FAB OWNERS ALLIANCE (FOA)
Overview
SEMI CONNECTS TO
ADVANCE A GLOBAL INDUSTRY

SEMI Mission
SEMI provides industry stewardship and engages with our members to advance the interests of the global electronics manufacturing and design supply chain.

SEMI Vision
SEMI promotes the development of the global electronics manufacturing and design supply chain and positively influences the growth and prosperity of its members. SEMI advances the mutual business interests of its membership and promotes a free and open global marketplace.

SEMI Value Proposition
SEMI speeds the time-to-better business results for its members across the global electronics manufacturing and design supply chain.
SEMI BRINGS THE WORLD TO YOU

1,000+ Standards

20+ Technology Communities

2,300+ Program Hours

5,000+ Volunteers

170+ Programs

2,400+ Member Companies

1.3 Mil People Served

GLOBAL ADVOCACY
WORKFORCE DEVELOPMENT
TECH COMMUNITIES
MARKET INTELLIGENCE
STANDARDS/EHS
THOUGHT LEADERSHIP
EXPOSITIONS/CONFERENCES

SEMI | FOA
One Membership Opens the Door to a World of Opportunities
• The FOA is a SEMI technology community that meets regularly to discuss and act on common manufacturing issues, combining strengths and resources to become more globally competitive.

• Established in 2004 as a nonprofit trade association of semiconductor & MEMS fab owners and industry suppliers with quarterly meetings and activities around the world, the FOA was integrated into SEMI in 2018.

• The group currently consists of 25+ device companies with over 130 semiconductor manufacturing facilities and 65+ suppliers to the industry.

• We are a collaboration of Fab Owners who see our fabs as the crown jewel in our companies’ competitive strategy. We believe operating our manufacturing facilities provides superior value for our customers.
Device Maker Members

A dynamic, tight-knit group of 25+ device makers from 200mm and below semiconductor & MEMS fab companies

[Image of various device maker logos]

★ = New
Solution Provider Members

AMEC
Apple T
Applied Materials
Araca, Inc.
ASML
Banner Industries
BISTel America
Brooks Automation
Busch LLC
CNW - Courier NetWork
CollabraTech Solutions
Critical Manufacturing
DAS Environmental Expert USA, Inc.
Ebara Technologies, Inc.
Edwards
Electronic Fluorocarbons, LLC
Entegris
Entrepix
ePAK International
Eyelit
FABMATIC USA Inc.
FabTime
Flexciton
GetSpares, LLC
Global Zeus
Green Tweed
INFICON (FPS)
JT Manufacturing
KLA (Orbotech, SPTS)
LAM Research
Linx Consulting Inc.
Macquarie Equipment Trading
MAX International Engineering
MEGA Kinetic Fluid Systems
MEI Wet Processing Systems & Services
Microtronic Inc.
Nanotronics Imaging, Inc.
Nextin Solutions
NSTAR GLOBAL
Odyssey Technical Solutions
Okmetic
Omron
Park Systems
Peer Group
Persys Engineering Inc.
Plasma-Therm, LLC.
Prudential Cleanroom Services
Revasum
Riken Keiki Co. Ltd.
Semilab USA
Semplastics
Semsysco
Siconnex
Sparetech
Stoneguard (SGC) Equipment
SurplusGLOBAL
SUSS MicroTech, Inc.
TEL
Telit IoT Platforms
Trymax Semiconductor Equipment
UTi Inventory Mgmt. (DSV)
Vacuum Engineering & Materials Co., Inc. (VEM)
VALUTEK

★ = New
Device Maker Participation

Representative Job Titles/Roles:
- Director of Wafer Fabrication
- Director of Wafer Manufacturing and Process Development
- VP, Quality & Procurement
- Senior VP Operations
- Senior Location Executive & Sr. Director
- Wafer Fabrication Site Director
- General Manager, Manufacturing
- VP Global Foundry Operations
- VP of Fab Operations
- Vice President Global Fab Operations
- Fab Manager & Sr. Director of Operations
- Vice President of Manufacturing
Key Elements/Activities

- Key Thread = Collaboration
  - Device Maker to Device Maker – DM-only Meetings
  - Device Maker to Solution Provider – General Sessions
  - Collaborative Forum (Co-Authored (DM & SP) Case Studies)
  - Study Teams & Benchmarking
  - Fab Tours

- Ground Rule: “Give to Get”
Meetings (Americas)

4 meetings annually

New for 2020 → Online Open Forums and Manufacturing Solutions Networking Events
Q1 Collaborative Forum

2 days – Focus on Joint Supply-Chain Solutions

Device makers and supply chain members present real-world challenges and the solutions they developed together.

Industry Updates

Market and Manufacturing Trends, Regulatory & Policy Developments, etc.

Team Updates

Topical focus team deep-dives in priority areas

- Maintenance Management
- Industrial Engineering
- HR
- EHS
- Parts & Sub-systems Lifecycle
- FDC
- Business Continuity, etc. (*illustrative*)

Collaborative Forum 2020 – Feb 19-20, Scottsdale, AZ

For our 2020 reception, we were honored to be joined by 2 First Robotics teams.
Overview

Q2 & Q4 Meetings - at Member Fab

Sample Agenda

Wednesday Evening – Sponsored Reception/Dinner

Session 1, Thu, 8:00am – Noon – (Device Makers Only)
- Team Reports (EE&MM, Facilities, IE, EH&S, HR, Process Engineering, FDC etc.)
- Open Forum – New projects, studies, deep dives
- Member Lunch (sponsored)

Session 2, Thu 1:00pm – 6:00pm (Solution Providers included)
- Introductions - Member Minute
  - Host company charitable contribution
- New Member Presentations, Surveys, New Business
- Afternoon Break
- New Member Presentations, Surveys, New Business
- Fab Overview and Tour - Host Fab
- Fab Managers Feedback
- Adjourn to Post Meeting Social
Overview

Q3 Speed Networking

- At SEMICON® West in San Francisco
- Standard Device Maker AM meeting
- 10-minutes mini-meetings between Device Makers and Solution Providers in the afternoon
- Device Makers have option to choose meetings
Meetings
Networking
Study Teams

— Equipment Engineering & Maintenance Managers
— Fault Detection and Classification (FDC)
— Industrial Engineering / Production Management
— Facilities
— EH&S
— Human Resources
— Reliability benchmarking

Study Team Topic Selection – Illustrative

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<thead>
<tr>
<th>Maintenance Management Systems</th>
<th>Spares</th>
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<td>Safety Procedure</td>
<td>Support in terms of hard tool down</td>
</tr>
<tr>
<td>FDC Standardization</td>
<td>Repair Potentials</td>
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<td>Alternative Sources</td>
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<td>Uptime Benchmark - M Factor</td>
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<td>Headcount Planning Models</td>
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<td>Cost Reduction - Alternative Sources</td>
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Benchmarking Fab Operations

- General – Location, Area, Tool Count, Automation
- Production - Fab Utilization, Shipments, Photo Alignments, WIP
- Cycle Time - Lot Cycle Time, Theoretical CT, Delivery Compliance, Raw Wafers Lead Time
- Technology – Technologies, Routes, Photo Layers, Metal Layers, Process Steps
- Staffing – Engineering, Maintenance, Production, Support
- Yield - Line Yield, Scrap, Misprocess, SPC Control
- Cost - Wafer Cost, Cost per Layer, Resist Cost
- Tool Performance - Tool Availability, Tool Utilization, Top Constraints
Success Stories - Meetings

- Q4 Meeting at ON Semiconductor, Gresham, Oregon
  - 120+ Attendees – 40+ = Device Maker
  - Industrial Engineering (IE) Team Meeting
    - 22 Attendees
    - Balancing Cycle-Time/Capacity, Key Cycle Time Bottlenecks, Dispatch, Automation
  - Highly Interactive DM-only Session
    - Host Topics – Wafer Scrubber Strategy, Talent Retention
    - Open Forum – Workforce Development, Materials Supply Chain, EHS

- General Session
  - New Member Presentations – HP, DAS, SkyWater, Entegris
  - 2 Networking Receptions
"For X-Fab, FOA is a vital SEMI Strategic Association Partner. FOA surveys give us a level of benchmarking that we can’t get internally. They give us the opportunity to compare how we are doing against a variety of other fabs and justify what we want to do to improve efficiency, which is invaluable to our company – more valuable than what we pay in dues for the FOA membership!"
**FOA Device Maker Member**

**DALE MILLER**  
Executive Sr. Director  
Fab 9 Global Foundries

“We get a lot of value from FOA, and especially the surveys. Every year we find a golden nugget that guides us into an area where we want to deep dive into such as cycle time, cost and productivity. The results help us assess how we compare to fabs like our own in the device maker community. We use it internally to talk about where we want to focus our money and time.”
OUR TEAM

SEMI FOA Staff

Tom Salmon
Executive Director, FOA & VP, CTP
SEMI

Shilpa Talwalkar
Program Manager, SEMI FOA

Christie Baker
Program Coordinator, SEMI FOA

FOA Governing Council Members

Dale Miller
GLOBALFOUNDRIES

Surya Iyer
Polar Semiconductor

Ariel Meyuhas
MAX IEG

John Spicer
ON Semiconductor

Lloyd Whetzel
XFAB Texas
Helping members achieve

Excellence in Manufacturing