



Universiteit Utrecht

Faculty of Science
Department of Chemistry
Inorganic Chemistry and Catalysis Group

PhD position vacancy

for studies on the activation of metal catalysts using in-situ gas-phase transmission electron microscopy

Heterogeneous metal catalysts are of tremendous importance to chemical industry. Activity, selectivity and stability of catalysts during chemical reactions is largely determined by the size, location and composition of catalytically active metal particles typically supported on metal oxides such as silica, alumina or titania. Within the framework of ARC-CBBC consortium (<http://www.arc-cbbc.nl/>), this project aims to deepen the understanding of reduction step of catalyst precursors, which is often a vital step in catalyst preparation as it determines the dispersion and thereby activity. The focus will be on the preparation of supported metal catalysts, and the evolution of the active phase will be investigated using both ex-situ and in-situ approaches. In-situ transmission electron microscopy will play a crucial role (see J. Am. Chem. Soc. 138, 2016, 3433), and thanks to the development of in-situ gas phase cells it will be possible to follow the evolution of metal nanoparticles under high temperature and in gas environment inside the TEM.

Requirements:

We are looking for an enthusiastic, motivated and skilled student holding an MSc in a relevant area of Chemistry, Materials Science or Chemical Engineering. The candidate preferably has some experience with catalysis, catalyst synthesis and/or electron microscopy.

Conditions of employment:

The candidate is offered a full-time position for 4 years.

The salary is supplemented with a holiday bonus of 8% and an end-of-year bonus of 8,3% per year. In addition we offer: a pension scheme, a partially paid parental leave, flexible employment conditions. Conditions are based on the Collective Labour Agreement Dutch Universities. The research group will provide the candidate with necessary support on all aspects of the project. More information is available on the website:

<http://www.uu.nl/EN/informationfor/jobseekers/Working-for-Utrecht-University/terms-of-employment/Pages/default.aspx>

Interested? Please contact:

Dr. Jovana Zečević (j.zecevic@uu.nl) or Prof. Dr. Krijn de Jong (k.p.dejong@uu.nl).
<http://www.inorganic-chemistry-and-catalysis.eu>

Faculty: Faculty of Science

A better future for everyone. This ambition motivates our scientists in executing their leading research and inspiring teaching. At Utrecht University, the various disciplines collaborate intensively towards major societal themes. Our focus is on Dynamics of Youth, Institutions for Open Societies, Life Sciences and Sustainability.

The Faculty of Science consists of six departments: Biology, Pharmaceutical Sciences, Information and Computing Sciences, Physics and Astronomy, Chemistry and Mathematics. The Faculty is home to 5600 students and nearly 1500 staff and is internationally renowned for the quality of its research. The Faculty's academic programmes reflect developments in today's society. Read the overall impression 2016 of the Faculty of Science.

Group: Inorganic Chemistry and Catalysis

In the Debye Institute for Nanomaterials Science, physicists and chemists work closely together on nanomaterials research. The group Inorganic Chemistry and Catalysis comprises more than 100 people, with research focus on nanostructured solid materials for applications in catalysis, hydrogen storage, and sustainable production of fuels and chemicals.