universidade de aveiro

CAPABILITY

3D Printing of Thermoplastic Materials

DEVELOPMENT AND VALIDATION OF THERMOPLASTICS FOR ADDITIVE MANUFACTURING

KEY WORDS

3D PRINTING,

THERMOPLASTICS,

CIRCULAR ECONOMY

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DESCRIPTION

The University of Aveiro has advanced 3D printing capabilities using Fused Filament Fabrication for the development, adjustment, and validation of thermoplastic and composite formulations, supporting technology transfer and circular economy applications. The system allows precise control of temperature, speed, layer height, and print geometry, enabling reproducible manufacturing of prototypes, parts, or standardized specimens. These capabilities, available at laboratory scale, allow correlating material behavior with printing conditions, optimizing sustainable or recycled formulations, and evaluating interlayer adhesion, processability, and surface quality. The outcomes include functional prototypes or printed samples with digital delivery of printing parameters and full traceability.

APPLICATIONS

- Optimization of thermoplastic or recycled formulations for 3D printing.
- Production of functional prototypes and standardized specimens.
- Evaluation of processability, interlayer adhesion and surface quality.
- Validation of sustainable materials through additive processes.