Universiteit Utrecht

European Research Council

Multiple PhD/PD positions on Multimetallic Organometallic Chemistry & Catalysis

Applications are invited for multiple 4-year PhD and/or PostDoc positions (1+2 years) in the Organic Chemistry and Catalysis (OCC) group at Utrecht University. The projects, led by Dr. Daniël Broere, will focus on developing new multinucleating ligand systems (2-4 metals) and metal complexes that can directly convert N_2 into amines. More information about the research group can be found on the www.broerelab.com .

Project Description: The majority of homogeneous catalyst systems consist of a single metal atom and organic ligands, which tune activity or selectivity. Similarly, nature employs metals in the active sites of metalloenzymes to catalyze chemical reactions. However, for the most challenging chemical transformations, such as N_2 activation, metalloenzymes often employ complex cofactors where multiple metals work together to make and break chemical bonds. This project will focus on obtaining fundamental understanding of how multiple metal centers can work together to activate N_2, and use this knowledge to develop homogeneous catalyst systems for the direct conversion of N_2 into organic amines through C-N bond formation reactions. It will involve a combination of organic and organometallic synthesis, spectroscopy, computational chemistry and homogeneous (electro)catalysis.

Requirements: Successful applicants for a PhD or PD position will hold a Master's or PhD degree in chemistry, respectively, and have a strong background in synthetic organic chemistry, coordination chemistry or homogeneous catalysis. Experience or affinity with computational chemistry and electrochemistry are desirable, but not required. Good communication skills, the ability to work safely, independently and in a team environment. Oral and written command of English is required.

Offer for PhD position: The successful candidate will be appointed on a fixed-term full-time basis. The appointment is initially for a period of 18 months. Upon good performance and a positive evaluation, the contract will be extended for the remaining period of 30 months (4 years in total). The gross monthly salary is for PhD candidates is based on the Collective Labour Agreement Dutch Universities (Scale P).

Offer for Postdoc position: The candidate is offered a full-time position for the period of 1 year, with the possibility of extension by 1 or 2 more years after satisfactory performance. The gross salary, depending on qualifications and work experience, is in the range between €3,226 and maximum €5,090 (scale 10 Collective Labour Agreement Dutch Universities) gross per month for a full-time employment.

Salaries are supplemented with a holiday bonus of 8 % and a year-end bonus of 8.3 % per year. We offer a pension scheme, (partly paid) parental leave, collective insurance schemes and flexible employment conditions (multiple choice model). A favorable tax agreement, the '30% ruling', may apply to non-Dutch applicants. More information is available at working at Utrecht University.

Starting date: The starting date for the various positions are flexible, but ideally Jan 1st 2024. Motivated candidates are invited to send their application (incl. letter of motivation, CV, references, and list of grades) directly to Dr. Daniël Broere (d.l.j.broere@uu.nl).