Compound Semiconductor Materials Europe TC Chapter
Meeting Summary and Minutes

Summer Meeting
Tuesday, July 25, 2023
4:30 PM – 6:30 PM CEST
Official Virtual TC Chapter Meeting

TC Chapter Announcements

Next TC Chapter Meeting
November 15, 2023. Check www.semi.org/en/standards for the latest update.

Table 1 Meeting Attendees

Co-Chair: *Arnd Weber (SiCrystal)*
SEMI Staff: *Kevin Nguyen (SEMI)*

Company	*Last*	*First*
Munich University of Applied Sciences	*Alt*	*Hans-Christian*
Wolfspeed	*Barbieri*	*Tom*
Scientic Visual	*Cheze*	*Caroline*
Continium Tech	*Izak*	*Richard*
Fraunhofer IISB	*Kranert*	*Christian*
Freiberger Compound Materials GmbH	*Kretzer*	*Ulrich*
Bruker	*Lafford*	*Tamzin*
Wolfspeed	*Rao*	*Shailaja*
X-Intrinsic	*Roberts*	*Bob*
Enkris	*Tao*	*Guoqiao*
Si Crystal	*Weber*	*Arnd*

Italic indicates online participant

Table 2 Leadership Changes

WG/TF/SC/TC Name	*Previous Leader*	*New Leader*
None		

Table 3 Committee Structure Changes

Previous WG/TF/SC Name	*New WG/TF/SC Name or Status Change*
None	

Table 4 Ballot Results

Document #	*Document Title*	*Committee Action*
6870	New Standard: Test Method for Quantifying Basal Plane Disclocation Density in 4h Sic by X Ray Diffraction Topography/Imaging	Passed as balloted
7053	Line Item Revision of SEMI M63, Test Method for Measuring the Al Fraction in AlGaAs on GaAs Substrates by High Resolution X-Ray Diffraction	Passed as balloted

Table 5 Ratification Ballot Results

Document #	*Document Title*	*ISC A&R Action*	*A&R Forms*
None			

Note 1: **Passed** Ratification ballots will be submitted to SEMI publication for final processing.

Note 2: **Failed** Ratification ballots were returned to the originating task forces for re-work and re-balloting or abandoning.

Table 6 Authorized Activity

#	*Type*	*SC/TF/WG*	*Details*
7111	SNARF	SiC Material and Wafer Specification TF	Revision of SEMI M81, Guide to Defects Found in Monocrystalline Silicon Carbide Substrates

#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

#	*When*	*TF*	*Details*
None			

Table 8 New Action Items

Item #	*Assigned to*	*Details*
None		

Table 9 Previous Meeting Action Items

Item #	*Assigned to*	*Details*	*Status*
May01-2023-1	Tom Barbieri	To conduct a feasibility study on Epi Defects and perhaps form a Task Force to create a SEMI Document.	Ongoing

1 Welcome, Reminders, and Introductions

1.1 Arnd Weber called the meeting to order at 4:30 PM. Attendees introduced themselves. Kevin Nguyen presented meeting reminders on antitrust, intellectual property issues and effective meeting guidelines.

2 Review of Previous Meeting Minutes

2.1 The TC Chapter reviewed the minutes of the previous meeting.

Motion:	To approve the meeting minutes
By / 2nd:	By: Christian Kranert / Fraunhofer IISB Second: Hans Christian Alt / Munich University
Discussion:	None
Vote:	6-0. Motion passed.

3 Task Force Report

3.1 *SiC-Task Force*

3.1.1 Arnd Weber reported the work for M55 to include 200 mm is completed. There is no other business. However, SEMI M81, Guide to Defects Found in Monocrystalline Silicon Carbide Substrates, is due for 5 year review. The SNARF was sent to members for review and was presented in the meeting. Arnd said Eric Guiot (Soitec) has provided some comments on SmartSiC, an SiC engineered substrate. Arnd will invite Eric and others to get involved when the meeting is kick off.

Motion: Approve the SNARF for Revision M81
By: Christian Kranert / Fraunhofer IISB
Second: Tom Barbieri / Wolfspeed, Inc.
Discussion: Bob Roberts commented whether to include consumable suppliers (e.g., pads) as the impacted sector in the SNARF form. Arnd appreciated the comment, but stated not necessary.
Result: 8-Y 0-N Voting Result: Pass - 100.00%.

Attachment: SNARF_M81-revision_20230725

3.2 *Test Methods Task Force*

3.2.1 Christian Kranert reported other than ballot 6870, New Standard: Test Method for Quantifying Basal Plane Dislocations in 4H-SiC by X-ray Topography. No other activity is in the work.

3.3 *5-year Review (M46, M63, M75) Task Force*

3.3.1 Hans Christian Alt reported doc. 7053, Line Item Revisions of SEMI M63, Test Method for Measuring the Al Fraction in AlGaAs on GaAs Substrates by High Resolution X-Ray Diffraction, will need to be reviewed.

4 Ballot Review

4.1 Doc. 6870, New Standard: Test Method for Quantifying Basal Plane Disclocation Density in 4h Sic by X Ray Diffraction Topography/Imaging

4.1.1 This document passed TC Chapter meeting with editorial changes. Refer to attachment below for complete details.

Attachment: 6870 A&R

4.2 Doc. 7053, 7053, Line Item Revisions of SEMI M63, Test Method for Measuring the Al Fraction in AlGaAs on GaAs Substrates by High Resolution X-Ray Diffraction

4.2.1 This document passed TC Chapter meeting as balloted. Refer to attachment below for complete details.

Attachment: 7053 A&R

5 Liaison Reports

5.1 *China CSM TC Chapter*

5.1.1 Kevin Nguyen reported. Of note:

- Last meeting
    - April 26, 2023
    - Dongguan, Guangdong
- Next meeting
    - Fall meeting, 2023
    - Exact date and time will be determined.
- Ballot Review
    - Doc. 6768, New Standard: Test Method for Micropipe Density of Silicon Carbide Wafer by Laser Reflection
        - Failed
    - Doc. 6769, New Standard: Test Method Qualitative for Residual Stress of Silicon Carbide Wafers by Photoelastic
        - Failed

Attachment: CSM China TC Chapter Apr 2023

5.2 *Japan CSM TC Chapter*

5.2.1 Kevin Nguyen reported. Of note:

- Last meeting
    - May 26, 2021 at Japan Spring 2021 Meetings
    - Web Conference
- Next meeting
    - Jan. 19, 2022 at Japan Winter 2022 Meetings
    - Web Conference
- New TFOF
    - Silicon Carbide Substrate liaison TF

Attachment: Japan CSM Liaison Report Feb2022 v1

5.3 *North America CSM TC Chapter*

5.3.1 Kevin Nguyen reported. Of note:

- Last Meeting: November 22, 2022 via online
- Next Meeting: TBD

- Ballot Review
    - Doc. 6952, Reapproval of SEMI M10-0218 *Terminology for Identification of Structures and Features Seen on Gallium Arsenide Wafers* – Passed as balloted
    - Doc. 6953, Line Item Revision of SEMI M79-0218 *Specification for Round 100 mm Polished Monocrystalline Germanium Wafers for Solar Cell Applications* – Passed as balloted
    - Doc. 6954, Line Item Revision of SEMI M23-0811 (Reapproved 0218) *Specification for Polished Monocrystalline Indium Phosphide Wafers* – Passed as balloted
- M86 (GaN) Revision TF
    - Doc. 6806, Revision of M86, *Specification for Polished Monocrystalline c-Plane Gallium Nitride Wafers* (Subject: To revise 1-4 inches diameter) – Passed in June 2022 and published as M86-0922

Attachment: NA CSM TC Chapter Liaison report Nov 2022 v1

6 New Business

6.1 Kevin Nguyen mentioned SEMI M54-0319 Guide for Semi-Insulating (SI) GaAs Material Parameters, is due for 5 year review. Arnd said this standard will be revisited at the next meeting.

6.2 In follow up with previous meeting action item on creating an epi defect guide, Tom Barbieri reported that there are interests, but no commitment yet. Tom will also need help in getting a copy of an IEC standard on epitaxial defect to leverage.

6.2.1 Tom will also bring this topic up again at the next Power America meeting taking place in early August. If anyone is interested, he would be happy to forward the meeting information. There, Tom will also try recruit for volunteers in joining M81 (Silicon Carbide defect) Revision effort.

7 Next Meeting and Adjournment

7.1 The next meeting is tentatively scheduled for November 15, 2023 in person in conjunction with SEMICON Europa, Munich, Germany. Arnd's preference is on Wednesday during that week. Kevin will work with Arnd for schedule. Refer to http://www.semi.org/standards for the list of meeting schedules.

Having no further business, adjournment was at 6:00 PM CEST.

Respectfully submitted by:

Kevin Nguyen,
SEMI Standards Operations Manager
Phone: 408-943-7997
Email: knguyen@semi.org

Minutes tentatively approved by:

Arnd Weber (SiCrystal)	

Table 10 Index of Available Attachments#1

Title
SNARF_M81-revision_20230725
6870 A&R
7053 A&R
CSM China TC Chapter Apr 2023
Japan CSM Liaison Report Feb2022 v1
NA CSM TC Chapter Liaison report Nov 2022 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. For additional information or to obtain individual attachments, please contact [SEMI Staff Name] at the contact information above.