

Machinebuilding expertise sought in the field of high-tech systems to develop 3D measurement machine.

Summary

Profile type	Company's country	POD reference
Technology request	Germany	TRDE20240118006
Profile status	Type of partnership	Targeted countries
PUBLISHED	Investment agreement Research and development cooperation agreement	• France • Switzerland • Netherlands • Belgium • Austria
Contact Person	Term of validity	Last update
Sabrina WODRICH	22 Jan 2024 21 Jan 2025	22 Jan 2024

General Information

Short summary

A German SME specialized in designing, developing and manufacturing precision optical fiber measurement systems, is seeking a partner with machinebuilding expertise in the field of high-tech systems in order to develop their own 3D measurement machine.

Full description

The German company is specialized in designing, developing and manufacturing precision optical fiber measurement systems since 2007. With their miniature measuring probes, the SME became technology leader for high-precision detection of the smallest, difficult to access cavities and sensitive surface structures.

Their measurements applications focus on the following areas:

- Surface and roughness acc. to ISO (accuracy of 3 nm)
- Distance: 0-1 mm (WL-Interferometry),
0-500 mm (Laser-Interferometry)
- 3D-Form and position
- Hole and gap (150µm)
- Inline metrology

The SME's services include developing and prototyping of individual measurement solutions (incl. algorithms), simulations and contract measurements as well as the construction, assembly and distribution of fibre optic probes and optical fibres.

In order to set next steps, the company wants to further professionalize both their product portfolio and business model. From a developer and manufacturer of measuring probes, tools and systems, the company is now looking to develop their own 3D-measurement machine.

Advantages and innovations

3D-measurement machine(s) utilizing unique fiber optical sensors for the measurement of optics, wafers, chips, barrels and high precision metal parts.

- Fast measurement speed due to measurement frequencies of up to 40 kHz
- Possible to measure a vast range of materials (glas, metal, silicon, ceramics, etc.)
- Capable to measure both accesible and hard to acces surfaces on one machine (optic vs. barrel)
- measurement result: 3D-point cloud (contains information about e.g. form, surface, scratches, roughness etc.)

Technical specification or expertise sought

The German SME is looking for a partner to jointly develop a 3D-measurement machine that combines several high precision axes to a uniqe kinematic set-up.

The design idea is based on a set-up that can be compared to a form tester kinematic, but it should utilize a 4th axis that carries the fiber optical sensor. The three main axes should be air-bearings, due to the requested measurement accuracy.

The partner sought should have in-depth expertise and extensive experience in machine development in the field of high-tech systems and knowledge of high precision technology.

Key aspect of the cooperation sought is the integration of existing measurement tools into a new measuring machine.

The German SME has thoroughly tested a three axis kinematic already. A possible machine concept is already available for further discussions.

Stage of development

Lab tested

IPR Status

Secret know-how

Sustainable Development goals

- **Goal 9: Industry, Innovation and Infrastructure**

Partner Sought

Expected role of the partner

To further professionalize the developed measurement tools and systems, the German company is looking for a key

partner with machinebuilding and automation competencies, specifically in the field of high tech systems.

The partner sought will be responsible for the engineering, development, testing, and production of a 3D measurement machine in close cooperation with the German SME.

The partner sought may also be a potential strategic partner in the sale of future machines and units. In order to do so the German company is looking for a technical cooperation agreement with a partner as mentioned above.

Type of partnership

Investment agreement

Research and development cooperation agreement

Type and size of the partner

- **SME 50 - 249**
- **SME 11-49**
- **Big company**

Dissemination

Technology keywords

- **02002017 - Micromachining, nanomachining**
- **02002019 - Micropositioning, nanopositioning**
- **02002018 - Microassembly, nanoassembly**
- **001001008 - Microengineering,**

Targeted countries

- **France**
- **Switzerland**
- **Netherlands**
- **Belgium**
- **Austria**

Market keywords

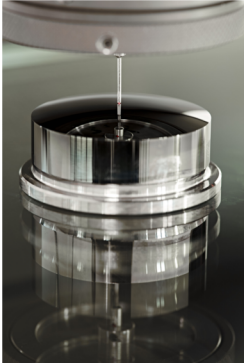
- **03007002 - Other measuring devices**
- **03006 - Fibre Optics**

Sector groups involved

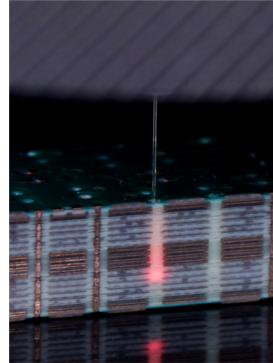
- **Electronics**

Media

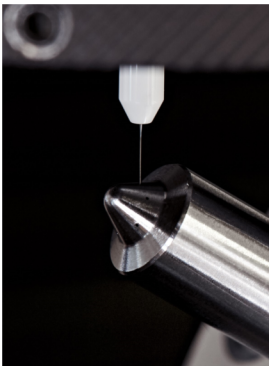
Images



[Measurement of metal lens](#)



[Measurement of surface and vias of multi-layer PCB](#)



[Spray hole measurement with fibre optical measurement probe](#)