**Precise photo-reactor with optical bench**

**Equipment: Precise photo-reactor with optical bench (included in the Laboratory of Photochemistry)**

**No. of Equipment: UJEP8**

**Responsible coordinator:** Prof. Ing. Pavel Janoš, CSc.

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**Equipment Description**

**Description of equipment:**

**Optical bench Melles Griot**

* Max. optical patch: 700 mm
* Lamp type: ISB610 – mercury lamp
* Filters: Melles Griot BV F10-365; F10-670; F10-450; F10-405; F10-630
* Reaction vessel: glass cuvette, 250 ml

**Simple batch reactor**

* Reaction vessel: optional
* Lamp type: fluorescent tube (LD 11W/0,73)

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

**WP4**a,b,c **WP6**a,b,e, **WP7**a

**Detailed description of expertise**

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

**Testing of the photo-degradation efficiency of nanocrystalline metal oxides and other (nano)materials**

Photo-catalytic activity of nanomaterials towards selected model compounds (dyes, pesticides, chlorophenols, …) or other contaminants

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

**Homogeneous photo-catalytic processes**

Mechanisms and kinetics of the photo-catalytic reactions, identification of reaction products and reaction pathways

**Keywords describing research area:**

Photocatalytic activity, Heterogeneous photocatalysis, Homogeneous photocatalysis

**Competence**

**Relevance for applied and industrial research:**

Modular testing equipment that allows to measure a photocatalytic activity of various nano(materials) under highly reproducible conditions with pre-determined model contaminants (dyes, pesticides, chlorophenols, …) or customer-specified target compounds.

Kinetic measurements under strictly specified conditions, optimization of the photo-catalytic process, estimation of degradation efficiency and other performance characteristics.

Exploitation of f**undamental understanding** of materials structure/activity for new kinds of photo-catalysts.

**Relevance for fundamental studies:**

Studying the mechanisms and kinetics of heterogeneous photo-catalytic reactions