**DXR Raman mikroscope**

**Equipment:** DXR Raman microscope

**No. of Equipment: UACH9**

**Responsible coordinator:** Dr. Petra Ecorchard

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**Equipment Description**

**Description of equipment:**

Thermo Scientific DXR Raman Microscope for phase identification and determination of the molecular structure of the chemical compounds. Analysis of the organic and inorganic compounds, carbon materials, nanomaterials, etc.

**Specifications and technical features:**

532-, 633-, 780-nm high-brightness lasers

1 micron spatial resolution

Full range gratings for complete spectra in one shot 50 cm-1 to 3500 cm-1, 5 cm-1 resolution

High-resolution gratings for difficult to resolve bands. 50 cm-1 to 1800 cm-1 (fingerprint region)

Light microscope - 4x, 10x, 20x, 50x, and 100x microscope objectives with brightfield/darkfield oil immersion, and long working distance options

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

**WP3**a,c-h, **WP4**a,b, **WP6**a,d-f, **WP7**a,b,c,h, **WP9**b

**Detailed description of expertise**

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

1. Phase identification of the prepared materials (nanoparticles of metal oxides, carbon materials, thin films, etc.)
2. Identification of the molecular structure of the various chemical compounds (composites, mixed oxides, catalysts, etc.)

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

Phase identification and spatial distribution of species and chemical individuals in various samples (mixed oxides, catalysts, sorbents)

**Keywords describing research area:**

Phase identification, determination of molecular structure, spatial distribution

**Competence**

**Relevance for applied and industrial research:**

Fast identification and phase analysis of the chemical individuals with high spatial resolution.

**Relevance for fundamental studies:**

Precise identification of chemical species, phase analysis and distribution of chemical individuals in various inorganic or organic samples with high spatial resolution.