Nano Scale Disruptive Silicon-Plasmonic Platform for Chip-to-Chip Interconnection

Press release distributed comprising key results with a public target audience

Milestone no.: MS49
Due date: 31/7/2015
Actual Submission date: 31/7/2015
Authors: AIT
Work package(s): WP7

List of Partners concerned

Partner number	Partner name	Partner short name	Country	Date enter project	Date exit project
1	Karlsruher Institut für Technologie	KIT	Germany	M1	M36
2	INTERUNIVERSITAIR MICRO-ELECTRONICA CENTRUM VZW	IMCV	Belgium	M1	M36
3	TECHNISCHE UNIVERSITEIT EINDHOVEN	TU/e	Netherlands	M1	M36
4	RESEARCH AND EDUCATION LABORATORY IN INFORMATION TECHNOLOGIES/ ATHENS INFORMATION TECHNOLOGY	AIT	Greece	M1	M36
5	UNIVERSITAT DE VALENCIA	UVEG	Spain	M1	M36
6	STMICROELECTRONICS SRL	ST	Italy	M1	M36
7	UNIVERSITEIT GENT	UGent	Belgium	M1	M36

Summary

MS49 has been achieved by the completion of the dissemination kit D7.7 which shows the main achievement of the NAVOLCHI project. Furterhmore, this milestone has been achieved by the development of an online Sway-based web site (web site that can be seen in any device; desktop, laptop, mobile, etc.) that shows the most important results of the NAVOLHCI project and contain all the required information for the web press and the dissemination of the results to several social networks such as linkedin, research gate, etc.

The Web page can be found in the following site and some screenshots of the website are showsn below:
https://sway.com/Y64i6d9AlpdhyV6V

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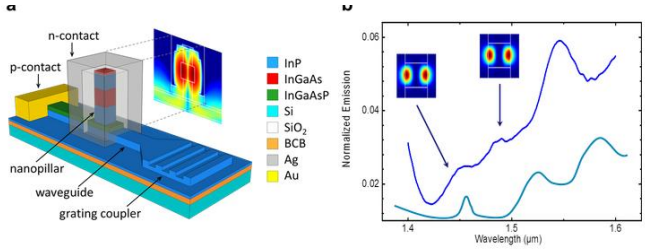
Project number:288869

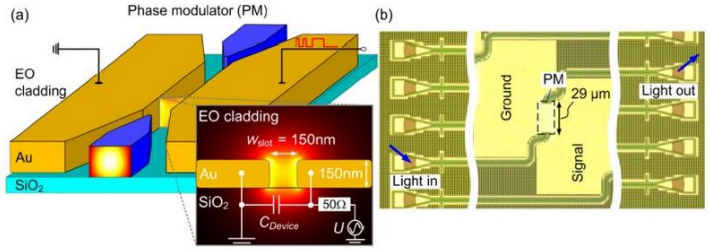
Duration:11/2011 - 10/2014

Total Cost:3.4M €

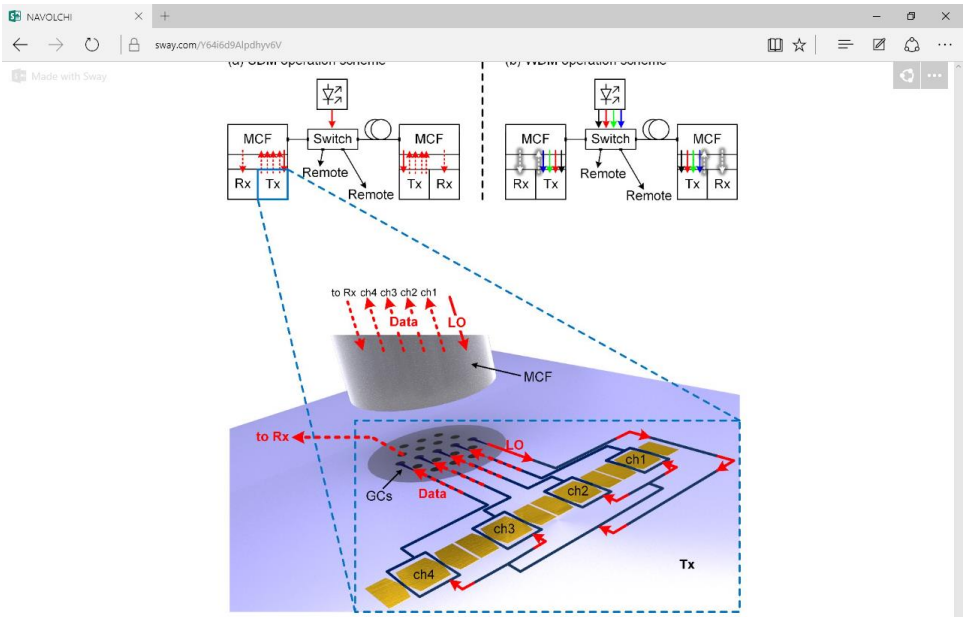
EC Contribution:2.4M €



Schematic representation of the nanopillar laser device coupled to an InP-waveguide, on a silicon substrate. The layer stack from top to bottom is: InGaAs(100nm) /InP(350nm) /InGaAs(350nm) /InP(600nm) / InGaAsP(200nm) /InP(250nm) /BCB /Si. The inset shows the spatial profile of the modulus square of the electric field of the main cavity mode in logarithmic scale to visualize the waveguide coupling.



Plasmonic-organic hybrid (POH) phase modulator (PM) fabricated on the silicon-on-insulator (SOI) platform. (a) Schematic of the POH PM comprising a metallic slot waveguide filled and clad with an electro-optic (EO) material. The photonic mode of a silicon nanowire waveguide (blue) is converted to a gap surface plasmon polariton (SPP) via a tapered silicon waveguide enclosed by a tapered gap plasmon waveguide. The inset shows a cross section of the device with the mode field of the SPP in the gap. In addition, a lumped-element equivalent



. (a) Space division multiplexing scheme with blow-up of the compact plasmonic transmitter (Tx) for high-speed optical interconnects in data center applications. The interconnect is fed by a central laser source, while a switching network distributes the signals. The central laser signal (LO, solid line) is interconnected by a multicore fiber (MCF) to the integrated plasmonic Tx via grating couplers (GCs). The Tx splits the laser into four channels and sends each signal to a modulator, so that several data streams are encoded. The individual signals are then sent back through different cores of the MCF (dashed lines). Finally, the modulated signals are