University of Gdańsk
Technology Transfer Office

chemistry

Thin layer photoreactor with innovative photocatalytic layer from nanotubes

About technology

Invention may ensure improvement of energy efficiency of technological processes, is application of innovative **thin film nanotube photoreactor** with photocatalytic layer in form of spatially oriented **nanotubes** made of mixture of metal oxides/ mixture of oxides and metal nanoparticles, developed by researchers from the University of Gdansk. One of benefits of the photoreactor is possibility of **using radiation** from the Vis **range** to carry out photocatalytic processes. Photocatalytic processes such as heterogeneous photocatalysis in presence of **semiconductor** nanoparticles are example of environmentally friendly technologies, that allow degradation of pollutants and inactivation of microorganisms not only in aqueous phase but in air streams as well.

Advantage:

- ability to degrade contaminants at ambient temperature and at atmospheric pressure;
- no need to introduce chemical reagents for water phase treatment (e.g. chlorine or chlorine compounds);
- possibility to degrade a wide range of chemical compounds (differences in chemical structure) instead of separation of these compounds (as in absorption, adsorption or coagulation processes);
- possibility of degradation of chemical compounds and inactivation of microorganisms in one technological process.

Research Team

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IP Protection

The invention is the subject of applications for patent protection to the Polish Patent and Trademark: **P.439488, P.439489, P.439490.**

Cooperation opportunities

- Licensing agreement
- Transfer of ownership
- Spin off

Implementation progress

TRL 4 –Technology validated in laboratory conditions

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Technological Offer
No. 088/2022/2