

Photoreactor system

Description/Parameters

The MPDS (Modulated Differential Photoacoustic Spectroscopy) photoreactor system by Peschl Ultraviolet GmbH is designed for conducting photocatalytic experiments in both liquid and solid systems, enabling the testing of photocatalytic activity of materials under various conditions such as pH, type and intensity of irradiation, and volume of the liquid phase.

The system is equipped with novalIGHT TQ 150 and novalIGHT TXE 150 lamps, covering a wavelength range from 200 to 800 nm, allowing applications such as photocatalytic water splitting and CO₂ reduction. Its high flexibility enables experiments under a wide range of conditions, including variation in light intensity, pH, and liquid phase volume, while allowing the acquisition of extensive data from single or repeated measurements on the same sample. The system allows sampling from both gaseous and liquid phases for subsequent analysis and evaluation of photocatalytic reactions. It is also equipped with a thermoCONTROL 100 cooling unit and magnetic stirring to ensure a homogeneous reaction environment. The system complies with European directives on machinery (2006/42/EC), low voltage equipment (2014/35/EU), and electromagnetic compatibility (2014/30/EU), as well as harmonized standards EN 61326-1:2013 and EN 61010-1:2010.

- Wavelength range: 200–800 nm (novalIGHT TQ 150 and TXE 150 lamps)
- Type and intensity of irradiation: selectable UV-C, UV-A, and visible light
- Adjustable experimental conditions: pH, amount of photocatalyst, and liquid phase volume
- Cooling of light sources: thermoCONTROL 100 cooling unit
- System homogenization: magnetic stirring

Utilization/Services

Hydrogen production via photocatalytic water splitting and CO₂ reduction. Testing and optimization of photocatalysts for various applications in nanomaterials and environmental chemistry.



Co-funded by
the European Union



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