



FHE Japan TC Chapter Meeting Summary and Minutes

Japan Standards Spring Meetings 2025

Friday, May 30, 2025, 3:00 PM – 5:00 PM JST

Board Room, SEMI Japan, Tokyo, Japan / Official Virtual TC Chapter Meeting (Hybrid)

TC Chapter Announcements

Next TC Chapter Meeting

Friday, October 17, 2025, 3:30PM – 5:30PM JST at KOMORI CORPORATION Tsukuba plant, Ibaraki, Japan and via OVTCCM (Hybrid)

Table 1 Meeting Attendees

Italics indicate virtual participants

FHE TC Co-Chairs: Tadahiro Furukawa (Yamagata University), Ryoichi Watanabe (Japan Display)/ Satoshi Maeda (Hiroshima City University)

SEMI Staff: Nahoko Koga (SEMI Japan)

| <i>Company</i> | <i>Last</i> | <i>First</i> | <i>Company</i> | <i>Last</i> | <i>First</i> |
|------------------------|-----------------|-----------------|----------------------------------|--------------|----------------|
| Japan Display | Watanabe | Ryoichi | <i>Hiroshima City University</i> | <i>Maeda</i> | <i>Satoshi</i> |
| <i>Innolux Japan</i> | <i>Nakagawa</i> | <i>Takanobu</i> | <i>NAURA</i> | <i>CAO</i> | <i>CLARK</i> |
| Yamagata University | Furukawa | Tadahiro | SEMI Japan | Kanno | Hirofumi |
| <i>Kobe University</i> | <i>Inoue</i> | <i>Mari</i> | SEMI Japan | Yoshida | Akiko |
| FUJIKURA KASEI | Wakabayashi | Katsutomo | SEMI Japan | Koga | Nahoko |
| TOPPAN | Ito | Manabu | | | |

Table 2 Leadership Changes

| <i>WG/TF/SC/TC Name</i> | <i>Previous Leader</i> | <i>New Leader</i> |
|-------------------------|------------------------|-------------------|
| None | | |

Table 3 TC Chapter Structure Changes

| <i>Previous WG/TF/SC Name</i> | <i>New WG/TF/SC Name or Status Change</i> |
|-------------------------------|---|
| None | |

Table 4 Ballot Results

| <i>Document #</i> | <i>Document Title</i> | <i>Committee Action</i> |
|-------------------|---|-------------------------|
| 6906 | New Standard: Terminology for Flexible Hybrid Electronics (FHE) | Failed |

#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 Ratification Ballot Results

| <i>Document #</i> | <i>Document Title</i> | <i>ISC A&R Action</i> | <i>A&R Forms</i> |
|-------------------|-----------------------|---------------------------|----------------------|
| 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 Activities Approved by the GCS between meetings of the TC Chapter

| <i>#</i> | <i>Type</i> | <i>SC/TF/WG</i> | <i>Details</i> |
|----------|-------------|-----------------|----------------|
| None | | | |

Table 7 Authorized Activities

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

| <i>#</i> | <i>Type</i> | <i>SC/TF/WG</i> | <i>Details</i> |
|----------|-------------|-----------------|----------------|
| None | | | |

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

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

Table 8 Authorized Ballots

| <i>#</i> | <i>When</i> | <i>TF</i> | <i>Details</i> |
|----------|---------------|--------------------|---|
| 6906A | Cycle 7, 2025 | FHE Terminology TF | New Standard: Terminology for Flexible Hybrid Electronics (FHE) |

Table 9 SNARF(s) Granted a One-Year Extension

| <i>#</i> | <i>TF</i> | <i>Title</i> | <i>Expiration Date</i> |
|----------|-----------|--------------|------------------------|
| None | | | |

Table 10 SNARF(s) Cancelled

| <i>#</i> | <i>TF</i> | <i>Title</i> |
|----------|-----------|--------------|
| None | | |

Table 11 Standard(s) to receive Inactive Status

| <i>Standard Designation</i> | <i>Title</i> |
|-----------------------------|--------------|
| None | |

Table 12 New Action Items

| <i>Item #</i> | <i>Assigned to</i> | <i>Details</i> |
|-----------------|---------------------------------------|---|
| FHE_20250530_01 | FHE Terminology Task Force Co-Leaders | To submit Doc.# 6906A, New Standard: Terminology for Flexible Hybrid Electronics (FHE) for Cycle 7, 2025 to SEMI Staff. |

Table 13 Previous Meeting Action Items

| <i>Item #</i> | <i>Assigned to</i> | <i>Details</i> |
|-----------------|-----------------------------------|--|
| FHE_20250131_01 | SEMI Staff | To make a community page for FHE Maintenance Task Force on Connect@SEMI again as it had disappeared. →Closed |
| FHE_20250131_02 | SEMI Staff | To check the status of GCS voting with SEMI Taiwan Staff regarding proposed as Local Area Sensing Network for FHE System Task Force. →Closed |
| FHE_20250131_03 | FHE Terminology Task Force Leader | To submit Doc.# 6906, New Standard, Terminology for Flexible Hybrid Electronics (FHE) for Cycle 3, 2025 to SEMI Staff. →Closed |

1 Welcome, Reminders, and Introductions

Tadahiro Furukawa (Yamagata University) called the meeting to order at 3:00 PM. The meeting reminders on antitrust issues, intellectual property issues and holding meetings with international attendance were reviewed. Attendees introduced themselves.

Attachment: 01_Required Meeting Elements March 2024_J

2 Review of Previous Meeting Minutes

The TC Chapter reviewed the minutes of the previous meeting.

Motion: Approve the minutes for the previous FHE Japan TC Chapter meeting as written.

By / 2nd: By: Ryoichi Watanabe / Japan Display Inc.
Second: Satoshi Maeda / Hiroshima City University

Discussion: None

Vote: 6-Y 0-N Motion Passed

Attachment: 02_FHE_JA_Minutes_20250131_v1.0

3 Liaison Reports

3.1 Japan Regional Standards Committee (JRSC)

Hirofumi Kanno (SEMI Japan) reported for the JRSC. At the previous meeting held on April 17, there was a leadership change for co-chair position.

Hirofumi Kannno (SEMI Japan) also reported that the Planning Meeting will be held on Thursday, August 28, inviting all the TF leaders as well as TC co-chairs to deepen knowledge related to standardization. More details will be provided as soon as they are finalized.

3.2 Global Coordinating Subcommittee (GCS)

Nahoko Koga (SEMI Japan) reported for the GCS of the global Flexible Hybrid Electronics TC that ballot 7242, New Standard: Guide for Reliability of Flexible Hybrid Electronics, under the FHE NA TC Chapter was approved to be submitted for Cycle 3, or 4- 2025.

Nahoko Koga (SEMI Japan) also reported that the SNARF, New Standard: Guide for Local Area Sensing Network(LASN)-Architecture and Address for FHE System, proposed by Local Area Sensing Network for FHE



System Task Force under FHE Taiwan TC Chapter was approved by the GCS. Details of the SNARF can be found at: <https://downloads.semi.org/web/wstdsbal.nsf/NTS!OpenForm&Start=1&Count=200&Expand=5&Seq=4>

3.3 FHE Taiwan TC Chapter

Nahoko Koga (SEMI Japan) reported for the FHE Taiwan TC Chapter that there had been no updates from the previous meeting except for the above SNARF approved by the GCS between TC Chapter meetings.

Attachment: 03_FHE Taiwan Liaison Report_20250326_R1

3.4 FHE NA TC Chapter

Nahoko Koga (SEMI Japan) reported for the FHE North America TC Chapter. Of note:

- SNARF, New Standard: Guide For Substrate Design Of Flexible Hybrid Electronics” from FHE Design TF and its Letter Ballot submission for Cycle 2, 2025 was approved by GCS on January 27, 2025.
- The voting result of Doc.#7193, New Standard: Guide For Substrate Design Of Flexible Hybrid Electronics was reviewed and it failed.
- The next meeting is scheduled for SEMICON West 2025.

Attachment: 04_NA FHE Liaison Report Apr2025 v1

4 SEMI Staff Report

Nahoko Koga (SEMI Japan) gave the SEMI Staff Report. Of note:

- SEMICON West 2025 will be held in Phoenix, Arizona in October. The venue of SEMICON West will alternate between Phoenix and San Francisco every October thereafter.
- By Feb 2025, all Standards Task Forces shall use Connect@SEMI to host documents that are currently in development. However, the ISC Regulations SC recommended to postpone enforcement of implementation until next Regs/ PM revision (which is currently aimed to become effective by NA Summer meeting in June). The Regs SC is working with SEMI to update both Connect@SEMI and rules so that they are aligned each other.
- SEMI University Japan Store launched in June, 2024, which proves SEMI Japan original e-learning courses with Japanese audio or subtitles including SEMI Standards tutorials.

Attachment: 05_Staff Report Feb 2025 v2_ay

5 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.

5.1 Document #6906, New Standard: Terminology for Flexible Hybrid Electronics (FHE)

- **Failed** TC Chapter review and will be returned to the TF for rework.

Attachment: 06_6906_Ballot Review

6 Subcommittee and Task Force Reports

6.1 FHE Terminology TF

Tadahiro Furukawa (Yamagata University) reported for the FHE Terminology Task Force. The Task Force met in May to discuss the details of voting results of Doc.#6906, New Standard: Terminology for Flexible Hybrid Electronics (FHE). They would re-work the document and plan to submit the document for Cycle 7, 2025.

6.2 Tactile Texture Characteristics for FHE TF

Tadahiro Furukawa (Yamagata University) reported for the Tactile Texture Characteristics for FHE Task Force. There are no activities to be reported.

6.3 FHE Maintenance TF

Tadahiro Furukawa (Yamagata University) reported for the FHE Maintenance Task Force. The Task Force met in March, and held a discussion on Doc.#7193, New Standard: Guide For Substrate Design Of Flexible Hybrid Electronics.

7 Old Business

7.1 Project Period Review

No SNARF will be expiring soon.

7.2 5-Year Review

No document is subject for 5-year review within this year.

8 New Business

None

9 Action Item Review

9.1 Open Action Items

| <i>Item #</i> | <i>Assigned to</i> | <i>Details</i> |
|-----------------|-----------------------------------|--|
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| FHE_20250131_02 | SEMI Staff | To check the status of GCS voting with SEMI Taiwan Staff regarding proposed as Local Area Sensing Network for FHE System Task Force. →Closed |
| FHE_20250131_03 | FHE Terminology Task Force Leader | To submit Doc.# 6906, New Standard, Terminology for Flexible Hybrid Electronics (FHE) for Cycle 3, 2025 to SEMI Staff. →Closed |

9.2 New Action Items

| <i>Item #</i> | <i>Assigned to</i> | <i>Details</i> |
|-----------------|---------------------------------------|---|
| FHE_20250530-01 | FHE Terminology Task Force Co-Leaders | To submit Doc.# 6906A, New Standard: Terminology for Flexible Hybrid Electronics (FHE) for Cycle 7, 2025 to SEMI Staff. |

10 Next Meeting and Adjournment

The next meeting is scheduled for Friday, October 17, 2025, 3:30PM – 5:30PM JST at KOMORI CORPORATION Tsukuba plant, Ibaraki, Japan and via Official Virtual TC Chapter Meeting.

Adjournment: [5:00 PM JST]

Respectfully submitted by:

Nahoko Koga

Standards & EHS

SEMI Japan

Phone: +81-3-3222-6018

Email: nkoga@semi.org

Minutes tentatively approved by:

| | |
|---|--------------|
| Tadahiro Furukawa (Yamagata University), Co-chair | July 2, 2025 |
| Ryoichi Watanabe (Japan Display), Co-chair | July 1, 2025 |
| Satoshi Maeda (Hiroshima City University), Co-chair | July 1, 2025 |

Table 14 Index of Available Attachments^{#1}

| <i>Title</i> | <i>Title</i> |
|--|-------------------------------------|
| 01_ Required Meeting Elements March 2024_J | 02_FHE_JA_Minutes_20250131_v1.0 |
| 03_FHE Taiwan Liaison Report_20250326_R1 | 04_NA FHE Liaison Report Apr2025 v1 |
| 05_Staff Report Feb 2025 v2_ay | 06_6906_Ballot Review |

^{#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 Nahoko Koga at the contact information above.