Project Presentation

General Information

NEBULA: Neuro-augmented 112Gbaud CMOS plasmonic transceiver platform for Intra- and Inter-DCI applications

Project Coordinator	Prof. Konstantinos Vyrsokinos (AUTH)
Starting date	1st of January 2020
Duration	36 months
Call (part) identifier	H2020-ICT-2019-2
Topic	Application driven Photonics components
Type	Research and Innovation action
Project Number	871658
EU contribution	5,999,191.25€
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Website	http://www.nebula-h2020.eu

Consortium

12 Partners

7 Countries

4 Universities

4 Research Institutes

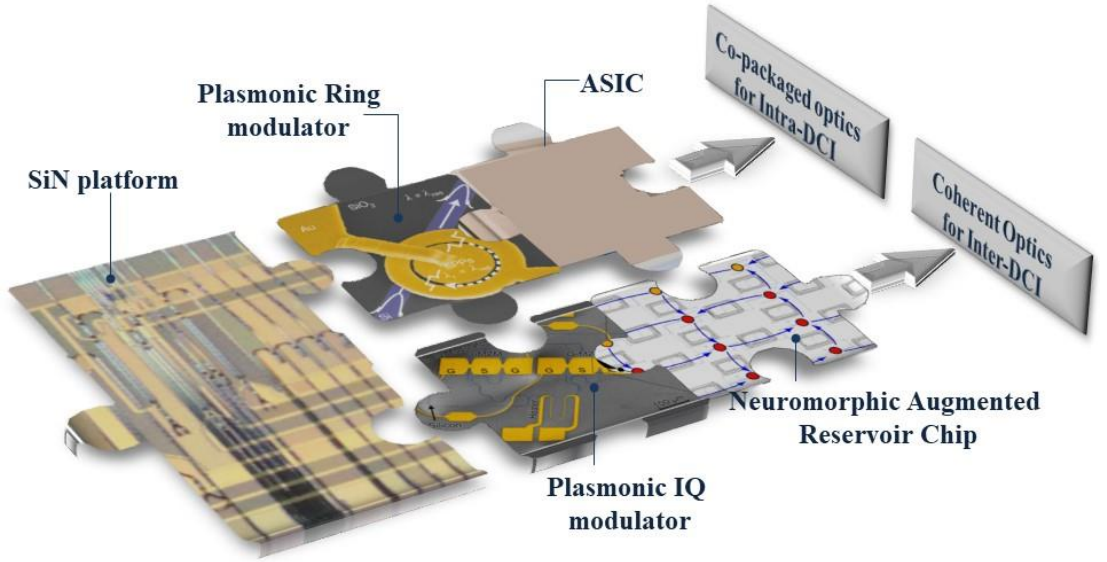
4 Companies

Concept

NEBULA aims to deliver a powerful neuro-augmented 112Gbaud CMOS plasmonic transceiver platform for Intra- and Inter-DCI applications with profound functional benefits

Key Technologies:

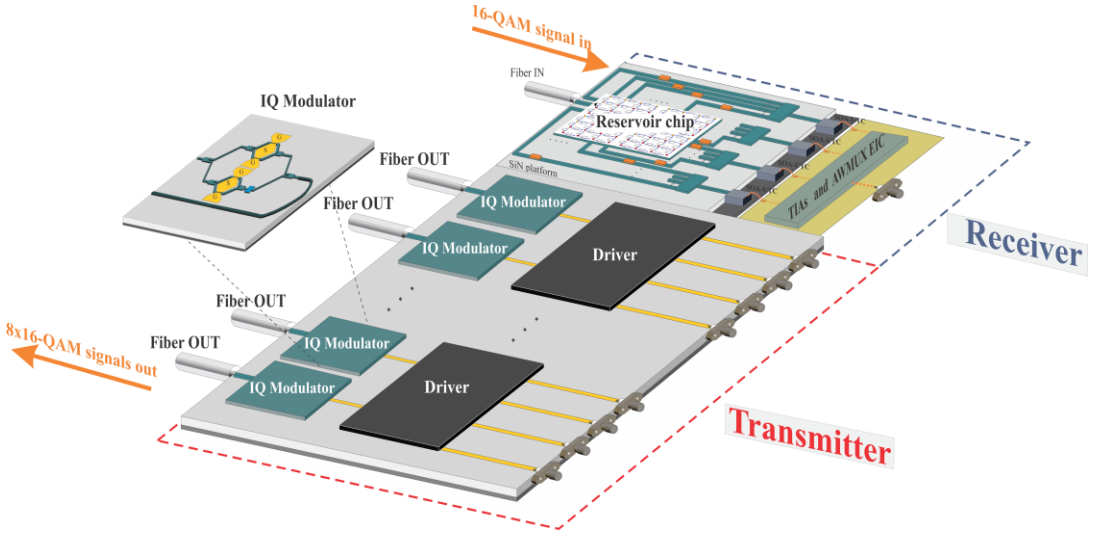
- 112GBaud plasmonic modulators on SiN based on ferroelectric BTO
- Loss-less thermal stabilization circuit
- Neuro-augmented all-optical DSP
- 112GBaud BiCMOS ultra-fast electronics



Prototypes

Inter-DCI

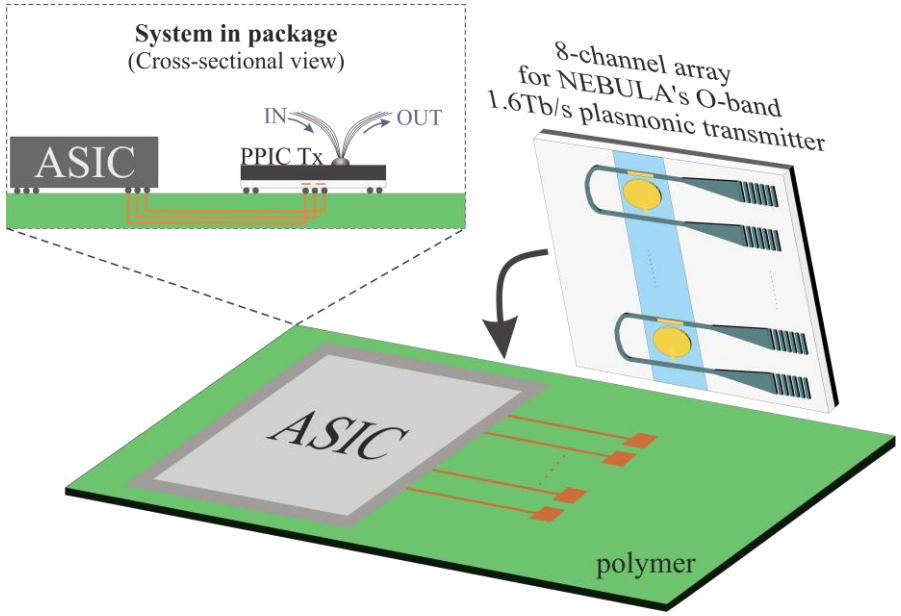
8-ch 112Gbaud 16-QAM C-band transceiver prototype



- ✓ DSP-free Rx
- ➢ 93% energy savings !

Intra-DCI

8-ch 112GBaud sub-volt O-band transmitter co-packaged with an ASIC



- ✓ 100Tb/s plasmonic EO engine
- ➢ 37% energy savings !

PHOTONICS 21
PHOTONICS PUBLIC PRIVATE PARTNERSHIP

Nebula