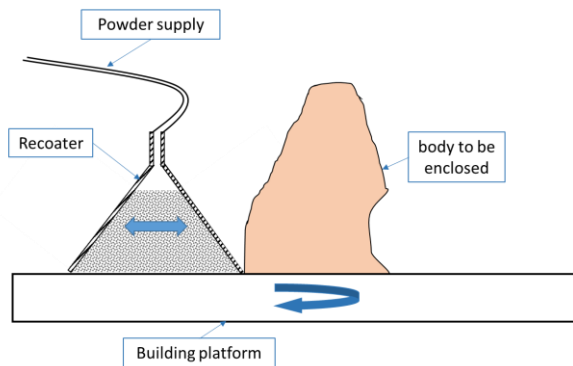


Integration of components in 3D-Printing Process

Function integration by inserting arbitrary components during additive manufacturing



Status quo

The enclosure of components during the additive manufacturing process by laser beam melting of metal powder is only possible by interrupting the manufacturing process. The powder is removed, the component is inserted and then a flat layer of powder is applied before the manufacturing process is continued.

Our technology: AM-Process for enclosing components with arbitrary geometry

Due to the arrangement of recoater and rotating construction platform, the powder can

also be placed directly on arbitrary shaped, inserted components. The laser can melt the powder and enclose the component with material.

Benefits

- Integration of sensors of arbitrary geometry into additively manufactured components.
- Integration of semi-finished products into the additive manufactured components.
- No interruption of the construction process necessary to insert the components.

Current stage of development

Technology-Readiness-Level (TRL): Level 2.

The concept of the insertion process has been drawn up and a prototype is in development.

Application possibilities

The possibility of enclosing components allows additional functions to be integrated into products. Furthermore, the properties of the

components can be specifically influenced by inserting semi-finished products.

Intellectual property situation

The presented technology is protected by intellectual property rights.

Commercialization opportunities

We are looking for industry partners who are interested in using the technology. If there is any need for further development, a close cooperation between the industry partner and TU Darmstadt is possible.

Your contact partner

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