SusFuelCat

Sustainable **Fuel** production by aqueous phase reforming – understanding **Cat**alysis and hydrothermal stability of carbon supported noble metals

Conference Programme

24.11.2016, Conference Hotel Drienerburght, Enschede, NL

09:00 hrs Registration

09:30 hrs Welcome Session

09:45 hrs Prof. Dr. J.-P. Lange (Shell Technology Centre, Amsterdam / Universiteit Twente, Enschede, The Netherlands):
Aqueous phase catalysis – industrial challenges
The conversion of biomass and, specifically, sugars to fuel and chemicals is often proceeding in an aqueous environment. This poses technical challenges that are new to industrial chemists and engineers that have built their experience in the oil and petrochemical industry.

10:25 hrs Dr. L. Vilcocq (CNRS, Lyon, France):
Transformation of sorbitol in aqueous phase over bifunctional heterogeneous catalysts
On new catalytic systems based on tungstated oxides for direct transformation of sorbitol (ex-lignocellulose hydrogenated sugar) into light hydrocarbons in aqueous phase.

11:05 hrs Coffee and tea break

11:35 hrs Dr. M. F. Neira D'Angelo (TU Eindhoven, The Netherlands):
Aqueous Phase Reforming – Catalysis and reactor engineering
Examples of how to optimise reactor configuration for APR, using a multiscale approach.

12:15 hrs Dr. P. C. A. Bruijnincx (Utrecht University, The Netherlands):
APR(-like) reactions of small oxygenates, lignin and whole biomass
On catalyst design and the influence of feed impurities on (crude) glycerol Aqueous Phase Reforming for the production of hydrogen and the APR-like conversion of the lignin component of lignocellulosic biomass.

12:55 hrs Lunch

14:00 hrs Prof. Dr. B. J. M. Etzold (TU Darmstadt, Germany):
SusFuelCat overview and key results
An overview and key results of the EU-funded SusFuelCat project, dedicated to the research and development of stable and acive catalysts for Aqueous Phase Reforming

14:40 hrs J. Gläsel (TU Darmstadt / Friedrich-Alexander Universität Erlangen-Nürnberg, Germany):
Synthesis of Mesoporous Graphitic Carbons
Mesoporous and graphitic carbon powders were synthesized based on the reactive extraction of titanium carbide in a novel temperature regime up to 1600 °C.

15:00 hrs L. Calvo Hernández (Universidad Autonoma de Madrid, Spain):
Improved preparation and hydrothermal stability of Pt based catalysts based on size-controlled nanoparticles obtained by colloidal synthesis
Synthesis of size-controlled Pt/C catalysts with improved resistance to leaching and accessibility of reactants to the metal phase.

15:20 hrs Poster session (including coffee and tea break)

16:10 hrs Dr. I. Simakova (Boreskov Institute of Catalysis, Russia):
Synthesis of Ru, Co, Ni colloidal nanoparticles and its immobilization on carbon supports
An effective approach for PVP removal procedure depending on the carbon support was developed to achieve high catalytic activity in galactose into galactitol hydrogenation.

16:30 hrs Prof. Dr. Ir. Leon Lefferts (Universiteit Twente, The Netherlands):
Aqueous Phase Reforming of C2/C3 oxygenates
Performance of supported Pt catalyst for APR of hydroxyacetone and ethylene-glycol will be discussed, with emphasis on the influence of the support and internal mass transfer.

16:50 hrs TBD (Johnson Matthey, UK or BTG Biomass Technology Group, The Netherlands:
Aqueous Phase Reforming of Technical Feedstock and Feedstock derived from Pyrolysis Oil
Selection and testing of carbon-supported catalysts with distinct properties that led to high selectivity and activity in continuous long-term APR. Analysis of process viability.

17:10 hrs Prof. Dr. D. Murzin (Åbo Akademi, Finland):
Kinetic modelling of xylitol Aqueous Phase Reforming
A kinetic model was developed accounting for generation of the main products in APR of xylitol over a carbon-supported Pt catalyst in a fixed bed reactor.

17:30 hrs Wrap-up