

Laboratory of Heterogeneous Catalysis



Head

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Justyna Szkuta
Agata Purzycka
Agnieszka Mikołajska
Magdalena Litwinowicz
Marta Zezula
Dorota Olszewska
Emilia Piesio
Anna Kamińska
Urszula Ulkowska
Elżbieta Kamińska

Current research

- Designing and development of cobalt catalysts for ammonia synthesis and ruthenium catalysts for the methanation of carbon oxides
- Catalytic transfer hydrogenation over modified magnesium oxide – chemo- and diastereoselectivity aspects
- Green chemistry. Chemical recycling of polymer waste
- Acid-base catalysis
- Designing selective hydrogenation reactions

Selected publications

Zybert M., Truszkiewicz E., Mierzwa B., Raróg-Pilecka W., *Thermal Analysis Coupled with Mass Spectrometry as a Tool to Determine the Cobalt Content in Cobalt Catalyst Precursor Obtained by Co-Precipitation*, *Thermochimica Acta* 584, 31, 2014

Karolewska M., Truszkiewicz E., Wcisłel M., Mierzwa B., Kępiński L., Raróg-Pilecka W., *Ammonia Synthesis Over a Ba and Ce-promoted Carbon-Supported Cobalt Catalyst. Effect of the Cerium Addition and Preparation Procedure*, *Journal of Catalysis* 303, 130, 2013

Marczewski M., Kamińska E., Marczevska H., Godek M., Rokicki G., Sokołowski J., *Catalytic Decomposition of Polystyrene. The Role of Acid and Basic Center*, *Journal of Applied Catalysis B: Environmental* 129, 236, 2013

Gliński M., Zalewski G., Burno E., Jerzak A., *Catalytic Ketonization Over Metal Oxide Catalysts. Xii. Comparative Measurements of Activity of Oxides of 32 Chemical Elements in Ketonization of Propanoic Acid*, *Applied Catalysis A: General*, 470, 278, 2014



Research profile

Metallic and metal oxide catalysts
Supported catalysis. Active carbon as a support in catalytic systems
Hydrogenation processes: selective hydrogenation, hydrogen transfer reactions
Ketonization reactions
Acid and basic solid catalysts
Green chemistry processes
Polystyrene recycling

Collaboration

Institute of Physical Chemistry, Polish Academy of Sciences, Warsaw (Poland)
Institute of Low Temperature and Structure Research, Polish Academy of Sciences, Wrocław (Poland)
New Chemical Syntheses Institute, Puławy (Poland)
Faculty of Biotechnology and Food Science, Łódź University of Technology (Poland)

Scientific Awards

- Wioletta Raróg-Pilecka – Scholarship from the Foundation for Polish Science, 2003-2004
- Elżbieta Truszkiewicz – Scholarship of the "Start" Programme, Foundation for Polish Science, 2008

Research equipment

- Surface Area and Porosity Analyzer ASAP 2020 - Micromeritics Instrument Co.
- Thermobalance STA 449 coupled with QMS 403C Aeolos – Netzsch
- IR (FTIR) Spectrometer – Nicolet 6700
- ESR Spectrometer

Certificates

- W. Raróg-Pilecka, E. Truszkiewicz – Individual Course of NETZSCH Education & Training Department 2009, Warsaw (Poland)

