



European Project Semester

PROJECT OUTLINE

Project dates: March 2025 – June 2025

Title: Recycling 3D printing polymer waste to create goodies

Project activity areas:

- Design of recycling tools
- Manufacturing of recycling tools
- Physical properties polymer waste
- Recycling process

Keywords:

**Mechanical design –
Manufacturing – Polymer
science- Recycling**

Tutor's name and coordinates

Client – End-user: ENIT - UTTOP
ENIT Technical Supervisor + contact:
Christian Garnier + Foued Abroug

Project origin

ENIT

Project technical background:

In view of the increasing use of 3D printing at ENIT/UTTOP, we propose a project in which the waste material from 3D printing is collected, recycled and used to create goodies, to distribute at events such as open school day/ fête de la science... . To do so, waste material from years of 3D printing at ENIT, will be collected, sorted, and recycled. The different strategies of recycling (creating filament, goodies using plastic injection) will be analysed and one or more paths will be selected. The set up necessary for recycling will be designed and prototypes will be created (molds, Mini Press, heating sources, etc.).

Studied topics:

The work to be done by the students will be:

- To understand the behavior of polymers used in 3d printing (PLA mainly)
- To analyze the different strategies of recycling and their feasibility at school
- To design and manufacture one or more recycling equipments
- To make validity tests
- To make a prototype of the goodies
- To write a notice of use for the equipment