

HyRes: Resource-saving Process Route for Integrated Hydraulic Components

Enabling Industries Through Combining PBF-LB/M and Hot Isostatic Pressing



Motivation and Relevance

- Powder Bed Fusion of Metals (PBF-LB/M) enables functionally integrated hydraulic manifolds
- Potential of better carbon footprint & functionality
- High machine cost of PBF-LB/M is an obstacle

Approach

- Develop optimized hydraulic block design
- Increase productivity and cost by shell-core strategy
- Shell-core strategy: First, fuse part shell and leave core in powder state. Subsequently densify by Hot Isostatic Pressing

Results

- Algorithmic generation of a shrinkage-compensated shell-core geometry
- Definition of a production line including post-process
- Life cycle and cost assessment

Research Area

- Algorithmic design
- Production Logistics
- Sustainability
- Cost reduction

Partners



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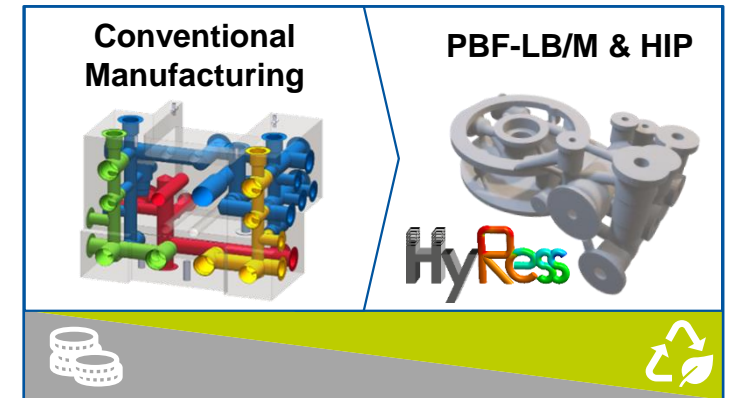
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Picture



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The project on which this publication is based was funded by the Federal Ministry for Economic Affairs and Climate Action of Germany under grant number 03LB3030G. The responsibility for the content of this publication lies with the author.'