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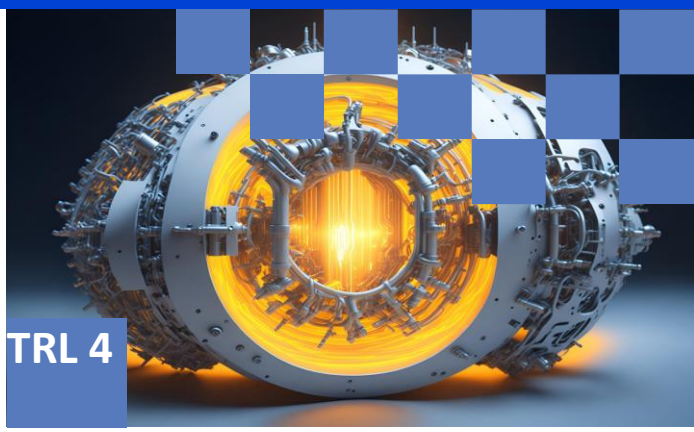
chemistry

Counter-current reactor for integrated photocatalytic and sorption processes in the aqueous phase



About the invention

The subject of the invention is a flow reactor designed for purifying water contaminated with organic and inorganic substances, using combined photocatalysis and adsorption mechanisms. The reactor has a modular design that allows for the optimisation of purification processes through the use of a photocatalytic and adsorption section in a single system.

The invention allows for the effective removal of organic and inorganic contaminants from water, including pesticides, pharmaceuticals, heavy metals and microorganisms. Its greatest advantages include:

- multifunctionality,
- modularity: the ability to freely arrange and configure sections lighting efficiency, which increases the effectiveness of photocatalysis;
- cost-effectiveness: the use of PES-based composite materials in the form of granules allows for easy regeneration and replacement.

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IP protection

The invention is protected by a patent application in the Polish Patent Office under the number: **P.451906**

Technology readiness level

TRL 4 - Technology validated in laboratory conditions

Possible cooperation

- Joint development of next generation photocatalytic nanocomposites,
- R plus D studies on catalytic performance and material stability,
- Licensing of the technology and collaborative implementation projects.

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