**Thermogravimetric analyzer with FTIR spectrometer**

**Equipment:** Thermogravimetric analyzer (TGA) and Fourier transform infrared (FTIR) spectrometer

**No. of Equipment:** TUL2

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**Equipment Description**

**Description of equipment:**

Thermogravimetric analyzer Q500 is suitable for studying material thermal stability from ambient to 1000 °C. Thermal stability can be studied on 100 microliters platinum or 250 microliters ceramics pans in nonreactive atmosphere of nitrogen or reactive atmosphere of synthetic air. The maximum sample weight is 1 gram and 0.1 microgram is sensitivity of thermobalance. Evolved gases can be online studied by FTIR spectrometer Nicolet iS10 with MCTA (nitrogen cooled) detector in spectral range 4000 – 650 cm-1 and maximum spectral resolution 1 cm-1. The spectrometer is connected to TGA by transfer line heated to 225 °C. The heated 10 centimetres long gas cuvette on 250 °C is used for detection of gas evolved during material thermal decomposition.

**Specification of expertise relevant to NanoEnviCz workpackages:**

**WP3**c,d,h, **WP4**a, **WP7**a,b,g

**Detailed description of expertise**

**Please, specify the main research topics connected with equipment**:

Thermal stability of material (especially organic).

**Please, specify the secondary research topics connected with equipment**:

Detection of organic matter content, fillers amount and inorganic residues in materials.

**Keywords describing research area:**

Thermal stability, degradation, evolved gas, polymer, filler

**Competence**

**Relevance for applied and industrial research:**

Detection of polymers content, fillers amount and inorganic residues in materials. Thermal stability of material.

**Relevance for fundamental studies:**

Thermal stability of material, determination of organic matter, fillers amount and inorganic residues.