

FORWARD AS ONE SEMICON® EUROPA



SMARTx - SMART Manufacturing

“Leagile” Manufacturing at SPTS... now and looking forward



D. Collins
General Manager
SPTS Technologies, a KLA company, London,
United Kingdom



Abstract

SPTS, a KLA company is a leading semiconductor equipment company supplying etch and deposition systems to a wide range of large and small device manufacturers, OSATs and foundries. This presentation will discuss why manufacturers benefit from combining both “lean” and “agile” strategies ensuring greater throughput, robust and importantly flexible supply chains, and more efficient use of resources. Over the past decade, SPTS has managed to significantly increase manufacturing efficiency through a culture of continuous improvement, and this presentation will describe just some of the processes and improvements which have proved effective at SPTS to reduce cycle times dramatically on numerous product lines. The talk will also address the current challenges being faced in terms of fab capacity, international trade and recruitment and training of a qualified workforce to meet the requirements of a rapidly growing business. Industries can never stand still and looking forward to the future, this presentation will introduce the increased use of technologies such as AI and augmented reality that SPTS are now assessing within our operations

Biography

Dan Collins is the General Manager of SPTS Technologies, a KLA company. After joining SPTS in 2016 as Supply Chain Director, Dan was promoted to VP Operations in 2019 and has been instrumental in driving the improvements to the company’s manufacturing operations. He has previous operations experience with Edwards and Cooper Tire & Rubber Company with exposure to supply chain management in the semiconductor, automotive, and other industries. He holds a BSc(Hons) in Astrophysics from Queen Mary University of London, and MSc in Technology Management.

The new standard in surface particle contamination measurements



E. Vermeulen
CEO
Fastmicro, Geldrop, Netherlands



Abstract

Erik will share valuable insights into how you can revolutionize cleanliness control with fast, accurate and quantitative surface particle measurements. And what process quality engineers can do to make reliable decisions on where and how to improve their cleanliness processes and deliver consistent quality products.

Biography

Erik Vermeulen

CEO of Fastmicro, and high-tech industry generalist: driving business and innovations developing people, teams, organizations and partnerships. In addition to 15 years of experience in high-tech production in machine factory, foundry, electronics assembly and machine building; more than 20 years of experience in market introductions from various positions in commerce, innovation, operations and general management. As an entrepreneur in startups, and in corporates, with international focus. Motivated and ambitious to have an impact on the clean manufacturing industry of the future.

Leveraging your fab digital twin: Subfab and beyond....



J. Behnke
GM Final Phase Systems
INFICON, East Syracuse NY, United States



Abstract

We will discuss the importance of a comprehensive fab Digital Twin to delivering today's and tomorrow's Smart Predictive solutions.

Biography

Mr. Behnke has 35 years of semiconductor industry experience including: logic and memory manufacturing, technology/product development and fab operational excellence. As the GM of Final Phase Systems an INFICON Product Line, John leads a team that develop and deploy SMART software solutions that enable fabs to improve their manufacturing efficiency. FPS's suite of software solutions are built upon a common Datawarehouse which enables advanced Fab Scheduling and optimized WIP movement as well as other related capabilities. He is also a Co-Chair of the Semi North America Smart Manufacturing Special Interest Group.

Prior to FPS John served as the CEO and President of Novati Technologies, the SVP and GM of the Semiconductor Group of Intermolecular, the CVP for Front End Manufacturing, Process R&D and Technology Transfers at Spansion and the Director of AMD's Fab 25's Engineering and Operations groups where he was a founding member of AMD's Automated Precision Manufacturing (APM) initiative which led the Semiconductor industry's development and use of APC and other advanced factory systems. He also led the successful conversion of Fab 25 from Logic to Flash memory which was enabled through the virtual automation of the fab.

Mr. Behnke earned a B.S. degree in Mechanical Engineering with an Industrial Engineering Minor from Marquette University. Mr. Behnke holds five U.S. patents.

How Edge Computing Enables Predictive Valve Maintenance in the Semiconductor Industry



H. Klingstedt
Senior Project Manager
Smart Systems Hub, Dresden, Germany



Abstract

In the presented use case, the goal was to replace the monitoring of production-critical ultra-pure water valves at the Dresden site of challenge owner GLOBALFOUNDRIES with a suitable AI-based sensor solution. Sensor-based monitoring of valves ensures predictive maintenance and uninterrupted production, not just in chip manufacturing. Defects in valves were previously unpredictable at challenge owner Globalfoundries - a U.S. semiconductor manufacturer with over 16,000 employees worldwide and the largest and most modern semiconductor plant in Europe.

The scalable edge computing solution, developed jointly with Coderitter, Globalfoundries, Infineon, Sensry, T-Systems and a hub team, is based on special sensors that provide acoustic data. Attached to the valve a small multisensorplatform as a smart sensor edge device enables the fusion, analyzation and classification using machine learning algorithms. The solution also includes the forwarding of the data to the cloud and the clear presentation in dashboards.

On the one hand, the case is highly relevant in the context of the worldwide lack of semiconductor chips. Creating “virtual” capacity by using AI-based predictive Maintenance solution is promising action not only for production plants of Globalfoundries but the whole industry. Finally, we will look at how solutions can be developed for companies at different stages of technology and market maturity and how this helps European industry from startups to large companies.

Biography

Career start as assistant to the board of directors at an automotive supplier group.

Support of projects in supply chain and supplier management of C and E-Class series.

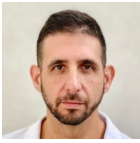
2016 as in-house consultant, design of digital transformation with introduction of PLM and SAP systems.

From 2020 onwards, specialisation in innovation management and support of co-innovation formats as well as projects in digitalisation consulting in the Smart Systems Hub.

Developing innovative IoT testbeds and MVPs by guiding different project partners as well as cross-sector technology experts (industry, SMEs, start-ups) through an innovation process.

Focus lies fast integration of IoT technologies and AI to solve a problem and align them in such a way that companies succeed in process improvements and develop new business models.

Walking on the Edge: The Path to Seamless-Hybrid Cloud Environments



A. Shenfeld
CTO | Automation Products Group
Applied Materials, Israel, Israel



Abstract

Taking a closer look at the potential impact of hybrid cloud technologies on smart manufacturing. Following a case-study where AMAT is deploying hybrid cloud technologies to solve both mission-critical, real time, production floor routing decisions, as well as, compute-intensive long term production planning simulation challenges seamlessly, on the edge and in the cloud.

Biography

Software engineer by training, Amnon is an experienced hands-on software developer and entrepreneur, passionate about creating disruptive software applications.

Prior to Applied Materials, Amnon served in senior R&D leadership roles in different fields and markets, from Enterprise Cyber Security, to AI applications in Machine Vision/Acoustics for consumer products and industrial IoT applications.

In 2015, he founded 3DSignals (\$30M raised), which is serving global manufacturers in pioneering Machine Hearing for industry 4.0 and industrial IoT applications.

In 2019, he founded Bernoulli.AI where he serve as chairman of the board, leading a commando team of software and hardware experts in the development of AI powered I4.0 applications.

When not at his desk, you might find him under the waves SCUBA diving around the globe.