Institute of Chemical Engineering

Adres artykułu: https://iich.gliwice.pl/en/article/current-research-areas

Current research areas

At the Institute, scientific research and development activities are carried out across a broad spectrum of areas, including:

- advanced gas and liquid separation technologies, including the capture and utilization of greenhouse gases using adsorption- and membrane-based methods, hybrid processes, as well as biogas upgrading and purification;
- biotechnology, including biodegradation of organic compounds, kinetics of microbiological decomposition, bio-air purification;
- nanomaterials, including the synthesis and characterization of materials with multimodal pore structure, as well as microreactors;
- chemical reactor engineering, including the reduction of VOCs and NO_x using catalytic structured reactors, catalyst supports, CFD modeling, trickle-bed reactors, mass and heat transfer, and the hydrodynamics of gas bubbling in electrolyte solutions and ionic liquids.

The Institute’s research activities are geared toward addressing key challenges in clean energy and environmental conservation. This work is integrated into strategic national and EU research frameworks. Detailed information on these activities can be found under the respective laboratory sections:

Laboratory of Bioreactor and Biocatalytic Process

Laboratory of Reactors and Catalytic Processes

Laboratory of Gas and Liquid Separation processes

Laboratory of Functional Materials and Microreactors

Metryczka

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