**High Resolution Transmission Electron Microscope**

**Equipment:** High Resolution Transmission Electron Microscope (HRTEM) FEI Titan 60-300 kV

**No. of Equipment: UPOL5**

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**Equipment Description**

High Resolution Transmission Electron Microscope (HRTEM) FEI Titan 60-300 kV

Technical parameters:

* electron source: X-FEG
* accelerating voltage: 60–300 kV
* point to point resolution in TEM mode: 0,08 nm
* STEM-HAADF resolution: 0,14 nm
* microscope is equipped with GIF (Gatan Image Filter) and analytic methods EDS a EELS
* special sample holders: double-tilt holder with low background for EDS , vacuum holder for reactive samples, cryo holder

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

**WP3**a,c-h **WP4**a,b **WP5**c, **WP6**a,e, **WP7**a-c,h,i,

**Detailed description of expertise**

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

The characterization of the nanomaterials samples (carbon structures, iron oxides, nanotubes, metal nanoparticles, ect.) in the atomic scale

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

The characterization of biological samples

**Keywords describing research area:**

High resolution transmission electron microscope (HRTEM), nanoparticles, biological samples, chemical composition

**Competence**

**Relevance for applied and industrial research:**

High resolution measurement of powder materials in the atomic scale with confirmation of the elemental composition

**Relevance for fundamental studies:**

The identification of nanoparticles – quality of production, size and shape, confirmation of core-shell structures, determination of d-spacing, projection of atomic structure

Confirmation of chemical composition – elemental mapping, EDX spectra