

Opening Ceremony & Keynote



L. Altimime
President
Semi Europe, Berlin, Germany



Biography

As President of SEMI Europe, Laith Altimime leads SEMI's activities in Europe and Middle East and North Africa (MENA). He has overall responsibility for regional events, programs, membership, advocacy, and collaborative forums. Additionally, he manages and nurtures relationships with SEMI members in the region, as well as with local associations and constituents in industry, government, and academia. He provides support and services to SEMI members worldwide that have supply chain interests in Europe.

Altimime has more than 25 years of experience in the industry, mostly in Europe. He has held leadership positions at Altis, Infineon, Qimonda, KLA-Tencor, Communicant Semiconductor AG, NEC Semiconductors, and imec.

Altimime holds a BS from Heriot-Watt University, Scotland.

Leadership in the Fourth Industrial Revolution



O. Schwab
Managing Director
World Economic Forum, Geneva, Switzerland

Abstract

Leadership in the Fourth Industrial Revolution

Biography

MSc in Civil Engineering, Ecole Polytechnique Fédérale de Lausanne and the Massachusetts Institute of Technology. 1999-2001, as Business Development Manager, Industry to Industry, San Francisco, an online business marketplace. 2003, Co-Founder, Club Airways, a pan-European airline charter service based in Geneva. 2002-03, consulting projects, Mercer Management Consultants. 2003-09, with Schindler Group, first as Assistant to the President, then as Manager, Logistics and Supply Chain for the company's high-end product lines for the Asian market. With the World Economic Forum: 2010-11, led the Technology Pioneers Programme, Geneva; 2011-2015, Executive Director, China, responsible for the development in the Greater China Region, based in Beijing; oversaw the development of relationships with leading Chinese businesses, government entities, and academic institutions; since Sept. 2015, Head of Business Engagement; leads the

relationships with the Forum's 1,000 business members and partners; responsibilities include ensuring that the Forum's Partners are actively engaged in its various events and initiatives, and integrating them in the Forum's various communities; also oversees the Technology Pioneers Programme aimed at young start-ups globally, and the Family Business Community.

Embracing Connectivity: Technologies Transforming the Digital Healthcare



A. Patchava
Expert Advisor, Global Digital Health, AI and
Blockchain Strategist
United Nations Centre for Trade Facilitation and
Electronic Business (UN/CEFACT), London, United
Kingdom



Abstract

Over the past decade, digital health technologies have been ever increasing in number and funding – with real opportunity to improve patient outcomes and practice efficiencies. This session highlights the changing role in healthcare – shifting from reactive to proactive, from sick care to health care system and shares a vision of Connected Care, a vision in which the electronics sector has a huge role to play. It outlines what is required to bring this vision to life, addresses the readiness of global markets for the adoption of new technologies and discusses how conscious collaboration between providers, payers, clinicians and other sectors can catalyse the move from vision to reality.

Biography

Dr Anushka Patchava is an experienced strategist having supported the commercialisation of several pharmaceutical assets and the implementation of digital strategies in the Healthcare and Lifesciences sector. Prior to this, Anushka received her Medical Degree from University of Cambridge, and has practiced in both the UK (NHS) and US (Harvard) health systems. She has a particular interest in architecting data-driven environments and is passionate about creating a Connected Care ecosystem; harnessing IoT, 5G, Blockchain and Digital Therapeutics to drive data-fluidity and improve patient outcomes.

She has advised a variety of health related seed and early stage start-ups, drawing upon her unique experience to bridge the interface between physician, patient, payer and policy. She has worked across cross-functional and cross-sector teams, driving conscious collaboration and agile methodologies to disrupt legacy systems and behaviour with deliberate digital design.

She holds qualifications in a breadth of areas including Digital Strategy and Leadership, Value Based Healthcare (Harvard Business School), Innovation (Stanford Business School), Digital Marketing and Analytics (Google Squared) and most recently, Intermediate Python.

Her role as an healthcare expert advisor to the United Nations (CEFACT) is focused on Artificial Intelligence and Blockchain, and her ideas and experience will be shared in an upcoming book chapter on the role of Artificial Intelligence in Healthcare.

Semiconductor Innovation Driving Future Mobility



B. Hellenthal
Head of Audi Comprehensive Semiconductor
Strategy, Audi AG
Audi AG, Ingolstadt, Germany



Abstract

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Biography

Berthold Hellenthal runs Semiconductor Strategy – Progressive SemiConductor Program (PSCP) at the Competence center Electronics and Semiconductors.

Dipl.-Ing. Berthold Hellenthal joined Audi in 2008 as a member of the management team. Working in the Electronic Development Department, he comprehensively supports all Audi electronic development out of the competence center “Robust Design: Electronics and Semiconductors”, specializing in electronic hardware reviews and application analysis as well as semiconductors.

Mr. Hellenthal is responsible for the comprehensive “Competence center Electronics and Semiconductors” as well as for the comprehensive Audi Semiconductor Strategy, the Audi Progressive SemiConductor Program (PSCP).

Future of Computing: bits + neurons + qubits



A. Curioni
Academy of Technology Logo IBM Fellow, Vice
President Europe and Director IBM Research -
Zurich
IBM Research, Zurich, Switzerland

Abstract

One of the promising applications for quantum computing is in Materials and Chemistry. With a quantum computer scientists and engineers expect to untangle the complexity of molecular and chemical interactions leading to the discovery of new materials and medicines, and model the quantum states of molecules. Other potential application areas are Business Optimization, supply chains, logistics, modeling financial data, and risk analysis

Biography

Dr. Alessandro Curioni is an IBM Fellow, Vice President of IBM Europe and Director of the IBM Research Lab in Zurich, Switzerland. On top of being responsible for IBM corporate research in Europe, he coordinates global research in IoT and Security.

Dr. Curioni is an internationally recognized leader in the area of high-performance computing and computational science, where his innovative thinking and seminal contributions have helped solve some of the most complex scientific and technological problems in healthcare, aerospace, consumer goods and electronics. He was a member of the winning team recognized with the prestigious Gordon Bell Prize in 2013 and 2015. His research interests now include AI, Big Data and novel compute paradigms, such as neuromorphic and quantum computing.

Dr. Curioni received his undergraduate degree in Theoretical Chemistry and his PhD from Scuola Normale Superiore, Pisa, Italy. He started at IBM Research – Zurich as a PhD student in 1993 before officially joining as a research staff member in 1998, where he had several research and manager roles, including being the founding manager of the Cognitive Computing and Computational Sciences department. He is a member of the Swiss Academy of Technical Sciences .

Next Generation Computing



H. Lakner
Director Fraunhofer-Institute for Photonic
Microsystems IPMS
Fraunhofer IPMS, Dresden, Germany



Abstract

The global digitization of all branches and value chains will henceforth only be possible with novel powerful computer systems. New generations of data centers and server farms are necessary for super-fast cloud computing. Additionally, next generation computers require decentralized, mobile, compact and highly efficient processor performance classes and will be used for edge computing and sensor nodes.

As the conventional downsizing approach in processor development according to Moore's Law is no longer sufficient, new concepts are required to allow ultra-fast processing, especially for artificial intelligence applications. Disruptive and highly innovative concepts that are based on artificial neural networks and neuromorphic processors for quantum computing will supersede the currently utilized "Von-Neumann-architecture". The neuromorphic architecture is characterized by a large number of interconnections and parallel processors, tight collocation of processor and memory, high data transfer bandwidth and very low power consumption.

The classic separation of hardware and software will be eliminated and therefore holistic system concepts could lead to novel solutions in the industrial sector. Coordinated developments in hardware-software-co-design enable solutions for future applications, e.g. autonomous driving. At the same time, existing and new systems need protection against cyber-attacks and have to be trustworthy. Thus, research into new architectures, design and manufacturing processes for computers and systems with a secure trust anchor, so called trusted electronics, is required.

Biography

Hubert Lakner (born 1958) received his diploma-degree in physics from Eberhard-Karls-Universität Tübingen in 1986. After one year in industry he joined the Gerhard-Mercator-Universität (Duisburg) working in the field of nanocharacterisation of mesoscopic semiconductor structures. He received his PhD in Electrical Engineering in 1993. From 1994 until September 1998 he held a post doc position (Oberingenieur) at the Gerhard-Mercator-Universität. He focussed on high frequency and high speed circuits based on compound semiconductor heterostructures. In October 1998 he joined the Fraunhofer Institute for Microelectronic Circuits and Systems (IMS) in Dresden where he was the Acting Director in 2002. Since January 2003 he is the (founding) Director of the new Fraunhofer Institute of Photonic Microsystems (IPMS) in Dresden. Additionally, he is Professor for Optoelectronic Devices and Systems in the Department of Electrical Engineering and Information Technology at the Technical University Dresden since February 2004. He is chairman of the board of directors of the Fraunhofer Microelectronics Group since 2005, representing about 3500 employees in 11 Fraunhofer institutes, and member of the Fraunhofer Präsidium (Presidential Council).

Prof. Lakner is engaged in many European and German initiatives e.g. AENEAS supervisory board, member of the ELG (Electronic Leaders Group), member of ECSEL Germany, chairman of the scientific advisory board of SILICON SAXONY.

Enabling Applications in the IoT Era



S. Ramamurthy
Applied Materials, California, United States



Abstract

Semiconductors will continue to transform virtually all industries in the future – the AI and Big Data era is driving endless demand for compute and storage devices. New materials and architectures will be required to address gaps in technology roadmaps, especially for specialty semiconductor devices. Innovation in materials processing, surface/interface engineering, and time-to-yield are core to offer solutions for these inflections. Collaboration across the value chain and new engagement models for accelerating applications adoption will be necessary to shape the industry for the future.

Biography

Sundar Ramamurthy, Ph.D. was appointed general manager of the Front End Products (FEP) Division at Applied Materials, Inc. in November 2009 and appointed vice president in May 2010. He has P&L responsibility for a number of product lines, including Epitaxy and Low Pressure Chemical Vapor Deposition, Gate Stack and Oxidation, Plasma Doping and Rapid Thermal Processing (RTP).

Dr. Ramamurthy previously was general manager of the RTP and Plasma Doping product lines. Under his direction, the company maintained its industry-leading RTP position while realizing share gains in the advanced annealing segment with the introduction of the first Applied Materials laser annealing product.

Prior to general management roles, Dr. Ramamurthy held positions of increasing responsibility in the business unit, including director of Technology, manager of Customer Applications and Process Engineering, program manager, process development engineer and implementing cost reduction and continuous improvement processes. He joined Applied Materials in 1996 as a new college graduate.

Dr. Ramamurthy holds a Ph.D. in materials science and engineering from the University of Minnesota and a B. Tech. in metallurgical engineering from the Institute of Technology, Banaras Hindu University, India. He has authored and co-authored more than 30 technical papers in peer-reviewed journals and has more than 20 patents granted or pending.

SOI: A Unique Opportunity



C. Mazure
Chairman & Executive Director
SOI Consortium, Singapore, Singapore



Abstract

This presentation will be focused on SOI Consortium vision and Mission.

It will be provided an outstanding overview on SOI as a key technology for the semiconductor growth drivers in IoT, 5G, Edge Computing/AI, Automotive field.

Biography

Dr. Carlos Mazure,
Chairman and Executive Director of SOI Industry Consortium since July 2014.
& EVP, Advisor to the CEO, at Soitec since April 2019

EVP & CTO, Head of Corporate R&D at Soitec from January 2001 through March 2019

IEEE Fellow, 34 years of experience in Semiconductor Industry. Carlos is recognized internationally as an industry influencer and opinion leader.

As Chairman and Executive Director of the SOI Industry Consortium, he helps expand the market opportunities for the SOI industry through promotion of SOI platforms in the semiconductor ecosystem.

Prior to Soitec, Carlos headed the ferroelectric FeRAM program at Infineon (Munich, Germany), and initiated Infineon/Toshiba FeRAM Alliance. Earlier he worked for IBM/Infineon DRAM Alliance (Fishkill, NY); and before at APRDL, Motorola (Austin, Texas) on BiCMOS ultra fast SRAMs.

Carlos holds two doctorates (University Grenoble, France; Technical University Munich, Germany).
Authored/co-authored 120+ technical papers, holds 100+ US patents.
Member of several international advisory committees and company boards.