**2018 Helmholtz – OCPC – Program**

**for the involvement of postdocs in bilateral collaboration projects**

**DESY\_OCPC\_2018-08**

**PART A**

**Title of the project: Ultrafast electron dynamics in complex molecules**

**Helmholtz Centre and Research Group: DESY / CFEL Controlled Molecule Imaging**

**Project leader: Prof. Dr. Jochen Küpper**

**Web-address:** https://www.controlled-molecule-imaging.org

**Description of the project:**

If you want to see the chemistry, you have to follow the electrons. Indeed, it is becoming evident that one has to study the combined electronic and nuclear dynamics of molecules in order to understand the elementary steps of chemical dynamics. Based on previous and current molecular-frame-photoelectron-angular-distribution-imaging experiments, per­formed in our group, we are preparing for experiments to image ultrafast dynamics in complex molecules, such as indole and the indole-water cluster. These experiments are targeted at the disentangling of ultrafast (attosecond) electronic dynamics coupled to femtosecond nuclear dynamics.

The successful candidate will have an outstanding Ph.D. in experimental physics, physical chemistry, or a related field. Extensive experience with ultrashort-pulse lasers is required; experience with few-femtosecond laser pulses, ultra-high-vacuum equipment, or electron imaging is a bonus.

**Description of existing or sought Chinese collaboration partner institute:**

**Required qualification of the post-doc:**

* PhD in Experimental Physics or related field
* Extensive background in ultrashort-pulse lasers and molecular quantum physics is required.
* Experience with molecular beams, high-vacuum equipment, and with large-scale/x- ray facilities would be a plus
* Fluent in written and spoken English

**PART B**

**Documents to be provided by the post-doc, necessary for an application to OCPC via a postdoc-station:**

* + Detailed description of the interest in joining the project (motivation letter)
  + Curriculum vitae, copies of degrees
  + List of publications
  + 2 letters of recommendation
  + Proof of command of English language

**PART C**

**Additional requirements to be fulfilled by the post-doc:**

* Max. age of 35 years
* PhD degree not older than 5 years
* Very good command of the English language
* Strong ability to work independently and in a team