universidade de aveiro

CAPABILITY

Mechanical Properties of Plastics

EVALUATION OF MECHANICAL BEHAVIOR OF PLASTIC MATERIALS

KEY WORDS

MECHANICAL PROPERTIES,

CHARACTERIZATION,

POLYMERS

DESCRIPTION

The University of Aveiro has advanced capabilities for studying the mechanical behavior of plastic materials, combining specialized expertise with high-precision equipment. The infrastructure enables the evaluation of strength, stiffness, ductility, impact resistance, and hardness in virgin, recycled, composite, and modified polymers under controlled environmental conditions. This capability integrates with morphological, thermal, and chemical analysis, allowing correlations between microstructure, processing, and mechanical performance. The generated knowledge supports the development of new formulations, process optimization, and understanding how structure and recycling affect material integrity.

APPLICATIONS

- Characterization of mechanical properties in virgin, recycled, composite and modified polymers.
- Correlation between mechanical behavior, microstructure, processing, and material composition.
- Evaluation of the effect of recycling, aging, additives or reinforcements on structural integrity.
- Support for studies on the development of new formulations and optimization of polymer processes.
- Integration with morphological, thermal and rheological analysis for multiscale understanding of the material.
- Generation of fundamental data for modeling, certification or validation in research and technology transfer.

CONTACT US

pcferreira@ua.pt

Universidade de Aveiro