v5 SA
2	Eu CSM Liaison Report November 2021 v1	5	6915 A&R
3	Japan CSM Liaison Report Feb2022 v1		

#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.