

RoodMicrotec

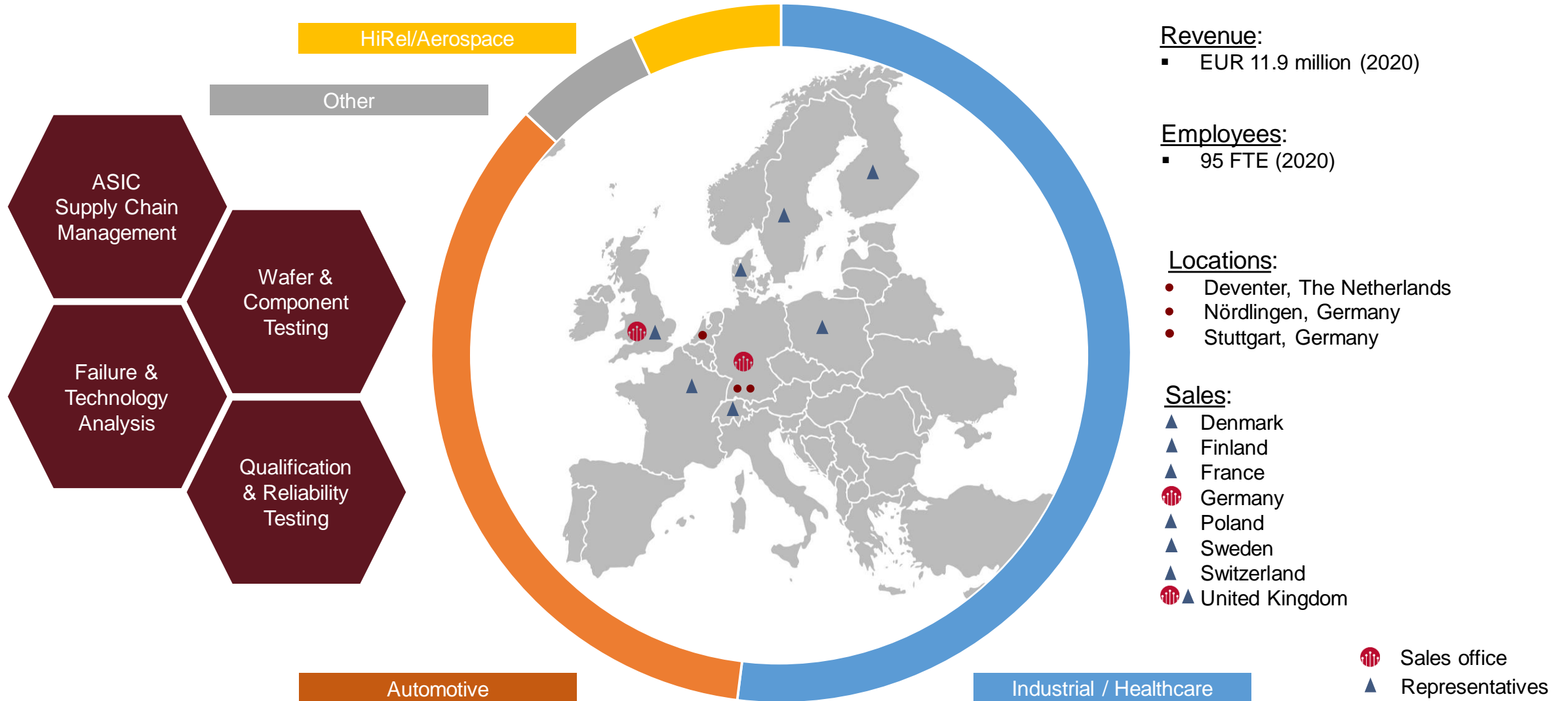
EPIC Online Technology Meeting

Automated Packaging & Testing
Photonic Integrated Circuits

2021-10-04

Andreas Kelm

RoodMicrotec at a glance

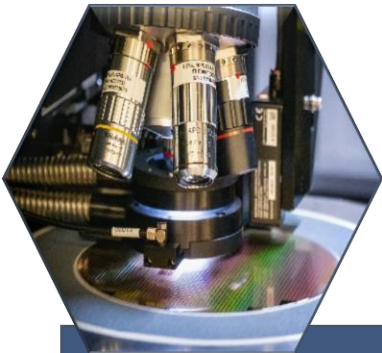
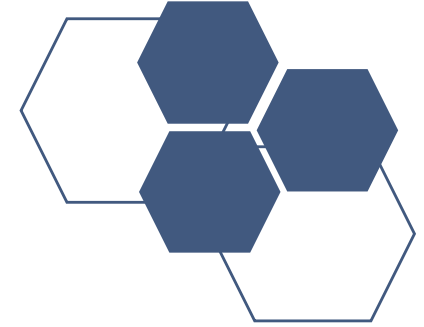


Semiconductor Testing Services



Test Engineering

- Test program development
- Test hardware design
- Correlation and characterization
- Test program conversion
- Test data evaluation and optimization of test solutions
- Design for Test (DFT) support



Test Services

- Wafer test up to 12 inch at -55°C to +200°C
- Automatic Optical Inspection (AOI)
- IC component testing from -40°C to +125°C
- Image sensor testing
- PIC wafer testing



End-of-Line

- Tape & reel
- Scanning and straightening
- Device programming
- Long-term storage

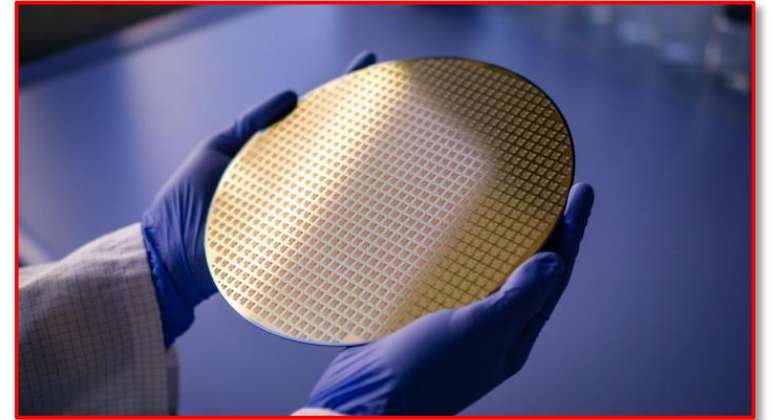
Testing of Photonic Integrated Circuits (PICs)

Specific requirements for PIC testing

- ❑ PICs might have optical as well as electrical interfaces
- ❑ Perform optical as well as electrical test as the same time
- ❑ High accuracy positioning systems in the lower single digit μm range required
- ❑ Low loss and high repeatability of optical as well as electrical connections
- ❑ No probe adjustment per device

General requirements for volume testing

- ❑ Automated device handling
- ❑ Capability of parallel testing of several devices
- ❑ Low setup and test time
 - ❑ Stable test setup to minimize adjustment
 - ❑ Ideally: “plug & play” solution
 - ❑ Standardized connectors



Wafer Level Test (WLT)

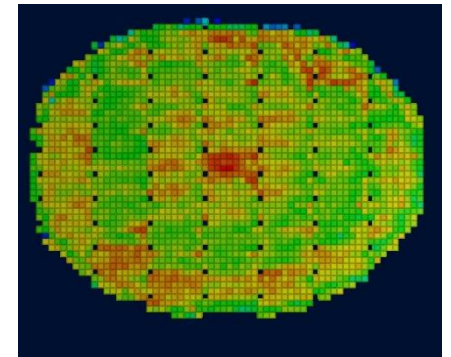
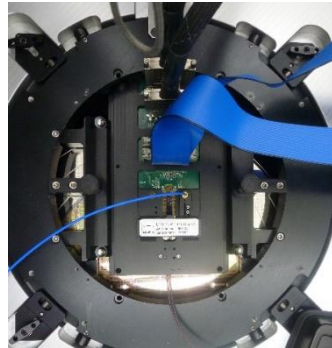


Test of packaged components

Testing of Photonic Integrated Circuits (PICs) at RoodMicrotec

Volume testing at RoodMicrotec

- ❑ Integration into existing process chain
- ❑ Use of automated handling systems for wafers or packaged devices: Systems with high accuracy are established and commercially available
- ❑ Reconfigurable test system to test different PICs on one system
- ❑ Testing of integrated optical components embedded in the wafer or package
- ❑ Testing of complete wafers without the need of realigning the setup
- ❑ Possibility of testing „optical only“ PICs, electro-optical devices as well as devices without optical components on the same system



PXIe based Test System

Electro-Optical Probecard

Wafer Prober

PIC Testing of Complete Wafer

Get in Touch With Us

Your
Reliable
Partner
in Business!

Contact us

info@roodmicrotec.com

Tel: +49 9081 804-0

Visit us

www.roodmicrotec.com

Follow us

