



P 2 C : Polymer Processing & Characterization

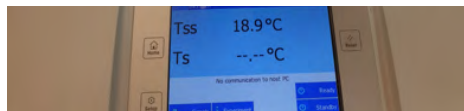
WHAT WE OFFER : services and expertise

- Characterization / test / analysis realized by highly qualified UCLouvain members
- Processing of polymers and composites, ranging from extrusion to 3D printing, RTM/SQRTM
- Characterization of polymers and composites, including thermal, rheological, mechanical and thermomechanical analyses
- Technical advice and consultancy
- Training for R&D engineers from the industrial sector



Polymer Processing

- Lab bench twin screw extruders with the option of water assisted extrusion (Minimized sample material usage (20g); Throughput range 20g/h to 2.5kg/h; Max. screw speed 1000 rpm; Barrel Length L/D: 40 L/D; Max. Temperature 450°C)
- With accessories such as pelletizer, injection molding system and filament and film spooler.
- 3D printer machines adapted for conventional thermoplastics as well as for high performance one (PES, PEI, PEEK) (max temperature: 430°C)



Thermal analysis

- Differential Scanning Calorimetry (DSC)
- High Pressure DSC (HPDSC) max. 100bar
- Thermogravimetric analysis (TGA)
- Flash DSC
- Dynamic Vapor Sorption (DVS)



Rheological analysis

Shear rheology

- Strain/stress controlled shear rheometers
- For • melts, solutions and suspensions
 - oscillatory shear measurements, creep-recovery tests and nonlinear shear tests
- Wide range of geometries: cone/plate, plate/plate with different diameters, cone-partitioned plate geometry, Couette device

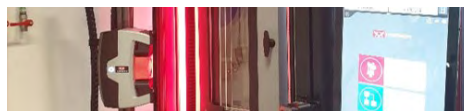
Extensional rheology

- Measurements on the filament stretching rheometer (Vader1000) or on the Extensional Viscosity Fixture (EVF)
- For polymer melts
- Temperature control



Thermomechanical analysis

- Dynamical Mechanical Analysis (DMA): various deformation modes (shear, tensile, bending, etc.) from -150°C to +350°C
- Thermomechanical analysis (TMA) from -150°C to +350°C



Material testing

- Tensile machine at 100N and 10kN
- Non-contacting video extensometer
- Temperature chamber (-100°C + 350°C and cooling module for LN2)

CONTACT

Platform managers

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(1) DSC machine – (2) Twin-screw extruder – (3) Plate-plate rheological analysis – (4) TMA device – (5) Tensile device

www.uclouvain.be/p2c



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