

# SEMICON® EUROPA

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## Smart Mobility



A. Aal  
Semiconductor Strategy & Reliability  
Volkswagen, Munich, Germany



### Biography

Andreas (IEEE SM / CRP) drove the semiconductor strategy & reliability assurance activities within the E/E development at Volkswagen, Germany, for many years, concentrating on technology capability enhancement of most advanced nodes incl. improved HW integration schemes as well as optimization of power electronics for automotive applications. He temporarily joint CARIAD SE between 2020 and 2022 as system architect and product security officer with focus on semiconductor and SW driven innovations.

Wearing always one shoe from the semiconductor industry and the other one from the car OEM, he became a strong representative of the through-the-supply-chain-joint-development and collaboration approach also being rewarded with the EDA Achievement award 2020.

He has 24 years of experience with and within the semiconductor industry, has authored/co-authored over 40 publications on reliability and has given tutorials at IEEE IRPS and IIRW as well as invited and keynote speeches during various conferences and conventions.

His early collaboration activities began already in 2007 becoming the chair of the German VDE ITG group MN 5.6 on (f)WLR, reliability simulations and qualification. He is currently also chair of the European chapter of the SEMI Global Automotive Advisory Council (GAAC), member of the coordination team of the corresponding "European platform for automotive semiconductor requirements along the supply chain" hosted by the VDE ITG and member of the Bmbf industry advisory board on cyber security.

Driving the disruptive automotive transformation process on a collaborative supply chain basis is one of his major passions.



B. Weiss  
Chief of Staff & Corporate Strategy  
SEMI, Milpitas, United States of America



### Biography

As Chief of Staff & Corporate Strategy, Bettina Weiss reports to SEMI's President & CEO and manages a broad portfolio of responsibilities. Major focus areas include advancing specific global strategic initiatives such as SEMI's Smart Mobility and Supply Chain initiatives and SEMI University, facilitate thought leadership (Think Tanks) activities in key strategic areas as well as improving organizational efficiency, alignment and financial sustainability. In addition, Weiss is the Sr. Liaison to the SEMI Board of Industry Leaders, leading strategic partnerships and M&A activity, and supporting the President & CEO in successfully creating a highly effective, agile global association.

Weiss joined SEMI in 1996 and held a variety of positions in SEMI's International Standards department, including department lead, global responsibility for SEMI's Photovoltaic/Solar Business Unit, business development including the integration of SEMI Strategic Association Partners FlexTech, MEMS & Sensors Industry Group, ESD Alliance and the SOI Consortium.

Prior to joining SEMI, Weiss worked in sales and marketing positions at Metron Semiconductor and Varian Semiconductor in Munich, Germany. She holds a BA from the International School for Applied Languages in Munich, Germany, and is a certified translator for Anglo-American Law and Economics.

### Welcome Remarks



B. Weiss  
Chief of Staff & Corporate Strategy  
SEMI, Milpitas, United States of America



### Abstract

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Munich, Germany, and is a certified translator for Anglo-American Law and Economics.

## Automotive and Semiconductor Industries: Increasing Interdependencies



I. Tighe  
Director of Economic Development  
Oakland County, Michigan, United States of  
America



### Abstract

Coming Soon

### Biography

Ingrid Tighe is the Director of Economic Development for Oakland County, Michigan, a county that comprises more than 20% of Michigan's overall GDP. In her role, Ingrid leads 180 people in four divisions that conduct business development and international business attraction; community development and planning; workforce development and six job centers; and veteran services. Prior to working at Oakland County, Ingrid served as the Executive Director of downtown Birmingham, Michigan. She also worked for the State of Michigan in economic development promoting business investment and job growth in Michigan working with the private sector, local economic developers, and government organizations and in workforce development implementing programs, policy, and statewide initiatives to improve veteran employment. Ingrid attended Vanderbilt University on a four-year R.O.T.C. scholarship and was commissioned as a U.S. Army Signal Corps officer upon graduation. She served from 1998 to 2005 with the 1st Infantry Division in Germany participating in NATO peacekeeping operations in Macedonia and Kosovo and later with the 1st Cavalry Division leading troops in 2004 to 2005 in the combat zone of Baghdad, Iraq. After honorably separating from the Army, Ingrid used the post 9/11 G.I. Bill to obtain her Master of Public Administration from the Gerald R. Ford School of Public Policy at the University of Michigan.

## **New Trends in Mobility and Automotive Semiconductor Industry: a Supply-Chain Perspective**



R. Antonicelli  
Automotive BU  
JCET, Dresden, Germany



### **Abstract**

Coming Soon

### **Biography**

Roberto Antonicelli is a professional with over 20 years of experience in the semiconductor industry. At JCET Group, formerly STATS ChipPAC, he is in charge of the Automotive BU for US and Europe. He is based in Morges (Switzerland), on the shores of the Lemman Lake. Prior to joining STATS ChipPAC in 2010, he has held diverse R&D positions at Infineon Technologies, Alcatel Microelectronics and ST Microelectronics. Roberto obtained his MSEE and PhD from Polytechnic University of Bari, Italy, respectively in 1997 and 2002.

## Automotive Reliability – Contamination Management and Maturity of the Ecosystems



A. Amade  
President of the Europe and the Middle East  
region & VP of sales for the Microcontamination  
Control division  
Entegris, Moirans, France



### Abstract

As we move into a more electrified and automated reality, the sustainability of functional safe and secure electronic systems is a major concern of automobile manufacturers. The complexity of high-performance systems is not possible without the application of the latest semiconductor technology nodes. Now more than ever, auto makers must dig even deeper into their supply chains to identify and eliminate the root causes of potential hazards, many of which are created during the manufacture of the semiconductors that build the systems upon which drivers rely.

To truly address functional safety, it is essential that the automotive industry and semiconductor manufacturers work together to create frameworks that improve functional safety for all stakeholders by exploring and optimizing the intersection of contamination control, inspection, and test.

Since SEMICON Europa 2018, Entegris has been spreading, with the support of SEMI and car makers, a New Collaborative Approach, a process to tackle defectivity with an improved contamination management strategy.

With this presentation we want to share our progress. Is there any meaningful trend that is worth to report in terms of defectivity management? What have we learnt in terms of maturity of the ecosystems? Any correlation with the major technology inflection points? Where should semiconductor manufacturers focus their efforts?

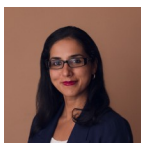
### Biography

Antoine Amade joined Entegris in 1995 as an application engineer in its semiconductor business. Today, he is the president of the Europe and the Middle East (EMEA) region as well as the VP of sales for the Microcontamination Control division focused primarily on growing the semiconductor business in North America and EMEA through market strategies and the management of sales.

For more than 25 years, Mr. Amade has held leadership positions at Entegris in gas microcontamination market management, strategic account management, and regional sales management.

Mr. Amade has a degree in Chemical Engineering from ENS Chimie Lille and is a member of the SEMI Electronic Materials Group, the Global Automotive Advisory Council for Europe (GAAC) and the Platform for Automotive Semiconductor Requirements Along the Supply Chain (PASRASC).

## Automotive Sensing and Viewing 2.1 $\mu\text{m}$ CMOS HDR LFM Image Sensors



R. Arora  
Senior Director Product Marketing, Automotive  
Solutions Division  
onsemi, Idaho, United States of America



### Abstract

Automotive industry is transitioning en-mass from level 2 to level 3 and higher of autonomous and assisted driving. This transition puts forth increased requirements for low light performance, high dynamic range (HDR), and image quality in general – all at affordable low cost. Additionally, wide proliferation of LED based traffic signs and lights created more challenges in capturing images and videos without LED flicker effects. Latest generation of newest automotive 2.1  $\mu\text{m}$  CMOS image sensors from **onsemi** addressed these challenges with further development of unique super-exposure pixel architecture that delivered unmatched up to 150 dB HDR in image capture and true LED flicker mitigation. Super-exposure pixel innovations also resulted in much improved low light performance surpassing the performance of twice larger 3  $\mu\text{m}$  sensors across automotive temperature range. Direct bench measurements of low light and high light signal-to-noise (SNR) metrics as well as images and videos captured confirmed these results. Additional benefits of the new sensors include enhanced sharpness, resolution, and high color fidelity of raw images that do not require any corrections, filtering, or altering. Therefore, these sensors are positioned well to serve both front and surround sensing and viewing applications using same camera settings.

New 8.3 and 3 mega-pixel sensors and their image sharpness and resolution in combination with total SNRs in low light and in transitions are important considerations for high safety autonomous designs, especially in corner cases. Visually pleasing video quality for applications such as surround view, e-mirror, and augmented reality displays are of importance as well. Using object probability detection SNRI criteria we study use cases both for night and daylight scenarios, meeting objectives of level 3 and higher of autonomous driving.

### Biography

Radhika Arora is a proven leader in business development and strategy with an impressive track record of increasing profits and expanding market share. She has had tremendous success in establishing a lasting presence in varied market segments, identifying growth opportunities in new emerging applications, and initiating strong business alliances. She is equally skilled at directing cross-functional teams to manage the complete product life cycle. Radhika currently serves as Senior Director, Product Marketing at onsemi. She manages the Automotive Marketing team, driving the strategy for Automotive with a focus on image sensors. Her efforts have led to onsemi having far-reaching impacts on the bottom line. Before that, Radhika served as Product Line Manager within the Image Sensor Group at onsemi, where she managed the Internet of Things/Scanning product line growing it into a critical and highly profitable segment. Radhika also founded a Non-Profit Organization - Suncharged. The organization focuses on enriching lives and improving productivity in rural India through means of alternative and sustainable energy solutions.

## High Performance 800V Silicon Carbide Inverters for Automotive Applications: The Next Step in Electrification?



S. Lambert  
Head of Electrification  
McLaren Applied, Woking, United Kingdom



### Abstract

McLaren Applied have been developing ground breaking solutions for electrification in both Automotive and Motorsport for over a decade. The culmination of these developments is its IPG5 800V Silicon Carbide Inverter, which represents the next step in Electrification – particularly in highly efficiency drivetrains, key for the next wave of electrification.

### Biography

Dr Stephen Lambert received his Doctorate from the University of Warwick by looking at the applicability of hybrid and electric drivetrains in motorsport. Following this he worked at Lotus Engineering, developing hybrid and electric demonstrator vehicles for a number of OEMs. Through this role, he found himself working closely with battery manufacturers as a key partner for these projects. He has since worked in various roles around developing battery technology in areas such as Formula 1 and high performance road cars. He is now responsible for the electrification strategy for automotive customers with McLaren Applied technologies, where he is helping deliver advantage by empowering customer to introduce and protect new vehicle concepts and technologies and to drive differentiation in the market. He is also chairman of ASEIN, a dedicated UK initiative focused on the accelerated and advanced delivery of Electronic Systems (ES) into vehicles and infrastructure operated by the UK Trade Association – TechWorks.