

Optimization of powder atomization for additive manufacturing of bronze and copper alloys

Supported by PX group

A leader in its field, PX Group specializes in the supply of tooling and semi-finished products with high-end functions, both for the watchmaking and luxury sectors and for the medical and industrial sectors. Using 3D techniques for manufacturing CoCr dental elements for more than 10 years, PX Group has recently developed additive manufacturing of metals and is now interested in powder manufacturing.

The Master project will focus on powder atomization using the ultrasonic atomization method developed by 3Dlab.



The main objective is to evaluate the technology for producing powders from standard alloys of bronze and copper. The aim is thus to determine the optimal parameters of ultrasonic atomization from these alloys.

The other objectives to be achieved are:

- Classify and analyze the powders produced using conventional characterization methods (particle size distribution by laser diffraction methods, optical and electronic microscopy, flowability of powders).
- Perform printing tests at PX Group using the state-of-the-art LMF machine and assess the quality of the parts (surface roughness, density and tolerances).