
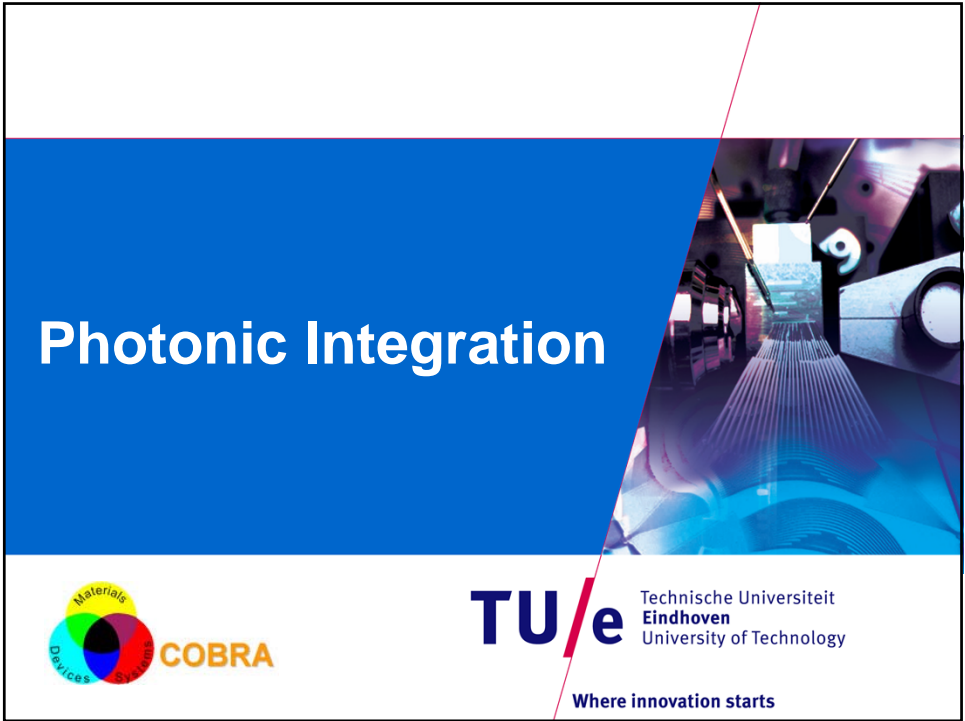


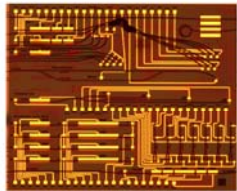
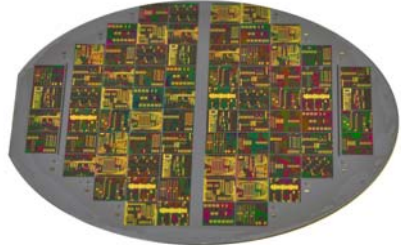
Photonic Integration



TU/e Technische Universiteit
Eindhoven
University of Technology


Where innovation starts

A Key Enabling Technology



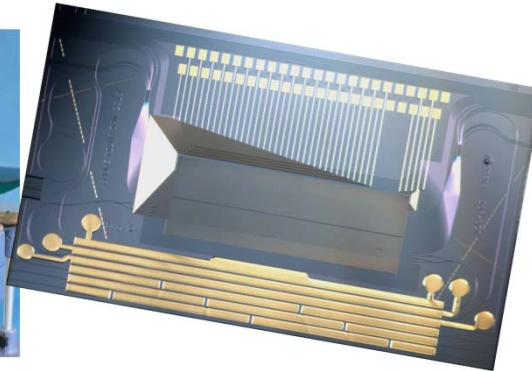
- Bio-imaging and healthcare
- Structural health monitoring
- Safety and metrology
- Connectivity and data networks

Many applications, one generic integration technology



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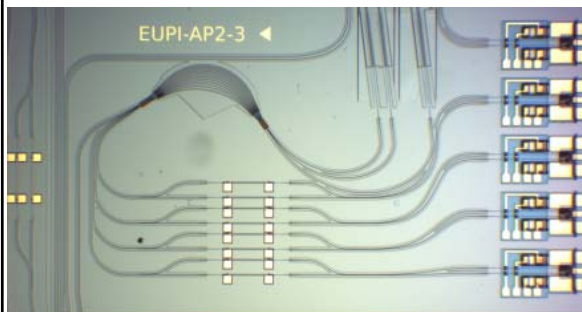
Photonics in Healthcare



Photonic Integration for enhanced performance and lower cost miniature readouts
 Applications for safety and performance in tunnels, aircraft, wind energy, and more ...



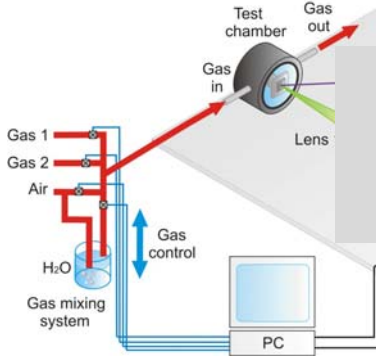
Structural Health Monitoring

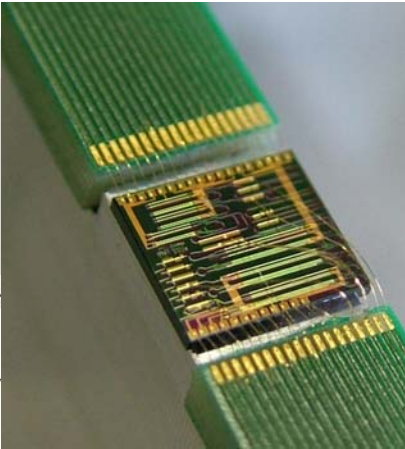




Photonic Integration for enhanced performance and lower cost miniature readouts
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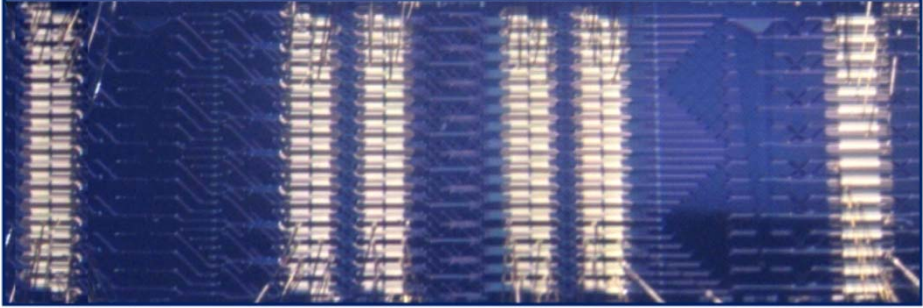
Gas Sensing







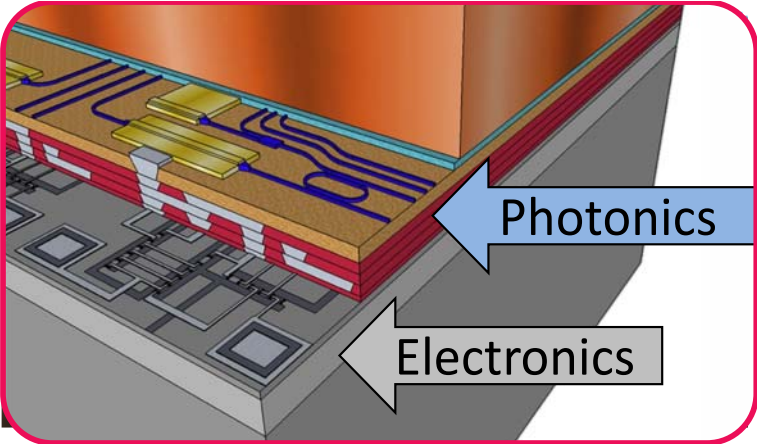


The Photonic Internet







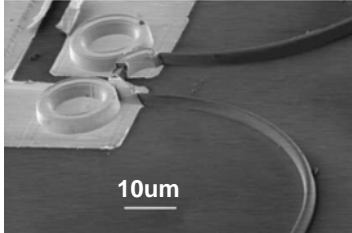
Photonics and the Future of Computing



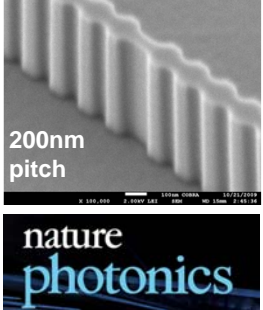
The diagram shows a cross-section of a multi-layered chip. The top layer is labeled 'Photonics' and contains blue waveguide-like structures. Below it is a layer labeled 'Electronics' containing various electronic components and interconnects. The layers are stacked on a substrate.

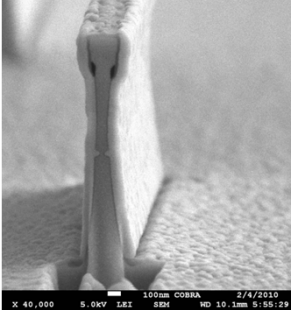
World Record-Breaking Lasers and Devices



10um



200nm pitch





100nm

nature
International weekly journal of science

nature
photonics

- *Integrated optical bistable*
- *Smallest electrically injected metallic laser*
- *First room-temperature electrically-pumped gap-plasmon laser*

World-Class Facilities : NanoLab@TU/e



800 m² cleanroom at Spectrum Building
for Photonic Integrated Circuit fabrication



World-Class Facilities: ASML wafer scanner



ASML & TU/e partnering for first-in-class wafer scanner
Configured for precision photonic ICs



www.tue.nl/phi

Example projects and topic areas ...

Design

- Integrated interferometry for precision strain metrology
- New design-for-manufacturing methods for volume production

Fabrication

- One-way photonics: integrated optical isolator
- Discovering new worlds: resonant slot guides in nano-scale membranes
- Birth of a new technology: electrical contacts on photonic membranes

Experiment

- One-way photonics: integrated optical isolator
- Discovering new worlds: resonant slot waveguides on membranes
- Birth of a new technology: electrical contacts on photonic membranes



Example of Companies Connecting with Phi

In the Netherlands



In Europe



.... and US and Asian labs

