



Mathematisch-Naturwissenschaftliche

Fakultät, Institut für Chemie

The group of **Prof. Dr. Kallol Ray** at the **Department of Chemistry in Humboldt Universität zu Berlin** is looking for motivated and dedicated PhD candidates to work on **organometallic synthesis, catalytic hydroformylation reactions and spectroscopic investigation of reaction mechanism**. The project will be carried out within the framework of the cluster of excellence Unified Systems in Catalysis (**UniSysCat**). A research stay in the laboratories of collaboration partners abroad might be possible. The PhD position is for at least **4 years, salary scale TV-L E13 (67%)**, and requires a Master degree (or equivalent) in Chemistry, a good knowledge and interest in synthetic inorganic chemistry, organometallic catalysis, and ligand synthesis. The group you would join is an international small-sized, highly dynamic group with excellent instrumentation and analytical facilities. Please send your application (motivation letter, CV, academic certificates, transcript of records, and contact information of references (if you are from outside Germany)) as a single pdf file to kallol.ray@chemie.hu-berlin.de.

Closing date for applications: March 11, 2019.

AK Prof. Kallol Ray, Math.-Nat., Institut für Chemie, Brook-Taylor-Str. 2, 12489 Berlin (2 Doktorandenstelle; 2/3 E-13, TVL-HU; befristet für 4-Jahre)

Aufgabengebiet: Wissenschaftliche Dienstleistungen in Forschung im Bereich der Synthese und spektroskopische Untersuchungen von Koordinationsverbindungen für die Katalytische Aktivierung kleiner Moleküle und Alkan-Hydroformilierung; Dienstleistungen in der Anorg.- Chemischen Grundpraktikum; Aufgaben zur Vorbereitung einer Promotion.

Anforderungen: Abgeschlossenes wissenschaftliches Hochschulstudium der Chemie, Mitwirkung in der Lehre, Erfahrung in organischer oder anorganischer Katalyse, mechanistische Untersuchungen. Muss motiviert sein, um neue spektroskopische Techniken zu erlernen. Sollte aufgrund verschiedener spektroskopischer Messungen zu nationalen und internationalen Reisen bereit sein.

Selected Publications from the Group:

- 1) Trapping of a Highly Reactive Oxoiron(IV) Complex in the Catalytic Epoxidation of Olefins by Hydrogen Peroxide**
X. Engelmann; D. D. Malik; T. Corona; K. Warm; E. R. Farquhar; M. Swart; W. Nam; K. Ray, *Angew. Chem. Int. Ed.* **2019**, doi.org/10.1002/anie.201812758
- 2) Nucleophilic vs Electrophilic Reactivity of Bioinspired Super-oxido Nickel(II) Complexes**
P. Chakadola, A. Chandra, T. Corona, E. Andris, B. Pandey, S. Garai, N. Lindenmaier, S. Kuentner, E. R. Farquhar, J. Roithova, G. Rajaraman, M. Driess, K. Ray, *Angew. Chem. Int. Ed.* **2018**, *57*, 14883-14887.
- 3) Temperature Dependence of the Catalytic Two-versus-Four Electron Reduction of Dioxygen by a Hexanuclear Cobalt Complex**
I. Monte-Pérez, S. Kundu, A. Chandra, K. E. Craigo, P. Chernev, U. Kuhlmann, H. Dau, P. Hildebrandt, C. Greco, C. Van Stappen, N. Lehnert, K. Ray, *J. Am. Chem. Soc.* **2017**, *139*, 15033-15042.
- 4) A Highly Reactive Oxoiron(IV) Complex Supported by a Bioinspired N3O Macrocyclic Ligand**
I. Monte Pérez, X. Engelmann, Y.-M. Lee, M. Yoo, K. Elumalai, E. R. Farquhar, E. Bill, J. England, W. Nam, M. Swart, **K. Ray**, *Angew. Chem. Int. Ed.* **2017**, *56*, 14384-14388.
- 5) A New Domain of Reactivity for High-Valent Dinuclear [M(μ-O)₂M'] Complexes in Oxidation Reactions**
X. Engelmann, S. Yao, E. R. Farquhar, T. Szilvási, U. Kuhlmann, P. Hildebrandt, M. Driess, K. Ray, *Angew. Chem. Int. Ed.*, **2017**, *56*, 297-301.