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Executive Forum 1

The Power of DeepTech: A Tale of Bits, Molecules and Ecosystems



L. Van den hove
President & CEO
imec, Leuven, Belgium



Abstract

Today, we are at the dawn of the 5th disruptive innovation wave. This emerging fifth wave, the deeptech wave, builds on the convergence of technologies such as AI, material science, biology, semiconductors ... to disrupt virtually every aspect of the physical world we live in. Semiconductors will be the core of many deeptech innovations thanks to their massive integration power, accessible mass production and low cost. To enable these deeptech innovations, Moore's law will have to continue to address insatiable demands for more computation and more storage. We will realize Moore's law by a multitude of approaches: continue traditional scaling, new devices, new switches, leverage the use of the third dimension, and paradigm shifts on how to build future systems. The challenges to bring these innovations to the market are huge. Therefore, we will have to approach this evolution through a major ecosystem, bringing together the right companies, the right R&D resources, perform this in leading-edge infrastructure, with the right funding and government support.

Biography

Luc Van den hove is President and CEO of imec since Juli 1, 2009. Before he was executive vice president and chief operating officer. He joined imec in 1984, starting his research career in the field of silicide and interconnect technologies.

In 1988, he became manager of imec's micro-patterning group (lithography, dry etching); in 1996, department director of unit process step R&D; and in 1998, vice president of the silicon process and device technology division. In January 2007, he was appointed as imec's EVP & COO. Luc Van den hove received his PhD in electrical engineering from the KU Leuven, Belgium.

He has authored or co-authored more than 200 publications and conference contributions.

Research Tracks to Guide ICT Industry Toward Greener Electronics



S. Dauve
Chief Executive Officer
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Abstract

CEA-Leti is challenging the European ICT industry to collaboratively tackle the data deluge with greener electronics. Sebastien Dauvé, CEA-Leti's Chief Executive Officer, will introduce nine research tracks to improve energy efficiency in new microelectronic hardware and systems by a factor of 1,000 by 2030.

Biography

Sebastien Dauvé was named Director of CEA-Leti effective on July 1, 2021, after more than twenty years of experience in microelectronics technologies and their applications, including clean mobility, medicine of the future, cybersecurity, and power electronics.

Sebastien Dauvé started his career at the French Armament Electronics Center, where he worked on developing synthetic-aperture radar. In 2003, he joined CEA-Leti as an industrial transfer manager and supervised several joint research laboratories, in particular with the multinational Michelin.

In 2007, Sebastien Dauvé became a laboratory manager, then head of an R&D department specializing in sensors applied to the Internet of things and electric mobility. During this time, he supported the dissemination of new technologies in industry, including the automotive industry (Renault), aeronautics and national defense (SAFRAN), and microchips with the industry leader (INTEL). He played an active role in the creation of start-ups, from health to infrastructure security, leading to dozens of new jobs. In 2016, he became Director of the CEA-Leti Systems Division.

From sensors to wireless communication, Sebastien Dauvé has played an active role in the digital transformation, focused on coupling energy frugality and performance. He has made cross-disciplinary approaches central to innovation by harnessing the expertise of talented teams with diverse backgrounds. Their goal is to provide technological tools for meeting the major societal challenges of the future.

Sebastien Dauvé is a graduate of the prestigious French Ecole Polytechnique and the National Higher French Institute of Aeronautics and Space (ISAE-SUPAERO).

The Research Fab Microelectronics Germany (FMD) Digital Transformation Story – Impact to the Industry



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Abstract

The Research Fab Microelectronics Germany (FMD) Digital Transformation Story – Impact to the Industry

Biography

Director Fraunhofer EMFT