Additive Manufacturing

Additive Manufacturing

In the field of additive Laser Zentrum Hannover e.V. (LZH) offers the following services:

Additive manufacturing of micro-components (micro 3-D printing)

Additive manufacturing of polymer parts

Cladding (deposition welding) of large areas

Consulting for the manufacturing of 2D and 3D micro and nanostructures

Development of processing systems and system components

Laser alloying

Laser-assisted GMA cladding (deposition welding)

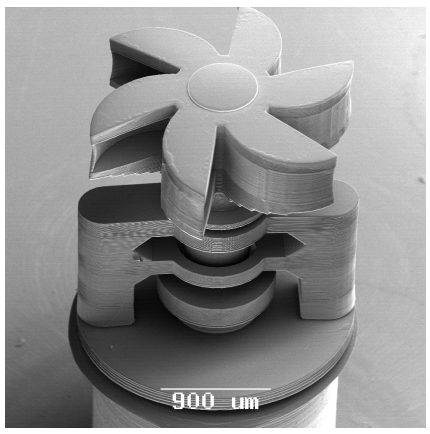
Laser cladding (deposition welding)

Laser dispersion

Selective laser melting / additive manufacturing

Social Networks

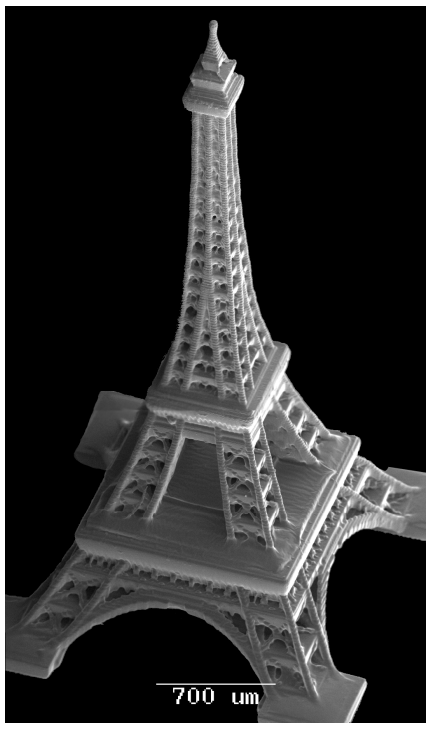
Additive manufacturing of micro-components (micro 3-D printing)



In the field of job order production, the Laser Zentrum Hannover e.V. (LZH) manufactures micro-components made of liquid, light-curable plastics or carries out feasibility studies.

More information

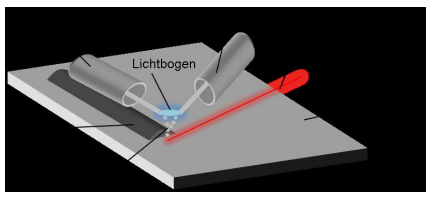
Additive manufacturing of polymer parts



The LZH offers consulting, feasibility studies and process development for the additive manufacturing of polymer parts. With micro stereo lithography, 3D parts can be manufactured with a resolution of > 5 µm. An aerosol jet process enables multi-material manufacturing processes on uneven surfaces, too.

More information

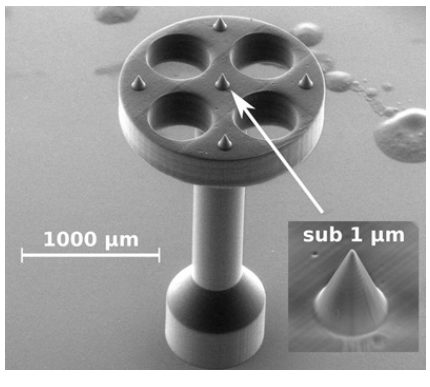
Cladding (deposition welding) of large areas



For the cladding of large areas, laser-assisted double-wire deposition welding has been developed.

More information

Consulting for the manufacturing of 2D and 3D micro and nanostructures



Several technologies are available for the additive manufacturing of two- and three-dimensional micro and nanostructures. The Laser Zentrum Hannover e.V. (LZH) supports customers in identifying the best-suited technology and can manufacture the prototypes.

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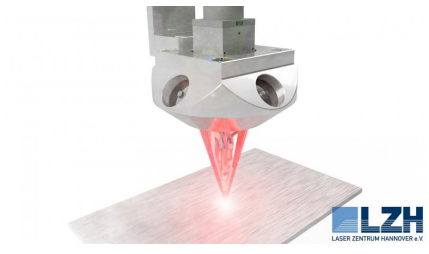
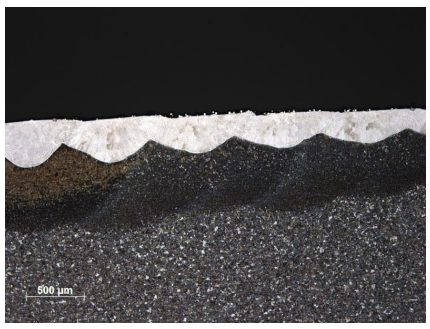
Development of processing systems and system components



The Machines and Controls Group designs, constructs and makes processing systems and system components, mainly for deposition welding and surface technology. This also includes the necessary process development. From the idea to realization to implementation of the process system, the LZH experts accompany their customers through the whole development process.

More information

Laser alloying



Using laser alloying, wear-resistant coatings can be placed on different materials. For example, materials with a high carbon affinity can be embedded in the surface of a basis material. These embedded materials react with the carbon in the basis material, forming wear-resistant carbides.

In this way, the lifetime of tools can be prolonged.

More information

Laser-assisted GMA cladding (deposition welding)

During laser-assisted arc deposition welding, the laser beam stabilizes and guides the electrical arc. Thus, low dilution rates (<5%) and a precise positioning of the deposition material can be achieved.

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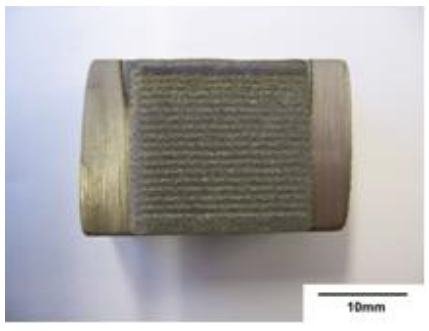
Laser cladding (laser deposition welding)

With the application of material by laser cladding, components can both be protected from wear or repaired.

More information

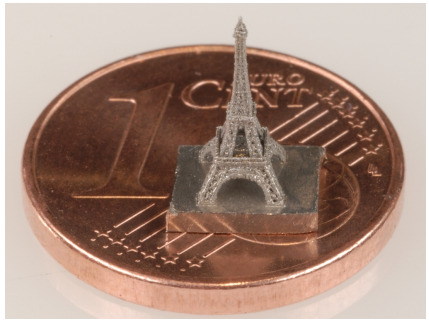
Laser dispersion



Using laser dispersion, metal-ceramic coatings can, for example, be added to moulding tools. These coating improve both the wear and corrosion characteristics of the tools, and can thus increase tool life.

More information

Selective laser melting / additive manufacturing



Additive manufacturing processes can be used to manufacture highly precise and complex workpieces.

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DEPARTMENTS

- Laser Components
- Laser Development
- Industrial and Biomedical Optics
- Production and Systems
- Materials and Processes
- Services

BUSINESS AREAS

- Additive Manufacturing
- Medical Technology
- Space Technology

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