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Iron complexes as electrocatalysts for the water oxidation reaction

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List of publications

'Evaluation of iron-based electrocatalysts for water oxidation – an on-line mass spectrometry approach'

K. G. Kottrup; D. G. H. Hetterscheid, *Chem. Commun.* **2016**, 52, 2643-2646.

'Detangling Catalyst Modification Reactions from the Oxygen Evolution Reaction by Online Mass Spectrometry'

P. Abril; M. P. del Río; C. Tejel; T. W. G. M. Verhoeven; J. W. H. Niemantsverdriet; C. J. M. Van der Ham; K. G. Kottrup; D. G. H. Hetterscheid, *ACS Catal.* **2016**, 6, 7872-7875.

*'The synthesis, characterization, X-ray structure and magnetism of dinuclear-based bis[*l*-(1,1,3,3-tetracyano-2-ethoxypropenido- λ^2 N,N') (1,1,3,3-tetracyano-2-ethoxypropenido- λ^2 N)(2,20-bipyridine)copper(II)] organized in alternating chains via semi-coordinating Cu–N distances'*

A. Addala; F. Setifi; K. G. Kottrup; C. Glidewell; Z. Setifi; G. Smith; J. Reedijk, *Polyhedron* **2015**, 87, 307-310.

'Catalytic activity of an iron-based water oxidation catalyst – substrate effects of graphitic electrodes'

K. G. Kottrup; S. D'Agostini; P. H. van Langevelde; M. A. Siegler; D. G. H. Hetterscheid, *ACS Catal.* accepted for publication

In preparation

K. G. Kottrup; S. D'Agostini; J. L. Fillol; M. Costas; D. G. H. Hetterscheid, *in preparation*

Curriculum Vitae

Konstantin Kottrup was born in Berlin, Germany on the 11th of February in 1988. In 2007 he graduated from Goethe-Gymnasium high school. Later that year he started studying chemistry at the Humboldt Universität zu Berlin. During his studies he performed two research internships at the Humboldt Universität, in which he worked on the selective cleavage of disulfide bridges in immunoglobulin-G antibodies and on the activation of small molecules with fluorinated pincer-complexes of palladium and iridium. He also supervised undergraduate students in practical and theoretical courses on analytical chemistry as part of his position as a teaching assistant. In 2012 he graduated after finishing his diploma thesis (equivalent of MSc thesis) under the supervision of Prof. Dr. Thomas Braun. The topic of his diploma thesis was the activation of Si-Si bonds at platinum and palladium complexes.

In 2013 he started his PhD research in the group “Metals in Catalysis, Biomimetics & Inorganic Materials” (MCBIM) at Leiden University. The results of the work which was supervised by Prof. Dr. Lies Bouwman and Dr. Dennis Hetterscheid are described in this thesis. During his time as a PhD researcher, he attended the NIOK course “Catalysis, An Integrated Approach” (CAIA) and the Leiden University graduate school courses on time management, scientific integrity, effective communication and scientific writing.

Parts of the results reported in this thesis were presented at the following meetings and conferences:

- Netherlands’ Chemistry and Catalysis Conference (NCCC) in Noordwijkerhout in 2014 (poster), 2015 (poster) and 2016 (oral)
- BioSolar Cells meeting in Amsterdam in 2014 (oral)
- International Solar Fuels (ISF) conference in Uppsala, Sweden in 2015 (poster)
- HRSMC symposium in Amsterdam in 2015 (poster)
- NWO CHAINS conference in Veldhoven in 2015 (oral)
- International Society of Electrochemistry (ISE) meeting in Den Haag in 2016 (poster)
- COST action CARISMA meeting in Lisbon, Portugal in 2017 (oral)