
Porous On-Demand Wafers for Energy, Environment and a Resilient supply chain

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Résumé

The global energy demand is increasing with the development of technologies and population growth. Therefore, the scientific community is bent on replacing fossil energy sources with new and renewable ones, and on developing efficient systems of energy storage.

In this context, the POWE2R (Porous On-Demand Wafers for Energy, Environment and a Resilient supply chain) project aims at developing on-demand innovative 3D structures for energy and environment, in an eco-responsible spirit and a resilient supply chain.

Additive manufacturing such as Laser Powder Bed Fusion (L-PBF) is a powerful technology for the elaboration of complex 3D structures and is widely used in different domains such as aerospace, biomedical and green energy (1). It can produce complex porous and dense metal structures in an eco-responsible spirit, minimizing material waste and environmental pollution (2).

This project aims to demonstrate the relevancy of functionalized porous structures, developed by coupling additive manufacturing processes and surface treatment such as thin films deposition techniques, in the field of low-carbon energy and environment.

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