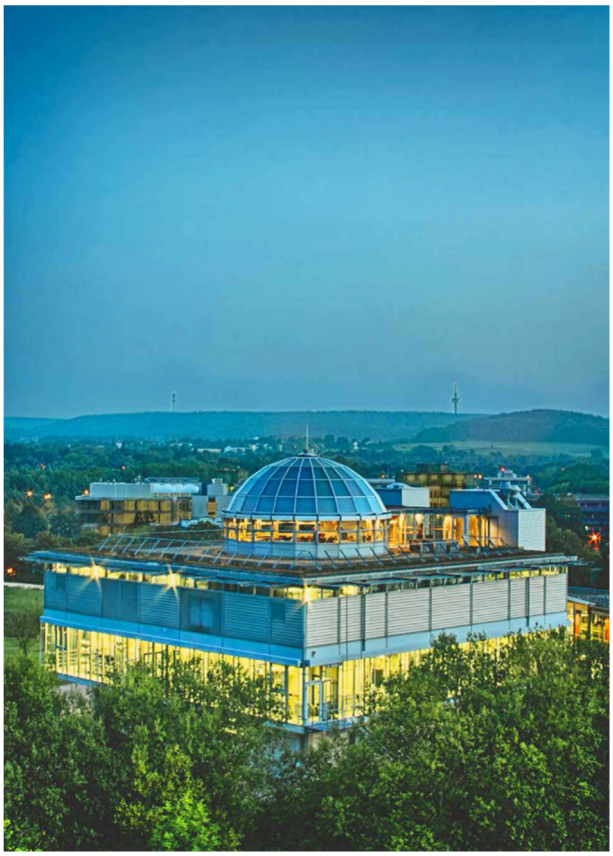
COMPANY PROFILE



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Facts

Founded

2014

Founders

Dr. Michael Nagel,
Dr. Christopher Matheisen,
Simon Sawallich
and Marcel Meuer

Employers

3-4

Business

Production and sales of optoelectronic measurement systems and components operating in the THz range.

Technology development services.

Measurement services.

Turnover

1.3 Mio.€ (2018)

Head Office

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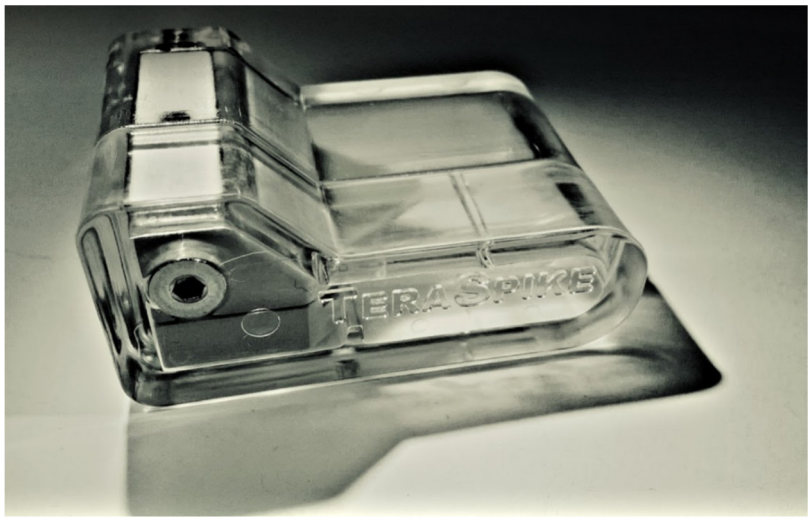
Phone

+49 241 8867-141



The TeraSpike – the only commercially available photoconductive microprobe for THz near-field imaging and on-chip testing applications worldwide.

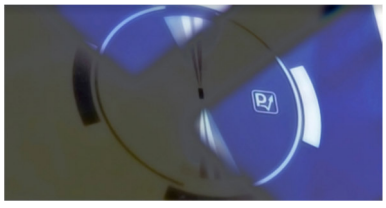
Protemics GmbH is a privately held spin-off of the research company AMO GmbH and the Institute of Semiconductor Electronics (Aachen University) with a back-ground of two decades in Terahertz technology research.

We incorporate an interdisciplinary team of specialists in Terahertz technology, semiconductor processing, optoelectronic system and software design, application engineering and business development.

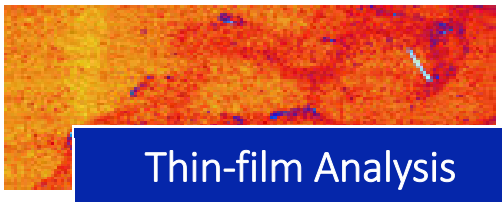
Our products and services are based on pioneering technologies in the range of ultra-fast photoconductive Terahertz microprobe devices for non-destructive testing applications. We stand for innovative custom oriented products and services with world-leading performance offered in short turnaround time.

Our mission

"The provision of the most innovative and powerful measurement solutions based on Terahertz microprobe technology for current and future applications."



Applications

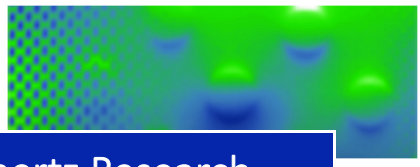


Thin-film Analysis

- Wafer analysis
- Solar cells
- Displays
- Flexible electronics
- 2D Materials
- Transparent conductors

Benefits:

- Sheet resistance imaging
- Contactless
- Micron-scale resolution
- Large-area scanning
- High-speed scanning

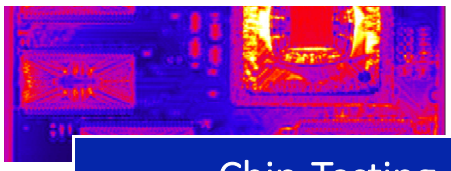


Terahertz Research

- Metamaterials
- Plasmonics
- Devices
- Waveguides
- Sensor surfaces
- Graphene

Benefits:

- Near-field access
- High-sensitivity
- Low-invasiveness
- Polarisation sensitive
- Broadband

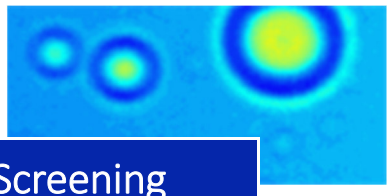


Chip-Testing

- Time-domain reflectometry
- Fault isolation
- Packaging level inspection
- 3D integration
- Through silicon via (TSV)

Benefits:

- Market leading TDR resolution
- Contactless
- Non-destructive
- Cost advantage

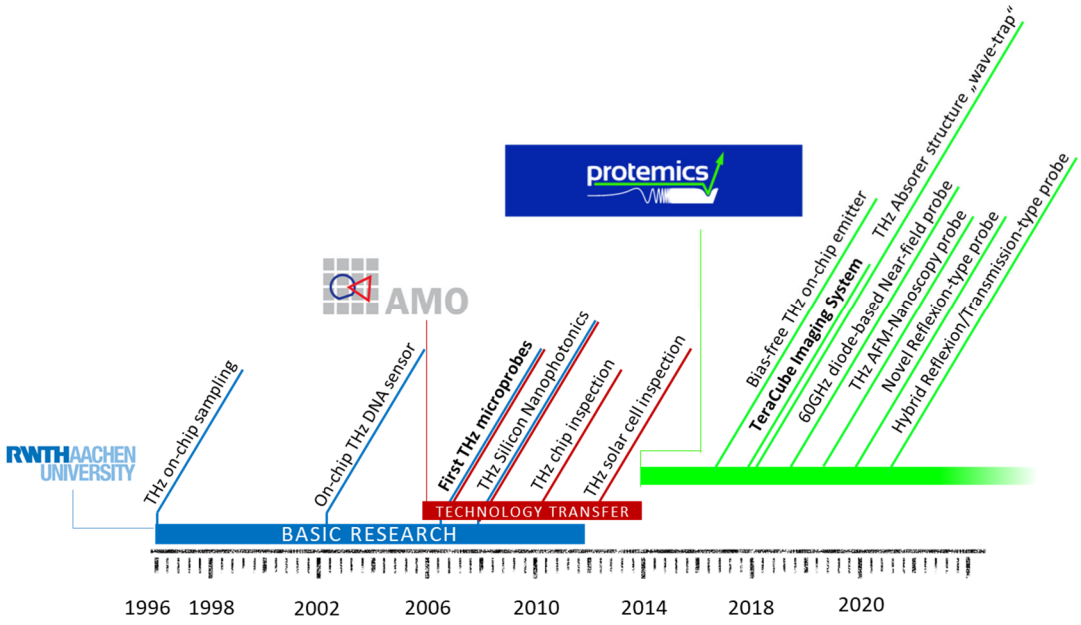


Volume Screening

- Plastic weld inspection
- Fiber inforced polymers
- Chip underfill inspection
- Organic layer screening

Benefits:

- Non-destructive
- Fast inspection
- Screening of opaque plastics
- Detection of microdefects



History of key developments paving the way for Protemics and made after its foundation.

Patents

Owned by Protemics

Cantilever microstructure component for the optical generation of electromagnetic signals in the terahertz frequency range.
DE 102017001001.3

Absorber microstructure for attenuating microwave and terahertz signals on striplines and planar waveguides.
DE 102014015516.1

Sensor and method for measuring power densities in the near field range of high-frequency sources in the 60 GHz band.
DE 102016002733.9

Probe-tip with integrated optoelectronic terahertz emitter structure for use in atomic force microscopes.
DE 102017001001.3

Photoconductive probe-tip for spatially resolved measurements of the complex dielectric properties of surfaces and thin coatings.
DE 102019005412.1

Photoconductive measuring tip for spatially resolved near-field measurement of transmitted and reflected terahertz radiation on surfaces.
DE 10 2020 002 735.0

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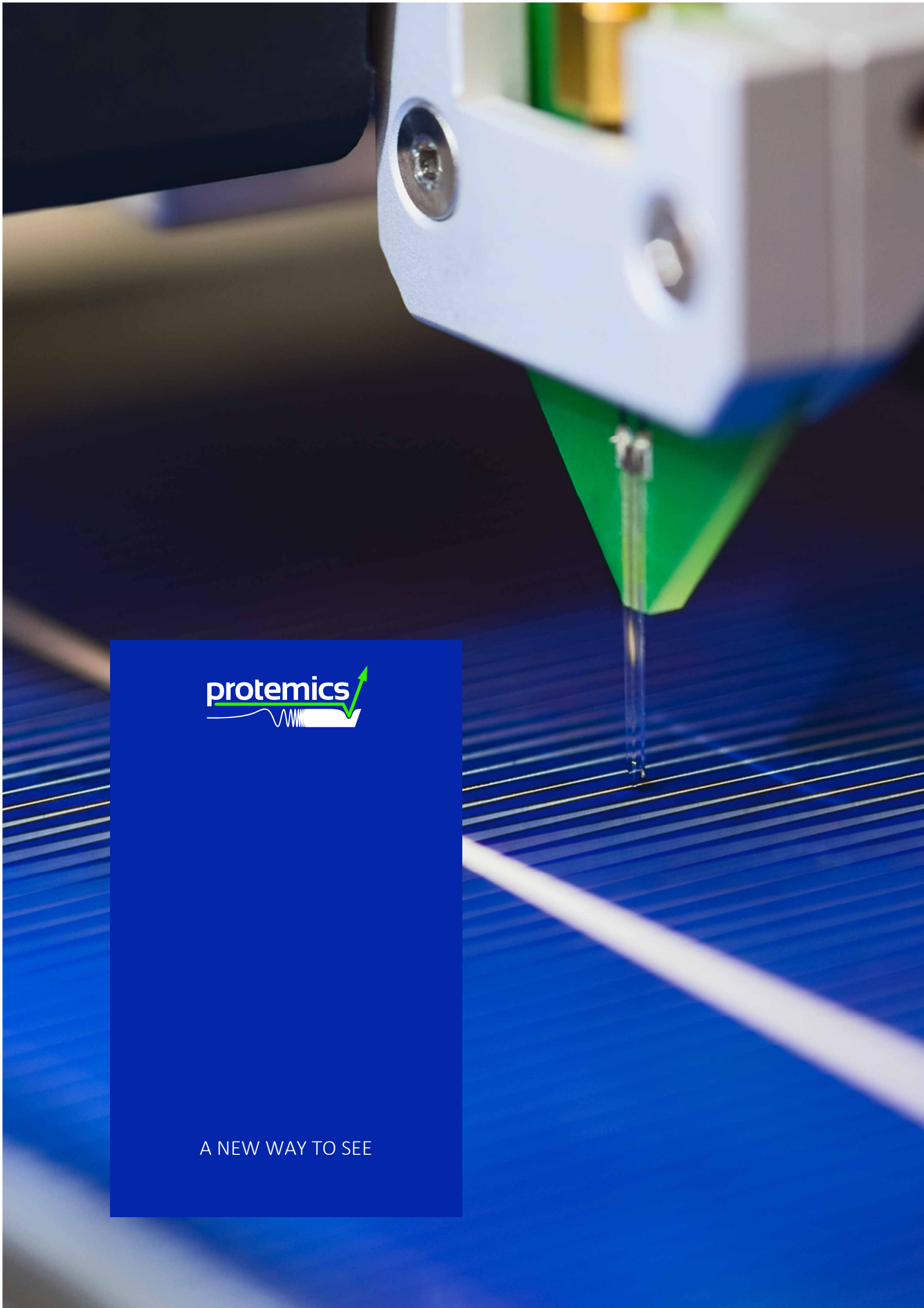
Photoconductive measurement tip, measurement setup, and use of the photoconductive measurement tip and/or the measurement setup.
WO2010091754 A1, DE102009000823 B3

Bimetal semiconductor structure for the generation of pulsed and continuous electromagnetic field signals in the microwave, millimeter waves and terahertz frequency range.
DE102012010926 A1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