



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>	Pharmaceutical Technology
<u>Name of Supervisor:</u>	Prof. Dr. Roland BODMEIER (Mr.)
<u>Number of open PhD positions:</u>	1
<u>Type of the PhD Study:</u>	Full-time
<u>Project title:</u>	Formulation of per-oral drug delivery systems of poorly water soluble drugs

PhD Project description:

Many low molecular weight drug molecules (new candidates but also established ones) possess poor per-oral bioavailability due to their low water solubility. There are several approaches to overcome this issue which include: drug amorphization, polymer based drug (micro-) encapsulation, drug particle size reduction and the use of excipients such as solubilizers (wetting agents) and disintegrants. Drug-excipients mixtures are directly formed into per-oral drug delivery systems (DDS) such as tablets or beforehand converted into granules. A variety of variables has to be investigated in terms of granule formation such as binder selection and process conditions (dry / wet granulation, etc.). Per-oral DDS studied are coated and un-coated tablets and capsules. Both, immediate and sustained release will be investigated. Besides formulation a throughout characterization of created DDS will be performed. On the one hand the drug has to be characterized (solid state (polymorphism), solubility, particle size and surface properties, etc.). On the other hand the DDS has to be characterized (in vitro release, physical and chemical stability, etc.). Methods include SS-NMR, PXRD, DSC, FTIR, freeze drying, wet and dry milling, PCS, LD, spray drying, hot melt extrusion, DVS, TGA, HPLC, GPC, continuous and discontinuous drug release, coating machines and tablet presses including a compaction simulator. Promising formulations are further investigated in vivo.

Language requirements:

English PhD study / thesis: IELTS 6.5 or TOEFL 95 ibt.

Academic requirements:

M.Sc. Pharmaceutical Sciences, M.Sc. Pharmacy, M.Pharm.

Information of the professor or research group leader:

http://www.bcp.fu-berlin.de/en/pharmazie/pharmazeutische_technologie/bodmeier/index.html
(for publications see PUBMED etc.)

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.