Postdoctoral position:
Flow chemistry under acidic media

Duration: 12 months
Starting date: October 2017

A 12 months postdoctoral position is available to start from October 2017 in flow chemistry under acidic media.

Flow microreactor systems are quite effective for controlling reactions involving highly reactive reagents. Furthermore, microreactor technology is capable of performing a wide range of single and multiphase organic reactions, requiring small quantities of reagents. The sub-millimeter reaction channels allow for precise control of variables such as reagent mixing, flow rates, reaction time and heat and mass transfer. They are amenable to integrated reaction monitoring and to semi-preparative scale-up and also reduce hazardous waste.

Many reactions in fine chemical synthesis occur under very acidic and harsh conditions, and the main objective of this postdoc is to set-up a flow chemistry platform for chemical synthesis under such conditions. We envisaged that microflow systems could serve as a powerful tool for mechanistic studies involving furtive cationic intermediates. Because residence times can be varied in the range of milliseconds to seconds by adjusting the length of a microchannel and flow speed, therefore, the time-dependent concentration of chemical species can be easily determined and exploited for analysis and synthetic transformations.[1]

The candidate's first task will be to set-up and optimize the first micro-operation using a suitable microreactor under harsh conditions. Then to couple the first micro-operation to others in order to form a micro-platform that can be used for synthesis and modifications of chemicals.

Profile:

Applicants must have completed a Ph.D. in chemical engineering with expertise in chemical reaction engineering, and mass and heat transfer. Additional experiences in microreactors and flow chemistry would be appreciated (desirable criteria). Also, you are a highly motivated and ambitious researcher with a proven track record of scientific excellence. We expect you to be able to perform independent research, have good communicational and social skills, be fluent in English and are eager to engage in collaborations with co-workers.

Application:

Interested and highly motivated applicant should forward a cover letter stating why the applicant is interested in this position, a complete CV with a publication list and 2 academic referees (with address, phone number and email).

Salary: 2000 € net (depends on the experience)

Contacts:

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[1] (a) H. Kim, K-I. Min, K. Inoue, D. J. Im, D-P. Kim, J. Yoshida *Science* 2016, *352* (6286), 691. (b) A. Nagaki, E. Takiwaza, J. Yoshida, *J. Am. Chem. Soc.* 2009, *131*, 1654.