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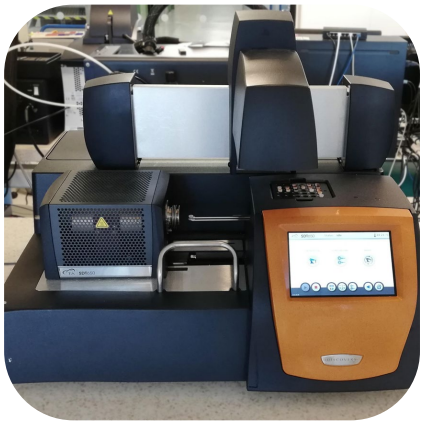
CAPABILITY



Thermal Analysis of Polymers

THERMAL CHARACTERIZATION USING TGA, DSC, DTA, CONDUCTIVITY AND DIFFUSIVITY

KEY WORDS

THERMOGRAVIMETRY,

CALORIMETRY,

THERMAL CONDUCTIVITY

DESCRIPTION

The University of Aveiro possesses expertise and facilities for the thermal characterization of materials. Available equipment includes thermogravimetric analyzers (TGA), differential scanning calorimeters (DSC), and differential thermal analyzers (DTA), along with instruments for measuring thermal conductivity and diffusivity. These techniques enable precise determination of key parameters such as glass transition temperature (Tg), melting point (Tm), crystallization behavior, thermal degradation, and heat capacity, providing critical insight into material performance under various thermal conditions. Complementary techniques such as thermal conductivity and effusivity measurements are also available, allowing comprehensive evaluation of heat transfer and insulation properties. These tools allow precise determination of thermal stability, phase transitions, heat capacity, and heat transfer properties. This analysis could be used to evaluate the behavior and recyclability of plastics, since these properties determine processing conditions, detect degradation, and reveal contamination or additive effects, contributing to a more circular plastics economy.

APPLICATIONS

- Development of new materials;
- Quality control;
- Research in polymers and compounds;
- Process optimization.

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