



Year 2 dissemination activities in POLYCAT

Status: 16th November 2012

Publications:

UNIPA

F. Ferrante, F. Lo Celso, D. Duca "Construction and characterization of models of hyper-crosslinked polystyrene"

Coll. Polym. Sci. **2012**, 290, 1443-1450.

INEOS

I. Tsvetkova, V. Matveeva, V. Doluda, A. Bykov, A. Sidorov, S. Schennikov, M. Sulman, P. Valtetsky, B. Stein, C.-H. Chen, E. Sulman, L. Bronstein "Pd(II) nanoparticles in porous polystyrene: factors influencing the nanoparticle size and catalytic properties"

J. Mater. Chem. **2012**, 22, 6441-6448.

AAU

D. Murzin "On Cluster Size Dependent Activity and Selectivity in Heterogeneous Catalysis"

Catal. Lett. **2012**, DOI: 10.1007/s10562-012-0896-z.

R. Cortese, D. Duca, V. Herrera, D. Murzin "L-Arabinose Conformers Adsorption on Ruthenium Surfaces: A DFT Study"

J. Phys. Chem. C **2012**, 116, 14908-14916.

H. Bernas, A. Bernas, P. Mäki-Arvela, R. Leino, D. Yu. Murzin "Hydrogenation of Citral Over Carbon Supported Iridium Catalysts"

Catal. Lett. **2012**, 142, 690-697.

TU/e

H. Fu, I. Dencic, J. Tibhe, C. Sanchez Pedraza, Q. Wang, T. Noël, J. Meuldijk, M. de Croon, V. Hessel, N. Weizenmann, T. Oeser, T. Kinkeade, D. Hyatt, S. Van Roy, W. Dejonghe, L. Diels "Threonine aldolase immobilization on different supports for engineering of productive, cost-efficient enzymatic microreactors" *Chem. Eng. J.* **2012**, 207-208, 564-576.

I. Dencic, V. Hessel, M. de Croon, J. Meuldijk, C. van der Doelen, K. Koch "Recent changes in patenting behavior in micro process technology and its possible use for gas-liquid reactions and the oxidation of glucose" *ChemSusChem* **2012**, 5, 232-245.

I. Dencic, T. Noël, J. Meuldijk, M. de Croon, V. Hessel "Micro reaction technology for valorization of biomolecules using enzymes and metal catalysts" *Engineering in Life Sciences* **2012**, submitted / in press.

TTU

I. Tsvetkova, V. Matveeva, V. Doluda, A. Bykov, A. Sidorov, S. Schennikov, M. Sulman, P. Valetsky, B. Stein, C.-H. Chen, E. Sulman, L. Bronstein "Pd(II) nanoparticles in porous polystyrene: factors influencing the nanoparticle size and catalytic properties"
J. Mater. Chem. **2012**, *22*, 6441-6448.

E. Sulman, L. Nikoshvili, V. Matveeva, I. Tyamina, A. Sidorov, A. Bykov, G. Demidenko, B. Stein, L. Bronstein "Palladium Containing Catalysts Based on Hypercrosslinked Polystyrene for Selective Hydrogenation of Acetylene Alcohols" *Topics in Catalysis* **2012**, *55*, 492-497.

UNEW

G. Akay, S. Fleming, "Agro-process intensification: soilborne micro-bioreactors with nitrogen fixing bacterium *Azospirillum brasilense* as self-sustaining biofertiliser source for enhanced nitrogen uptake by plants", *Green Process Synth* **2012**, *1*, 427-437.

Contributions to conferences:

Oral presentations	Date	Topic of Contribution	Authors	Organisation
2 nd European Conference of Chemical Engineering (EC-CE '11) Puerto De La Cruz, Tenerife (SPAIN)	10-12 December 2011	Nanosized Catalysis as a Basis for Developing Innovative Technologies in the Pharmaceutical Industry	E. Sulman	TTU
12 th International Conference on Microreaction Technology (IMRET12), Lyon (F)	20-22 February 2012	Invited (overview over POLYCAT, COPIRIDE, PILLS): Intensified Processes and New Plant Concepts - Contributions of the EU FP7 projects COPIRIDE, PILLS and POLYCAT	P. Löb (IMM), U. Krtschil (IMM), T. Rehm (IMM), V. Hessel (TUE), S. Fletcher (Chemistry Innovation), R. Farnell (Chem. In.), E. Sulman (TTU), L. Bronstein (INEOS)	IMM
12 th International Conference on Microreaction Technology (IMRET12), Lyon (F)	20-22 February 2012	Conventional and micro-reactor based process and cost analysis for glucose oxidation	I. Dencic, M.H.J.M. de Croon, J. Meuldijk, V. Hessel	TU/e
PNI in-house research "2nd Soft Matter & Life Science Workshop", Potsdam (DE)	20-21. March 2012	POLYCAT: Modern polymer-based catalysts and microflow conditions as key elements of innovations in fine chemical syntheses	Martin Hoffmann	HZB
6 th Workshop Chemical and Biological Micro Laboratory Technology, Ilmenau (DE)	20-22 March 2012	Conventional noble metal and enzyme catalyzed glucose oxidation, and a process design analysis for its continuous-flow operation	I. Dencic, M.H.J.M. de Croon, J. Meuldijk, V. Hessel	TU/e
24 th Biennial ORCS Conference Westin Annapolis, MD (USA)	15-19 April 2012	Modern catalytic nanotechnologies for hydrogenation processes	<u>Sulman E.</u>	TTU

(Seminar) Nordic bioprocess improvement seminar, Lyngby, Denmark	26. April 2012	Enzymatic microreactors – enzyme immobilization and cost considerations	I. Dencic, M.H.J.M. de Croon, J. Meuldijk, V. Hessel	TU/e
15 th Nordic Symposium on Catalysis ; Mariehamn, Åland (FI)	10-12 June 2012	D-glucose oxidation over Pt, Pd, Au impregnated hypercrosslinked polystyrene	<u>V. Doluda</u> , N. Lakina, A. Bykov, V. Matveeva, E. Sulman, M. Sulman, L. Bronstein, P. Valetsky	TTU
International Congress on Catalysis, Munich (DE)	6 July 2012	Partial Hydrogenation of 2-Butyne-1,4-diol in Continuous Flow Mode Using Microreactor Technology	<u>Thomas Rehm</u> , Ralf Zapf, Patrick Löb, Satu Ek, Charline Berguerand, and Lioubov Kiwi-Minsker	IMM
20 th International Congress of Chemical and Process Engineering (CHISA 2012), Prague (CZ)	25-29 August 2012	Keynote: Novel polymer based catalysts and microflow conditions as key elements for innovation in fine chemical synthesis – the FP7 EU project POLYCAT	<u>P. Löb</u> (IMM), T. Rehm (IMM), V. Hessel (TUE), E. Sulman (TTU), L. Bronstein (INEOS)	IMM
20 th International Congress of Chemical and Process Engineering (CHISA 2012), Prague (CZ)	25-29 August 2012	Nanostructured mesoporous polymers as effective stabilizers of catalytic nanoparticles for fine organic synthesis”	<u>V. Matveeva</u> , E. Sulman, M. Grigorjev, V. Doluda, L. Nikoshvili, I. Tyamina	TTU
20 th International Congress of Chemical and Process Engineering (CHISA 2012), Prague (CZ)	25-29 August 2012	Development of novel polymer-based nanoparticulate catalysts as the basis of FP7 project POLYCAT	E. Sulman, <u>V. Matveeva</u> , I. Tyamina, L. Nikoshvili, L. Bronstein, Z. Shifrina, L. Kiwi-Minsker	TTU
20 th International Congress of Chemical and Process Engineering (CHISA 2012), Prague (CZ)	25-29 August 2012	Exploring potential of enzymatic microreactors – from functionalization to process design.	I. Dencic, M.H.J.M. de Croon, J. Meuldijk, V. Hessel	TU/e
22 nd International Symposium on Chemical Reaction and Engineering (ISCRE 2012), Maastricht (NL)	2-5 September 2012	Exploring potential of enzymatic microreactors – from functionalization to process design	I. Dencic, M.H.J.M. de Croon, J. Meuldijk, V. Hessel	TU/e
Swiss Chemical Society Fall meeting, Zürich (CH)	13 September 2012	Structured Metal Fiber-based Catalysts for the Solvent-Free Hydrogenation of 2-butyne-1,4-diol: Role of the Oxide Support	<u>Charline Berguerand</u> , Igor Iouranov, Fernando Cárdenas-Lizana, Lioubov Kiwi-Minsker	EPFL
World Congress on Oleo Science (WCOS 2012), Nagasaki, Japan	30 September – 4 October 2012	Interdisciplinary lecture: Integration of Agro-, Bio-, Chemical-, Energy, Environmental Process Intensification in the Development of Sustainable Biorefinery Technology	<u>G. Akay</u>	UNEW

Posters	Date	Topic of Contribution	Authors	Organisation
45. Jahrestreffen Deutscher Katalytiker, Weimar (D)	14-16 March 2012	Partial hydrogenation of 2-butyne-1,4-diol catalysed with poly(Vinyl Pyrrolidone)-stabilised Pd nanoparticles in a falling film microreactor	T. Rehm (IMM), R. Zapf (IMM), P. Löb (IMM), L. Kiwi-Minsker (EPFL), C. Berguerand (EPFL)	IMM
Tailor Conference, Autrans (F)	19-21 March 2012	Selective Liquid Phase Hydrogenation of p-Chloronitrobenzene over Monodispersed Pt Nanoparticles Tailored by Hyper-Crosslinked Polystyrene	Charline Berguerand, Fernando Cárdenas-Lizana, Igor Iouranov and Liubov Kiwi-Minsker	EPFL
22 nd International Symposium on Chemical Reaction Engineering (ISCRE 22) Maastricht (NL)	2-5 September 2012	Novel nanocatalysts based on nanostructured matrix of hypercrosslinked polystyrene	Sulman E., Matveeva V., Sulman M., Bronstein L.	TTU
15 th International Congress on Catalysis, Munich (D)	1-6 July 2012	Polymer-stabilized Pd nanoparticles for effective catalytic semihydrogenation of acetylene alcohols	Nikoshvili L., Semenova A., Sulman E., Matveeva V., Bykov A., Demidenko G., Sidorov A., Sulman M.	TTU
15 th International Congress on Catalysis, Munich (D)	1-6 July 2012	Polymer-stabilized metal nanoparticles – an effective way for integration of homo- and heterogeneous catalysis	E.M. Sulman, L.Zh. Nikoshvili, G.N. Demidenko, V.G. Matveeva, M.G. Sulman, P.M. Valetsky, L.M. Bronstein	TTU
20 th International Congress of Chemical and Process Engineering (CHISA 2012), Prague (CZ)	25-29 August 2012	Transformations of Pd acetate in polymeric matrices of non-functionalized and functionalized hypercrosslinked polystyrenes	A. Bykov, V. Matveeva, E. Sulman, I. Tyamina	TTU

Oral presentation, poster or other contributions	Date	Topic of Contribution	Authors	Organisation
Polymers for Advanced Technology Conference (PAT 2011), Łódź (POLAND)	10/2011	Dissemination of project results; interaction and discussion with various scientists	S. H. Anastasiadis	FORTH
General Meeting 12, American Physical Society ; Boston, MA (USA)	02/2012	Dissemination of project results; interaction and discussion with various scientists	S. H. Anastasiadis	FORTH
Fourth Workshop on Current Trends in Molecular and Nanoscale Magnetism, Halkidiki (GR)	06/2012	Dissemination of project results; interaction and discussion with various scientists	A. Lappas	FORTH
3 rd Russian – Hellenic Symposium on Polymeric Biomaterials and Bionanomaterials: Recent Advances Safety and Toxicology (BI-	02/2012	Dissemination of project results; interaction and discussion with various scientists	S. H. Anastasiadis	FORTH

ONANOTOX 2012), Heraklion Crete (GR)				
9 th Workshop on Nanosciences and Nanotechnologies; Thessaloniki (GR)	07/2012	Dissemination of project results; interaction and discussion with various scientists	S. H. Anastasiadis	FORTH
XL Congresso Nazionale di Chimica Inorganica, Sestri Levante (IT)	9 -13 September 2012	HPS-based catalysts: a computational study	Nerina Armata, Remedios Cortese, Francesco Ferrante, Fabrizio Lo Celso, Antonio Prestianni, Dario Duca	UNIPA
14 th International Conference on Theoretical Aspects of Catalysis, Vlissingen (NL)	26-30 June 2012	L-arabinose adsorption on hydrogenated and hydrated ruthenium catalyst	Remedios Cortese, Nerina Armata, Dario Duca, Dmitry Yu. Murzin	UNIPA
Computational and Theoretical Chemistry Division of the Italian Chemistry Society, Pisa (IT)	22 -23 February 2012	Computational approaches used in the POLYCAT EU project	Francesco Ferrante, Nerina Armata, Remedios Cortese, Fabrizio Lo Celso, Antonio Prestianni, Dario Duca	UNIPA

Press Releases:

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LCA/LCC-Workshop held together with TU/e at UNIJENA:

http://www.uni-jena.de/uni_journal_01_2012_tagungen.html

http://www.uni-jena.de/Mitteilungen/PM111114_Kressirer%C3%96kobilanzen.html