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

Open PhD Position at Freie Universität Berlin, offered only to Chinese CSC scholarship candidates 2020

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

**Department/Institute:** Experimental Physics

**Subject area:** Biophysics, Biochemistry and Photosynthesis

**Name of Supervisor:** Dr. Dennis Nürnberg

**Number of open PhD positions:** 2

**Type of the PhD Study:** Fulltime

**Project title:** Oxygenic photosynthesis at its energy limit: Membranes and proteins for growth in the infrared

**PhD Project description:**

Oxygenic photosynthesis uses chlorophyll a to convert solar energy into the chemical energy that powers the biosphere. Chlorophyll a absorbs visible light only up to ~700 nm, the so-called "red limit". We have recently discovered, when deeply shaded by other photosynthetic organisms, some cyanobacteria are able to extend this limit towards the near-infrared by using modified chlorophylls denoted as Chl f in their photosynthetic apparatus (Nürnberg et al., 2018, Science). In our group we aim to understand how Chl f remodels photosynthetic proteins and membranes by combining biophysical, biochemical and molecular biological methods. Aside from advanced optical spectroscopy, membrane rearrangements after far-red light exposure will be monitored by super-resolution microscopy and the influence of the far-red light-induced proteins on the formation of specialised membrane domains will be investigated. The new-type of Chl-f photosystems will be isolated and characterised by locating the long-wavelength pigments and determine their role in energy and electron transfer. Our findings will provide important new insights into the mechanism of light acclimation and the limits of oxygenic photosynthesis when generating near-infrared plants with superior solar-energy conversion efficiency.

Reference:


From the news:

http://news.sciencenet.cn/dz/dznews_photo.aspx?id-31645
**Language requirements:**
IELTS: 6.5 or TOEFL: 95 ibt
Test Daf 16 or DSH 2

**Academic requirements:**
A Master’s degree in biophysics, biochemistry or a related subject. The applicant should have experience with microscopy or spectroscopy and basic knowledge of molecular biological and biochemical lab work. Very good theoretical knowledge of cell biology and/or biophysics.

**Information of the professor or research group leader (website, awards etc.):**
For further information, please visit my website:
https://www.researchgate.net/profile/Dennis_Nuernberg

**Please Note:** In a first step, the complete application should be submitted to csc@international.fu-berlin.de for evaluation by January 4th, 2020. Please do not contact the professor before. He/she will get in contact with you after having received the complete application via the International Office of Freie Universität Berlin in January.