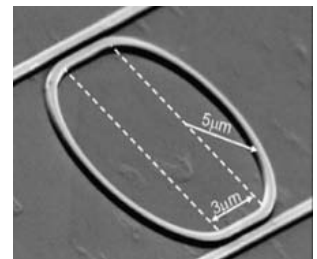




# imec-ePIXfab SiPhotonics MPW

## EUROPRACTICE IC Service offers Multi-Project Wafer Services in ePIXfab silicon photonics platform:

The imec-ePIXfab SiPhotonics technology is now offered to the Europractice IC MPW network of over 650 European universities. Access for all universities and research institutes for SiPhotonics MPW will be operated through Europractice, in close collaboration with ePIXfab for optical design support and training. In this way, ePIXfab leverages the long experience of Europractice in MPW and ASIC services and ensures the continued offer and support of this emerging technology to a wider user base.



Racetrack ring resonator

## Target applications

SiPhotonics targets designs for a wide range of applications:

- Datacom and short-reach optical interconnect
- Telecom and access networks
- Sensors (gas, pressure, strain) and read-out ICs
- Biomedical: biomolecule detection, drug development, point-of-care diagnostics

## Europractice SiPhotonics MPW Pricelist 2011

**EU-Discounted Price** only applies to EUROPRACTICE registered (who paid their annual full membership fee) Academic and Research Members from all 27 EU countries and Norway, Iceland, Liechtenstein, Israel, Croatia, Serbia, Macedonia, Albania, Montenegro, Bosnia&Herzegovina, Switzerland, Turkey who submit designs for *educational or publicly funded research use only*.

SME companies can request ePIXfab directly for the discounted price.  
[epsiphot@imec.be](mailto:epsiphot@imec.be)

**Standard Price** normal price for universities and research institutes not belonging to previous category. (Companies should contact ePIXfab directly)

*Prices and conditions may change at any time without prior notice.*

Die Size		Standard Price	EU-Discounted Price
1 block	6x2.1 mm	3700 €	3515 €
2 blocks	6x4.25 mm or 12.1x2.1 mm	6000 €	5700 €
4 blocks	12.1x4.25 mm	10700 €	10165 €
larger		Contact us	

- For each design submitted (one location), ePIXfab delivers 50 dies.
- Additional services
  - Full or extra wafer: 500 €
  - Extra metrology: 150 €

## Europractice SiPhotonics MPW runs in 2011

ePIXfab	J	F	M	A	M	J	J	A	S	O	N	D
SiPhotonics					15				12			12



# imec-ePIXfab SiPhotonics MPW

## Objective

Europpractice and ePIXfab offer MPW runs on silicon photonics ICs giving access to components and systems based on this technology. The objective is to decrease the total cost of fabless R&D through this scheme with

- Increased technological capabilities offered through the imec/ePIXfab R&D foundry
- Lower effort and shallower learning curve for design into the technology
- Lower prices for European users
- Training and documentation
- A path to manufacturing

By lowering the bare cost, the effort, the learning curve and risk when doing fabless prototyping of silicon photonic integrated circuits, this will increase take-up of the technology and strengthen the impact of R&D in the European area.

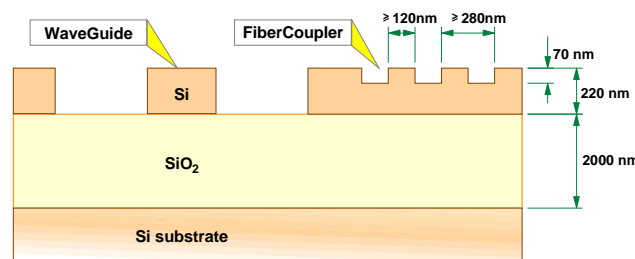
## Technology & Characteristics

### Process

- substrate: SOI with 220nm Si, 2000nm BOX
- **WG module**(WaveGuides): 220nm full Si etch for strip waveguides, photonic crystals, ...
- **FC module** (FiberCoupler): 70nm partial Si etch for fiber couplers, rib waveguides, ...
- Top cladding: deposited oxide or protective resist
- Statistical process tracking of WG and FC modules

### Lithography:

- Minimum linewidth: 120nm
- Minimum pitch: 280nm



### Optical

- Waveguide losses: 2.5-3dB/cm at 1550nm wavelength
- Fiber coupler efficiency: ~30%, 1550nm center wavelength, 30nm 1dB bandwidth

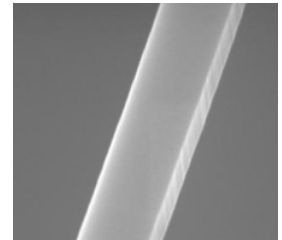
### General conditions :

EUROPRACTICE SiPhotonics MPW Service is accessible for universities and research institutes. (EUROPRACTICE registered members)  
→ more info at [www.euopractice-ic.com](http://www.euopractice-ic.com)

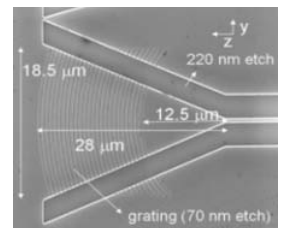
Signing the DKLA is necessary to get access to the design kit.

Companies should contact ePIXfab at [www.epixfab.eu](http://www.epixfab.eu) for prototyping and additional services:

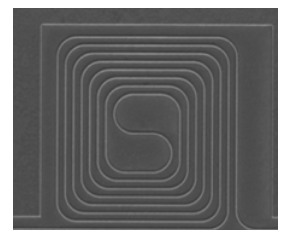
- Process optimization, technology development and low volume manufacturing through imec's CMORE service
- Design support and design IP



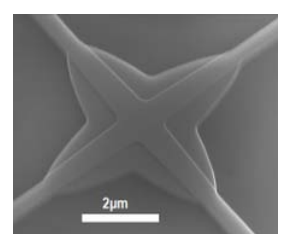
Strip waveguide



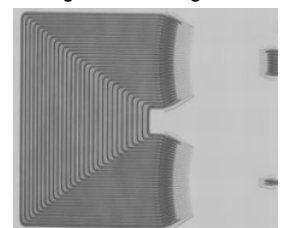
Focusing grating coupler



Spiral delay line



Low-loss, low-crosstalk waveguide crossing



8-channel arrayed waveguide grating