



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

Open PhD position at FUB for CSC scholarship candidates 2017

Please note: the PhD position is only offered to Chinese PhD candidates for application in the framework of the FUB-CSC PhD Program.

<u>Department/Institute:</u>	Department of Biology, Chemistry, Pharmacy/Institute of Pharmacy
<u>Subject area:</u>	Polymer- and Colloidal Chemistry
<u>Name of Supervisor:</u>	Prof. Dr. Daniel KLINGER (Mr.)
<u>Number of open PhD positions:</u>	1
<u>Type of the PhD Study:</u>	Full-time
<u>Project title:</u>	Development of Functional Nanomaterials by Controlling Shape and Morphology of (Block) Copolymer Nanoparticles

PhD Project description:

From molecules to materials – the candidate should actively participate in research projects in the Klinger Lab. Especially, the preparation of polymeric nanoparticles with well-defined anisotropic shapes and internal morphologies should be addressed.

For this, concepts from synthetic macromolecular chemistry should be combined with methods from the fields of colloidal chemistry and block copolymer self-assembly: By developing a facile and scalable synthetic platform, dynamic responsiveness and specific chemical functionalities should be introduced into hierarchically-structured nanomaterials via the molecular design of tailor-made polymeric building blocks.

This multidisciplinary project includes synthesis and characterization of the respective (macro-) molecular building blocks, their assembly into nanoparticles, characterization of the colloidal materials, and investigations on the resulting macroscopic functionality for specific applications such as drug delivery, photonics, and catalysis.

Language requirements:

Excellent English language skills required.

English: IELTS 6.5 or TOEFL 95 ibt. German: Test DaF 16 or DSH 2

Academic requirements:

- Completed university degree (Master) in chemistry, materials science, pharmacy or closely related fields
- Sound knowledge and practical expertise in organic chemistry / polymer chemistry / colloidal chemistry

Information of the professor or research group leader:

In the Klinger Lab, we focus on the development of nano-structured polymeric materials and colloids with dynamic and responsive properties. Our research is inspired by nature's outstanding ability to create very specific (macroscopic) functions through molecular and structural design. To approach similar levels of control in synthetic materials, we work on multiple length scales: Starting from the rational design of molecular units, we develop well-defined polymeric architectures and control their self-assembly into ordered superstructures. Additionally, we focus on the use of confinements to create additional elements of hierarchy. The synergy between chemical and structural functionality allows the development of polymeric nanoparticles and -materials for a broad variety of applications. Additional information can be found on our website: <http://www.klinger-lab.de/>

Please note:

In a first step the complete application should be submitted to the Beijing Office for evaluation by January 4th, 2017. Please don't contact the professor before. He/She will get in contact with you after having received the complete application in January.