universidade de aveiro

CAPABILITY

Barrier and Surface Properties

ANALYSIS OF THE BARRIER AND SURFACE PROPERTIES OF POLYMERS

KEY WORDS

PERMEABILITY,

CONTACT ANGLE,

SURFACE

CONTACT US

pcferreira@ua.pt

Universidade de Aveiro

DESCRIPTION

The University of Aveiro possesses advanced capabilities for the characterization of barrier and surface properties of polymeric materials. Its facilities include systems for assessing water vapor transmission rate (WVTR) and oxygen transmission rate (OTR) under precisely controlled temperature and relative humidity conditions.

In addition, the University is equipped with high-precision goniometric systems for contact angle analysis, featuring high-resolution imaging and automated droplet evaluation software. A variety of probe liquids (including water, diiodomethane, and ethylene glycol) can be used to determine wettability and surface energy, enabling comprehensive evaluation of the interfacial behavior of polymeric surfaces.

These analyses are essential for understanding how materials interact with moisture, gases, and liquids, offering valuable insights into durability, performance, and functional behavior. Barrier and surface properties play a crucial role in determining both the performance of plastics and their recyclability.

APPLICATIONS

- Development of packaging materials.
- Coating evaluation.
- Biopolymer study.
- Stability analysis.
- Surface properties.