

NEWS RELEASE

European Project Achieves Milestone on Route to Fabricating Silicon Photonics Circuits in CMOS-Compatible Process

HELIOS Team Will Present Results of 40Gbit/s Optical Modulator Demonstration At Group IV Photonics Conference, Sept. 14-16, in London

GRENOBLE, France – Sept. 12, 2011 – CEA-Leti announced today that a team of European researchers and companies has achieved a major milestone towards fabricating silicon photonics circuits in CMOS foundries.

By demonstrating for the first time a 40Gbit/s optical modulator in silicon with a record extinction ratio of 10dB (the power difference between the 1 and 0 data levels), members of the HELIOS Project accomplished one of the key project goals needed to build and optimize the entire supply chain for fabricating complex functional silicon-photonics devices from design to the process level.

In addition to the 40Gb/s modulator, HELIOS partners are building the fabrication supply chain through several other complex photonic ICs that address a variety of industrial needs, including a 16x10 Gb/s transceiver, a photonic QAM-10Gb/s wireless transmission system and a mixed-analog and digital-transceiver module for multifunction antennas.

Designed and characterized by staff in the Silicon Photonics Group at the Advanced Technology Institute, University of Surrey, UK, the modulator circuit was fabricated in a CMOS-compatible process by Leti, which is coordinating the project. HELIOS partners will present the results at the 8th International Conference on Group IV Photonics in London, Sept. 14-16.

"This result is a major step towards high-bandwidth optical systems on silicon because it makes 40Gb/s modulators viable for commercial applications," said Graham Reed, professor of silicon photonics at the University of Surrey.

Silicon photonics, which is the only viable technology to meet the demand of high-volume markets, has generated growing interest in recent years, mainly for optical telecommunications or for optical interconnects in microelectronic circuits.

CMOS photonics may lead to low-cost solutions for a range of applications such as optical communications, optical interconnections between semiconductor chips and circuit boards, optical signal processing, optical sensing, and biological applications.

For more information on HELIOS, including a list of partners, visit the HELIOS Project website address is www.helios-project.eu/.

About CEA-Leti

Leti is an institute of CEA, a French research-and-technology organization with activities in energy, IT, healthcare, defence and security. Leti is focused on creating value and innovation through technology transfer to its industrial partners. It specializes in nanotechnologies and their applications, from wireless devices and systems, to biology, healthcare and photonics. NEMS and MEMS are at the core of its activities. An anchor of the MINATEC campus, CEA-Leti operates 8,000-m² of state-of-the-art clean room space



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on 200mm and 300mm wafer platforms. It employs 1,400 scientists and engineers and hosts more than 190 Ph.D. students and 200 assignees from partner companies. CEA-Leti owns more than 1,700 patent families.

For more information, visit www.leti.fr.

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