Institute of Chemical Engineering

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Structed reactor for selective calatytic reduction of NOx: catalyst, transport phenomena and reaction kinetics studies

(NSC – Etiuda 2, No. 2014/12/T/ST8/00674)
Duration: 2014 - 2016
Description
Utilization of metallic foams as catalyst carriers is a modern approach to environmental protection. The literature does not provide a satisfactory explanation of transport properties. Authors present different theoretical concepts of the mechanism for fluid flows through the solid foams. The purpose of this project is to experimental study of heat, mass transfer and flow resistance in a gas flows through metallic foams. Based on experimental results from catalytic reaction kinetics and transport coefficients studies, the universal model of solid foam based catalytic reactor will be developed. The calculation results will be verified with the experimental data from a large-scale selective catalytic reduction (SCR) of nitrogen oxides with ammonia.

Objectives
The research deals with structured steel foam reactor with catalyst for selective catalytic reduction (SCR) of NOx. The perspective aim of this project is application of developed reactor for biogas-fuelled engine exhaust removal.

Metryczka

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