Nano Photonic Optical Link

Fact Sheet

Project Information

NAPOLI

Grant agreement ID: 618097

Project closed

Start date
1 September 2013

End date
31 July 2016

Funded under
Specific programme "People" implementing the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007 to 2013)

Total cost
€ 72 916,67

EU contribution
€ 72 916,67

Coordinated by
TECHNISCHE UNIVERSITEIT EINDHOVEN
Netherlands

Objective

In today's ware house sized computers the interconnection of individual processing cores is limiting the total system performance. Interconnects already take up about 50% of the systems power consumption and this value increases with system complexity. Optical interconnects are nowadays employed for rack-to-rack communication to overcome this "interconnect bottleneck" by reducing space requirements and power consumption. In the future, such optical technologies must

penetrate deeper in the system design and be applied for chip-to-chip, or even on-chip interconnection to sustain the exponential growth of computer performance. New approaches are needed to meet the extreme requirements in integration density, power consumption and cost for optical interconnects in future high performance computers. By exploring the limits of miniaturization and energy efficiency in integrated active optical components we want to demonstrate a compact optical link and assess the potential of nanophotonic technology for integrated optical chip-to-chip or even on-chip interconnects. We will employ metallo-dielectric cavities to shrink the footprint of devices, which in turn will increase operation speed, reduce power consumption and allow efficient cooling of the highly integrated devices through the metal surfaces. We will develop a first waveguide coupled nanolaser, demonstrate optical detectors with record small footprint and demonstrate for the first time an optical interconnect that satisfies the requirements of future computing systems with respect to transmission density, power consumption and device size. The acquired techniques will directly contribute to the development of a photonic technology platform. Such innovations in photonic technology are essential to overcome the interconnect bottleneck and enable next generation computing technology.

Programme(s)

FP7-PEOPLE - Specific programme "People" implementing the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007 to 2013)

Topic(s)

FP7-PEOPLE-2013-CIG - Marie-Curie Action: "Career Integration Grants"

Call for proposal

FP7-PEOPLE-2013-CIG
See other projects for this call

Funding Scheme

MC-CIG - Support for training and career development of researcher (CIG)

Coordinator

TECHNISCHE UNIVERSITEIT EINDHOVEN

EU contribution

€ 72 916,67

Total cost

No data

Address

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Region

Zuid-Nederland > Noord-Brabant > Zuidoost-Noord-Brabant

Activity type

Higher or Secondary Education Establishments

Links

Contact the organisation Website
Participation in EU R&I programmes
HORIZON collaboration network

Last update: 22 May 2017

Permalink: https://cordis.europa.eu/project/id/618097