

List of publications:

1. Tuning the Type 1 Reduction Potential of Multicopper Oxidases: Uncoupling the Effects of Electrostatics and H-Bonding to Histidine Ligands
Asmita Singha, Alina Sekretareva, Lizhi Tao, Hyeongtaek Lim, Yang Ha, Augustin Braun, Stephen M. Jones, Britt Hedman,§ Keith O. Hodgson, R. David Britt, Daniel J. Kosman*, Edward I. Solomon*
J. Am. Chem. Soc., **2023**, 145, 24, 13284–13301
[<https://doi.org/10.1021/jacs.3c03241>]
2. Oxygen Reduction by Iron Porphyrins with Covalently Attached Pendent Phenol and Quinol.
Asmita Singha, Arnab Mondal, Abhijit Nayek, Somdatta Ghosh Dey, and Abhishek Dey*
J. Am. Chem. Soc., **2020**, 142, 52 21810–21828
[<https://doi.org/10.1021/jacs.0c10385>]
3. Resonance Raman Spectroscopy and Density Functional Theory Calculations on Ferrous Porphyrin Dioxygen Adducts with Different Axial Ligands: Correlation of Ground State Wave Function and Geometric Parameters with Experimental Vibrational Frequencies
Asmita Singha, Pradip Kumar Das, and Abhishek Dey*
Inorg. Chem., **2019**, 58, 16, 10704–10715
[<https://doi.org/10.1021/acs.inorgchem.9b00656>]
4. Mechanism of Reduction of Ferric Porphyrins by Sulfide: Identification of a Low Spin $\text{Fe}^{\text{III}} - \text{SH}$ Intermediate
Kaustuv Mittra,[#] **Asmita Singha**,[#] and Abhishek Dey*
Both the authors contributed equally.
Inorg. Chem., **2017**, 56, 7, 3916 – 3925
[<https://doi.org/10.1021/acs.inorgchem.6b02878>]
5. Hydrogen atom abstraction by synthetic heme ferric superoxide and hydroperoxide species
Asmita Singha and Abhishek Dey*
Chem. Commun., **2019**, 55, 5591-5594
[<https://doi.org/10.1039/C9CC01423C>]
6. Effect of hydrogen bonding on innocent and noninnocent axial ligands bound to iron porphyrins
Asmita Singha, Kaustuv Mittra and Abhishek Dey*
Dalton Trans., **2019**, 48, 7179-7186
[<https://doi.org/10.1039/C8DT03852J>]
7. Nitrogen hybridization controls peroxo-oxo equilibrium in ethylenediamine bound binuclear $[\text{Cu}_2\text{O}_2]$ complexes
Asmita Singha, Atanu Rana, Abhishek Dey*
Inorganica Chimica Acta, **2019**, 487, 63-69
[<https://doi.org/10.1016/j.ica.2018.11.026>]

8. Second sphere control of spin state: Differential tuning of axial ligand bonds in ferric porphyrin complexes by hydrogen bonding
Kaustuv Mittra, Kushal Sengupta, **Asmita Singha**, Sabyasachi Bandyopadhyay, Sudipta Chatterjee, Atanu Rana, Subhra Samanta, Abhishek Dey*
Journal of Inorganic Biochemistry, **2016**, 155, 82–91
[<https://doi.org/10.1016/j.jinorgbio.2015.11.013>]
9. Iron porphyrins with a hydrogen bonding cavity: effect of weak interactions on their electronic structure and reactivity
Kaustuv Mittra, **Asmita Singha**, and Abhishek Dey *
Dalton Trans., **2016**, 45, 18796-18802
[<https://doi.org/10.1039/C6DT03597C>]
10. Synthetic heme dioxygen adducts: electronic structure and reactivity
Asmita Singha, Kaustuv Mittra and Abhishek Dey*
Trends in Chemistry, **2022**, 4, 1, 15-31
[<https://doi.org/10.1016/j.trechm.2021.10.008>]
11. Tailor made iron porphyrins for investigating axial ligand and distal environment contributions to electronic structure and reactivity
Sk Amanullah, **Asmita Singha**, Abhishek Dey*
Coordination Chemistry Reviews, **2019**, 386, 183–208
[<https://doi.org/10.1016/j.ccr.2019.01.021>]
12. Bioinspired Electrocatalysis for the Oxygen Reduction Reaction.
Abhishek Dey*, **Asmita Singha**
Encyclopedia of interfacial chemistry: surface science and electrochemistry, **2018**, 373-383
13. Interplay of Electronic Cooperativity and Exchange Coupling in Regulating the Reactivity of Diiron(IV)-oxo Complexes towards C–H and O–H Bond Activation
Dr. Azaj Ansari, Mursaleem Ansari, **Asmita Singha**, Prof. Gopalan Rajaraman*
Chem. Eur. J., **2017**, 23, 10110 – 10125
[<https://doi.org/10.1002/chem.201701059>]
14. Oxygen reduction reaction by metalloporphyrins
Kaustuv Mittra, Subhra Samanta, **Asmita Singha**, Kushal Sengupta, Sudipta Chatterjee
Oxygen Reduction Reaction: Fundamentals, Materials, and Applications, **2022**, pp. 45–77