

Title of the invention:

System for the photocatalytic degradation of volatile organic compounds

Inventors:

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Field:

Chemical technology, Environmental chemistry

Summary:

A system for investigation of photocatalytic degradation of volatile organic air pollutants. The system comprises a photoresistor designed to make use to the maximum extent of the active surface of the photocatalyst and light used for activation of this catalyst. The system offers the measurement of reaction temperature, intensity of light of the used lamps as well as thermostating the process due to use of a simple lamp cooling system. The use of an in-house constructed reflector in this system improves maximally the effectivity of utilizing the light for the photocatalytic tests.

Advantages / innovative aspects:

- Innovative reactor design allows for maximal utilizing the light energy of the lamps used.
- Very effective method of utilizing the light energy of the lamps used.
- Very high degree of degradation of organic air pollutants.
- High selectivity towards complete mineralization of volatile organic compounds (to carbon dioxide and water).
- Easy handling and innovative design allows following important data during the photocatalytic reaction (e.g., reaction temperature, exposure intensity).

Keywords:

photocatalysis, pure air, volatile organic compounds, photoreactor, degradation

Use:

Air pollution, Chemical engineering, Producing apparatus, Solar power (photovoltaic cells)

State of the progress:

stage of research

Intellectual property rights:

Patent application no. P-405094 - 19.08.2013 - Poland

Expected cooperation:

contract of sale, licence agreement, cooperation agreement

Link to the publication:

<http://photo-catalysis.org/displayNews.php?id=732>