



ESSENtIAL

Epixfab services specifically targeting (SME) industrial take-up of advanced silicon photonics

Support Action
FP7 Grant Agreement 288702

Deliverable 5.1 – Short project fact sheet & short project presentation

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Start date of project: 1 October 2011

Duration: 36 months

Work package 5: Management

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http://epixfab.eu/index.php?option=com_content&view=article&id=87&Itemid=93

Project co-funded by the European Commission within the seventh framework programme		
Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential	

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Project reference: 288702

Instrument: CSA

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Timeline:

Start Date: 01/10/2011
End Date: 30/09/2014

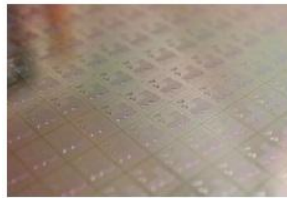
Budget:

Overall Cost: 1 652 974 EUR
Funding: 940 000 EUR

Project Partners:

- Interuniversitair Micro-Electronica Centrum Vzw – IMEC, BE
- Commissariat à l'Energie Atomique et aux Energies Alternatives – CEA, FR
- IHP GMBH - Innovations for High Performance Microelectronics/Leibniz-Institut für Innovative Mikroelektronik, DE
- Teknologian Tutkimuskeskus VTT, FI
- Nederlandse Organisatie voor Toegepast Natuurwetenschappelijk Onderzoek – TNO, NL
- University College Cork, National University of Ireland, Cork, IE
- CMC Microsystems, CA

ESSenTIAL will bring silicon photonics within reach of European small and medium sized enterprises – building on the track record of the Silicon Photonics Platform ePIXfab, and its integration into Europractice. ESSenTIAL will offer affordable access to standardized active and passive silicon photonic IC and packaging technology, a path from design to manufacturing and hands-on training.



Left to right, diced Si photonic-IC wafer, chips ready to be shipped, Si photonic chip being packaged with fibre optic access ports.

Based on a consortium of major research institutes with silicon photonics expertise, ESSenTIAL will reach out to European industry and will support them to evaluate silicon photonics in the context of concrete applications and markets. To ensure low-cost early access and scalability to manufacturing, the maturity of silicon photonic IC technology will be enhanced by-

- setting up a library of generic devices
- a level of process and device benchmarking and a well maintained design flow
- offering for the first time, devices in a standard package to allow easy testing
- training on the photonic-IC and packaging services, including hands-on design training with interaction among companies.
- maturity, standardization and sustainability, driven by a steadily growing user base, from Europe and elsewhere.

ESSenTIAL will ensure that ePIXfab will keep Europe's lead in fabless silicon photonics and will turn it into an industry-relevant platform.

Outreach

ESSENtIAL will help SMEs take advantage of silicon photonics technology

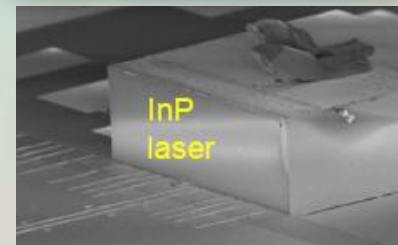
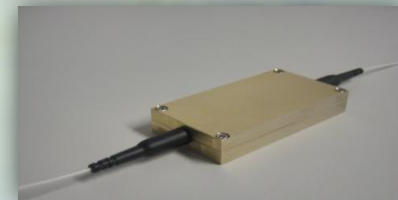
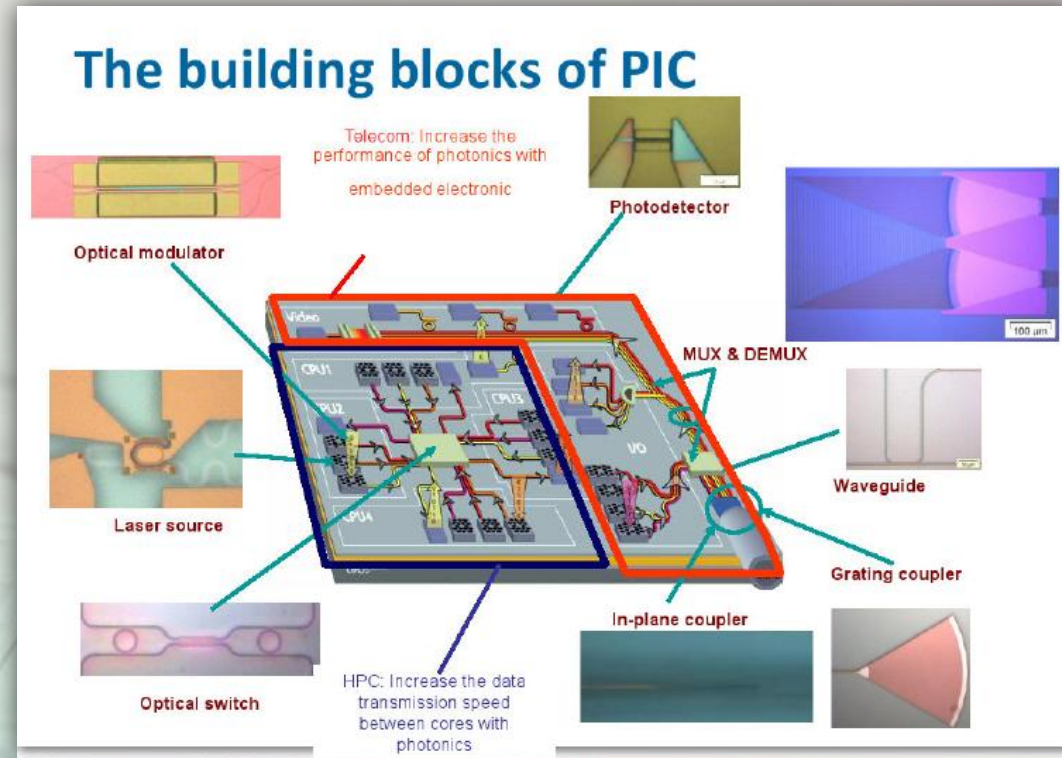
- All partners strive to reach out to SMEs
- Feasibility studies for the SMEs
- Yearly workshops for introduction to Silicon Photonics and networking
- Updated and maintained website
- The consortium will be present at various events throughout the year (shared public calendar via the website – epixfab.eu)

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Technology

- New Technology:
 - Passive functions
 - Power Splitter
 - AWG's
 - Fiber Coupler
 - Slow light devices..
 - Active Functions in 2012-13
 - Heaters
 - Photo-detectors
 - Modulators
 - Packaging and Integration
 - Standard low cost packaging for MPW users
 - Semi-standard approaches for specific needs of SME
 - Integration of micro and nanophotonic dies for hybrid assembly
 - Hybrid integration of light sources



Training

- Bi-annual training providing
 - In-depth knowledge of the Silicon Photonics Technology and the MPW scheme
 - Introduction to optical characterization equipment and techniques
 - Detailed design training on design kits for different fabs by software vendors
 - **Next training 10-13 April 2011, Grenoble, France**
- Annual workshop for introduction to the field of Silicon Photonics and networking (Consortium – SME, SME-SME)
 - **1st workshop organized on 5th Dec 2011 at IMEC, 50 participants and 28 web-streaming participants.**
Material available online: <http://epixfab.eu/>

