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DIASENSE

We redefine Semiconductor Chip Failure Analysis & Production Metrology with Quantum Sensing

DIASENSE Quantum Diamond Magnetic Microscope:
- The go-to tool for chip failure analysis
- The essential tool for in-line semiconductor testing

Contact: Christian D. Nielsen – cdn@diasense.dk – +45 2486 6749

DIASENSE DkCCC DECK – February 2 2026

DIASENSE

The DIASENSE Team

Operational founders

Christian D. Nielsen
Founder and CEO

Business Development
Chip designer by trade

Marvin Holten
Founder and CTO

Quantum Physicist

Advisory founders

Alex Huck
Founder and CSO
Ass. Prof. at QPIT, DTU

Ulrik L. Andersen
Founder and Sci. Advisor
Prof. at QPIT, DTU

Founded in Q1’24
DTU Physics spinout

Located at DTU Physics
- Quantum Denmark in Q1’26

BioInnovation DTL-Q alumni

Advisors

Laura Smolier
CEO, Quantum Denmark

Tina Moe
CEO, Leadership of the Future

Jakob Svagin
Director, BioInnovation Institue

Team leads

Samuel Möller
Quantum Lead

Instrument Lead

AI-driven Imaging Lead

Business Lead CBO

Team members (full-time)

Electrical / DSP Engineering

Mechanical Engineering

• • •

Part time

Bjarne Schümann
Quantum Information Science

Marcus Boye Jensen
Quantum Optics (October 1st)

Axel Bregnsbo
Electrical Engineering

Per Giese
CFO

Semiconductor Test Tools are Falling Behind

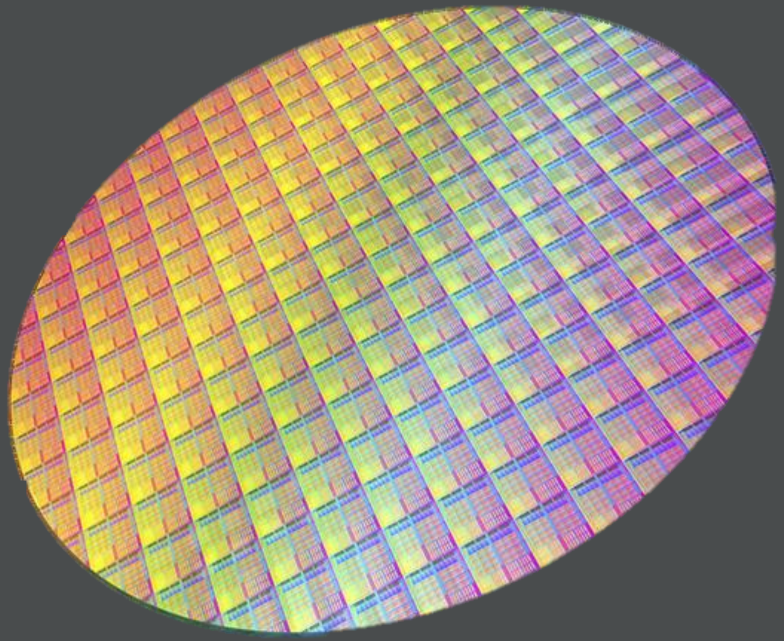
The chip industry

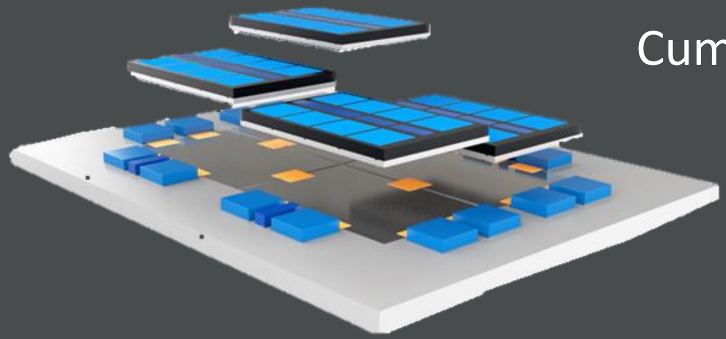
Complexity:

x1000 in 20 years

from 2D to 3D

chiplets and memory stacks





Chip failure analysis & production metrology - Challenges

Subtle buried faults

Analyzing 3D Stacks – TSVs / RDLs - reduced yield and reliability

Cumbersome and limited tools

TSV: Through Silicon Via
RDL: Redistribution Layers

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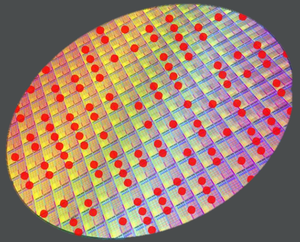
Semiconductor Test Tools are Falling Behind

Modern semiconductor systems have outgrown existing test and analysis tools

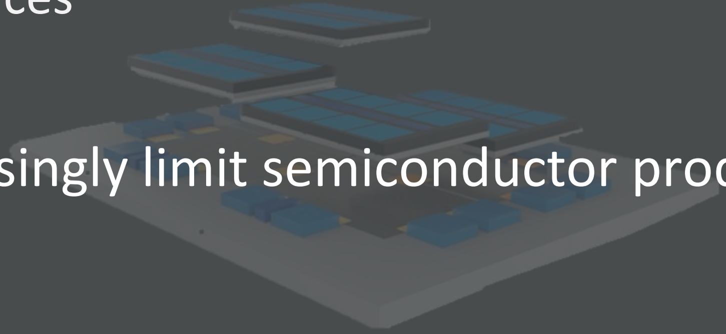
Time-to-Market:
FA takes **weeks – months**

Reliability:
100s DPPM escapes
10–100× cost



Yield:
+1% yield = **millions of dollars/week**
for high-volume devices

Scrap/Waste:
~10% of chips scrapped
in advanced packaging



Test and analysis — not fabs — increasingly limit semiconductor production throughput.

FA: Failure Analysis
Yield = % of working chips per wafer | low yield drives high cost

DPPM: Defect Parts Per Million

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DIASENSE Quantum Diamond Magnetic Microscope

DIASENSE restores visibility where test and analysis come short

Value Propositions

Failure Analysis

High throughput diagnostics
- live navigation and smart analysis tools

High sensitivity: Uncover subtle defects
- detect µA currents in depth

Non-invasive
- works on bare dies, packaged devices, wafers, and packaging

The go-to tool for chip failure analysis

Production Test & Metrology

Contactless testing
- leaves wafers, dies, and stacks unharmed

Inspect buried structures non-destructively
- monitor TSVs, RDLs, and 3D interconnects

Fast fingerprinting: detect process variations early
- identify non-uniformities across wafers and stacks

The essential tool for in-line semiconductor testing

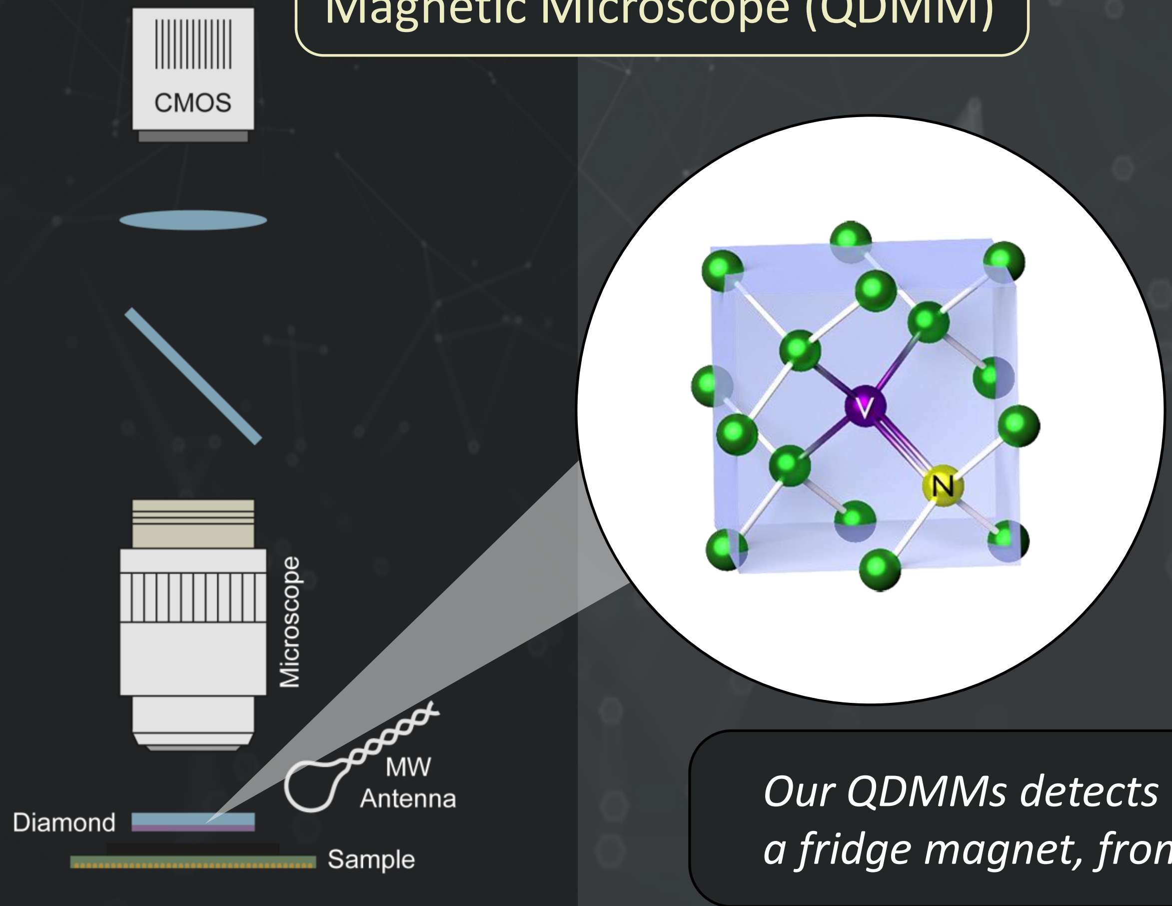
TSV: Through Silicon Via
RDL: Redistribution Layers

Conceptual renderings (artist’s impression) for illustration only

Quantum Sensing Leveraged!

Our technical foundation – the basics

The Quantum Diamond Magnetic Microscope (QDMM)



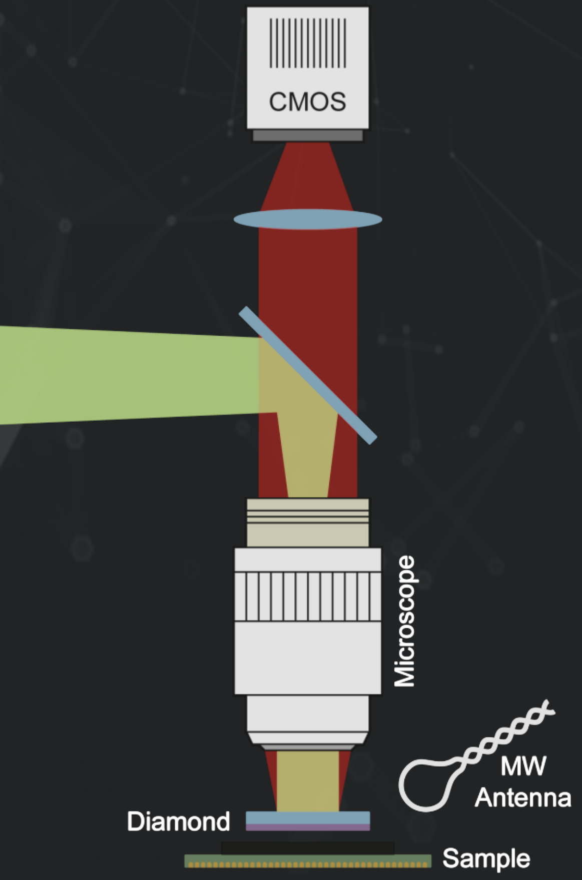
Quantum Diamonds:

- High density ($> 100'000\ /\mu m^3$)
- Very high coherence times at RT ($T_2^* > 1\mu s$)
- Direct quantum state readout & manipulation:
  - Laser at 532 nm
  - Microwaves at $2 - 3\ GHz$

Our QDMMs detects magnetic fields 10 million times weaker than a fridge magnet, from a sensing volume a billion times smaller.

Pushing NV sensing beyond CMOS readout

DIASENSE's QDMM will be 100–1000x more sensitive than competing tools based on CMOS camera readout



CMOS-QDMM:

Spatial resolution:	< 500nm
Measurement Bandwidth:	< 1 kHz
Magnetic Sensitivity:	10 μT / $\sqrt{Hz}$

***3 patents** applications on detector and drive scheme are filed.*
*We have **5+** more in line that will be filed during 2026.*

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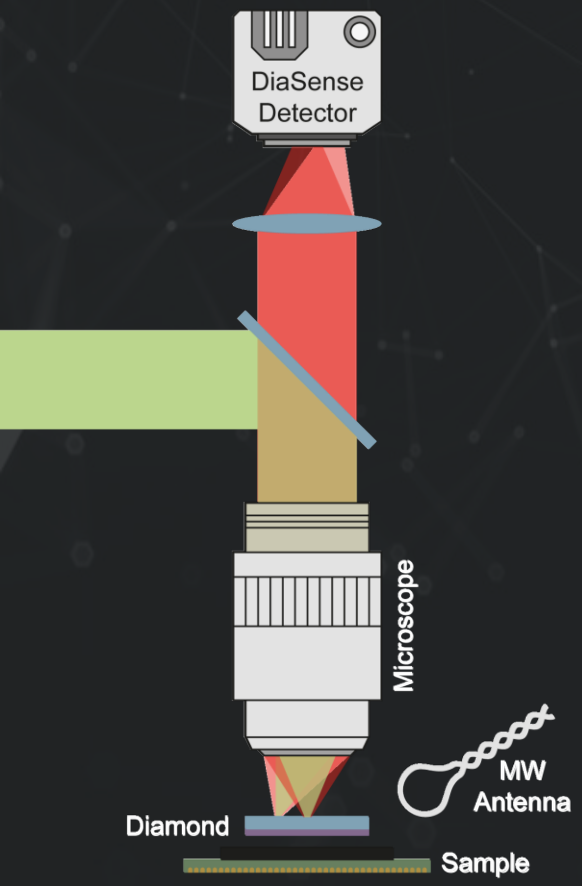
Pushing NV sensing beyond CMOS readout

DIASENSE's QDMM will be 100–1000x more sensitive than competing tools based on CMOS camera readout



CMOS-QDMM:

Spatial resolution:	< 500*nm*
Measurement Bandwidth:	< 1 *kHz*
Magnetic Sensitivity:	$10\ \mu T\ /\ \sqrt{Hz}$

DiaSense next-gen. QDMM:

Spatial resolution:	< 500*nm*
Measurement Bandwidth:	> 1 M*Hz*
Magnetic Sensitivity:	$10 - 100\ nT\ /\ \sqrt{Hz}$

***3 patents** applications on detector and drive scheme are filed.*
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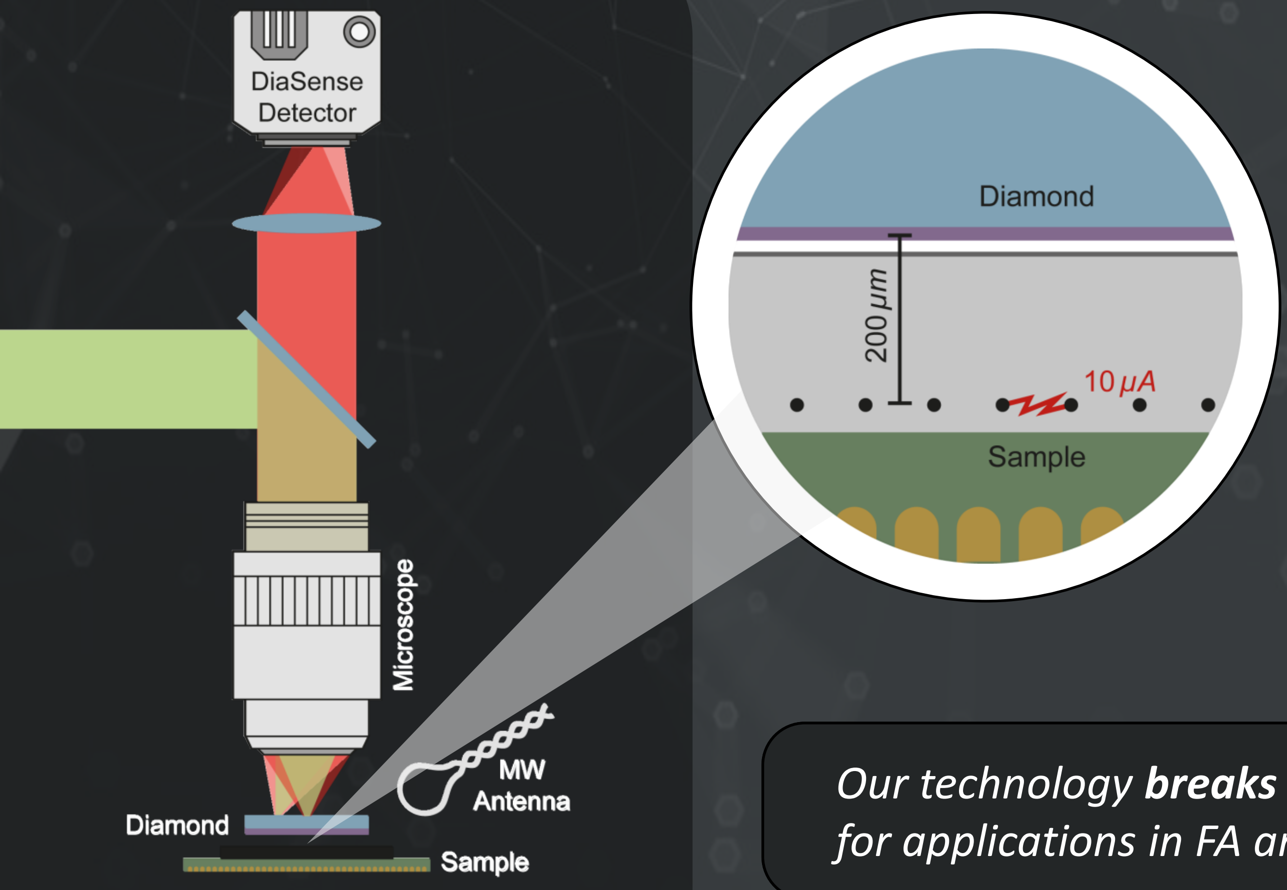

CMOS-QDMM:

Measurement time (SNR=1)
> 11 days

- Magnetic Sensitivity: $10\ \mu T / \sqrt{Hz}$

DiaSense next-gen. QDMM:

Measurement time (SNR=1):
1 ~~day~~ second!

- Magnetic Sensitivity: $10 - 100\ nT / \sqrt{Hz}$

*Our technology **breaks the sensitivity barriers** that have limited QDMMs for applications in FA and semiconductor metrology so far.*

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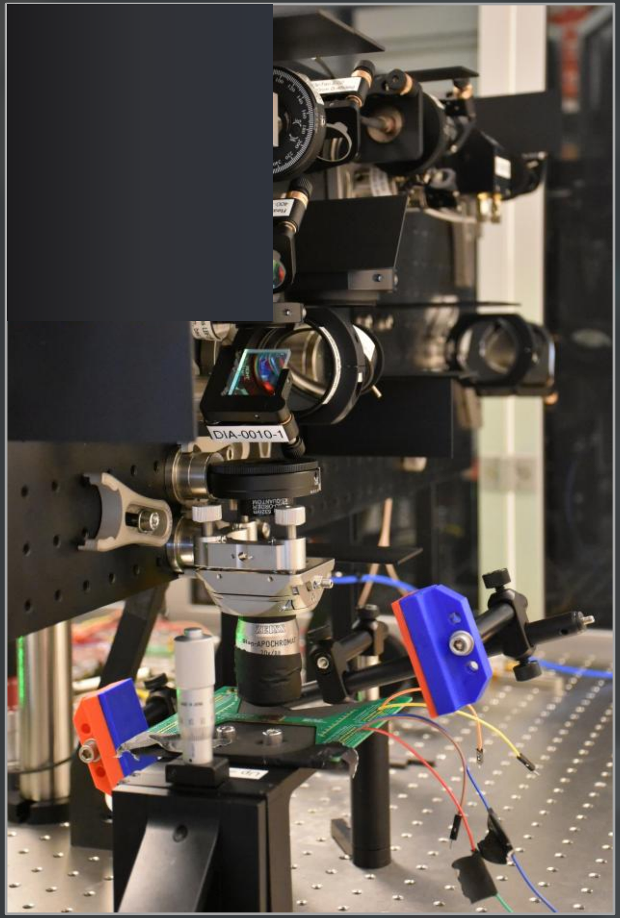
Prototype images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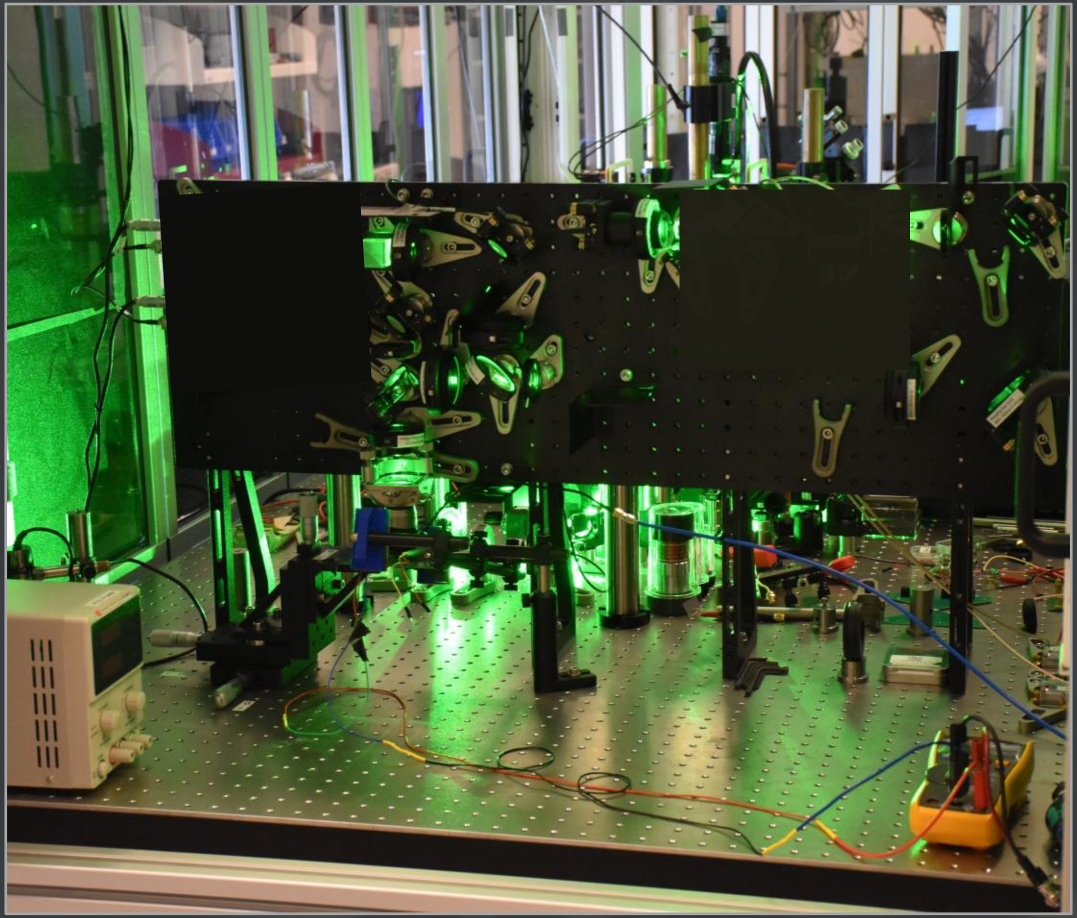
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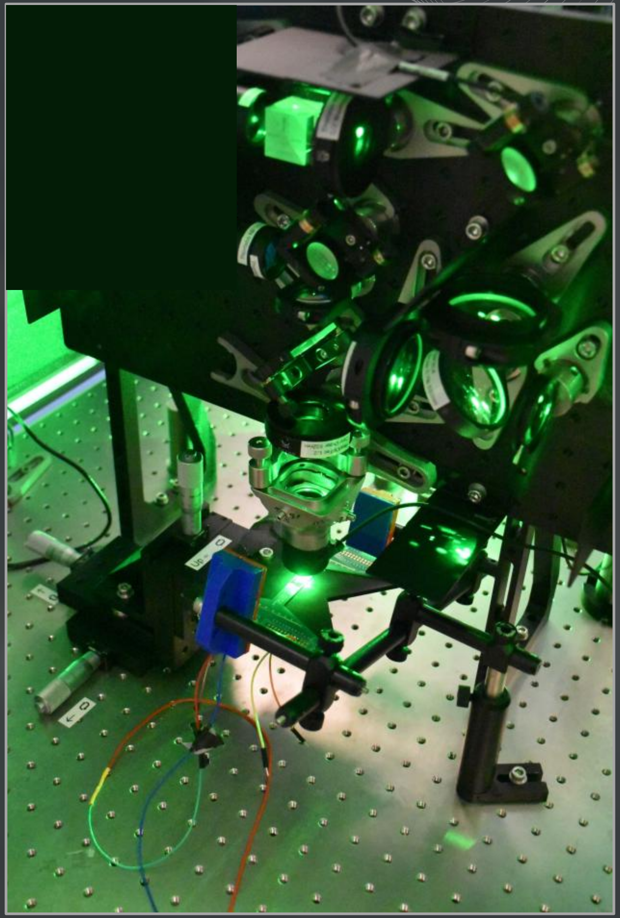
[redacted]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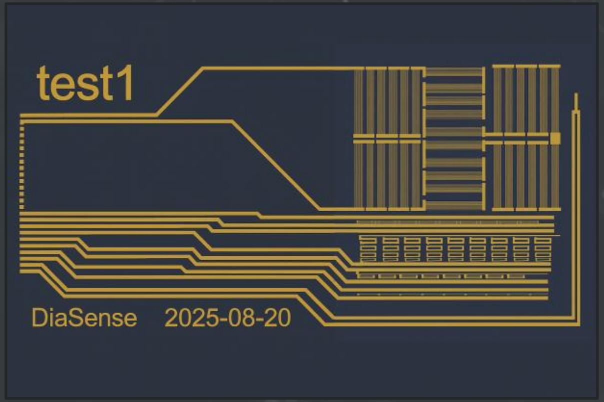
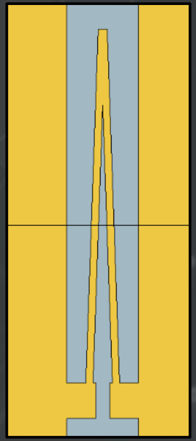
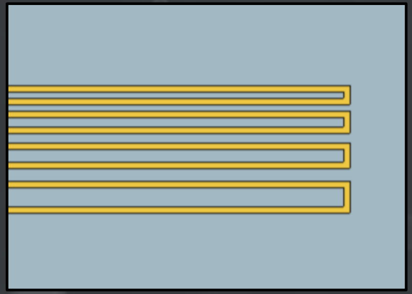
Seeing Currents Flow

Prototype results validate our core architecture.

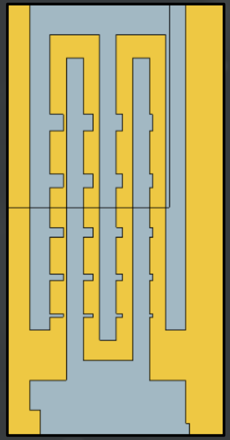


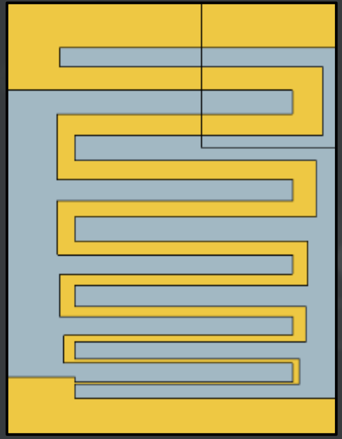

Spike


Meander

DiaSense Calibration Chip

- Silicon oxide wafer
- Gold wires 600 μm thick
- Smallest features: 10 μm
- Max current: 100 mA


Wire defects


Width ramp


Spacing ramp

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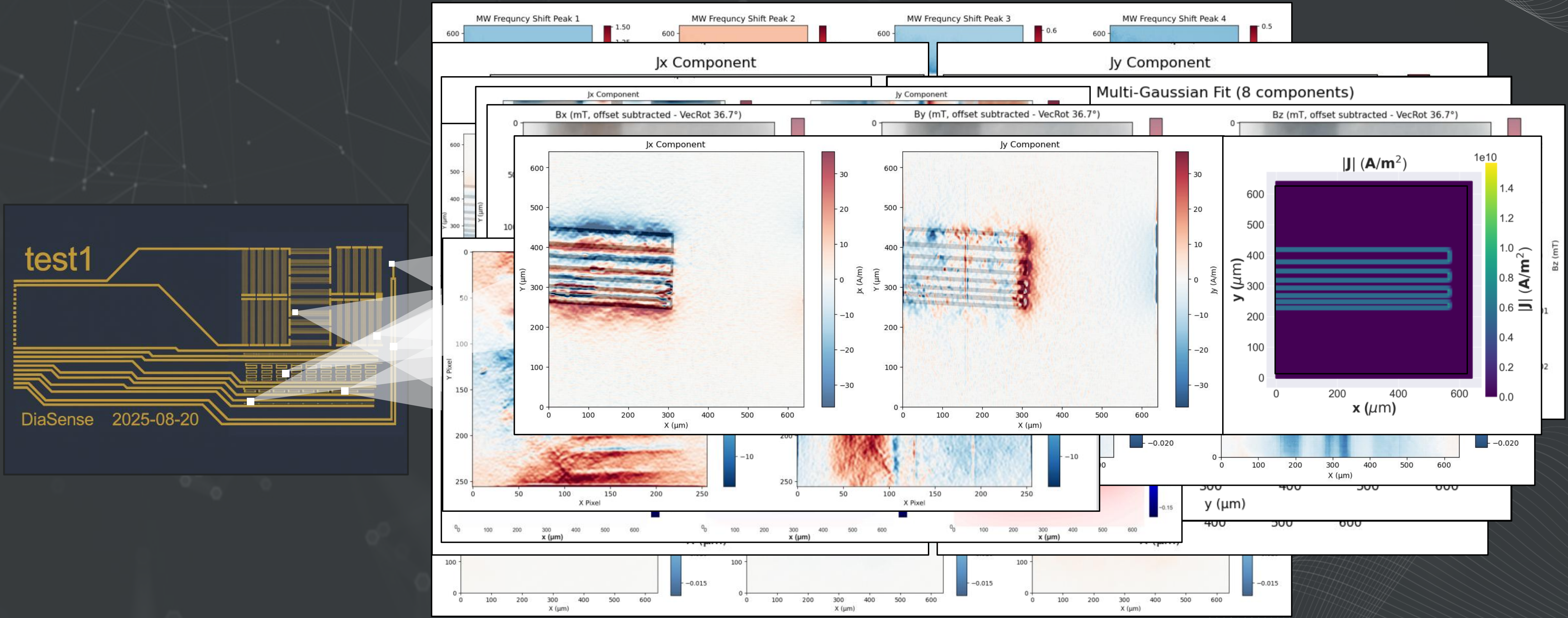
Seeing Currents Flow

Prototype results validate our core architecture.



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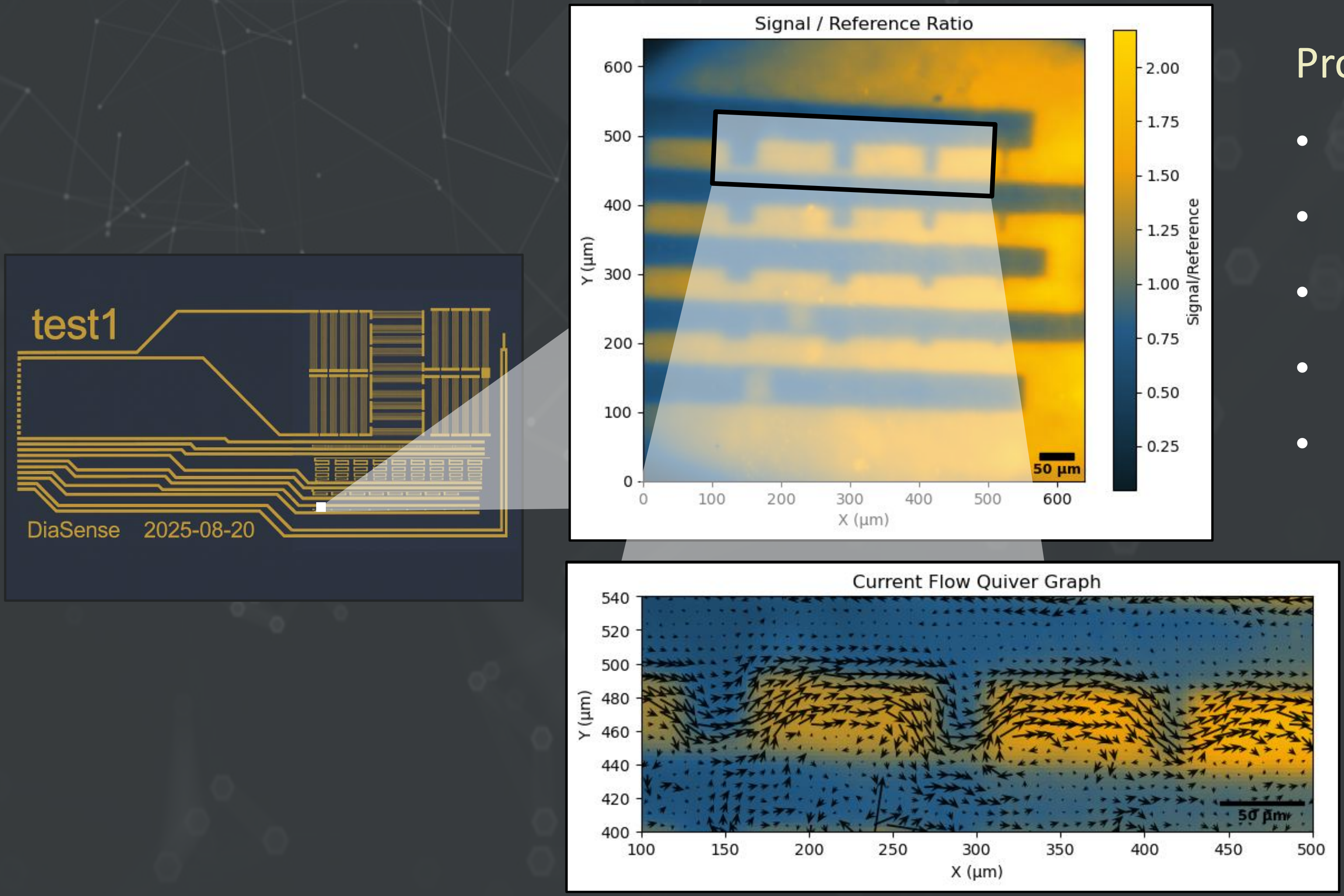
Seeing Currents Flow

Prototype results validate our core architecture.



Proof of Concept

- Single pixel sensitivity: 10 $nT / \sqrt{Hz}$
- Full image sensitivity: < 1 $\mu T / \sqrt{Hz}$
- Current resolution: 5 μm
- Image size: up to 2048px x 2048px *
- Field of View: 640µm x 640µm

** Stitched image from several single measurements.*

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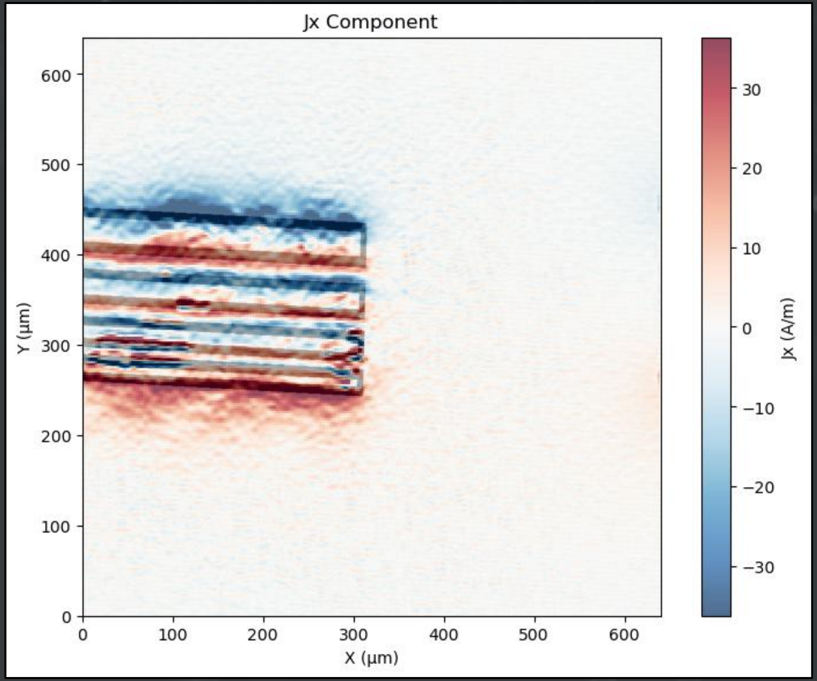
Seeing Currents Flow

Prototype results validate our core architecture.

TNG TECHNOLOGY CONSULTING



Diasense / TNG Collaboration

- Build world-class AI-Team at DiaSense
- Provide expertise in AI-architectures (PINNs, CNNs)*
- Generate simulated training data
- Provide training infrastucture (HPC)

Partnering with TNG, a top-tier European AI leader, DiaSense accelerates its leap into AI-enhanced quantum sensing.

PINN: Physics Informed Neural Network

CNN: Convolutional Neural Network

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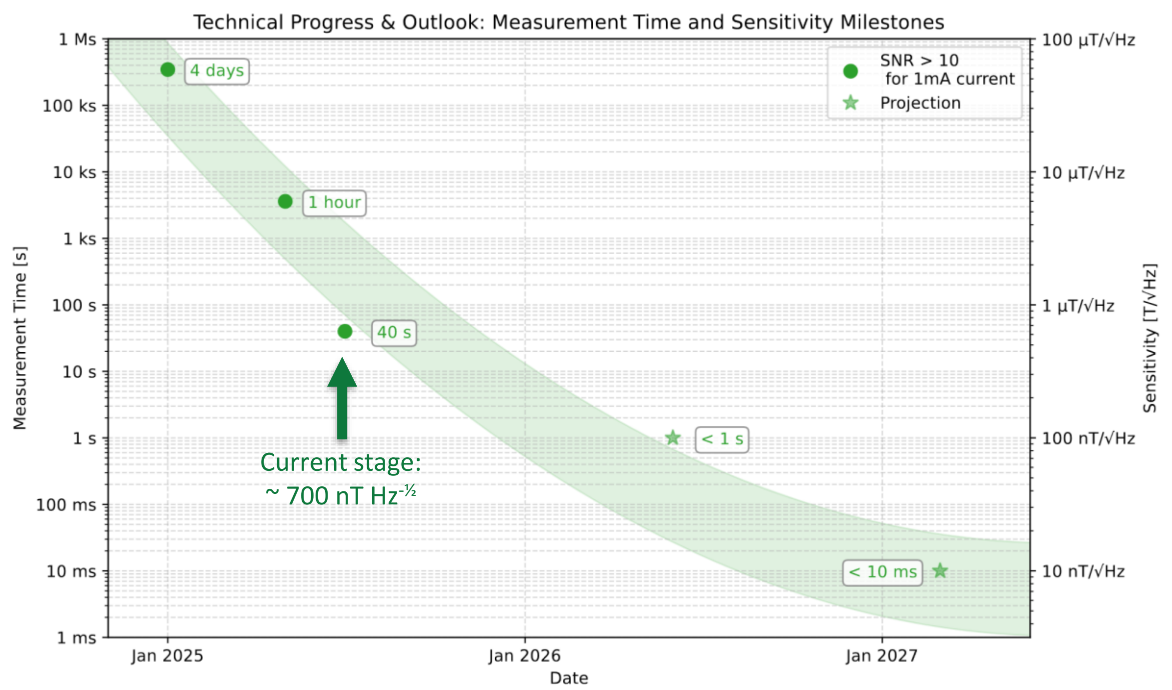
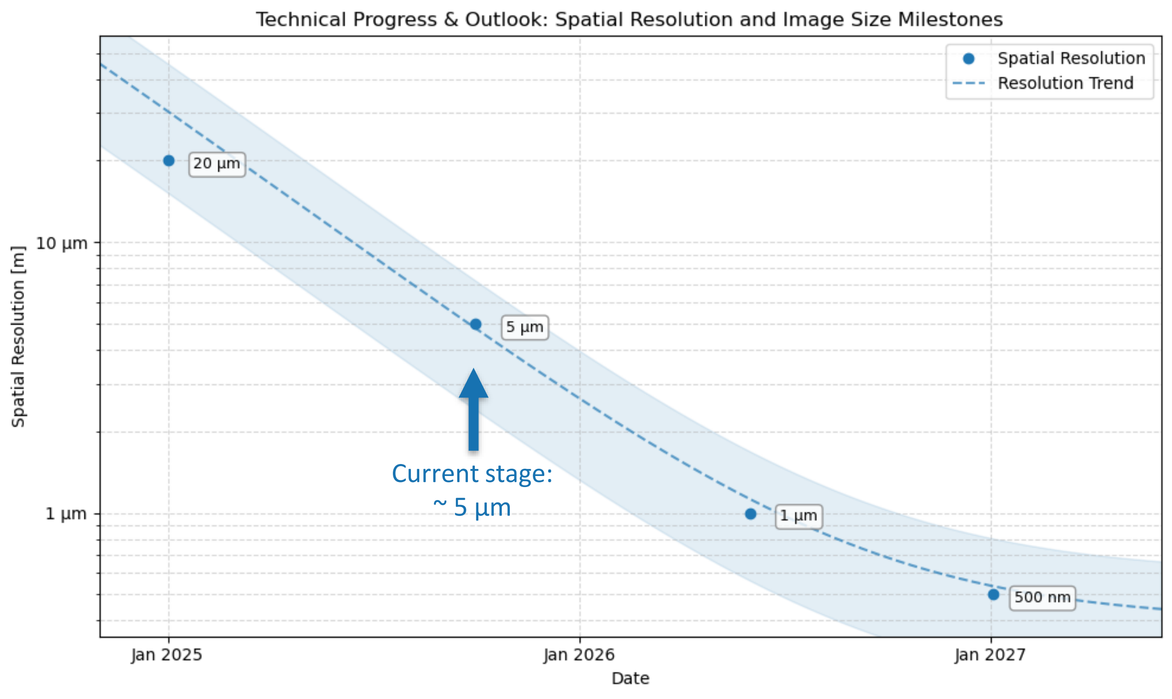
Towards the Quantum Limit

Next milestones in sensitivity and resolution



Current stage:
~ 700 nT Hz^-½



Current stage:
~ 5 µm

Early prototype results confirm a clear trajectory toward full-spec performance by early 2027.

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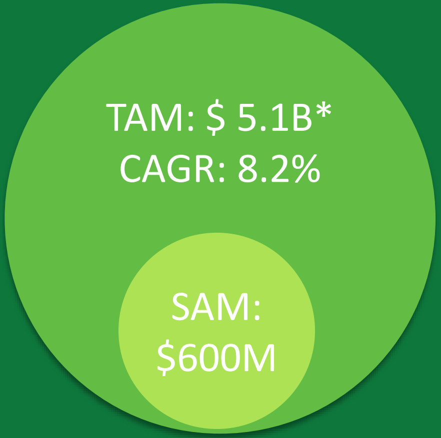
Promising market opportunities

Failure Analysis

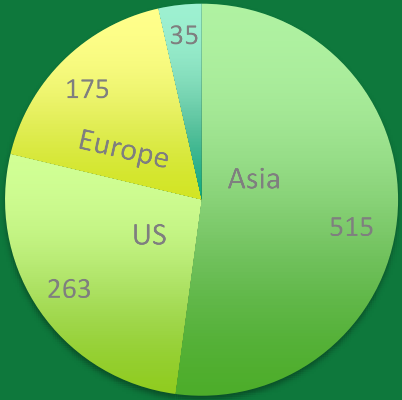
Customer Segmentation

- Independent FA Labs
- Semiconductor Manufacturers
- Research Institutions

Market sizing


TAM: $ 5.1B*
CAGR: 8.2%
SAM: $600M

Approx. 1000 labs worldwide

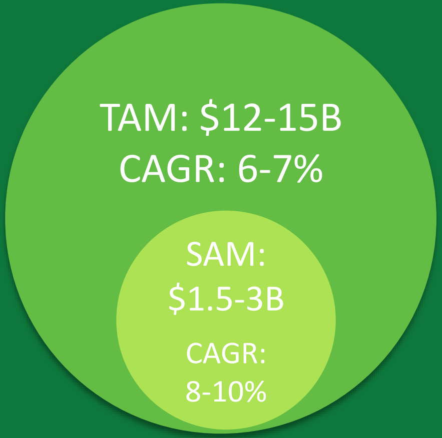


Production Test & Monitoring

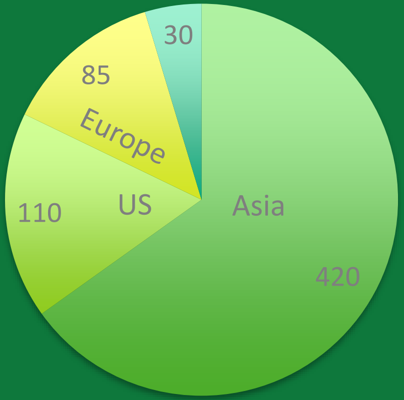
Customer Segmentation

- Semiconductor Manufacturers
- Semiconductor Assembly and Test

Market sizing


TAM: $12-15B
CAGR: 6-7%
SAM: $1.5-3B
CAGR: 8-10%

Approx. 645 relevant production lines *



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* (GVR) Failure Analysis Market Size, Share & Trends Report, 2030 (2024)

* Approx. 400-500 new relevant production lines to be established 2029-33

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Promising initial industry traction

Development agreement
Failure Analysis

With DIASENSE QDMM, Eurofins Maser is shaping the future of semiconductor failure analysis.

Thijs Kempers,
CEO, Eurofins Maser

Purchase Agreement w. down payment

eurofins | MASER

Advanced talks
Production test & metrology

imec

Infineon

PERI ASSET
by David Park

JSR Electronics Materials

APPLIED MATERIALS

ITRI
Industrial Technology Research Institute

tsmc

SK hynix

SAMSUNG

Up next

cea leti

Execution – building a winning team to build a winning product

Major work packages

- User driven design, testing, and benchmarking
- Diamond conditioning with advanced quantum protocols
- Diamond read-out HW and schemes
- AI-driven 3D current reconstruction and failure search
- Optical integration
- Instrument design – incl. µm precision positioning and probing
- Feature design and implementation
- Software design – platform design
- Market preparation

Building the Winning Team

Over the next 12-15 months – Q4’25 to Q4’26 – we plan to hire ~10 full time employees and five student assistants – all experts in their field

- Quantum engineers
- Electronics designer
- AI / DSP / Imaging experts
- SW designers
- Instrument designers
- Business and finance executives

Recruiting:

BLACK SWANS EXIST

Warrant program

Further a strong chairman of the board and our advisory board will be established

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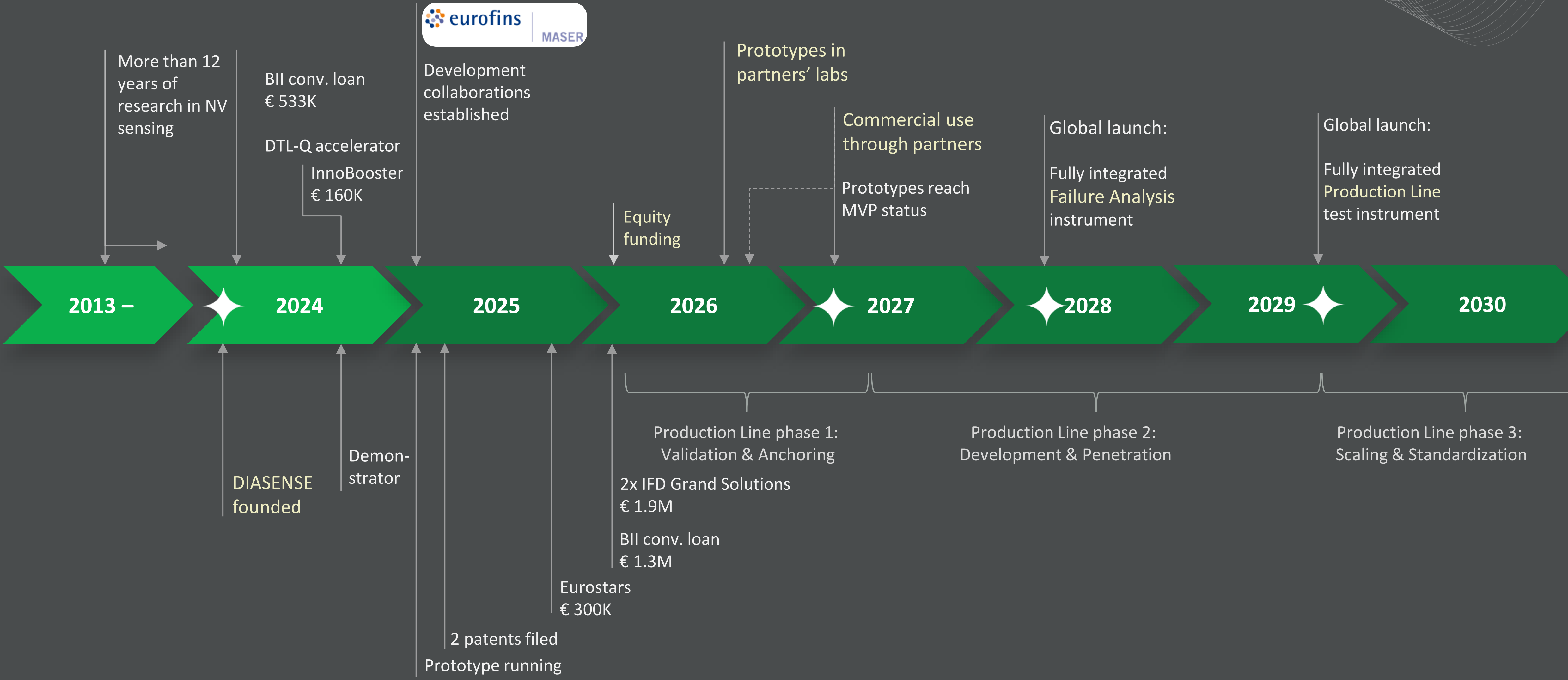
Major milestones



More than 12 years of research in NV sensing

BII conv. loan
€ 533K

DTL-Q accelerator

InnoBooster
€ 160K

eurofins MASER

Development collaborations established

Equity funding

Prototypes in partners' labs

Commercial use through partners

Prototypes reach MVP status

Global launch:

Fully integrated Failure Analysis instrument

Global launch:

Fully integrated Production Line test instrument

2013 –

2024

2025

2026

2027

2028

2029

2030

DIASENSE founded

Demon-strator

Prototype running

2 patents filed

Eurostars
€ 300K

2x IFD Grand Solutions
€ 1.9M

BII conv. loan
€ 1.3M

Production Line phase 1:
Validation & Anchoring

Production Line phase 2:
Development & Penetration

Production Line phase 3:
Scaling & Standardization

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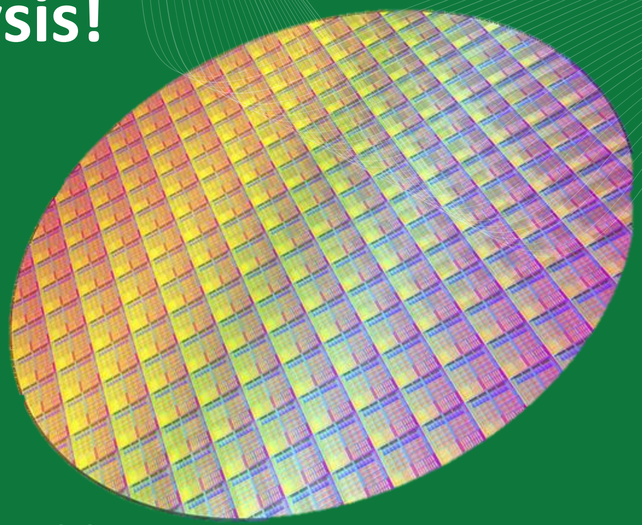
Join Us to Redefine Chip Test and Failure Analysis!



We are scaling up …

- to build a world-class team,
- to place prototypes at leading partner labs and progress to MVP,
- to establish proof-of-business – getting ready for Series A

… and match granted soft funding (€2.2M) and CL (€1.4M) for 2026-27

We are also seeking

- **Strong capital partners** who can support us towards series A
- **advisory board members** with deep tech and semiconductor expertise
- **a chairman of the board** to support our next phase of growth

Contact: Christian D. Nielsen – cdn@diasense.dk – +45 2486 6749

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Backup and quick reference slides

DIASENSE Quantum Diamond Magnetic Microscope

DIASENSE restores visibility where test and analysis come short

Value Propositions

Failure Analysis

High throughput diagnostics
- live navigation and smar

High sensitivity: Uncover sub
- detect µA currents in dep

Non-invasive
- works on bare dies, pack

The go-to tool for chip

Production Test & Monitoring

Contactless testing
- leaves wafers, dies, and st

Inspect buried structures non-
- monitor TSVs, RDLs, and 3D

Fast fingerprinting: detect proc
- identify non-uniformities a

The essential tool for in-

Conceptual renderings (artist's impression) for illustration only

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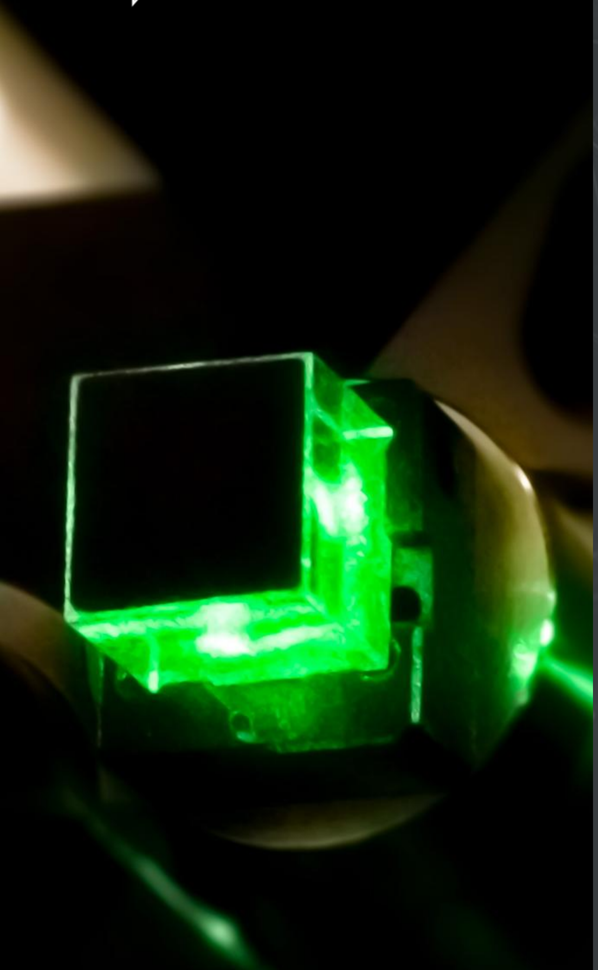

Seeing where others can’t

DiaSense QDMM uniquely resolves buried faults in depth.

Method	Diasense QDMM	Conv. QDMM	Scanning QDMM	MMI*	OBIRCH*	LIT*
Principle	Next-gen detector & laser drive	CMOS widefield	AFM tip scanning	(GMR/SQUID sensors)	IR laser + resistance change	Thermal emission
Strengths	high sensitivity 3D capable	3D capable	high resolution	3D capable	High sensitivity, fast	Fast hotspot detection
Weaknesses		Limited sensitivity	Limited sensitivity	Low resolution cryogenic	Indirect measurement only 2D	Limited resolution only 2D

DIASENSE
QUANTUM DIAMONDS SENSOR TECHNOLOGY
ZABRE
CIQTEK
HAMAMATSU PHOTON IS OUR BUSINESS
EuQlid
Qnami
ThermoFisher SCIENTIFIC

*MMI: (Magnetic Microscopy Imaging)
OBRICH: (Optical Beam Induced Resistance Change)
LIT: (Lock-in Thermography)