



# European Project Semester

## PROJECT OUTLINE

**Project dates:** March – June 2023

**Title:**

New process for 3D printing paste extrusion

**Project activity areas:**

*Additive manufacturing of low-tech systems, Research & Developments, Product testings*

**Keywords:**

*3D printing, additive manufacturing, low-tech equipment, Product testings*

**Tutor's name and coordinates**

Client – End-user: *Infuse Design*  
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**Project origin**

*Research, Innovation, Up-cycling, Circular Economy, Environment protection, Ceramics, biomaterial*

**Project technical background:**



*Infuse design* is a start-up working on low-tech equipment such as “desert fridge” (clay cooling device using evaporation phenomenon) or “oyas” (watering device that uses the porosity of clay to dispense water underground).

Therefore, Infuse design is seeking for new extrusion processes to improve the reliability of paste material dispensing for additive manufacturing. Indeed, the processing of paste material remains intricate due to the complex rheological behaviour of the said material which make hard to control the amount of material dispensed and thus the thickness of material.



This project also implies to work on the paste material preparation itself as it has a very strong impact on the final material health. The project shall aim to secure the paste material preparation process.

**Studied topics:**

- Material engineering
- Material characterisation
- Process characterisation
- Process reliability
- 3D printing