

Thermogravimetric Analysis (TGA) and Differential Scanning Calorimetry (DSC)

The Materials Characterization Center is equipped with a Thermogravimetric Analysis and Simultaneous Difference Thermal Analysis (TGA/SDTA) unit (Figure 1). The system includes a METTLER TGA/SDTA851e thermobalance and its STARe software.

In thermogravimetry (TGA), weight changes of a substance that occur during a controlled temperature program and in a defined gas atmosphere are measured. In the difference thermal analysis (DTA), temperature changes of a substance (in relation to a reference temperature) that occur during a controlled temperature program and in a defined gas atmosphere are measured.



Figure 1: Systems for Thermogravimetric Analysis and a Differential Scanning Calorimetry.

The Materials Characterization Center is also equipped with a Differential Scanning Calorimetry (DSC) unit. The system includes a METTLER DSC822e thermal analyzer and its STARe software (also in Figure 1).

The thermal analyzer is an instrument for performing dynamic differential calorimetry measurements and is based on the well-proven Boersma or heat flux principle. The amount of energy (heat) absorbed or released by a substance, which occurs during a controlled temperature program and in a defined gas atmosphere, is measured.