

List of Publications and Patents

- 1) Theerthankar Das,[†] **Biswanath Das**,[†] Brandon Clark Young,[†] Vina Aldilla, Shekh Sabir, Basmah Almohaywi, Mark Willcox, Mike Manefield and Naresh Kumar: Ascorbic acid modulates the structure of the *Pseudomonas aeruginosa* virulence factor pyocyanin and ascorbic acid-furanone-30 combination facilitate biofilm disruption, *Front. Microbiol.* **2023**, 14, 1166607. doi: 10.3389/fmicb.2023.1166607.
- 2) **Biswanath Das** (as one of the corresponding authors), Esteban A. Toledo-Carrillo, Guoqi Li, Jonas Ståhle, Thomas Thersleff, Jianhong Chen, Lin Li, Fei Ye, Adam Slabon, Mats Göthelid, Tsu-Chien Weng, Jodie A. Yuwono, Priyank V. Kumar, Oscar Verho, Markus D. Karkäs, Joydeep Dutta and Björn Åkermark: Bifunctional and regenerable molecular electrode for water electrolysis at neutral pH, *J. Mater. Chem. A*, **2023**, 11, 13331–13340.
- 3) Maryam Mirabediny, Jun Sun, Tsz Tin Yu, Bjorn Åkermark, **Biswanath Das** (as one of the corresponding authors), and Naresh Kumar: Effective PFAS degradation by electrochemical oxidation methods-recent progress and requirement, *Chemosphere*, **2023**, 321, 138109.
- 4) Jianwei Zhang, **Biswanath Das**, Oscar Verho, and Jan-E. Bäckvall: Electrochemical Palladium-Catalyzed Oxidative Carbonylation-Cyclization of Enallenols, *Angewandte Chemie Int Ed*, **2022**, 61, e202212131.
- 5) **Biswanath Das** (as one of the corresponding authors), Esteban Alejandro Toledo-Carrillo, Lin Li, Fei Ye, Jianhong Chen, Adam Slabon, Oscar Verho, Lars Eriksson, Mats Göthelid, Joydeep Dutta, and Björn Åkermark: Cobalt Electrocatalyst on Fluorine Doped Carbon Cloth – a Robust and Partially Regenerable Anode for Water Oxidation, *ChemCatChem*, **2022**, 14, e202200538.
- 6) Jun Sun, Sreenu Jennepalli, Matthew Lee, Adele Jones, Denis M. O'Carroll, Michael J. Manefield, Mohan Bhadbhade, Björn Åkermark, **Biswanath Das** (as one of the corresponding authors), and Naresh Kumar: Efficient Reductive Defluorination of Branched PFOS by Metal–Porphyrin Complexes, *Environ. Sci. Technol.*, 56, 12, 7830–7839, **2022**.
- 7) Lin Li,[†] **Biswanath Das**[†] (as one of the corresponding authors), Ahibur Rahaman, Andrey Shatskiy, Fei Ye, Peihong Cheng, Chunze Yuan, Zhiqi Yang, Oscar Verho, Markus D. Karkäs, Joydeep Dutta, Tsu-Chien Weng, and Björn Åkermark: Ruthenium containing molecular electrocatalyst on glassy carbon for electrochemical water splitting, *Dalton Trans.*, 51, 7957-7965, **2022**.
- 8) **Biswanath Das**, Afnan Al-Hunaiti, Akina Carey, Sven Lidin, Serhiy Demeshko, Timo Repo, Ebbe Nordlander: A di-iron(III) μ -oxido complex as catalyst precursor in the oxidation of alkanes and alkenes, *Journal of Inorganic Biochemistry* 231, 111769, **2022**.
- 9) **Biswanath Das** (as one of the corresponding authors), Ahibur Rahaman, Andrey Shatskiy, Oscar Verho, Markus D Karkäs,b and Björn Åkermark: The Impact of Ligand Carboxylates on Electrocatalyzed Water Oxidation, *Acc. Chem. Res.*, 54, 17, 3326–3337, **2021**. (Review article)
- 10) Tshilidzi Makhado, **Biswanath Das**, Roelof. J. Kriek, H. C. M. Vosloo, Andrew Swarts: Chemical and electrochemical water oxidation mediated by bis(pyrazol-1-ylmethyl)pyridine-ligated Cu(I) complexes, *Sustainable Energy Fuels*, 5, 2771-2780, **2021**.
- 11) Jun Sun, Sreenu Jennepalli, Matthew Lee, Denis M. O'Carroll, Björn Åkermark, Michael J. Manefield, **Biswanath Das** (as one of the corresponding authors) and Naresh Kumar: Removal of per- and polyfluoroalkyl substances (PFAS) from water by ceric(iv) ammonium nitrate, *RSC Adv.*, 11, 17642-17645, **2021**.
- 12) Ryan Gilbert-Wilson, **Biswanath Das**, Dejan Mizdrak, Leslie D. Field, and Graham E. Ball: Observation and Analysis of Large Dynamic Frequency Shifts in the ¹H NMR Signals of H–D in Deuterium-Substituted Dihydrogen Complexes, *Inorganic Chemistry*, 59, 15570-15573, **2020**.
- 13) Chen Jia, Karin Ching, Priyank V Kumar, Chuan Zhao, Naresh Kumar, Xianjue Chen, Biswanath Das (as one of the corresponding authors): Vitamin B12 on Graphene for Highly Efficient CO₂ Electroreduction, *ACS Applied Materials and Interfaces*, 12, 41288–41293, **2020**.
- 14) **Biswanath Das** (as a corresponding author), Chen Jia, Karin Ching, Xianjue Chen, Mohan Bhadbhade, Stephen B Colbran, Chuan Zhao: Ruthenium Complexes in Homogeneous and Heterogeneous Catalysis for Electroreduction of CO₂, *ChemCatChem*, 12, 1292-1296, **2020**.

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- 15) **Biswanath Das** (as a corresponding author), Anders Thapper, Sascha Ott, Stephen B Colbran: Structural features of molecular electrocatalysts in multi-electron redox processes for renewable energy – recent advances, *Sustainable Energy & Fuels*, 3, 2159–2175, **2019**. (Review article)
- 16) **Biswanath Das** (as a corresponding author), Mohan Bhadbhade, Anders Thapper, Chris D Ling, Stephen B Colbran: A new tri-nuclear Cu-carbonate cluster utilizing CO₂ as a C1-building block–reactive intermediates, a probable mechanism, EPR and magnetic studies, *Dalton Transaction.*, 48, 3576-3582, **2019**.
- 17) **Biswanath Das**, Afnan Al-Hunaiti, Brenda N. Sánchez-Eguía, Erica Zeglio, Serhiy Demeshko, Sebastian Dechert, Steffen Meyer, Matti Haukka, Timo Repo, Ivan Castillo, Ebbe Nordlander: Di-and tetrairon (III) μ -Oxido complexes of an N3S-Donor ligand: catalyst precursors for alkene oxidations, *Frontiers in Chemistry*, 7, 97, 1-12, **2019**.
- 18) Wenzhe Zang, Jeremiah Toster, **Biswanath Das**, Richard Gondosiswanto, Shiyang Liu, Paul Eggers, Chuan Zhao, Colin L. Raston, Xianjue Chen: p-Phosphonic acid calix [8] arene mediated synthesis of ultra-large, ultra-thin, single-crystal gold nanoplatelets, *Chemical Communication*, 55, 3785-3788, **2019**.
- 19) **Biswanath Das**, James N. McPherson, Stephen B. Colbran: Oligomers and macrocycles with [m]pyridine[n]pyrrole ($m + n \geq 3$) domains: Formation and applications of anion, guest molecule and metal ion complexes, *Coordination Chemistry Review*, 363, 29-56, **2018**. (Review article)
- 20) James N. McPherson, **Biswanath Das**, Stephen B. Colbran: Tridentate pyridine–pyrrolide chelate ligands: An under-appreciated ligand set with an immensely promising coordination chemistry, *Coordination Chemistry Review*, 375, 285-332, **2018**. (Review article)
- 21) **Biswanath Das**[¶], Henrik Daver[¶], Monika Pyrkosz-Bulska, Elzbieta Gumienna-Kontecka, Fahmi Himo, Ebbe Nordlander: An unsymmetric ligand with a N₅O₂ donor set and its corresponding dizinc complex: a structural and functional phosphoesterase model, *European Journal of Inorganic Chemistry*, 4004-4013, **2018**.
- 22) **Biswanath Das**, Lida Ezzedinloo, Mohan Bhadbhade, Martin Bucknall, Stephen B Colbran: Strategic design of a ruthenium catalyst for both CO₂ reduction and H₂O oxidation: the electronic influence of the co-ligands, *Chemical Communication*, 53, 10006-10009, **2017**.
- 23) **Biswanath Das**, Andreas Orthaber, Sascha Ott, Anders Thapper: Iron pentapyridyl complexes as molecular water oxidation catalysts: strong influence of a chloride ligand and pH in altering the mechanism, *ChemSusChem*, 9, 1178-1186, **2016**.
- 24) Lei wang, Lele Duan, Ram B Ambre, Quentin Daniel, Hong Chen, Junliang Sun, **Biswanath Das**, Anders Thapper, Jens Uhlig, Peter Diner, Licheng Sun: A Nickel (II) PY5 complex as an electrocatalyst for water oxidation, *Journal of Catalysis.*, 335, 72-78, **2016**.
- 25) **Biswanath Das**, Bao-Lin Lee, Erik A. Karlsson, Torbjörn Åkermark, Andrey Shatskiy, Serhiy Demeshko, Rong-Zhen Liao, Tanja M. Laine, Matti Haukka, Erica Zeglio, Ahmed F. AbdelMagied, Per E. M. Siegbahn, Franc Meyer, Markus D. Kärkäs, Eric V. Johnston, Ebbe Nordlander, BjörnÅkermark: Water oxidation catalyzed by molecular di-and nonanuclear Fe complexes: importance of a proper ligand framework, *Dalton Transactions*, 45, 13289-13293, **2016**.
- 26) Gayatri Panchbhai, Wangkheimayum Marjit Singh, **Biswanath Das**, Reuben T. Jane, Anders Thapper: Mononuclear iron complexes with tetraazadentate ligands as water oxidation catalysts, *European Journal of Inorganic Chemistry*, 20, 3262-3268, **2016**.
- 27) Henrik Daver, **Biswanath Das**, Ebbe Nordlander, Fahmi Himo: Theoretical Study of Phosphodiester hydrolysis and transesterification catalyzed by an unsymmetric biomimetic dizinc complex, *Inorganic Chemistry*, 55, 1872-1882, **2016**.
- 28) **Biswanath Das**, Andreas Orthaber, Sascha Ott, Anders Thapper: Water oxidation catalysed by a mononuclear Co^{II} polypyridine complex; possible reaction intermediates and the role of the chloride ligand, *Chemical Communication*, 51, 13074-13077, **2015**.
- 29) **Biswanath Das**, Afnan Al-Hunaiti, Matti Haukka, Serhiy Demeshko, Steffen Meyer, Albert A. Shteinman, Franc Meyer, Timo Repo, Ebbe Nordlander: Catalytic oxidation of alkanes and alkenes by H₂O₂ with a μ -Oxido Diiron(III) complex as catalyst/catalyst precursor, *European Journal of Inorganic Chemistry*, 21, 3590-3601, **2015**.

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- 30) **Biswanath Das**, Henrik Daver, Monika Pyrkosz-Bulska, Elke Persch, Suman K Barman, Rabindranath Mukherjee, Elzbieta Gumienna-Kontecka, Martin Jarenmark, Fahmi Himo, Ebbe Nordlander: A dinuclear zinc (II) complex of a new unsymmetric ligand with an N5O2 donor set; A structural and functional model for the active site of zinc phosphoesterases, *Journal of Inorganic Biochemistry*, 132, 6-17, **2014**.
- 31) **Biswanath Das**, Henrik Daver, Amrendra Singh, Reena Singh, Matti Haukka, Serhiy Demeshko, Franc Meyer, George Lisensky, Martin Jarenmark, Fahmi Himo, Ebbe Nordlander: A heterobimetallic Fe^{III}Mn^{II} complex of an unsymmetrical dinucleating ligand: a structural and functional model complex for the active site of purple acid phosphatase of sweet potato, *European Journal of Inorganic Chemistry*, 13, 2204-2212, **2014**.
- 32) **Biswanath Das**, Matti Haukka, Ebbe Nordlander: (μ -Acetato- κ 2O: O') [μ -2, 6-bis ({bis [(pyridin-2-yl- κ N) methyl] amino- κ N} methyl)-4-methylphenolato- κ 2O: O] (methanol- κ O) dizinc bis (perchlorate), *Acta Crystallogr. Sect. E*, 70, m120 - m121, **2014**.
- 33) Vadapalli Chandrasekhar, Mrituanjay D.Pandey, **Biswanath Das**, Bani Mahanti, Kandasamy Gopal, Ramachandran Azhakar: Synthesis, structure and photo-physical properties of phosphorus-supported fluorescent probes, *Tetrahedron*, 67, 6917-6926, **2011**.
- 34) Vadapalli Chandrasekhar, Mrituanjay D.Pandey, **Biswanath Das**, Bani Mahanti, Tapas Senapati: A phosphorus-supported coumarin-containing ligand as a fluorescence probe for detection of Cu (II) and Ag (I) ions, *Indian Journal of Chemistry*, A50, 453-458, **2011**.

Conference papers

- 35) **Biswanath Das**, Andreas Orthaber, Sascha Ott, Anders Thapper *J Biol Inorg Chem.* (18th International Conference on Biological Inorganic Chemistry (ICBIC)), 22, S259-S259, **2017**.
- 36) Mainak Mitra, **Biswanath Das**, Afnan Al-Hunaiti, Matti Haukka, Serhiy Demeshko, Steffen Meyer, Julio Lloret-Fillol, Miquel Costas, Franc Meyer, Timo Repo, Ebbe Nordlander *J Biol Inorg Chem.* (12th European on Biological Inorganic Chemistry (EuroBIC)), 19, S727-S728, **2014**.

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Patent:

- (i) "System, Electrode, and Method for H₂ generation from Water" (Ansökningsnummer SE 2100177-1) **2022**
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