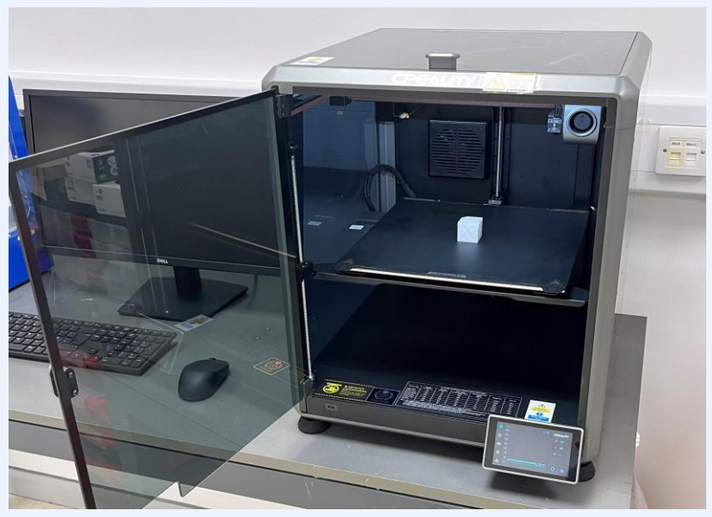
Advanced Makerspaces for PiLot production by micro-Enterprises

FDM 3D Printing

Rapid Prototyping of 3D Models

Introduction

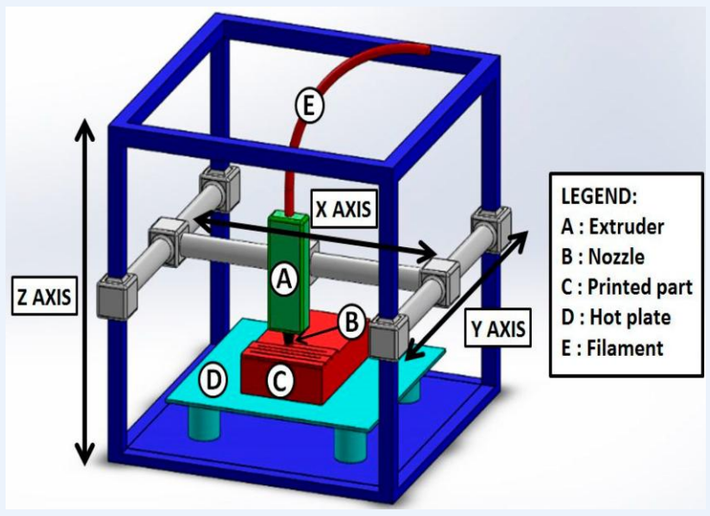
Fused Deposition Modelling (FDM) 3D printing has emerged as a transformative technology, reshaping the landscape of prototyping and small-scale manufacturing. Compatible with a wide range of materials and applications, makes it a powerful tool in the laboratory.



High Speed FDM Printer

Applications

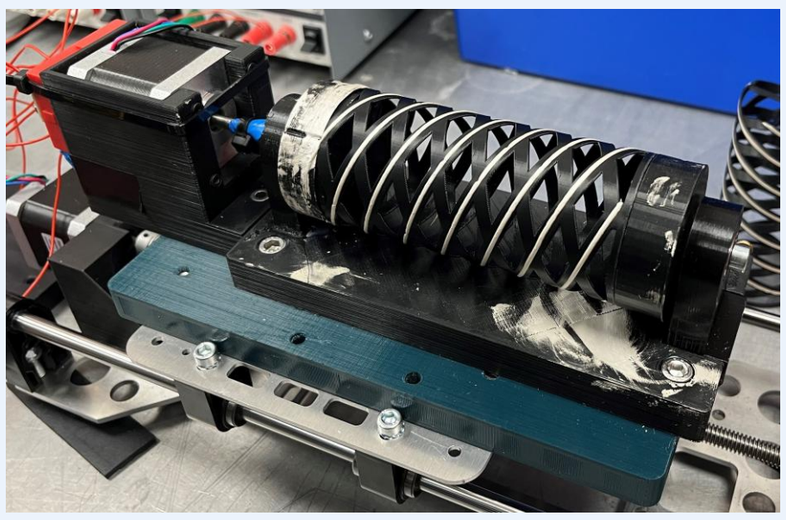
- Small scale production of parts or components
- Custom fixtures and fittings for lab experiments and equipment
- Prototyping parts and 3D designs
- Advanced materials research - printing exotic materials.



Basic FDM Printer Schematic

How Does it Work?

FDM 3D printing operates on the principle of layer-by-layer additive manufacturing. It utilises a thermoplastic filament, typically made of PLA or ABS, which is heated to its melting point within the 3D printer's print head. The melted material is then precisely deposited layer by layer, gradually building the desired three-dimensional object



3D Printed Jig for Printing Antenna Circuits

Technical Specifications

- 300×300×300 mm build volume
- Nozzle temp up to 360 degrees
- Prints PLA, ABS, PETG, TPU +more
- Up to 600 mm/s print speed
- Enclosed print chamber
- Automatic calibration/bed levelling

Custom Designed Fixture and Mount

Interreg Northern Periphery and Arctic
Co-funded by the European Union
AMPLE
Ollscoil na Gaillimhe University of Galway