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PROFESSIONAL EXPERIENCES

- 01/11/2024-present CNRS Researcher (CR CN) at Institut des Sciences Moléculaires de Marseille (iSm2), Aix-Marseille University, France
- 01/12/2022-31/10/2024 SNSF Postdoctoral Researcher at ETH Zurich, Switzerland
- 09/09/2021-08/11/2022 Postdoctoral Researcher at CEA Paris-Saclay, France
- 19/07/2021-08/09/2021 Research Associate (RA), funded by IACS institute fellowship programme
- 01/08/2019-05/07/2021 Senior Research Fellow (SRF), funded by IACS institute fellowship programme
- 01/08/2016-31/07/2019 SRF; funded by Council of Scientific & Industrial Research (CSIR), India
- 08/08/2014-31/07/2016 Junior Research Fellow (JRF), funded by CSIR, India
- 17/07/2013-10/05/2014 Year-long Master's Project, funded by Indian Institute of Technology (IIT), Kharagpur
- 15/05/2013-16/07/2013 Summer Internship, funded by DST-INSPIRE scholarship programme, Department of Science and Technology (DST), India

EDUCATION

- 08/08/2014-05/07/2021 **Ph.D.**, Inorganic Chemistry
University of Calcutta
Thesis Title: *Understanding Nature's Choice Of Macrocyclic Porphyrinoids For Low Valent Chemistry*
Ph.D. Advisor: **Prof. Abhishek Dey**, School of Chemical Sciences, IACS, Kolkata
- 16/07/2012-10/05/2014 **M.Sc.**, Chemistry
Year-Long Master's Project Thesis Title: *Developing Vinyl Functionalized Amphiphilic Pyridine Based Monomer to Explore Multifunctional Side-Chain Metallopolymers*
Advisor: **Dr. Sanjib K Patra**, Department of Chemistry, IIT, Kharagpur, India
- 07/07/2009-06/07/2012 **B.Sc.**, Chemistry
Department of Chemistry and Biochemistry, Presidency College, Kolkata, India

ACADEMIC ACHIEVEMENTS**Oral and Invited Presentations**

- Delivered a "Oral Lecture" at the 30th International Conference on Organometallic Chemistry (ICOMC 2024) at Agra, India, 2024
- Delivered a "Short Invited Lecture" at the International Symposium On Frontiers In Sustainable Catalysis and Organometallics (FISCO 2024) at MNIT Jaipur, India, 2024
- Delivered a "Flash presentation" at GDR Solar Fuels Symposium at Frejus, France, 2022
- Delivered a "Flash presentation" at electronic Biological Inorganic Chemistry meeting (eBIC), 2021
- Delivered "Invited lecture" at Royal Society of Chemistry Inorganic Reaction Mechanisms Group (IRMG) 50th Anniversary Virtual Symposium, 2020
- Delivered a "Flash presentation" at 19th International Conference on Biological Inorganic Chemistry (ICBIC-19) at Interlaken, Switzerland, 2019
- Delivered "Invited lecture" at National Chemistry Scholars' Colloquium (NCSC-2019) at IISER-Kolkata
- Delivered "Invited lecture" at 68th conference of Japan Society of Coordination Chemistry at Sendai, Japan

Prizes and Awards

- Swiss National Science Foundation (SNSF) Postdoctoral Fellowship, 2022
- Awarded Chemistry Europe Best Poster Prize in GDR Solar Fuels Symposium 2022, awarded by Wiley: 2022

- Awarded Chemical Science Outstanding Poster Prize in Chemical Science Symposium 2021, awarded by Royal Society of Chemistry: 2021
- Best Poster Award in International Conference on Recent Trends in Catalysis (RTC2020) awarded by Catalysis Science & Technology, RSC: 2020
- Graduated ACS Reviewer Lab: 2019
- Best Poster Award in 43rd International Conference on Coordination Chemistry (ICCC2018) awarded by Magnetochemistry: 2018
- Best Poster Award in Modern Trends in Inorganic Chemistry (MTIC-XVII) awarded by ACS OMEGA: 2017
- International Travel Grant from DST-SERB (Govt. of India) to attend Frontiers in Metallo-biochemistry Symposium and Bioinorganic Workshop at Pennsylvania State University: 2018
- International Travel Grant from CSIR (Govt. of India) and IACS to attend 19th International Conference on Biological Inorganic Chemistry (ICBIC-19) at Interlaken, Switzerland: 2019
- Received the Innovation in Science Pursuit for Inspired Research (INSPIRE) scholarship awarded by the Department of Science & Technology, India for being among the top 1% in both 10th and 12th Standard Board Examinations: 2009-2014
- Awarded a scholarship from Sitaram Jindal Foundation for excellent performance in 12th Board exam: 2009
- Awarded a Scholarship from Govt. of West Bengal for good performance in 10th Board exam: 2007
- Received 3rd and 1st prize from West Bengal State Coordination Committee for excellent performance in 10th and 12th Board exams respectively: 2007, 2009

Funding/Grant received

- SNSF Swiss Postdoctoral Fellowship from Swiss National Science Foundation: 01/12/2022-31/11/2024
- Post-doctoral Fellowship from CEA Paris-Saclay: 09/09/2021-08/11/2022
- Research Associate Fellowship from IACS Institute Fellowship Programme: 19/07/2021-09/09/2021
- Senior Research Fellowship from IACS Institute Fellowship Programme: 01/08/2019-31/03/2021
- Senior Research Fellowship (File No. 09/080(0931)/2014-EMR-I) from CSIR, Govt. of India: 01/08/2016-31/07/2019
- Junior Research Fellowship (File No. 09/080(0931)/2014-EMR-I) from CSIR, Govt. of India: 08/08/2014-31/07/2016
- Summer Research Internship Fellowship from DST-INSPIRE (File No. 574/2009), Govt. of India: 15/05/2013-16/07/2013
- International Travel Grant from DST-SERB, Govt. of India (File No. ITS/2018/000868): 2018
- International Travel Grant from CSIR, Govt. of India (File No. TG/10662/19-HRD): 2019
- International Travel Grant from IACS, Kolkata (OM No. 1.21835B dated 04.06.2019): 2019

National-Level Examination track-record

- Qualified Graduate Aptitude Test in Engineering (GATE), 2014; All India Rank: 26
- Qualified National Eligibility Test (NET), 2014; All India Rank: 44
- Qualified Joint Admission Test for M.Sc. (JAM), 2012; All India Rank: 72
- Ranked top 1.5% in state Joint Entrance Examination (JEE): 2009
- Ranked top 1.5% in state ranking of All India Engineering Entrance Examination (AIEEE): 2009
- Ranked 7th in the entrance examination for the Integrated Ph.D. program at IACS, Kolkata: 2012

Conference and Workshop attended

- GDR Solar Fuels Symposium at Frejus, France: 2022
- 44th International Conference on Coordination Chemistry at Rimini, Italy: 2022
- European Biological Inorganic Chemistry Conference at Grenoble, France: 2022
- Chemical Science Symposium: 2021
- Electronic Biological Inorganic Chemistry meeting (eBIC): 2021
- 50th Anniversary Virtual Symposium by Royal Society of Chemistry Inorganic Reaction Mechanisms Group (IRMG): 2020
- Virtual LatinXChem: 2020
- 1st Virtual International Symposium on C–H Activation (ISCHA) from Georg-August-Universität Göttingen, Germany: 2020
- Virtual Global Inorganic Discussion Weekday (GIDW) conference from Chemical Institute of Canada: 2020
- Industry-Academia Conclave on Hydrogen and Fuel Cells at IISER Thiruvananthapuram: 2020
- International Conference on Recent Trends in Catalysis (RTC2020) at NIT Calicut: 2020

- Inorganic Discussion Meeting at IISER, Kolkata: 2020
- Indo-French Symposium on Small-Molecule Activation for Fuels and Commodity Chemicals Production-IACS: 2019
- 19th International Conference on Biological Inorganic Chemistry (ICBIC-19) at Interlaken, Switzerland: 2019
- National Chemistry Scholars' Colloquium (NCSC-2019) at IISER-Kolkata: 2019
- 43rd International Conference on Coordination Chemistry at Sendai, Japan: 2018
- 68th conference of Japan Society of Coordination Chemistry at Sendai, Japan: 2018
- Frontiers in Metallobiochemistry Symposium (Poster Presentation) and Bioinorganic Workshop organized by Pennsylvania State University: 2018
- Frontiers in Inorganic Chemistry-II (FIC-II) symposium organized by IACS: 2018
- Modern Trends in Inorganic Chemistry (MTIC-XVII) jointly organized by NCL Pune and IISER Pune-Poster Presentation: 2017
- 5th Symposium on Advanced Biological Inorganic Chemistry (SABIC-2017) jointly organized by TIFR and IACS: 2017
- 6th International Conference on Metals in Genetics, Chemical Biology and Therapeutics (ICMG-2016) organized by IISc, Bangalore- Poster Presentation-2016
- Modern Trends in Inorganic Chemistry (MTIC-XVI) organized by Jadavpur University- Poster Presentation-2015
- ACS on Campus organized by American Chemical Society at IIT Kharagpur: 2014
- Research Scholars Day at IIT Kharagpur: 2014
- International year of Chemistry organized by University Grants Commission (UGC) held at Presidency University, Kolkata and University of Calcutta: 2012

Participation in Industrial Innovation

- Industry-Academia Conclave on Hydrogen and Fuel Cells organized by DST (Govt. of India) at IISER Thiruvananthapuram-Poster presentation: 2020

Organisation of International Conferences

- 5th Symposium on Advanced Biological Inorganic Chemistry (SABIC-2017) jointly organized by TIFR and IACS; Organizing Member-Hall management, Travel, and Food: 2017
- Indo-French Symposium on Small-Molecule Activation For Fuels And Commodity Chemicals Production-IACS; Organizing Member-Hall management and Food: 2019
- Frontiers in Inorganic Chemistry-II symposium organized by IACS; Organizing Member-Food: 2018
- 15th Inter College Chemi Quiz (National) held at Presidency College, Kolkata: 2011

Supervising and Mentoring Activities

- Mentored one doctoral researcher at Prof. Ally Aukauloo and colleague's lab as a post-doc
- Mentored two doctoral researchers at Prof. Abhishek Dey's lab as a sub-group leader over four years
- Mentored six masters and project students at Prof. Abhishek Dey's lab as a sub-group leader

Reviewing Activities (Independent)

- Journal of the American Chemical Society (ACS; IF: 14.4)
- Small (Wiley; IF: 13.3)
- ACS Catalysis (ACS; IF: 13.08)
- Inorganic Chemistry (ACS; IF: 5.165)
- Biochemical Engineering Journal (Elsevier; IF: 3.978)
- Journal of Environmental Engineering (Elsevier; IF: 1.657)

Membership

- Swiss Chemical Society (2022-2024)
- American Chemical Society (2021-2022)
- Society of Biological Inorganic Chemistry (2018-2019)

Areas of Responsibilities and Extra-Curricular Activities

- Electrochemistry, UV-Vis spectrophotometer, and Glove box responsible at Copéret group: 2022-2024
- Student-in-charge of the central EPR facility from the CSS, IACS: 2018-2021
- Student-in-charge of the central CHN analyzer from the CSS, IACS: 2016-2017
- Independent reviewer for the peer-reviewed journal: ACS Catalysis, ACS (IF: 13.08); Inorganic Chemistry (ACS; IF: 5.165); Biochemical Engineering Journal, Elsevier (IF: 3.47); Journal of Environmental Engineering (Elsevier; IF: 1.657)

- Mess-Secretary at Govt. Eden Hindu Hostel (Undergrad Hostel): 2011
- Winner of several prizes in academics as well as sports such as: awarded 1st prize in Inter-School Essay competition at Sub-Division level: 2007; awarded 1st prize in Inter-School Quiz Competition held at Purba Barasat Adarsha Vidyapeeth: 2007; awarded 1st prize in Inter-School Quiz Competition held at Banamalipur Priyanath Institution: 2009; awarded 3rd prize in Inter-School Quiz Competition on Aranya Saptaha (Forest Week) from Govt. of West Bengal: 2004

RESEARCH INTERESTS

- Synthetic Inorganic Chemistry: synthesis of core-modified metallo-porphyrinoids
- Thorough study of the reactivity of the synthetic metallo-porphyrinoids and the intermediates involved in photo- and electrochemical transformations, relevant to biology and energy applications
- Synthesis, characterization, and reactivity of functionalized heterogeneous support
- Inventing Artificial metalloenzymes through Directed-Evolution and their applications in small-molecule activation with the elucidation of the reaction pathways to develop the functional catalytic system

SKILLS AND EXPERIENCES

- Hands-on experience in handling air and moisture-sensitive reactions using standard Schlenk and Glovebox techniques
- Expertise in synthesis and purification utilizing column chromatography, TLC, etc.
- Isolation and characterization of reactive intermediates for the reaction of synthetic model complexes by spectroscopic techniques (*NMR*, *FTIR*, *UV-vis*, *resonance Raman*, *EPR*, *transient-absorption and rapid-flash photolysis*, etc.), analytical tools (*GC-MS*, *GC-TCD*, *Ion Chromatography*) and theoretical calculations (*Density Functional Theory*) to support the experimental data using Gaussian 03 and Gaussian 16
- Electrocatalysis in both homogeneous and heterogeneous conditions
- Homogeneous photo-catalysis
- Understanding solid supports through *Surface Organo-Metallic Chemistry (SOMC)* and characterization by *solid-state NMR*

LIST OF PUBLICATIONS

- [Tuning the thermodynamic onset potential of electrocatalytic O₂ reduction reaction by synthetic iron-porphyrin complexes](#), Sk Amanullah, Pradip Kumar Das, Subhra Samanta and Abhishek Dey*, *Chem. Commun.*, **2015**, 51, 10010-10013.
- [Molecular electrocatalysts for the oxygen reduction reaction](#), Subal Dey, Biswajit Mondal, Sudipta Chatterjee, Atanu Rana, Sk Amanullah, Abhishek Dey*, *Nat. Rev. Chem.*, **2017**, 1, 98.
- [Tailor made iron porphyrins for investigating axial ligand and distal environment contributions to electronic structure and reactivity](#), Sk Amanullah, Asmita Singha, Abhishek Dey*, *Coord. Chem. Rev.*, **2019**, 386, 183-208.
- [Synthetic Iron Porphyrins for Probing the Differences in the Electronic Structures of Heme a₃, Heme d, and Heme d₁](#), Sk Amanullah, Paramita Saha, Rajat Saha, and Abhishek Dey*, *Inorg. Chem.*, **2019**, 58 (1), 152-164.
- [Formally Ferric Heme Carbon Monoxide Adduct](#), Atanu Rana†, Sk Amanullah†, Pradip K. Das†, Ashley B. McQuarters‡, Nicolai Lehnert*‡, and Abhishek Dey*†, *J. Am. Chem. Soc.*, **2019**, 141 (13), 5073–5077.
- [A bi-functional cobalt-porphyrinoid electrocatalyst: balance between overpotential and selectivity](#), Sk Amanullah, Abhishek Dey*, *J. Biol. Inorg. Chem.*, **2019**, 24, 437–442.
- [The role of porphyrin peripheral substituents in determining the reactivities of ferrous nitrosyl species](#), Sk Amanullah, Abhishek Dey*, *Chem. Sci.*, **2020**, 11, 5909–5921. (selected **2020 ChemSci Pick of the Week Collection** and **2020 Chemical Science HOT Article Collection**)
- [Electrocatalytic Reduction of Nitrogen to Hydrazine Using a Trinuclear Nickel Complex](#), Paramita Saha, Sk Amanullah, Abhishek Dey*, *J. Am. Chem. Soc.* **2020**, 142, 41, 17312–17317. Preprint available. <https://doi.org/10.26434/chemrxiv.12386144.v1>
- [Biochemical and artificial pathways for the reduction of carbon dioxide, nitrite and the competing proton reduction: effect of 2nd sphere interactions in catalysis](#), Sk Amanullah, Paramita Saha, Abhijit Nayek, Md. Estak Ahmed, Abhishek Dey*, *Chem. Soc. Rev.* **2021**, 50, 3755–3823.

- [Activating Fe\(I\) State of Iron Porphyrinoid with Second-Sphere Proton Transfer Residues for Selective Reduction of CO₂ to HCOOH via Fe\(III/II\)–COOH Intermediate\(s\)](#), Sk Amanullah[‡], Paramita Saha[‡], Abhishek Dey*, *J. Am. Chem. Soc.* **2021**, *143*, 34, 13579–13592. [[‡]equal contribution]
- [O₂ Reduction by Iron Porphyrins with Electron Withdrawing Groups: To Scale or not to Scale](#), Sk Amanullah, Paramita Saha, Abhishek Dey*, *Faraday Discuss.* **2022**, *234*, 143-158.
- [Selectivity in Electrochemical CO₂ Reduction](#), Paramita Saha, Sk Amanullah, Abhishek Dey*, *Acc. Chem. Res.* **2022**, *55*, 2, 134-144 (featured as “most-read of the 12 months collection”).
- [Recent Developments in Synthesis of Bio-Inspired Iron Porphyrins for Small Molecule Activation](#), Sk Amanullah, Paramita Saha, Abhishek Dey*, *Chem. Commun.*, **2022**, *58*, 39, 5808-5828.
- [Selective Electrocatalytic Reduction of NO to NH₃ by Iron Porphyrins at Physiologically Relevant Potentials](#), Paramita Saha, Sudip Barman, Sk Amanullah, Abhishek Dey*, *ACS Catal.* **2023**, *13*, 20, 13181–13194.
- [Second Coordination Sphere Effect Shifts CO₂ to CO Reduction by Iron Porphyrin from Fe⁰ to Fe^I](#), Sk Amanullah,* Philipp Gotico, Marie Sircoglou, Winfried Leibl, Manuel J. Llansola-Portoles, Tania Tibiletti, Annamaria Quaranta, Zakaria Halime,* and Ally Aukauloo,* *Angew. Chem.Int. Ed.* **2024**, *63*, e202314439.
- [Surface Coordination Chemistry of Graphitic Carbon Nitride from Ag Molecular Probes](#), Sk Amanullah,^a Weicheng Cao,^a Enzo Brack,^a Milivoj Plodinec,^b and Christophe Copéret^{a,*} *Angew. Chem. Int. Ed.* **2024**, e202417428. Pre-print available in ChemRxiv. <https://doi.org/10.26434/chemrxiv-2024-kmvvw>
- [Electrochemical Reduction of CO₂ to CH₃OH Catalyzed by an Iron Porphyrinoid](#), Paramita Saha, Sk Amanullah, Sudip Barman, Abhishek Dey*, *J. Am. Chem. Soc.* **2025**, *147*, 2, 1497–1507.
- Oxygen Reduction and Oxidase Activity of Thiolate Bound Iron Porphyrin Complexes: Role of Hydrogen Bonds, Sk Amanullah[‡],¹ Samir Chattopadhyay[‡],¹ Subhra Samanta^{2,3}, Nicolai Lehnert^{3,*}, Abhishek Dey^{1,*} (manuscript under revision) [[‡]equal contribution]
- Solvent Dependence of Reduction Potential of Iron Porphyrins with Axial Ligands: Modelling the Role of Protein Dielectric and Hydrogen Bonding in Tuning Fe^{III/II} E°, Pradip Kumar Das, Subhra Samanta, Sk Amanullah, Atanu Rana, Karl M Kadish*, Abhishek Dey* (manuscript under preparation)

Book Chapter(s)

- Sk Amanullah, Chandradeep Ghosh, Somdatta Ghosh Dey*, Abhishek Dey*, [Fundamentals of Porphyrin Chemistry: A 21st Century Approach \(Volume 1\), Chapter 16, Page: 709-722](#). WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim, ISBN 978-1-119-12931-8. doi.org/10.1002/9781119129301.ch16