Call for 2015 DESY-ONACPR Fellowship Applicants

## **Code: DESY-2015-18**

## **Research Laboratory: DESY**

### Division/Group: FS-CFEL-1 (CMI)

### Supervising scientist: Prof. Dr. Jochen Küpper FRSC

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### Research Field: Physical Chemistry */ Molecular Physics*

**Position:** Postdoctoral Research in Physical Chemistry/Molecular Physics

**Structure-function relationship in chemical reactions using controlled molecules and cold ions:** We have investigated the structure-function relationship of conformer-selected complex molecules. Initially, we performed a pioneering benchmark experiment to investigate structure-dependent chemical reactivities and determined the conformer-specific rate constants for the reactions of cis- and trans-3-aminophenol with Ca+ ions in a so called Coulomb Crystal. These studies will be extended to the investigation of conformer specific reactivity studies of complex chemical reactions, such as cycloaddition / Diels-Alder reactions. This involves the experimental verification of relevant molecular properties in deflection and spectroscopy experiments, and the measurement of conformer specific reactivities.

**Research Area:**

**Specific Requirements:**

Detailed analyses require some programming, simulations of the selection process, and quantum-chemical calculations. This project will require repeated travel to our collaborators at the University of Basel, Switzerland.

A successful candidate will have a background in physical chemistry, molecular physics, or a related field.

[Science, 342, 98–101 (2013)](http://dx.doi.org/10.1126/science.1242271)

[Phys. Rev. Lett. 100, 133003 (2008)](http://dx.doi.org/10.1103/PhysRevLett.100.133003)

[Angew. Chem. Int. Ed. 48, 4900 (2009)](http://dx.doi.org/10.1002/anie.200900755)

**Work Place:** Hamburg

**Earliest Start:** December 2015

**Language Requirement:**

**Further Remarks:**