

# Customised series production of 3D printed microcomponents

## Summary

Profile type

**Technology offer**

Company's country

**Germany**

POD reference

**TODE20220623001**

Profile status

**PUBLISHED**

Type of partnership

**Investment agreement**  
**Commercial agreement with technical assistance**  
**Research and development cooperation agreement**

Targeted countries

**• World**

Contact Person

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Term of validity

**23/06/2022**  
**23/06/2023**

Last update

**24/06/2022**

## General Information

### Short summary

A German start-up has developed a unique production technology which enables the mass-produce of high-resolution, function-integrated micro-components made of metals with functional internal structures  $>100\text{ }\mu\text{m}$ . Hereby mass-production of metal microcomponents miniaturising existing components and integration of semi-finished products or preliminary products into additive manufacturing are possible. The SME is looking for partners for joint further development and testing of new applications.

### Full description

A start-up from northern Germany developed a technology for the additive mass-production of high-resolution, function-integrated micro-components made of metals (e.g. 304, 316L, NiTi, etc.). The process is the only technology that combines the advantages of 3D printing with low surface roughness ( $R < 10\text{ }\mu\text{m}$ ), sharp cutting edges as well as functional channel structures ( $\varnothing < 100\text{ }\mu\text{m}$ ). The technology is also suitable to integrate semi-finished products or preliminary products into additive manufacturing.

Both the system technology and the software have been developed in-house and can be fine-tuned down to the smallest detail for optimum series production results. The integrated and automated clamping technology enables the assembly of components on pre-products (e.g. deep-drawn parts) or semi-finished products (e.g. drill shafts).

The 3D printing systems are characterised by the fact that they are designed from the start for series production with the highest printing resolution. For the first time, it is possible to build complex structures on pre-products and semi-finished products in series. The size of the components can be discussed individually. Functional internal structures  $> 100\text{ }\mu\text{m}$  can be integrated into the component.

The German SME is looking for partners for the joint further development and testing of new applications.

The customers will gain a competitive advantage by being able to have complex micro components manufactured at competitive prices due to series production. The technology is suitable for the mass production of components for application areas as medical technology, forming technology, mechanical engineering, microproduction technology, microfluidics, bioTec, process technology, aerospace technology, defence technology, etc.

The start-up is looking for research and development cooperation agreements, for commercial agreement with technical assistance and for investment agreements.

#### Advantages and innovations

- The process combines the advantages of 3D printing with low surface roughness ( $R < 10 \mu\text{m}$ ), sharp cutting edges as well as functional channel structures ( $\varnothing < 100 \mu\text{m}$ ).
- The 3D printing systems are characterised by the fact that they are designed from the start for series production with the highest printing resolution.
- Enables to build complex structures on pre-products and semi-finished products in series.

#### Stage of development

**Available for demonstration**

#### IPR Status

**IPR applied but not yet granted**

#### Sustainable Development goals

**• Goal 12: Responsible Consumption and Production**

## Partner Sought

#### Expected role of the partner

The start-up is looking for innovative companies from the above described application areas, who want to improve their products by means of function-integrated 3D microcomponents or who want to launch new innovative products on the market using the offered technology.

#### Type of partnership

**Investment agreement**

**Commercial agreement with technical assistance**

**Research and development cooperation agreement**

#### Type and size of the partner

**• SME 50 - 249**

**• R&D Institution**

**• SME 11-49**

**• Big company**

**• SME  $\leq 10$**

## Dissemination

Technology keywords

- **02002018 - Microassembly, nanoassembly**
- **02002017 - Micromachining, nanomachining**
- **02007010 - Metals and Alloys**
- **02002010 - Machining (turning, drilling, moulding, planing, cutting)**
- **02002009 - Machine Tools**

Targeted countries

- **World**

Market keywords

- **05004004 - Medical instruments**
- **08003007 - Other industrial equipment and machinery**
- **08003001 - Machine tools, other metal working equipment (excl. numeric control)**

Sector groups involved

## Media

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### Images



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