

## List of publications: Dr. Kushal Sengupta

# - equal contribution

### 2022

- Ahmed, M. E., Chattopadhyay, S., Chatterjee, S. and **Sengupta, K.** (2022). Oxygen reduction reaction in enzymatic biofuel cells. *Oxygen Reduction Reaction, Elsevier*: 427-466. <https://www.sciencedirect.com/science/article/pii/B9780323885089000082>
- Mitra, K., Samanta, S., Singha, A., **Sengupta, K.** and Chatterjee, S. (2022). Oxygen reduction reaction by metalloporphyrins. *Oxygen Reduction Reaction, Elsevier*: 45-77. <https://www.sciencedirect.com/science/article/pii/B9780323885089000033>

### 2020

- Chatterjee, S. and **Sengupta, K.** (2020). Carbon-based electrodes for direct methanol fuel cells. *Direct Methanol Fuel Cell Technology, Elsevier*: 135 - 176. <https://www.sciencedirect.com/science/article/pii/B9780128191583000069>
- Jung, W., **Sengupta, K.**, Wendel, B. M., Helmann, J. D. and Chen, P. (2020). Biphasic unbinding of a metalloregulator from DNA for transcription (de) repression in Live Bacteria. *Nucleic Acids Research* 48(5), 2199-2208. <https://academic.oup.com/nar/article/48/5/2199/5718257>.
- Fu, B.#, **Sengupta, K.**#, Genova, L. A.#, Santiago, A. G., Jung, W., Krzemiński, Ł., Chakraborty, U. K., Zhang, W. and Chen, P. (2020). Metal-induced sensor mobilization turns on affinity to activate regulator for metal detoxification in live bacteria. *Proceedings of the National Academy of Sciences* 117(24), 13248-13255. <https://www.pnas.org/doi/abs/10.1073/pnas.1919816117>.

### 2018

- Sarkar, A., **Sengupta, K.**, Chatterjee, S., Seal, M., Faller, P., Dey, S. G. and Dey, A. (2018). Metal Binding to A $\beta$  Peptides Inhibits Interaction with Cytochrome c: Insights from Abiological Constructs. *ACS Omega* 3(10), 13994-14003. <https://www.ncbi.nlm.nih.gov/pubmed/31458095>.

### 2017

- Chatterjee, S., **Sengupta, K.**, Mondal, B., Dey, S. and Dey, A. (2017). Factors Determining the Rate and Selectivity of 4e<sup>-</sup>/4H<sup>+</sup> Electrocatalytic Reduction of Dioxygen by Iron Porphyrin Complexes. *Accounts of chemical research* 50(7), 1744-1753. <https://pubs.acs.org/doi/full/10.1021/acs.accounts.7b00192>

### 2016

- Sengupta, K.**#, Chatterjee, S.# and Dey, A. (2016). Catalytic H<sub>2</sub>O<sub>2</sub> Disproportionation and Electrocatalytic O<sub>2</sub> Reduction by a Functional Mimic of Heme Catalase: Direct Observation of Compound O and Compound I in Situ. *ACS Catalysis* 6(3), 1382-1388. <https://pubs.acs.org/doi/full/10.1021/acscatal.5b02668>
- Sengupta, K.**, Chatterjee, S. and Dey, A. (2016). In Situ Mechanistic Investigation of O<sub>2</sub> Reduction by Iron Porphyrin Electrocatalysts Using Surface-Enhanced Resonance Raman Spectroscopy Coupled to Rotating Disk Electrode (SERRS-RDE) Setup. *ACS Catalysis* 6(10), 6838-6852. <https://pubs.acs.org/doi/full/10.1021/acscatal.6b01122>
- Mukherjee, S., **Sengupta, K.**, Bandyopadhyay, S. and Dey, A. (2016). Bio-inspired Electrodes. *Handbook of Porphyrin Science with Applications to Chemistry* 43, 89-177. [https://www.worldscientific.com/doi/abs/10.1142/9789813149632\\_0002?cookieSet=1](https://www.worldscientific.com/doi/abs/10.1142/9789813149632_0002?cookieSet=1)

- Mitra, K., **Sengupta, K.**, Singha, A., Bandyopadhyay, S., Chatterjee, S., Rana, A., Samanta, S. and Dey, A. (2016). Second sphere control of spin state: Differential tuning of axial ligand bonds in ferric porphyrin complexes by hydrogen bonding. *Journal of inorganic biochemistry* 155, 82-91. <https://www.ncbi.nlm.nih.gov/pubmed/26638009>.
- Chatterjee, S.#, **Sengupta, K.#**, Bandyopadhyay, S. and Dey, A. (2016). Ammonium tetrathiomolybdate as a novel electrode material for convenient tuning of the kinetics of electrochemical O<sub>2</sub> reduction by using iron–porphyrin catalysts. *Journal of Materials Chemistry A* 4(18), 6819-6823. <https://pubs.rsc.org/en/content/articlehtml/2016/ta/c5ta10544g>

## 2015

- Chatterjee, S., **Sengupta, K.**, Hematian, S., Karlin, K. D. and Dey, A. (2015). Electrocatalytic O<sub>2</sub>-Reduction by Synthetic Cytochrome c Oxidase Mimics: Identification of a “Bridging Peroxo” Intermediate Involved in Facile 4e<sup>-</sup>/4H<sup>+</sup> O<sub>2</sub>-Reduction. *Journal of the American Chemical Society* 137(40), 12897-12905. <https://pubs.acs.org/doi/full/10.1021/jacs.5b06513>
- Chatterjee, S., **Sengupta, K.**, Samanta, S., Das, P. K. and Dey, A. (2015). Concerted Proton–Electron Transfer in Electrocatalytic O<sub>2</sub> Reduction by Iron Porphyrin Complexes: Axial Ligands Tuning H/D Isotope Effect. *Inorganic chemistry* 54(5), 2383-2392. <https://www.ncbi.nlm.nih.gov/pubmed/25695312>.

## 2014

- Bandyopadhyay, S., Rana, A., Mitra, K., Samanta, S., **Sengupta, K.** and Dey, A. (2014). Effect of Axial Ligand, Spin State, and Hydrogen Bonding on the Inner-Sphere Reorganization Energies of Functional Models of Cytochrome P450. *Inorganic chemistry* 53(19), 10150-10158. <https://pubs.acs.org/doi/full/10.1021/ic501112a>
- Santra, R. C.#, **Sengupta, K.#**, Dey, R., Shireen, T., Das, P., Guin, P. S., Mukhopadhyay, K. and Das, S. (2014). X-ray crystal structure of a Cu (II) complex with the antiparasitic drug tinidazole, interaction with calf thymus DNA and evidence for antibacterial activity. *Journal of Coordination Chemistry* 67(2), 265-285. <https://www.tandfonline.com/doi/abs/10.1080/00958972.2013.879647?cookieSet=1>
- **Sengupta, K.**, Chatterjee, S., Mukherjee, S., Dey, S. G. and Dey, A. (2014). Heme bound amylin self-assembled monolayers on an Au electrode: an efficient bio-electrode for O<sub>2</sub> reduction to H<sub>2</sub>O. *Chemical Communications* 50(29), 3806-3809. <https://pubs.rsc.org/en/content/articlehtml/2014/cc/c3cc49571j>
- **Sengupta, K.**, Chatterjee, S., Pramanik, D., Dey, S. G. and Dey, A. (2014). Self-assembly of stable oligomeric and fibrillar aggregates of Aβ peptides relevant to Alzheimer's disease: morphology dependent Cu/heme toxicity and inhibition of PROS generation. *Dalton Transactions* 43(35), 13377-13383. <https://pubs.rsc.org/en/content/articlehtml/2014/dt/c4dt01991a>

## 2013

- **Sengupta, K.**, Chatterjee, S., Samanta, S., Bandyopadhyay, S. and Dey, A. (2013). Resonance Raman and electrocatalytic behavior of thiolate and imidazole bound iron porphyrin complexes on self-assembled monolayers: Functional modeling of cytochrome P450. *Inorganic chemistry* 52(4), 2000-2014. <https://pubs.acs.org/doi/full/10.1021/ic302369v>

- **Sengupta, K.**, Chatterjee, S., Samanta, S. and Dey, A. (2013). Direct observation of intermediates formed during steady-state electrocatalytic O<sub>2</sub> reduction by iron porphyrins. *Proceedings of the National Academy of Sciences* 110(21), 8431-8436. <https://www.pnas.org/doi/abs/10.1073/pnas.1300808110>
- Chatterjee, S., **Sengupta, K.**, Bhattacharyya, S., Nandi, A., Samanta, S., Mitra, K. and Dey, A. (2013). Photophysical and ligand binding studies of metalloporphyrins bearing hydrophilic distal superstructure. *Journal of Porphyrins and Phthalocyanines* 17(03), 210-219. <https://www.worldscientific.com/doi/abs/10.1142/S1088424613500119>
- Chatterjee, S., **Sengupta, K.**, Dey, S. and Dey, A. (2013). Ammonium Tetrathiomolybdate: A Versatile Catalyst for Hydrogen Evolution Reaction from Water under Ambient and Hostile Conditions. *Inorganic chemistry* 52(24), 14168-14177. <https://pubs.acs.org/doi/full/10.1021/ic402056k>
- Chatterjee, S., **Sengupta, K.**, Samanta, S., Das, P. K. and Dey, A. (2013). Electrocatalytic O<sub>2</sub> Reduction Reaction by Synthetic Analogues of Cytochrome P450 and Myoglobin: In-Situ Resonance Raman and Dynamic Electrochemistry Investigations. *Inorganic chemistry* 52(17), 9897-9907. <https://www.ncbi.nlm.nih.gov/pubmed/23961832>.
- Mondal, B., **Sengupta, K.**, Rana, A., Mahammed, A., Botoshansky, M., Dey, S. G., Gross, Z. and Dey, A. (2013). Cobalt Corrole Catalyst for Efficient Hydrogen Evolution Reaction from H<sub>2</sub>O under Ambient Conditions: Reactivity, Spectroscopy, and Density Functional Theory Calculations. *Inorganic chemistry* 52(6), 3381-3387. <https://pubs.acs.org/doi/full/10.1021/ic4000473>
- Samanta, S., Das, P. K., Chatterjee, S., **Sengupta, K.**, Mondal, B. and Dey, A. (2013). O<sub>2</sub> Reduction Reaction by Biologically Relevant Anionic Ligand Bound Iron Porphyrin Complexes. *Inorganic chemistry* 52(22), 12963-12971. <https://www.ncbi.nlm.nih.gov/pubmed/24171513>.
- Samanta, S.<sup>#</sup>, Mitra, K.<sup>#</sup>, **Sengupta, K.**, Chatterjee, S. and Dey, A. (2013). Second Sphere Control of Redox Catalysis: Selective Reduction of O<sub>2</sub> to O<sub>2</sub><sup>-</sup> or H<sub>2</sub>O by an Iron Porphyrin Catalyst. *Inorganic chemistry* 52(3), 1443-1453. <https://pubs.acs.org/doi/full/10.1021/ic3021782>

## 2012

- Pramanik, D.<sup>#</sup>, **Sengupta, K.**<sup>#</sup>, Mukherjee, S., Dey, S. G. and Dey, A. (2012). Self-assembled monolayers of Aβ peptides on Au electrodes: an artificial platform for probing the reactivity of redox active metals and cofactors relevant to Alzheimer's disease. *Journal of the American Chemical Society* 134(29), 12180-12189. <https://pubs.acs.org/doi/full/10.1021/ja303930f>
- Mitra, K., Chatterjee, S., Samanta, S., **Sengupta, K.**, Bhattacharjee, H. and Dey, A. (2012). A hydrogen bond scaffold supported synthetic heme Fe III–O<sub>2</sub><sup>-</sup> adduct. *Chemical Communications* 48(85), 10535-10537. <https://pubs.rsc.org/en/content/articlehtml/2012/cc/c2cc35162e>
- Mukherjee, S., **Sengupta, K.**, Das, M. R., Jana, S. S. and Dey, A. (2012). Site-specific covalent attachment of heme proteins on self-assembled monolayers. *Journal of Biological Inorganic Chemistry* 17(7), 1009-1023. <https://www.ncbi.nlm.nih.gov/pubmed/22760676>.
- Samanta, S., **Sengupta, K.**, Mitra, K., Bandyopadhyay, S. and Dey, A. (2012). Selective four electron reduction of O<sub>2</sub> by an iron porphyrin electrocatalyst under fast and slow electron fluxes. *Chemical Communications* 48(61), 7631-7633. <https://www.ncbi.nlm.nih.gov/pubmed/22737689>