SMARTx - SMART Manufacturing

The new standard in surface particle contamination measurements

E. Vermeulen
CEO
Fastmicro, Geldrop, Netherlands

fastmicro
cleanliness control

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.

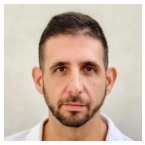
How Edge Computing Enables Predictive Valve Maintenance in the Semiconductor Industry

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
Coming soon