Generative component production for the manufacturing of thermogenerators for waste heat utilization

Summary

Profile type	Company's country	POD reference
Technology request	**Germany**	**TRDE20230907008**
Profile status	**Type of partnership**	**Targeted countries**
PUBLISHED	**Research and development cooperation agreement**	**• World**
Contact Person	**Term of validity**	**Last update**
Rita ELSTE - TOMSONE	**13 Sep 2023** **12 Sep 2024**	**13 Sep 2023**

General Information

Short summary

A German company is looking for technology or R&D partners and products in the areas of generative manufacturing or 3D printing technology. The focus is on applications in the field of generative manufacturing and 3D printing of different materials (material compounds) especially in combination with ceramic materials.

Full description

On the basis of the various 3D printing technologies, the aim is to investigate which technology is suitable for producing complex designs and combining this printing technology with a wide range of materials in order to produce a compact component with integrated electronic components in a single operation. For example, one way to produce these components economically would be to manufacture heat exchange systems that have integrated components for power generation in the form of thermoelectric generators.

Thermoelectric generators (TEG) have so far only been tested as prototypes/lab samples. Their advantage over all available commercial solutions is that they are practically maintenance-free and thus almost cost-free to operate.
In order to use this waste heat in the form of electrical energy, the idea was developed to insert thermoelectric generators (TEG) into the exhaust pipes and generate electricity via them. Since these components are very small and production is very costly, the company wants to use generative manufacturing with a 3D printer that is able to process a material compound, especially in combination with ceramics.

With this project, the company is entering a new field of technology with a considerable scientific and technical risk for it. With the help of a transfer facility, appropriate know-how is to be brought into the company and the risk reduced. In addition, the aid is necessary to realize the process innovation.

Advantages and innovations

Due to the fact that the main business of the company is the planning and construction of exhaust systems and heat exchangers and only conventional manufacturing techniques have been used so far, the company does not have sufficient knowledge or experience with generative manufacturing techniques. For this reason, it is essential for the entrepreneurial development project in the course of this KTT project to involve external technology providers in order to be able to realize the project.

The technology transfer and the implementation of the project will enable the company to start a new business field with the generative component production of thermogenerators as an example for series-produced prototypes and small series. For the time being, the products manufactured in this process should be exclusively prototypes and small series parts of complete products that are used in various areas and whose production in a conventional manner would only be possible with considerable effort.

Technical specification or expertise sought

Partners are sought who are able to provide the company with technological support for the planned project or who can offer such 3D printing technology.

Stage of development

Under development

IPR Status

Secret know-how

Sustainable Development goals

• Not relevant

Partner Sought

Expected role of the partner

Technology Transfer

Type of partnership

Type and size of the partner

Research and development cooperation agreement

- **Big company**
- **SME 50 - 249**
- **Other**
- **University**
- **R&D Institution**
- **SME <=10**
- **SME 11-49**

Dissemination

Technology keywords

- **04002012 - Other energy related machinery**

Market keywords

- **08005 - Other Industrial Products (not elsewhere classified)**

Targeted countries

- **World**

Sector groups involved

- **Renewable Energy**
- **Construction**