CEA-Leti | Engineering the Semiconductor Foundations of the AI Era

Welcome & Introduction



M. Tchagaspanian
EVP, Strategic Partnership
CEA-Leti, Grenoble, France

Abstract
Coming soon

Biography
Michael Tchagaspanian is now EVP Sales & Marketing at CEA-Leti since 2017. During his last 12 years at CEA-Leti, he launched collaborative programs with industrial partners in the field of smart sensing and imaging , embedded systems and integrated circuits. He manages several strategic developments with US Silicon Valley. Previously, he held the position of Business Development Manager for the Integrated Circuits and Embedded Systems Division, where he was previously head of the Image Sensor Design Laboratory, dedicated to intelligent integrated circuits for imaging applications and display. Advanced algorithms have been created and integrated into the circuit architecture for several applications (defense and security, smart home and building, medical). Prior to CEA, during the previous 11 years in the semiconductor industry, as ASIC design manager for ST Microelectronics and On Semiconductor, he built on-chip integrated circuits for radio frequency and management applications Energy. He has led strategic projects for automotive and mobile phone applications.

References

Opening keynote: Building the Physical Foundations of the AI Era

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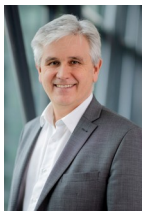


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References

Reinventing the AI Compute Engine: Embedded Memory, 3D Integration and Beyond-CMOS Materials



O. Faynot
GM of Silicon Component Division
CEA-Leti, Grenoble, France

Abstract
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Biography
Olivier Faynot received the M.Sc and Ph.D. degrees from the Institut National Polytechnique de Grenoble, France in 1991 and 1995, respectively. His doctoral research was related to the characterization and modeling of deep submicron Fully Depleted SOI devices fabricated on ultrathin SIMOX wafers.

He joined CEA (CEA-Grenoble, France) in 1995, working on Partially Depleted and Fully Depleted SOI technologies development in the frame of Industrial Partnerships.

From 2008 to 2017, he managed various teams focussed on advanced CMOS, memories and 3D technology integration and was assigned on manufacturing sites to implement FDSOI technologies.

During that period, he was engaged in the transfer to production of 28nm and 22nm FDSOI technologies with industrial partners. Those technologies are now available in production.

From 2017 to 2019, he managed the Patterning department at CEA-LETI, within the Silicon Technology division.

Since 2019, he is managing the whole Silicon Component division at CEA-LETI.

He is author and co-author of more than 400 scientific publications in journals and international conferences, and was successively in the committees of the main international Semiconductors conferences like International Electron Device Meeting (IEDM), the symposium on VLSI Technology, the IEEE International SOI conference, the EUROSOI network, the Solid State Device and Materials (SSDM) conference and the International S3S conference.

He received the ‘Général Férié’ award in 2012 and the ‘Electron d’Or’ award with CEA-Leti, ST Microelectronics and SOITEC in 2017.

He has been elected as an IEEE Fellow in 2024 for leadership in CMOS technology development.

References

Rewiring AI Systems with Light: Silicon Photonics, Optical Interconnect and Co-Packaged Optics



C. Fellous
GM of Optics and Photonics Division
CEA-Leti, Grenoble, France

Abstract
Coming soon

Biography
Cyril Fellous has joined CEA-Leti in 2024 as head of Optics and Photonics Division. He holds a PhD and Engineering degree in Physics and material science.

Industry, business and technology enthusiast. he has developed a 25 years experience in high tech sector, enjoying many positions from process and Device engineer, R&D manager, quality manager, product and program manager and Business unit Director.

Cyril has worked in various semiconductor companies like STMicroelectronics, Teledyne e2v, SOITEC.

Cyril's ambition is to develop long term partnerships, creating business opportunities and being customer focused.

Within CEA-Leti he has the chance to lead a team of highly skilled experts and professionals providing breakthrough technologies and solutions to partners.

Together we bring high differentiation in the image sensors, optical sensors, Silicon photonics, optical packaging and displays for sensing, imaging, IA, data communication, computing, AR/VR, health and we help our customers to transform these R&D technologies into industrial solutions.

References

Powering the AI Factory: Advanced Power Delivery, Thermal Management and Packaging



F. Clermidy
GM of System Division
CEA-Leti, Grenoble, France

Abstract
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Biography
Fabien Clermidy is currently heading the system Division of CEA-LETI. He was previously leading the digital architecture and IC design division.

The main activities of his division spread from power modules development to hardware cybersecurity, including sensors system design and new telecommunication scheme. The main applicative domains are automotive, factory of future, energy, telecommunications, security and defense.

Fabien holds a PhD, a thesis supervisor degree and is a CEA research director. He has published more than 100 papers including in the greatest conferences such as ISSCC, VLSI, DAC, DATE or IEDM. He is also author or co-author of 15 patents. Fabien is in the board of directors of the open Hardware Group leveraging on RISC-V open-source initiative

References

When Chips Start Talking with Light: Live Journey into Optical Network On Chip



Y. Thonnart
Chief Scientist, Digital Integrated Circuits and Systems Division
CEA-Leti, Grenoble, France

Abstract
Coming soon

Biography
Yvain Thonnart graduated from Ecole Polytechnique and Telecom Paris, France in 2005. He then joined the Technological Research Division of CEA, the French French Alternative Energies and Atomic Energy Commission, within the CEA-Leti institute until 2019, then within the CEA-List institute. He has led the development of several large research projects for on-chip communications, focusing on the maturation of novel concepts towards industrial adoption, such as communication between multiple voltage and frequency domains, 3D-stacked circuits, and optical on-chip interconnects. He is now a CEA fellow, and chief scientist for the digital ICs and systems division of CEA-List.

References

Inside the Drone Brain: Sensing, Positioning, Connectivity and Cybersecurity for Trusted Autonomy



P. Despesse
Deputy Director of Programs, Systems Division
CEA-Leti, Grenoble, France

Abstract
Coming soon

Biography
Philippe Despesse is Industrial Partnerships Manager at CEA-Leti, bringing more than 25 years of experience across semiconductor technologies, product development, system innovation and industrial partnerships. He began his career at STMicroelectronics and ST-Ericsson, where he held engineering, marketing, business development and strategic partnership roles. Since joining CEA-Leti in 2015, he has contributed to technology programs spanning power electronics, energy management, connectivity, sensing and hardware cybersecurity. His work focuses on bridging semiconductor innovation and industrial applications, with a particular interest in next-generation drones, aerospace, mobility and autonomous systems, where efficiency, connectivity, sensing and security are key enablers.

References

Closing keynote: RESOLVE: Engineering Sustainable Compute for Europe



J.-R. Lequepeys
CTO
CEA-Leti, Grenoble, France

Abstract
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Biography
Jean-René Lèquepeys received an engineering degree in 1983 from CentraleSupélec, a top French graduate engineering school at Paris-Saclay University, France. He taught physics during 2 years in Ouarzazate, Morocco.

He joined CEA, a French Research and Technology Office focusing on applied research, in Paris Saclay in 1985. He first worked at the laboratory of the Central Security Office, on the evaluation of means of detection and intrusion. Two years later, he was promoted head of this laboratory.

In 1993, he moved to Grenoble, France, and joined the System Division of CEA-Leti. He worked on different projects in the field of image processing and telecommunication technologies. In particular, he was responsible for the "Telecom, Communicating Objects and Smart Card" programs from 1999 to 2004.

In 2005, he took the responsibility of the Circuits Design Division at CEA-Leti (200 people). He launched new research activities at CEA such as a new laboratory in Aix-en-Provence, France, on the development of secured chips. In 2000, Jean-René Lèquepeys received the prestigious award from the french Société de l'Electricité, de l'Electronique et des technologies de l'information et de la communication (SEE) "Grand Prix de l'électronique Général Ferrié" for his work in the telecommunications field (he holds 15 patents).

In 2010, he launched a new division at CEA focusing on Electronic Architectures, Integrated Circuit Design and Embedded Software. He established the structure on two sites (Paris and Grenoble) and led the division twice in his career.

He rapidly got involved in the creation of the Silicon Components Division at CEA-Leti, and took the lead of it in 2011 managing 350 people. Division encompasses micro and nanoelectronics (SOI, nanodots, quantum, memories, 3D technologies, substrates), Micro Systems (sensor, actuator, radiofrequency components) and Power Components. He established the French Nano2022 Program for research funding in microelectronics.

In 2019, he was appointed Chief Technology Officer of CEA-Leti, overseeing Science, relations with the European Commission, Industrial Partnership and Strategic Program Management in the scope of the institute (2,000 people, ~€350m budget). He took the responsibility of the Microelectronic Program at CEA level, spearheading technological and upstream research in the field of semiconductor technologies. For the past 2 years, he has been strongly involved in the CEA-Leti Next Gen FD-SOI project in the frame of France2030 and has played a key role in European chips Act pilot line promoting FD-SOI and Gate All Around technologies.

Having dedicated his career to applied research, he is regularly invited as a keynote speaker in international semiconductor conferences.

Jean-René is also Vice President of ACSIEL, a professional trade union gathering industrial companies in the French electronic value chain, member of the Board of EPOSS, the European Technology Platform on

Smart Systems Integration, a member of the Board of AENEAS, the Association for Europoean NanoElectronics Activities, and an expert consultant for the European Commission and French Research Agency

References