Post-doctoral position on "Catalytic pyrolysis of biobased feedstocks over tailored zeolites"

Description:

The catalytic pyrolysis of biomass feedstocks is of high relevance for the production of renewable fuels and chemicals. However, the high corrosivity, poor thermal stability, and low heat capacity of bio-oil impede its industrial application with existing infrastructure. To effectively use this fuel, the highly-oxygenated compounds must be chemically converted into products that are more stable and more similar to currently used fuels and chemicals. The additional incorporation of a catalyst has been shown to selectively favour the reaction pathways into valuable hydrocarbon products. Albeit the fact that many catalysts have been explored, ZSM-5 zeolites have been identified as the materials which exhibit the highest selectivity to gasoline range hydrocarbons. However, they suffer from low carbon yield and excessive coke formation.

Tasks:

- Development of zeolite-based catalysts combining excellent activity and stability with a high selectivity to hydrocarbons by post-synthetic mesoporosity introduction and metal incorporation.
- Understanding the interplay between porosity and acidity effects in the design of zeolite catalysts for the catalytic pyrolysis of biomass.

Requirements:

- Candidate must possess a PhD in Chemistry, Chemical Engineering or Materials Chemistry.
- Potential applicants should have a proven record of expertise in heterogeneous catalysis, ideally in zeolites. A strong background in novel zeolitic and mesostructured materials and synthesis of hierarchical zeolites is desired.
- Candidate should be highly motivated, creative and productive with excellent oral and written English language communication skills.

Deadline for application: 30th April 2015

Documents to be submitted:

- Curriculum Vitae
- Statement of research interests
- Contact information for two references

Contact:

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