

# MASTER'S THESIS

## 3D printing with Laufen's recycled ceramic waste materials

**\*\*Title:\*\*** 3D printing with recycled ceramic waste materials

**\*\*Short**

**Text:\*\***

The proposed master's thesis will investigate the development of a 3D printing process using recycled ceramic waste materials provided by the Austrian company Laufen. The project explores how waste streams containing clay and glazing residues can be processed and utilized as a viable material for additive manufacturing.

After a short review of current research on ceramic recycling and clay-based 3D printing, the thesis will focus on developing suitable material processing strategies to ensure reliable printability. This includes preparing the recycled material mixture, testing its behavior during extrusion, and evaluating basic material properties of the printed elements.

The project will also explore design approaches that highlight the material characteristics while addressing the interests of the collaborating company. A workshop-based stay at the company's facilities in Gmunden may be possible to support the development process and exchange with industry experts.

**THESIS SUPERVISOR:**

Milena Stavric

**DURATION:**

max. 12 months

**INFRASTRUCTURE:**

IAM ShapeLab

**ADDITIONAL SUPPORT:**

Hana Vašatko, Julian Jauk, Lukas Gosch

[Image generated by ChatGPT]

I O I III