



DEBSENA CHAKRABORTY

Curriculum vitae

Prime Minister Research Fellow
Department of Inorganic and Physical
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ACADEMIC INFORMATION

- 2019-Present:** PhD in Chemistry, Prof. P.S. Mukherjee Lab, Department of Inorganic & Physical Chemistry, Indian Institute of Science, Bangalore, Karnataka.
- 2017-2019:** M.S. in Chemistry, Indian Institute of Science, Bangalore, Karnataka. (CGPA: 8.7)
- 2014-2017:** B.Sc. in Chemistry, Hooghly Mohsin College, West Bengal. (72.9 %)
- 2014-2002:** Don Bosco School, Bandel, West Bengal. (ISC 92.25%, ICSE 92.2%)

TEACHING EXPERIENCE

- August 2019-December 2019: Worked as Teaching Assistant (T.A.) for the CD212 course "INORGANIC CHEMISTRY: MAIN GROUP AND COORDINATION CHEMISTRY" taken by Prof. E. D. Jemmis and Prof. A. Mondal in IISc, Bangalore.
- August 2020 - April 2022: Worked as Teaching Assistant (T.A.) for Kendriya Vidyalaya IISc, Bangalore.
- September 2022 - December 2022: Worked as Teaching Assistant (T.A.) in the Department of Chemistry Laboratory (CHM_1081) at Manipal Institute of Education (MAHE).

TECHNICAL SKILLS

- Expertise in synthesis of inorganic and organic molecules using Schlenk Technique.
- Operating NMR Instrument (Bruker 400 MHz and 500 MHz) for recording and analyzing 1D (¹H, ¹³C) and 2D (COSY, NOESY) NMR data. Detailed in-dept analysis of complex ESI-MS of inorganic and organic molecules. Molecular Modeling, Structure Optimization and Energy Calculation using Gaussian software. Crystal Structure solving using WinGX.
- Programming Language: Python, JAVA, C++, and Web Page designing, editing and digital art.

PUBLICATION

Google Scholar: <https://scholar.google.com/citations?user=QnJvY78AAAAJ&hl=en>

- 7) Cavity-Shape-Dependent Divergent Chemical Reaction inside Aqueous Pd₆L₄ Cages.
D. Chakraborty, S. Ali, P. Choudhury, N. Hickey, P. S. Mukherjee.
J. Am. Chem. Soc. **2023**, *145*, 26973.
- 6) Structural Switching of a Distorted Trigonal Metal-Organic Cage to a Tetragonal Cage and Singlet Oxygen Mediated Oxidations.
R. Banerjee, **D. Chakraborty**, W.-T. Jhang, Y.-T. Chan and P. S. Mukherjee.
Angew. Chem. Int. Ed., **2023**, e202305338.
- 5) Molecular Barrels as Potential Hosts: From Synthesis to Applications.
R. Banerjee*, **D. Chakraborty***, P. S. Mukherjee. [* = Equal Contribution]
J. Am. Chem. Soc. **2023**, *145*, 7692.
- 4) Selective separation of planar and non-planar hydrocarbons using an aqueous Pd₆ interlocked cage.
D. Chakraborty, R. Saha, J. K. Clegg, P. S. Mukherjee.
Chem. Sci., **2022**, *13*, 11764.
- 3) Recent Trends in Organic Cage Synthesis: Push Towards Water-Soluble Organic Cages.
D. Chakraborty, P. S. Mukherjee.
Chem. Commun., **2022**, *58*, 5558.
- 2) De Novo Approach for The Synthesis of Water-Soluble Interlocked and Non-Interlocked Organic Cages.
D. Chakraborty, R. Modak, P. Howlader, P. S. Mukherjee.
Chem. Commun. **2021**, *57*, 3995.
- 1) Self-Assembly of a Pd₈ Macrocycle and Pd₁₂ Homochiral Tetrahedral Cages Using Poly(tetrazolate) Linkers.
P. Howlader, P. Bhandari, **D. Chakraborty**, J. K. Clegg, P.S. Mukherjee.
Inorg. Chem. **2020**, *59*, 15454.