Postdoc Program between the Freie Universität Berlin (FUB) and the China Scholarship Council (CSC)

Open Postdoc position at FUB for CSC scholarship candidates 2016

Please note: the postdoc position is only offered to Chinese who graduated with a PhD degree from a Chinese university.

Department/Institute:	Chemistry and Biochemistry
Subject area:	Organic Chemistry: Natural Product Synthesis
Professor / Research Group:	Prof. Dr. Philipp HERETSCH (Mr.)
Number of open Postdoc positions:	2
Project title:	Development of novel C–H-functionalization reactions and their application in the synthesis of biologically relevant natural products

Postdoc Project description:

The objective of this project is the development of preparatively useful and predictably selective novel C–H-functionalization methods and their application in the synthesis of a complex natural product for biological evaluation.
A special focus will lie on the element copper, an inexpensive, abundant, non-toxic metal with extremely rich chemistry. Copper can readily access Cu0, CuI, CuII and high-valent CuIII oxidation states allowing it to act through one-electron or two electron processes. Especially the ability to generate high-valent copper using dioxygen increases its chemistry exponentially since oxygen can act as either a sink for electrons ("oxidase activity"), or a source of oxygen atoms that are incorporated into the product ("oxygenase activity"), or even both.
The development of more robust and general methods for C–H bond oxidation through catalysis by high-valent copper and the design of new ancillary ligands that stabilize high-valent copper to facilitate novel C–H-functionalization reactions are the major thrust of this project. The application of newly developed C–H-functionalization methodology will culminate in the synthesis of a complex secosteroid natural product (e.g. aplysiasecosterol A) and its designed analogs.
In summary, state-of-the-art organic chemistry, with a special emphasis on C–H-functionalization chemistry will be developed and used to synthesize a challenging natural product. Its application for biological and/or drug discovery studies with collaboration partners in Berlin will round up this project.

Language requirements:

English: IELTS 6,5 or TOEFL 95 ibt.

Academic requirements:

Candidates with a strong background in synthetic organic chemistry, ideally documented in a number of publications in the fields of method development and/or total synthesis, are highly encouraged to apply. Language skills in German are not a requirement.

Information of the professor or research group leader:

In our laboratory we are pursuing the synthesis and study of complex molecular structures relevant for biology and medicine. We work on the discovery and development of new synthetic strategies and technologies, especially in the field of C–H-functionalization, to employ them in our endeavors. Please find further relevant information on our website: www.chemie.fu-berlin.de/heretsch
Please note: In a first step the complete application should submit to the Beijing Office for evaluation by October 30, 2015. Please don't contact the professor before. He/She will get in contact with you after having received the complete application.