

Partner search/offer

Date (25-11-2021)

- **Relevant topic(s) in work programme (code & name of the topic(s) line(s))**

CL4-2022-Resilience-01-12: Functional multi-material components structures

- **Quick description of the project concept**

Metal matrix composite by SLM additive manufacturing using Tough coated hard powders as strengthening additives.

The project aims to develop new metal matrix composites by SLM with the objective to improve the mechanicals properties (hardness, strength...) of well controlled metal matrix materials printed by additive manufacturing (316L, 17-4PH...). In order to Upgrade the properties of those conventional alloys, tough coated hard powders (TCHP) can be used as strengthening additives by mixing them with the base alloy powder. TCHP are innovative powders with a core/shell structure where a ceramic particle is coated by a metallic layer. With this approach, diffusion of the ceramic phase is prevented during shaping. Moreover, wettability and metallurgical bond between the metal matrix and the hard particles are improved.

- **Description of the expertise requested/proposed (up to 1000 characters)**

As the project deals with additive manufacturing by SLM, the desired fields of expertise are materials science, powder metallurgy, powders synthesis and functionalization, SLM processing, powders and materials characterizations, simulations...

- **Keywords describing the expertise requested/proposed (up to 10 words)**

Multi-materials, coated powders, SLM additive manufacturing, mechanical tests, Metal matrix composite

Organisation information

Organisation and country: LIFCO Industrie (France)

Type of organisation: Enterprise

Former participation in FP European projects?

Yes (CleanHME, grant number : 951974)

Web address: www.lifco-industrie.com

Description of the organisation:

As a private Research Center, LIFCO is a European specialist in surface engineering of divided materials (powders). Strategic areas of action:

- R & D studies in the field of functionalized powders, materials, and surface treatments
- Training and expertise
- Manufacture and functionalization of inorganics and organics nano and micro powders and their application
- Manufacturing of sintered ceramics, composite materials, technical textiles and their application
- Process engineering according to our patents in surface treatments of divided materials.

Contact details

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