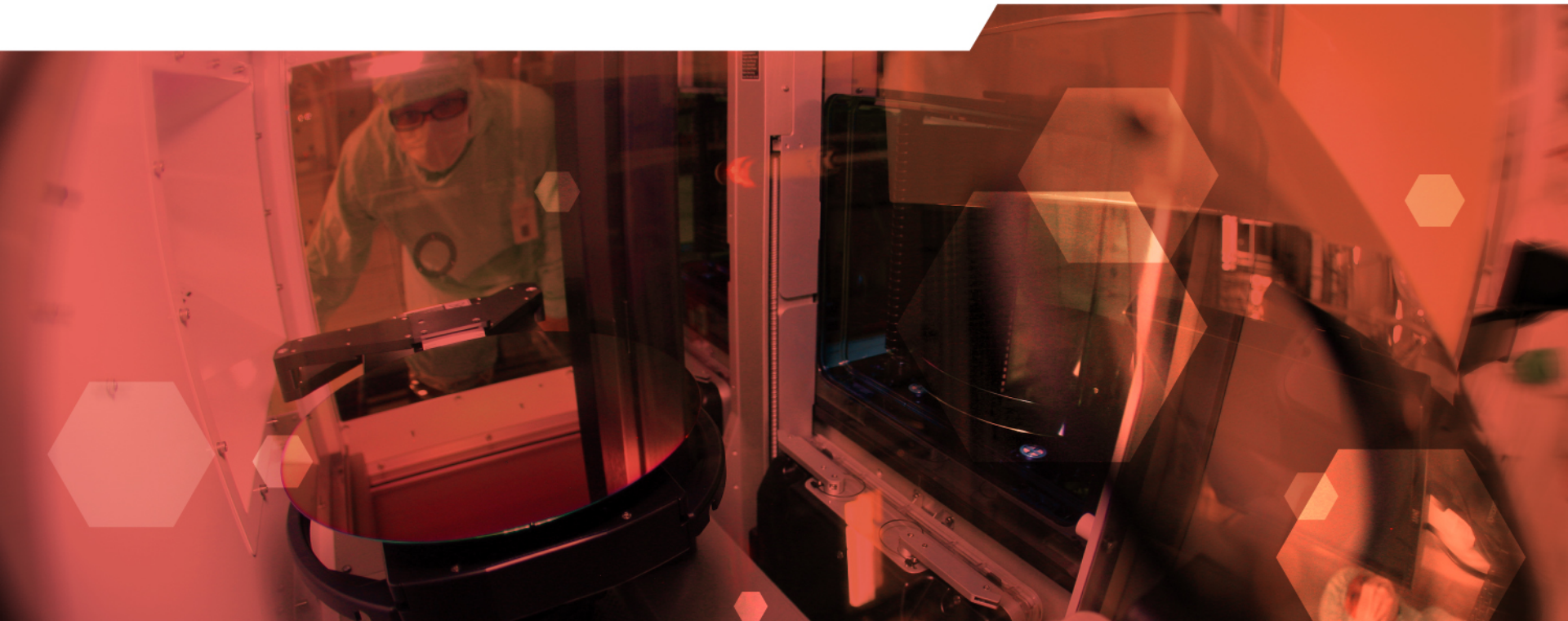


# North America TC Chapter Metrics Global Technical Committee

## Liaison Report

November 2018

v1



# Outline

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# Leadership

- N.A. Metrics TC Chapter Cochairs
  - David Bouldin (Fab Consulting)
  - Mark Frankfurth (Cymer)
  - Vladimir Kraz (BestESD)
- Leadership Change
  - None

# N.A. Metrics TC Updated Organization Chart

## Legend

C Chair/Co-Chair  
L Task Force Leader  
TF Task Force  
TA Technical Architect  
TE Technical Editor

### North America Metrics TC Chapter

C: David Bouldin (Fab Consulting)  
C: Mark Frankfurth (Cymer)  
C: Vladimir Kraz (BestESD)  
*TE: Carolyn Busing (self)*  
*TA: Greg Francis (Cymer)*

#### EMC TF

L: Vladimir Kraz (BestESD)  
L: Mark Frankfurth (Cymer)

#### Equipment RAMP TF

L: Steven Meyer (Intel)  
L: David Busing (Consultant)  
L: Russell Fitzpatrick (Applied Materials)

#### Equipment COO TF

L: David Bouldin (Fab Consulting)  
L: David Jimenez (WWK)

#### ESD/ESC TF

L: Chuck McClain (NorthWest Electrostatic Services)  
L: Russell Fitzpatrick (Applied Materials)

#### RF Measurements TF

L: Jay Osselburn (QEI-RF)  
L: Ya-hong Neiryneck (Intel)

#### Factory Level Productivity Metrics TF

L: Ron Billings (Ore. State/FABQ)  
L: Jim Irwin (Irwin Consulting)

#### Critical Chamber Components (CCC) Test Methods TF

L: Supika Mashiro (TEL)

**NEW**

Inactive

NOTE: *Italics* means group is currently inactive.

# Meeting Information

- Last meeting
  - November 7, 2018 at the SEMI Standards NA Fall 2018 Meetings
    - SEMI Headquarters, Milpitas California
- Next meeting
  - April 3, 2019 at the SEMI Standards NA Spring 2019 Meetings
    - SEMI Headquarters, Milpitas California

# Authorized Activities

#	Type	SC/TF/WG	Details
6472	SNARF	CCC Test Methods TF	<p>New Standard: <i>Test Method for Measuring Surface Metal Contamination Through ICP-MS of Critical Chamber Components Used in Semiconductor Wafer Processing</i></p> <p><b>New SNARF distributed for 2-week review 10/19/2018-11/5/2018. Approved at TC meeting.</b></p>
6473	SNARF	CCC Test Methods TF	<p>New Subordinate Standard: <i>Test Method for Measuring Surface Metal Contamination Through ICP-MS of Showerheads Used in Semiconductor Wafer Processing</i></p> <p><b>New SNARF distributed for 2-week review 10/19/2018-11/5/2018. Approved at TC meeting.</b></p>
6468	SNARF	ESD/ESC TF	<p>Line-item Revision to SEMI E78-0912, <i>Guide to Assess and Control Electrostatic Discharge (ESD) and Electrostatic Attraction (ESA) for Equipment</i></p> <p><b>New SNARF Approved at TC meeting</b></p>
6467	SNARF	ESD/ESC TF	<p>Line-item Revision to SEMI E129-09-12, <i>Guide to Assess and Control Electrostatic Charge in a Semiconductor Manufacturing Facility</i></p> <p><b>New SNARF Approved at TC meeting</b></p>
6466	SNARF	Eq. RAMP Metrics TF	<p>Line-item Revision to SEMI E10-0814E, <i>Specification for Definition and Measurement of Equipment Reliability, Availability, and Maintainability (RAM) and Utilization</i></p> <p><b>New SNARF Approved at TC meeting</b></p>
6469	SNARF	Eq. RAMP Metrics TF	<p>Line-item Revision to SEMI E79-0814E, <i>Specification for Definition and Measurement of Equipment Productivity</i></p> <p><b>New SNARF Approved at TC meeting</b></p>

# Authorized Ballots

#	When	TF	Details
6365	Cycle 7-2018	ESD/ESC TF	Line-item Revision to SEMI E78-0912, <i>Guide to Assess and Control Electrostatic Discharge (ESD) and Electrostatic Attraction (ESA) for Equipment</i>
6364	Cycle 7-2018	ESD/ESC TF	Line-item Revision to SEMI E129-09-12, <i>Guide to Assess and Control Electrostatic Charge in a Semiconductor Manufacturing Facility</i>

# Open SNARFs

- 6472, New Standard: Test Method for Measuring Surface Metal Contamination Through ICP-MS of Critical Chamber Components Used in Semiconductor Wafer Processing
- 6473, New Subordinate Standard: Test Method for Measuring Surface Metal Contamination Through ICP-MS of Showerheads Used in Semiconductor Wafer Processing
- 6468, Line-item Revision to SEMI E78-0912, Guide to Assess and Control Electrostatic Discharge (ESD) and Electrostatic Attraction (ESA) for Equipment
- 6467, Line-item Revision to SEMI E129-09-12, Guide to Assess and Control Electrostatic Charge in a Semiconductor Manufacturing Facility
- 6466, Line-item Revision to SEMI E10-0814E, Specification for Definition and Measurement of Equipment Reliability, Availability, and Maintainability (RAM) and Utilization
- 6469, Line-item Revision to SEMI E79-0814E, Specification for Definition and Measurement of Equipment Productivity



# 5 Year Review Metrics

Designation	Standard Title	Action By	Assigned to
SEMI E78-0912	Guide to Assess and Control Electrostatic Discharge (ESD) and Electrostatic Attraction (ESA) for Equipment	9/28/2017	Ballot in Cycle 7-18
SEMI E129-0912	Guide to Assess and Control Electrostatic Charge in a Semiconductor Manufacturing Facility	9/28/2017	Ballot in Cycle 7-18
SEMI E43-0813	Guide for Electrostatic Measurements on Objects and Surfaces	8/21/2018	Assigned to ESD/ESC TF
SEMI E165-0813	Guide for a Comprehensive Equipment Training System When Dedicated Training Equipment is not Available	8/30/2018	TF plans to resume in Spring 2019
SEMI E150-0314	Guide for Equipment Training Best Practices	3/14/2019	TF plans to resume in Spring 2019
SEMI E149-0314	Guide for Equipment Supplier-Provided Documentation for the Acquisition and Use of Manufacturing Equipment	3/14/2019	TF plans to resume in Spring 2019
SEMI E79-0814E	Specification for Definition and Measurement of Equipment Productivity	3/14/2019	SNARFs by Eq RAMP TF

# Task Force Highlights

# Critical Chamber Components (CCC) Test Methods Task Force Report

- Leadership change
  - Michal Cox (Intel) will be recommended at the next TC meeting as the co-leader of CCC Test Methods TF (pending his Program/TC Member registration)
- New SNARFs proposal (SNARFs reviewed by GTC members prior to NA Metrics TC meeting)
  - New Standard: *Test Method for Measuring Surface Metal Contamination Through ICP-MS of Critical Chamber Components Used in Semiconductor Wafer Processing*
  - New Subordinate Standard: *Test Method for Measuring Surface Metal Contamination Through ICP-MS of Showerheads Used in Semiconductor Wafer Processing*
- Ballots Adjudicated
  - None

# EMC Task Force Report

- Leadership change
  - None
- SNARFs proposal / Ballots Adjudicated
  - None
- Upcoming Activities – Plan to popularize E176 among Semi and PCBA manufacturers
  - We (EMC TF) collectively suggest that SEMI publishes a “White Paper” on importance of new E176 which is just technical enough to convey the substance and just business-like enough to impress its importance on the management layers
  - Encourage SEMI members, such as tool manufacturers, to popularize E176 among their customers:
    - It will improve operability and uptime of their equipment; It will improve process and yield at the FABs; Everyone wins
  - On behalf of SEMI spread focused Press Releases to technical publications worldwide (they appreciate Press Releases from global organizations more than from businesses)
    - free & provides multiple exposure to different levels within companies
  - At SEMICONs have special sessions on specific Standards
  - Anything else that works

# ESD/ESC Task Force Report

- Leadership change
  - None
- SNARFs proposal / Ballots Adjudicated
  - None
- New SNARFs
  - SNARF for Line-item Revision to SEMI E78-0912, *Guide to Assess and Control Electrostatic Discharge (ESD) and Electrostatic Attraction (ESA) for Equipment*
  - SNARF for Line-item Revision to SEMI E129-09-12, *Guide to Assess and Control Electrostatic Charge in a Semiconductor Manufacturing Facility*
    - SEMI E78 and SEMI E129 are up for mandatory 5 year review
    - IRDS updated ESD Guideline table to extend past 2018. E78 and E129 should be updated to reflect the change
    - Ballots submission planned for Cycle 2-2019
- SNARF 6365 (LI Rev E78) and SNARF 6364 (LI Rev E129) abolished at Fall TC Meeting due to the scope change;
- Upcoming Activities
  - SEMI E43-0813, *Guide for Electrostatic Measurements on Objects and Surfaces*
    - Due for 5 year review. TF will provide recommendation for the scope of revision by Spring 2019

# RF Measurements Task Force Report

- SNARFs proposals
  - None
- Ballots Results
  - None
- Future Activities
  - Review existing RF related standards: SEMI E113, E114, E115, E136, E143;
  - Load transient tests
  - Reliability/ Availability of RF Generator/ RF supply system
    - Application of E10 like metrics
  - Measurements, particularly modulation (e.g., RF measurements on modulated loads)
    - Measurement accuracy, definitions
  - Pulsing, Frequency Sweep, Arc Management
  - + Issues/topics raised during revision to E135 that were not yet incorporated

# Equipment RAMP Task Force Report

- Webinars overview of SEMI E10, E79, E58, and E116 (and how they work together) to enhance the application and correct usage of these existing Standards.
  - Overview of Metrics Global TC and Equipment Performance Standards
  - Overview of E10
  - Overview of E79
  - Example Scenario and Calculations in E10, Part I: States Transitions
  - Sample Calculations in E10, Part II: Fundamental Quantities and Metrics
    - PPT 100%, script 100%, production 100% - Pending posting to the web
    - Promotional article planned for Standards Watch Newsletter in Dec 2018
  - Sample Calculations in E79 — *On Hold – until E10 and E79 updates complete*
    - PPT 100%, script 0%, production 0%
- Upcoming Activities
  - SNARF for Line-time Revision to SEMI E10-0814E, *Specification for Definition and Measurement of Equipment Reliability, Availability, and Maintainability (RAM) and Utilization*
  - SNARF for Line-item Revision to SEMI E79-0814E, *Specification for Definition and Measurement of Equipment Productivity*

RECORDED & POSTED

# Equipment COO Task Force Report

- No meeting / no updates.
- “inactive” status effective July 2018.



# Next Meeting Schedule

The next N.A. Metrics Standards Meetings are tentatively scheduled\* for April 2-3, 2019 at SEMI HQ, Milpitas, California in conjunction with the Spring 2019 Meetings. Exact meeting date and details will be announced when finalized and available at <http://www.semi.org/en/standards-events>

## **Tuesday, April 2, 2019 (Tentative)**

- EMC TF (11:00 – 12:00 noon)
- ESD/ESC TF (13:00 – 14:30)
- Critical Chamber Components (CCC) Test Methods TF (14:30 – 16:30)

## **Wednesday, April 3, 2019 (Tentative)**

- Equipment RAMP Metrics TF (9:00 – 11:00)
- RF Measurements TF (12:30-14:30)
- Metrics NA TC Chapter (15:00 – 18:00)

\*All times are in Pacific Time. Times and dates are subject to change without notice.

# Thank you!

For more information or to participate in any N.A. Metrics activities,  
please contact Inna Skvortsova at SEMI  
[iskvortsova@semi.org](mailto:iskvortsova@semi.org)