

A UK company that uses additive manufacturing to reduce size, cost and weight of heat exchangers, is offering expertise to European developers of small energy systems, such as micro-turbines, heat pumps, waste heat-to-power systems, sorption coolers.

Summary

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|--------------------------------------|---|------------------------|
| Profile type | Company's country | POD reference |
| Technology offer | United Kingdom | TOGB20230620023 |
| Profile status | Type of partnership | Targeted countries |
| PUBLISHED | Commercial agreement with technical assistance | • World |
| Contact Person | Term of validity | Last update |
| Rita ELSTE - TOMSONE | 20 Jun 2023 19 Jun 2024 | 20 Jun 2023 |

General Information

Short summary

UK company uses additive manufacturing (AM, or 3-D printing) to dramatically reduce the size, weight and costs of multiple heat exchangers crucial to a wide range of small energy systems, incl. micro-turbines, heat pumps, waste heat-to-power systems, and sorption coolers.

The company is looking to enter into commercial agreements with technical assistance with producers/developers interested in footprint reductions and efficiency improvements enabled by compact integrated AM heat exchangers

Full description

A UK company is offering a conceptual, pre-design technology solution to the developers of small energy systems, that utilises additive manufacturing (AM, or 3-D printing). The solution reduces the size, weight and costs of multiple heat exchanges. It is aimed at producers of microturbines, heat pumps (both vapour compression and sorption for heating and cooling) and waste heat to power systems.

Very compact AM heat exchangers are used commercially in F1 racing, and are being developed for aerospace applications engines and airframes at TRL 7-9. However, their use in other and smaller energy systems is almost unknown. In this context they are at TRL1-2. The UK company is interested in specifications of the state of the art in heat and mass transfer components already in use by the partner, so that the data can be used to enable the UK company to develop AM versions of the same components further. This will provide basis for further collaboration on design and prototyping with the partner.

The UK company is looking to enter into commercial agreements with technical assistance. They want to engage with small producers and developers, interested in collaborating on AM projects, that would add value to their current offer and be potentially game changing in their respective industries. The UK company will also welcome contact from larger industry producers and developers, too.

Advantages and innovations

There are the following advantages to this technology:

- (i) much smaller, lighter and cheaper heat exchangers;
- ii) the high level of integration of both heat exchangers and other system components enabled by AM;
- (iii) the reductions in system size, weight and costs, and increases in efficiency, enabled by these AM components

Technical specification or expertise sought

Stage of development

Concept stage

Sustainable Development goals

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

IPR Status

Secret know-how

Partner Sought

Expected role of the partner

The UK company seeking to engage with SMEs in Europe. Once the specifications for heat and mass transfer components have been provided, the UK company will make initial sizing and weight data on component cores available. If, in the European partner's view, these are sufficiently attractive compared to state of the art to merit detailed design, the UK company will look to discuss collaboration and potential R&D grant applications.

Type of partnership

Type and size of the partner

Commercial agreement with technical assistance

• **SME 11-49**

Dissemination

Technology keywords

- **02001 - Design and Modelling / Prototypes**
- **04001001 - Heat storage**

Targeted countries

- **World**

Market keywords

- **06003006 - Combined heat and power (co-generation)**

Sector groups involved

- **Energy-Intensive Industries**