

PRESS RELEASE

New possibilities in pressure-supported heat treatment at Fraunhofer IFAM Dresden

The Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM in Dresden is strengthening its technological expertise in the field of pressure-supported heat treatment with the new acquisition of a Quintus Hot Isostatic Press QIH 15L. This significantly expands the possibilities, which were previously focused on spark plasma sintering technology.

The researchers see the main areas of application for the new facility in, on one hand, the development of combined processes, i.e. heat treatment and hot isostatic pressing (HIP) for materials with complex heat treatment. Examples include nickel-based superalloys and intermetallic materials such as titanium aluminides.

On the other hand, the new machine is also of enormous importance for additive manufacturing. For example, existing HIP treatments are to be optimized and adapted to additive manufacturing processes, which involves different microstructures compared to conventional manufacturing technologies. The HIP process is also to be combined with the additive manufacturing process in order to significantly save process time here, for example.

Short distances are a big plus for developments, which is why the new system will be installed in the Innovation Center Additive Manufacturing ICAM® of Fraunhofer IFAM Dresden. Here, the institute bundles its various technologies for additive manufacturing. From selective electron beam melting and 3D screen printing to fused filament fabrication, gel casting, and MoldJet - the institute offers its customers a comprehensive portfolio for customized solutions from a single source.

Of course, the new system is not only used for R&D projects, but can also be used as a service for carrying out predefined HIP cycles.

Customers have access to a furnace chamber with a diameter of 170 mm and a height of 290 mm at a maximum pressure of 200 MPa and a maximum temperature of 1400 °C. The system is equipped with the URQ® technology, which enables the highest cooling rates of up to 10³K/min to be achieved. This makes it possible to carry out multi-stage heat treatments in the actual HIP process.

Editor

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BRANCH LAB DRESDEN**

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[Further information on the possibilities at Fraunhofer IFAM Dresden.](#)



New facility at Fraunhofer
IFAM Dresden: Quintus Hot
Isostatic Press QIH 15L
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