

## 1. Thermogravimetric Analysis (TGA)

Thermogravimetric measurements were carried out using a thermobalance TA Instruments Q500. Samples are supported on a platinum holder, and a platinum thermocouple is used for temperature registration. Heating rate from 0.1 to 100 °C/min. Weight sensibility: 0.1 microgram. Weight accuracy: 0.01%. Isothermal temperature measurement accuracy: 0.1°C.



## 2. Differential Scanning Calorimetry (DSC)

Differential scanning calorimetry was performed with the TA Instruments DISCOVERY DSC25 AUTO device. Range of temperature (-80 °C to 725 °C). Calorimetric accuracy: 0.1%. Thermometric accuracy: 0.01%. Heating rate: 0.01 to 200 °C/min.



### 3. Infra-Red spectroscopy (FTIR)

FTIR measurements were carried out using a Fourier Transform IR spectrophotometer (Jasco 4100 LE). The FTIR spectra can be obtained in the wavenumber range from 350 to 7800  $\text{cm}^{-1}$  and resolution 1-16  $\text{cm}^{-1}$ . Samples are measured by direct contact in the measuring window. The Figure 4 shows Jasco 4100 LE spectrophotometer.



### 4. Optical Microscopy

Microscopy images were obtained with an Optical Microscope LEICA DM4000M. Objectives with 5x, 10x, 20x and 50x power. Eyepiece 10x power. Images are registered with a digital camera LEICA DFC 420C, 5Mpixel resolution.



## 5. Universal Testing System

Mechanical (compression strength) measurements were carried out using a Universal Testing machine (Instron 3365). The plates are 150mm diameter. Load cells: 5 and 100 kN.

