

Hot Isostatic Pressing - Compression Isostatique à Chaud

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Abstract

HIP is a technique allowing to densify castings and parts derived from powder metallurgy processes (sintering, MIM, additive manufacturing). However HIP is also used to manufacture parts, eventually complex, from loose powder and/or machined blocks. In this case, materials are inserted in a canister to prevent any gas intrusion which would impair the densification and joining.

Since only a deep knowledge of physical mechanisms can provide a path to process optimization, one would like to be able to measure *in situ* parameters as local temperature, deformation, gas composition... Not only the harsh conditions encountered in HIP make measurements difficult, but the canister itself prevents access to the materials.

However some strategies can be developed to study HIP mechanisms. They are helpful to gather data required for modeling and simulation of HIP processes.

In this talk, the HIP technology will be introduced and progress in knowledge and modeling of HIP mechanisms will be illustrated.

Biographical sketch



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