MEMS & Imaging Sensors Summit

Welcome Remarks

L. Altimime
President
SEMI Europe, Berlin, Germany

Abstract
Coming Soon

Biography
Laith Altimime, as President of SEMI Europe, leads SEMI's activities in Europe and the Middle East and Africa (EMEA). Altimime has P&L responsibility as well as ownership of all Europe region programs and events, including SEMICON Europa. He is responsible for establishing industry standards, advocacy, community development, expositions, and programs. He provides support and services to SEMI members worldwide that have supply chain interests in Europe. He manages and nurtures relationships with SEMI members in the region and globally as well as with local associations and constituents in industry, government, and academia. Altimime has more than 30 years of international experience in the semiconductor industry. Prior to joining SEMI in 2015, He held senior leadership positions at NEC, KLA-Tencor, Infineon, Qimonda, and imec. Altimime holds an MSc from Heriot-Watt University, Scotland.

References

Europe's first semiconductor VC fund

R. Kromhof
Founding Partner
Cloudberry VC, Helsinki, Finland

Abstract

Introduction to Cloudberry VC: Europe's First Semiconductor-Dedicated VC Fund

Europe leads the world in semiconductor research yet captures a fraction of the value when that research becomes a company. Too many promising deep tech teams stall in the gap between the lab and a first commercial cheque, and most generalist funds are not built to underwrite hardware risk on physics, fabrication, and long development cycles.

Cloudberry VC was founded to close that gap. As Europe's first venture fund dedicated to semiconductors, photonics, and advanced materials, we back founders at pre-seed and seed, the earliest and hardest stage to fund, and bring deep operator experience and strategic industry partners to help them reach the market. Our strategic LP base includes industry leaders such as GlobalFoundries and Radiant Opto-Electronics, giving portfolio companies direct access to manufacturing expertise, supply chain reach, and commercial relationships from day one.

This talk introduces who we are, why a specialist fund matters for European deep tech, what we look for in a team and a technology, and how we work alongside founders from first cheque onward. It is aimed at founders, researchers, and partners building the next generation of European semiconductor companies.

Biography

René Kromhof is Founding Partner of Cloudberry VC, Europe's first venture fund dedicated to semiconductors, photonics, and advanced materials. He brings more than two decades in the semiconductor and consumer electronics industry to backing deep tech founders at the earliest stages.

René spent seven years at ASML, where he worked at the heart of the lithography systems that underpin modern chipmaking. He later helped build Heptagon, a developer of optical sensing and micro-optics technology, through to its acquisition by ams AG in 2017. These experiences shaped his conviction that Europe's world-class semiconductor research deserves capital and partners that understand hardware.

At Cloudberry VC, René invests at pre-seed and seed in founders building the next generation of European chip, photonics, and materials companies, backed by strategic industry partners including GlobalFoundries. He is based in Helsinki and works with founders across Europe to take ambitious technology from the lab to the market.

References

Boosting MEMS through technological development: from improved transduction to optomechanics

M. Sansa
Project Manager in Optomechanics
CEA, Leti, Grenoble, France

Abstract

Electrical microsensors (MEMS) have been gaining maturity and performance over the last 40 years, and they are nowadays ubiquitous in our everyday life. Recently, the integration of MEMS with silicon photonics gave birth to optomechanical MEMS (optically transduced microsensors), enabling a jump in performance in terms of readout sensitivity and frequency of operation. This combination opens the door to new sensing paradigms across various fields, and is rapidly maturing in terms of integration.

In this talk I will present the advantages of optomechanics for high-efficiency sensing, and showcase how CEA-Leti's developments have enabled novel applications in fields such as biosensing, environmental and biological monitoring, high-speed atomic-force microscopy (AFM) and precision timing with clocks.

Biography

Marc Sansa received his M.Sc. in Micro and Nanotechnologies from the Universitat Autònoma de Barcelona in 2009 and his Ph.D. in Electronic Engineering from the same institution in 2013. He joined CEA-LETI in 2014 as a research engineer and currently serves as a project manager at the Sensors and Actuators Laboratory. He is an expert in microelectromechanical systems (MEMS) and optomechanics, he has authored over 65 publications and holds more than 18 patents. His research focuses on developing novel MEMS technologies by leveraging multiphysical approaches and collaborative efforts among multidisciplinary teams and experts from diverse fields.

References

Ultra miniaturized rechargeable solid-state micro battery technology for new generation of implantable medical devices

P. Andreucci
Chief Executive Officer
Injectpower, Moirans, France

Abstract

Powering the Future of Digital Health: Ultra-Miniaturized All-Solid-State Microbatteries for Next-Generation Implantable Medical Devices

The rise of digital health and personalized medicine has fueled an unprecedented demand for autonomous, smart implantable medical devices (IMDs). Monitoring and treating chronic pathologies—such as glaucoma in ophthalmology, intracranial pressure in neurosurgery, or arrhythmia in cardiology—require continuous, highly reliable physiological data tracking. However, traditional battery technologies represent a critical bottleneck, as their size, rigid form factors, and chemical leakage risks severely limit the miniaturization and safety of long-term implants.

This paper introduces INJECTPOWER's breakthrough energy solutions based on wireless rechargeable, all-solid-state microbatteries tailored specifically for high-density, ultra-miniaturized IMDs. Leveraging over 20 years of foundational R&D at CEA-Leti and protected by a robust portfolio of more than 40 patents, these microbatteries achieve dimensions as thin as a human hair while delivering unrivaled volumetric energy density and hermetic safety.

By eliminating liquid electrolytes, this all-solid-state chemistry eliminates the risk of toxic leakage, ensuring high biocompatibility and excellent thermal stability during wireless charging cycles (such as RF or inductive powering). This technology enables a new paradigm of completely autonomous, micro-scaled implants capable of providing continuous, representative medical data over years of implantation.

We will present the electrochemical performance, cycling stability, and integration architecture of these microbatteries. Finally, we will discuss the scaling-up strategy and industrial roadmap within the framework of the European IPCEI Health (Tech4Cure) program, leading toward a first certified commercial product on the market by 2029.

Biography

Philippe Andreucci

Co-founder & CEO of INJECTPOWER | Deep Tech Entrepreneur & Board Member

Biography

Philippe Andreucci is a seasoned deep-tech entrepreneur and executive leader with over 25 years of experience driving breakthrough innovations from laboratory research to global markets. Throughout his career, he has successfully operated at the intersection of micro-technologies, nanosystems, and life sciences, combining strong technical expertise with a proven track record in fundraising, corporate governance, and international business development.

Philippe began his leadership journey at **CEA-Leti**, a world-renowned microelectronics research institute, where he served as **Head of Nanosystems Programs**. During this tenure, he co-founded the **Alliance for Nanosystems VLSI**—a prestigious, multi-year international research collaboration between the **CEA** and the **California Institute of Technology (Caltech)**, established alongside **Professor Michael Roukes**.

Driven by an entrepreneurial vision, Philippe transitioned from institutional leadership to venture creation. He co-founded and led **APIX Analytics**, a company specializing in miniaturized gas chromatography systems for industrial and environmental applications. Under his leadership as CEO, APIX successfully industrialized its technology, raised significant venture capital and additional fundings, and established a strong international footprint.

Following this success, Philippe co-founded **INJECTPOWER** in 2020, a pioneering deep-tech company disrupting the implantable medical device sector. The company manufactures ultra-miniaturized, wireless rechargeable all-solid-state microbatteries that provide autonomy to a new generation of monitoring and treatment solutions for chronic diseases (such as glaucoma, cardiovascular, and neurological disorders). Under his guidance, INJECTPOWER secured a strategic position within the prestigious **European IPCEI Health (Tech4Cure)** program, established key commercial partnerships in the US, and is currently on track for its first product certification by 2029.

An active figure in the tech ecosystem, Philippe serves as a **Board Member for several high-growth startups**, where he provides strategic counsel on corporate scaling, venture financing, and intellectual property management.

Core Expertise

Deep Tech Entrepreneurship & Leadership: Proven ability to build, fund, and scale companies with highly complex, hardware-and-software integrated technologies.

International Ecosystem Building: Established track record of forging high-level academic and industrial alliances between Europe and the United States (e.g., Caltech, US clinical partners).

Venture Capital & Corporate Finance: Expert in structuring mixed financing strategies, combining multi-million dollar equity rounds (VC) with non-dilutive sovereign funding (IPCEI, state grants).

Governance & Advisory: Experienced board member guiding early-stage and scaling startups through critical pivots, IP valorization, and growth phases.

Vision Statement: *"Miniaturized, reliable energy is the true gateway to tomorrow's digital health. By giving implantable devices the power to monitor chronic conditions autonomously, we are shifting medicine from reactive treatments to proactive, life-saving data intelligence."*

References

Active Metasurfaces for Power-Efficient AI Compute

C. Soon
Neurophos, Austin, United States of America

Abstract
Large matrix multiplications consume much of the power of modern data centers. The exponential growth in demand for AI inference has not been matched by a similar increase in compute energy efficiency. Optical matrix multiplication can dramatically improve compute power efficiency but only for very large matrices. However, performing such large matrrix multiplications optically requires much denser spatial-light modulators (SLMs) than are commercially available. We present metasurface-based SLMs which are 10,000 times denser than traditional Mach-Zender modulators and describe a compact Optical Processing Units which deliver dramatically higher compute performance at a fraction of the power of state-of-the-art processing units.

Biography
Hod Finkelstein is CTO of Neurophos. He was previously Head of Cameras & Depth at Meta; Chief R&D Officer and CTO at AEye and Sense Photonics, where he led lidar development; Director of Technology Development at Illumina, the DNA Sequencing Company; and headed semiconductor technologies at Mellanox. He completed his PhD in EE at UCSD, holds an MSEE from the Technion, a BSEE from Cornell, and an Executive MBA from the Kellogg School of Management. During his career, he developed the first generic-CMOS Single-Photon Avalanche Diode (SPAD), employed silicon photonics for single-molecule DNA sequencing, and commercialized high-resolution dToF flash lidar.

References

Innovation in MEMS-industry, where do we come from and where are we going

T. Vilenius
Senior Manager, Business Development
Automotive
Murata Electronics Oy, Vantaa, Finland

Abstract
Small reflexion on how has innovation in MEMS business changed over the past 30 years. Starting from innovating how to realize a function on silicon, then how to make it for less than $100 and miniaturizing the sensors to fit inside a smartphone.
What is MEMS innovation today and how we need to innovate in future to create value for the whole supply chain & industry.

Biography
Tommi Vilenius has been working in Automotive MEMS business for 30 years in various roles from R&D, Quality, Testing and Customer interface. Currently Mr Vilenius is focusing on new automotive applications for inertial MEMS and fitting together physical MEMS devices to ever improving capabilities of data processing & AI.

References

NEMS-Based Inertial Sensors: Enabling Navigation-Grade Performance for High-Volume Autonomous Applications

P. Robert
CEO
INGAGE, Grenoble, France

Abstract

Reliable navigation remains a critical challenge for autonomous systems operating in environments where GNSS signals are unavailable or degraded. From autonomous vehicles and drones to industrial robots, accurate positioning requires inertial sensors capable of maintaining navigation performance during extended GNSS outages.

While MEMS inertial sensors have become ubiquitous thanks to their compact size, low power consumption and low manufacturing cost, their performance remains insufficient for many navigation-grade applications. Conversely, existing high-end inertial solutions deliver the required accuracy but are often too bulky and expensive for deployment in high-volume markets.

This presentation introduces a new generation of MEMS inertial sensors based on ultra-sensitive nano-strain-gauge transduction technology. Developed over more than 15 years of research at CEA-Leti and protected by an extensive patent portfolio, this breakthrough sensing approach significantly enhances the detection of mechanical motion and enables performance levels beyond the limits of conventional capacitive MEMS technologies.

The talk will present the fundamental principles of nano-strain-gauge sensing, its integration into MEMS accelerometers and gyroscopes, and the expected benefits in terms of bias stability, noise performance, scale-factor stability and overall inertial navigation accuracy. Particular attention will be given to the challenges associated with transferring advanced laboratory technology into a manufacturable industrial solution compatible with high-volume semiconductor processes.

The presentation will also provide an overview of the technology industrialization roadmap pursued by iNGage, a fabless Deeptech company founded in 2025 to bring this innovation to market. By combining navigation-grade performance with MEMS scalability, nano-strain-gauge inertial sensors have the potential to unlock a new generation of cost-effective navigation systems for autonomous mobility, robotics and other demanding positioning applications.

Biography

Philippe Robert is CEO and co-founder of iNGage, a deeptech startup developing a new generation of high-performance MEMS sensors. He holds a PhD in Microtechnologies and began his career at the startup SILMAG, developing advanced magnetic sensor technologies for data storage, before joining THALES to work on high-end MEMS inertial sensors for aerospace and defense applications.

He joined CEA-Leti in 2001, where he held successive leadership roles, including Head of the MEMS Sensors Laboratory and Head of the Microsystems Department (120+ people), before leading Business Development for Microsystems.

In 2025, he founded iNGage as CEO & CTO, leading corporate strategy, fundraising, and execution.

He has authored over 50 scientific publications and holds more than 60 patents, including more than 20 related to the M&NEMS architecture at the core of iNGage's innovation.

Philippe also contributes to the international MEMS community through expert evaluations (HCERES, EIC) and leadership roles in major conferences such as IEEE MEMS, IEEE Transducers, and Eurosensors.

References