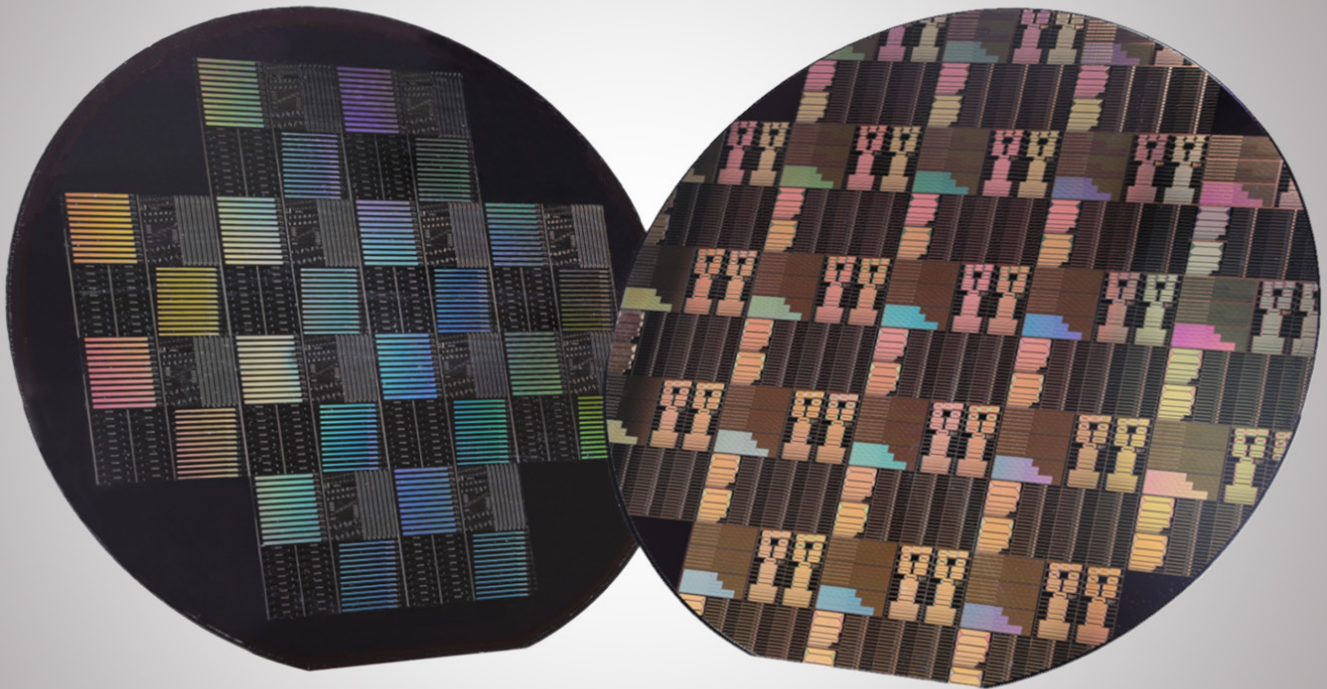


# SILICON NITRIDE INTEGRATION PLATFORM



## AT A GLANCE

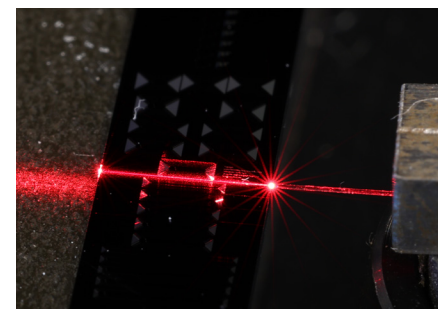
The Silicon Nitride  $\text{Si}_3\text{N}_4$  line of HHI provides passive structures (ring resonators, MMIs, AWGs, gratings) and thermo-optical elements (phase shifters, VOAs, tunable gratings).

### Features

- Low-loss
- Cost-efficient
- Highly integrable
- VIS to NIR wavelength
- Efficient coupling to other materials such as InP, GaAs, PolyBoard etc.
- Short production times
- Versatile applications possibilities in telecom / datacom, sensing, quantum technologies

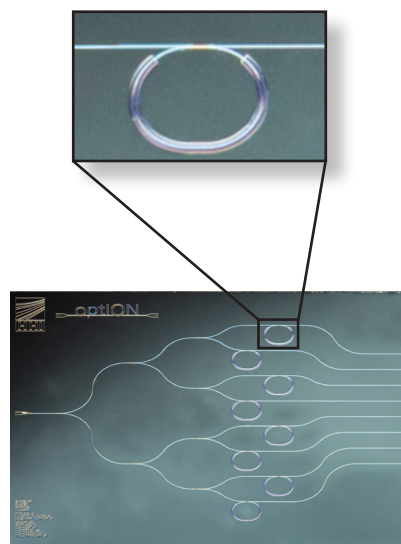
### Services

- Building blocks available for 400nm-thick waveguides for telecom- and non-telecom wavelengths
- Photonic sensors: diagnostics, environmental/water analysis, life science and food analytics

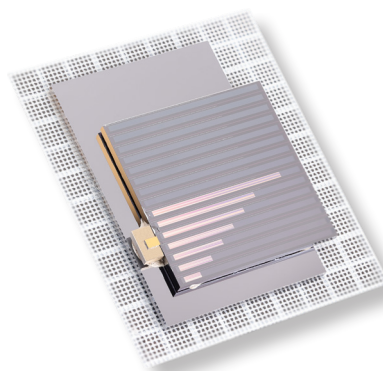


## Applications

- Telecom / datacom
- Sensing and analytics
- Quantum technology
- Medical and life sciences



*Ring resonators for sensing and analytics*

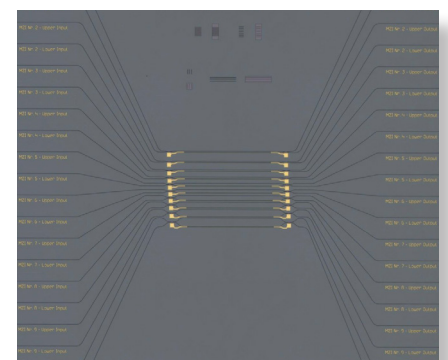


*InP-SiN integration*

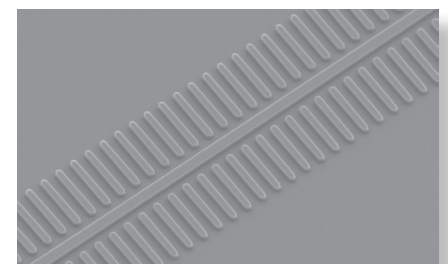
## Technical Background

Low loss structures such as ring resonators, MMI and AWGs, gratings as well as thermo-optical elements like phase shifters VOA and tunable gratings are fabricated on wafer scale.

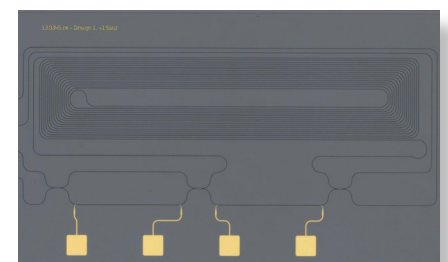
Customized designs are available.



*Switches*



*Gratings*



*Delay line interferometer*

Klara Mihov  
 Photonic Components

Phone +49 30 31002-675  
 klara.mihov@hhi.fraunhofer.de

Fraunhofer Heinrich Hertz Institute  
 Einsteinufer 37, 10587 Berlin  
 Germany

[www.hhi.fraunhofer.de/pc](http://www.hhi.fraunhofer.de/pc)