Fab Management Forum

M. Woittennek
Vice President Business Unit Wide-Bandgap
X-Fab, Dresden, Germany

Biography
Coming Soon

References

Welcome Remarks

L. Altimime
President
SEMI Europe, Berlin, Germany

Abstract
Coming Soon

Biography
Laith Altimime, as President of SEMI Europe, leads SEMI's activities in Europe and the Middle East and Africa (EMEA). Altimime has P&L responsibility as well as ownership of all Europe region programs and events, including SEMICON Europa. He is responsible for establishing industry standards, advocacy, community development, expositions, and programs. He provides support and services to SEMI members worldwide that have supply chain interests in Europe. He manages and nurtures relationships with SEMI members in the region and globally as well as with local associations and constituents in industry, government, and academia. Altimime has more than 30 years of international experience in the semiconductor industry. Prior to joining SEMI in 2015, He held senior leadership positions at NEC, KLA-Tencor, Infineon, Qimonda, and imec. Altimime holds an MSc from Heriot-Watt University, Scotland.

References

Coming Soon

J. O'Donnell
Sales Team Manager
VAT Group, St.Gallen, Switzerland

Abstract
Coming Soon

Biography
Coming Soon

References

Winning in the EU: Margin & Complexity Over Volume

O. Tal
CEO
The MAX Group, Alpine, NJ, United States of America

Abstract
European fabs cannot outspend the industry's volume leaders on capital. Leading-edge manufacturers reinvest a large share of their revenue into capacity, a level of spending few companies can sustain, and fewer still can sustain year after year. For most of the industry, including most European fabs, trying to compete this way is not realistic.

This talk presents a different strategy. Fabs in the EU do not need to win on volume. They can win on margin instead, running high-mix, high-complexity work where customers pay for reliability and precision rather than the lowest cost per chip. European specialty manufacturers already follow this model, and it comes with a fraction of the capital intensity.

Choosing this strategy is the easy part. Running it well is not. High-mix, high-WIP environments are unforgiving of weak operational discipline, and the fabs that get it wrong lose the very margin advantage they set out to capture.

This talk draws on field results from directly supporting over 200 fabs globally to unpack what separates fabs that capture the margin advantage from those that lose it to their own complexity, and leaves attendees with a pointed question: is your fab built to compete this way, or just positioned to?

Biography
Oded Tal founded the MAX Group in 1999 and serves as CEO. Under his leadership, MAX has grown into the leading provider of management, operations, and engineering services to the semiconductor industry. He has also held executive roles for MAX clients navigating M&A, including CEO of TSI Semiconductors, where he led its transformation and sale.

Before founding MAX, Tal held various positions in the semiconductor and automotive industries in the United States and Israel. After serving in the Israeli Air Force, where he taught piston engine maintenance, he began his career at Computest Automotive Test Equipment in development and operations management. He has served on the CS Mantech technical committee and board of directors, along with other commercial and NGO entities, and currently sits on the board of directors of Enablence Technologies.

Tal holds a PhD in industrial engineering from Louisiana State University, where his research focused on hidden losses in automated semiconductor manufacturing. He also holds an MEM in engineering management from Ohio State University and a BS in industrial engineering, with a focus on manufacturing, from the University of New Haven.

References

J. Recklies
Executive Vice President Frontend
Infineon, Munich, Germany

Biography
Coming Soon

References

Challenges of Digital Transformation in an Established Semiconductor Factory

J. Jentzsch
Infineon Technologies Dresden AG & Co. KG,
Dresden, Germany

Abstract
Through a digital transformation project at Infineon's Dresden site, our goal is to implement a coordinated, holistic digitalization strategy for the site. This involves fundamentally rethinking the organization, processes, and collaboration. The focus is not only on the technical implementation of individual projects, but rather on supporting employees through the transformation phase by further developing their work methods and adapting and introducing new business processes.

Biography
Julia Jentzsch has been with Infineon Dresden since 2011. After holding positions in industrial engineering, implementing automation projects, and maintenance manager, she has led the Digital Transformation Dresden department since 2025. Her focus is on the successful implementation of digital transformation project at Infineon Dresden.

References

Coming Soon

J. Behnke
General Manager Smart Manufacturing
INFICON Inc., Syracuse, United States of America

Abstract
will be announced later

Biography
Mr. Behnke has over 40 years of semiconductor industry experience. As the GM of INFICON's FPS Product Line and Head of its IMS Marketing team, John leads a global team that develops and deploys Smart Manufacturing software and hardware solutions which improve factories performance. INFICON's comprehensive Digital Twin of a factory enables advanced Factory Scheduling, optimized WIP movement and other advanced capabilities.

He is also a Co-Chair of the Semi North America Smart Manufacturing Chapter as well as a founding member of Semi's Smart Global Executive Committee.

Prior to his current role at FPS John served as: the President of Novati Technologies, SVP and GM of the Semiconductor Group at Intermoleculor, CVP for Front End Manufacturing and Tech Transfers at Spansion and Director of Operations at AMD's Austin Fab 25

References

Coming Soon

P. Lendermann
Chief Business Development Officer
D-SIMLAB Technologies, Singapore, Singapore

Abstract
Coming Soon

Biography
Coming Soon

References

From Fragmented Data to Resilient Fabs: AI-Augmented Engineering for Europe's Semiconductor Future

A. Varin
High-Tech Manufacturing Product Manager
Spotfire, Product Management, Göteborg, Sweden

A. Chimera
Industry Solution Lead
Spotfire, Göteborg, Sweden

Abstract
Europe's semiconductor industry is entering an era defined by geopolitical uncertainty, supply chain pressures, rising manufacturing complexity, and an urgent need to improve competitiveness. In this environment, fab performance is not only a matter of equipment, process technology, or capacity. It increasingly depends on how fast engineering teams can turn complex, fragmented manufacturing data into trusted decisions.

Today, yield, quality, process, equipment, test, wafer, and operational data often live across separate systems, tools, and teams. Engineers spend too much time moving between applications, reconciling data, rebuilding context, and repeating analysis before they can act. As fabs become more automated and data-rich, this fragmentation becomes a strategic risk: if something goes wrong, the same automation that increases productivity can also increase the volume of defective material produced before the issue is detected, understood, and contained.

This presentation will explore a future in which industrial AI & analytics becomes a connected decision environment for semiconductor manufacturers. Rather than replacing engineers with AI, companies need to focus on augmenting engineering expertise with contextual analytics, domain-specific intelligence, statistical guidance, wafer-centric representations, and AI-assisted investigation. This approach helps engineers ask better questions, move faster across data domains, identify patterns earlier, and make decisions with confidence.

Using Spotfire as an example of this vision, the session will discuss how visual analytics, advanced analytics, wafer-level analysis, scalable data access, and AI-assisted workflows can come together to support the next generation of fab management. The focus will not be on a product roadmap, but on broader perspectives: How software can help European fabs become more resilient, more adaptive, and more competitive while keeping human expertise at the center of manufacturing decisions.

Biography
Arnaud is the High-Tech Manufacturing Product Manager for Spotfire, with a focus on industrial investigations, data visualization, and semiconductor manufacturing use cases.
Since joining Spotfire in 2013, Arnaud has worked closely with customers, frontline engineers, and scientists to understand complex analytical workflows and translate them into product capabilities that help engineering and operations teams make better-informed decisions. He currently leads Spotfire's semiconductor manufacturing product investments, including wafer-centric analytics and yield and quality-improvement workflows. His work focuses on helping fabs connect fragmented data domains and tools, accelerate engineering investigations, and bring advanced analytics, visual exploration, and AI-assisted workflows into large-scale manufacturing environments.

References

Hidden Costs, Visible Gains: How Sub-Fab Thermal Intelligence Drives Uptime, Energy Savings, and Sustainable Operations

M. Joyner
Sales Executive Expert, Semiconductor
Watlow Electric Manufacturing Company, St. Louis, United States of America

Abstract

Driving Fab Uptime, Sustainability, and Operational Resilience Through AI-Enabled Thermal Analytics for Sub-Fab Systems

Event/Format: Fab Management Forum at Semicon Europa 2026

Company: Watlow Electric Manufacturing Co.

Presenter: Mark Joyner

E-mail: mark.joyner@watlow.com

Presentation: Oral Presentation

As semiconductor fabs continue to scale advanced manufacturing operations while facing increasing pressure to improve uptime, energy efficiency, sustainability, and operational resilience, greater visibility into sub-fab thermal systems has become critical. This presentation demonstrates how fab-level thermal analytics and connected monitoring technologies can help semiconductor manufacturers identify inefficiencies, predict failures earlier, optimize maintenance strategies, and improve overall fab performance.

Presentation Format: Fab Management Forum Technical Session

Motivation

Modern European semiconductor fabs rely heavily on Advanced Process Control (APC), Fault Detection and Classification (FDC), and fab-level analytics to improve yield and productivity. However, many thermal systems in the sub-fab and utility layers such as exhaust heating, abatement, forelines, gas delivery, and nitrogen heating are typically monitored only through local controller alarms and periodic maintenance. Despite operating outside the main process chambers, these systems have a direct impact on equipment uptime, process stability, energy consumption, safety, and environmental compliance, yet they often fall outside the scope of traditional fab-level monitoring.

As a result, issues such as temperature and power drift, clogging or deposition in exhaust systems, sensor degradation, leaks, and wiring faults are frequently detected only after they lead to process excursions, unplanned downtime, or environmental risk. At the same time, European fabs face increasing pressure to reduce energy use and CO2 emissions while maintaining high-volume production in alignment with EU semiconductor and sustainability objectives. This work was motivated by the combined challenges of uptime risk, latent thermal-driven variability, and limited visibility into the energy and health performance of sub-fab thermal assets.

This case study examines how systematic, sub-fab level thermal monitoring can complement existing APC and manufacturing analytics to support both competitiveness and sustainability in European semiconductor manufacturing.

Scope and Objectives

The work combines expertise in thermal systems engineering, semiconductor manufacturing, and data analytics to investigate how high-resolution thermal data from sub-fab systems can be transformed into actionable operational insights. Data was collected from industrial heaters, SCRs, and control panels using connected controllers and supplemental monitoring points. The dataset included temperatures, setpoints, power consumption, electrical resistance, and controller health indicators, streamed into a standardized analytics pipeline.

The analytics framework targets five key classes of failure and inefficiency modes that are relevant to production sub-fab environments and can be characterized using fab-level thermal monitoring:

Thermal drift identified through long-term deviations in power-to-temperature response.

Clogging and deposition effects in abatement and exhaust systems, detected via changes in temperature uniformity and power behavior; in one system, this enabled extending maintenance intervals from two weeks to twelve weeks.

Heating faults and post-maintenance anomalies, such as mis-wired or degraded zones, identified through correlated power and temperature trends.

Sensor and controller degradation, detected through abnormal thermal or power behavior prior to protective

shutdowns.
Energy inefficiencies, quantified through power trends linked to insulation loss, configuration errors, or drifted setpoints.
The case study presents production examples and use cases illustrating several classes of failure and inefficiency and demonstrates how the same physics-informed methods can generalize across additional modes. The objective is to convert raw thermal signals into actionable information for engineering teams without duplicating existing Manufacturing Execution System (MES) or Advanced Process Control (APC) dashboards, while providing Application Programming Interface (API) access that exposes system-level data through a unified interface.

Core Innovation

The core contribution of this work is a thermal analytics framework tailored specifically to semiconductor sub-fab systems. Rather than treating thermal data as generic IoT signals, the approach incorporates physics-informed features, including zone-to-zone balance, thermal response behavior, and electrical-to-thermal relationships.
Key characteristics include early detection of heater and Silicon Controlled Rectifier (SCR) degradation, engineering-oriented outputs such as health indicators and fault precursors, and a low-disruption deployment model leveraging existing controller infrastructure. Results are exposed through standard interfaces to enable integration with fab analytics platforms. The data pipeline is designed to be secure, scalable, and compatible with evolving cybersecurity requirements.

Collaboration & Ecosystem Fit

The proposed framework is designed to complement existing fab analytics, APC, and FDC infrastructures, enabling collaboration between fabs, equipment suppliers, and control system providers. Standardized data access and APIs support joint development with R&D partners and facilitate reuse across multiple European fabs operating similar sub-fab architectures. By improving visibility into energy and health performance of utility systems, the approach aligns with European semiconductor and sustainability initiatives aimed at reducing energy consumption, emissions, and operational risk across the manufacturing ecosystem.

Benefits and Outlook

The case study demonstrates measurable benefits, including reduced unplanned downtime, improved energy efficiency, and increased confidence in process stability. The framework is designed to scale across repeatable sub-fab system architectures using standardized industrial communication protocols, enabling deployment without hardware redesign while maintaining disciplined data models and integration practices.
Over the next 3 - 5 years, the approach can evolve toward tighter integration with control systems through edge-based analytics and selective closed-loop actions, such as guided setpoint adjustments or power balancing within validated safety limits.
Demonstrated using Watlow and Eurotherm industrial control platforms, the methodology is transferable to other controller ecosystems that support common industrial protocols, supporting the long-term goal of competitive, resilient, and environmentally sustainable semiconductor manufacturing in Europe.

Biography

Mark Joyner is a seasoned semiconductor industry professional with over three decades of experience spanning engineering and commercial roles. Originally from London, England, he began his career in the industry in 1989 and has since built deep expertise at the intersection of advanced thermal technologies and wafer fabrication.
In his current role at Watlow, Mark leads Sales and Account Management across Europe, working with wafer fabs to deploy high-performance thermal solutions that enhance process stability, operational reliability, energy efficiency, and equipment uptime across fab and sub-fab environments.
Mark holds an MSc in Molecular Electronics from Cranfield Institute of Technology. He lives in Edinburgh, Scotland, with his wife and son.

References

Coming Soon

F. Wohlfart
Global Communications Manager
Siemens, Nuremberg, Germany

Abstract
Coming Soon

Biography
Coming Soon

References

Toward Autonomous Manufacturing: The Path from AI-Assisted Analytics to "Human in the loop" Agentic AI

S. Tropsa
Seeq Corporation, Sandy, United States of America

Abstract

As AI begins to meaningfully integrate into manufacturing operations, many companies are looking to get beyond deploying a basic chat bot. LLM Models are also advancing far quicker than they can be vetted for security concerns. In this session, Seeq will show how the Seeq Analytics and AI platform enables manufacturers to roll out scalable, trustable agentic AI workflows that are user customizable but purpose built for manufacturing environments. In practice, Intel has scaled the Seeq Platform and Agentic AI integrations within their ecosystem across their fabs to implement AI workflows allowing for faster time to detection as well as resolution for a given anomaly detected in the software, saving an estimated 7.5 million dollars through the platform roll out.

Biography

Sean Tropsa began his career as an engineer in the semiconductor manufacturing industry, where he developed expertise in analyzing large data sets with an emphasis on root cause analysis and process optimization. In his current role as the Head of Technical Solutions, Growth Markets, Sean leverages this background to help subject matter experts in the Semiconductor Industry apply Seeq to derive actionable insights from their data to meet sustainability goals, while improving reliability, yield, and quality. Sean holds both BS and MS degrees in Chemical Engineering from Arizona State University.

References

Coming Soon

S. Knopp
CTO & Co-Founder
Planimize, Vienna, Austria

Abstract
Coming Soon

Biography
Coming Soon

References

M. Enzelberger-Heim
Fab Manager
Texas Instruments, Freising, Germany

Biography
Coming soon

References

SiC Update: Technology Changes, Market Outlook & Order Trends

B. Marchetti
Vice President Engineering Wide Band Gap
Semiconductor
Bosch, Reutlingen, Germany

Abstract
Coming soon

Biography
Coming soon

References

New Collaborations, Materials & Market for Photonics

S. Ertl
Senior Vice President & General Manager
ams OSRAM, Bavaria, Germany

Abstract
Coming Soon

Biography
Coming Soon

References