

CURRICULUM VITAE

PROFILE

Dr. Pallab Bhandari

Assistant Professor, Chemistry

Google Scholar: <https://scholar.google.com/citations?hl=en&user=Hd95Z6EAAAAJ>

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PERSONAL DETAILS

Hometown: Kolkata, West Bengal

Nationality: Indian

Languages: English, Bengali, Hindi

CURRENT ACADEMIC POSITION

Assistant Professor

Department of Chemistry, School of Studies of Physical Science

Guru Ghasidas Vishwavidyalaya (A Central University, NAAC accredited A⁺⁺)

Bilaspur-495009, Chhattisgarh

Since: April, 2025 – Present

RESEARCH INTERESTS

- Supramolecular Chemistry
 - Covalent Organic Cages
 - Self-Assembled Metal-Organic Cages
 - Host-Guest Chemistry
 - Supramolecular Catalysis
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EDUCATION

Ph.D. (Jul 2018 – Dec 2023)

Inorganic and Physical Chemistry, Indian Institute of Science, Bangalore

Thesis Title: *Self-Assembled Hosts for Applications in Guest Binding and Catalysis*

Supervisor: Prof. Partha Sarathi Mukherjee

M.S. (Master of Science) in Chemistry (Aug 2016 – May 2018)

Indian Institute of Science, Bangalore

CGPA: 8.3 out of 10

B.Sc. (Bachelor of Science) in Chemistry (Aug 2013 - May 2016)

Ramakrishna Mission Residential College, Narendrapur, University of Calcutta

Marks: 78% (624 out of 800)

WORK EXPERIENCE

Assistant manager

Analytical R&D, Material Science Lab, Pharmaceutical Industry, Hyderabad

Jan 2024 – Mar 2025

TEACHING EXPERIENCE

Teaching assistant for UG chemistry courses

Indian Institute of Science (IISc), Bangalore

RESEARCH EXPERIENCE

- **Coordination Driven Molecular Architectures**

Self-assembly of Pd^{II}/Pt^{II} coordination barrels and uncommon host-guest chemistry of various guests inside molecular pockets.

- **Purely Covalent Organic Cage/Macrocycles**

Syntheses and applications of supramolecular organic discrete cages/macrocycles for applications in metal nanoparticle synthesis for organic catalysis and photocatalysis in heterogeneous conditions

- **Post Synthesis Modification of Unstable Cages to Stable Analogs**

Post synthesis of thermally and chemically robust amide bonded pure organic macrocycle and cage compounds for selective toxic ions sensing.

- **Synthesis of Cage Templated Ag/Pd Nanoparticles**

Heterogeneous catalysis in organic conversions and photocatalysis

- **Applications of Cage Materials in Catalysis and Host-Guest Chemistry**

Metal organic cages in guest encapsulation, molecular separation and catalysis. Covalent organic cages in catalysis and ions binding.

ACHIEVEMENTS

- Qualified IIT JAM 2016 (Joint Admission Test for M.Sc.): All India Rank 275
- Qualified Joint CSIR-UGC National Eligibility Test 2019 (NET): All India Rank 91
- Awarded Int. Ph.D. Fellowship, Indian Institute of Science, India (2016-2023)

CONFERENCES ATTENDED

Gordon Research Conference (GRC-2023) on Self-Assembly and Supramolecular Chemistry

PUBLICATIONS

1. Self-Assembly of Octanuclear Pt^{II}/Pd^{II} Coordination Barrels and Uncommon Structural Isomerization of a Photochromic Guest in Molecular Space

Pallab Bhandari, Ritwik Modak, Soumalya Bhattacharyya, Ennio Zangrando, Partha Sarathi Mukherjee*
JACS Au, **2021**, 1, 2242-2248

2. Face-Directed Tetrahedral Organic Cage Anchored Palladium Nanoparticles for Selective Homocoupling Reactions

Pallab Bhandari, Bijnaneswar Mondal, Prodip Howlader, Partha Sarathi Mukherjee*
European Journal of Inorganic Chemistry **2022**, e202100986

3. Post-Synthesis Conversion of an Unstable Imine Cage to a Stable Cage with Amide Moieties Towards Selective Receptor for Fluoride

Pallab Bhandari, Partha Sarathi Mukherjee*
Chemistry–A European Journal **2022**, e202201901

4. Nucleation of Tiny Silver Nanoparticles by Using a Tetrafacial Organic Molecular Barrel: Potential Use in Visible-Light-Triggered Photocatalysis

Bijnaneswar Mondal, **Pallab Bhandari**, Partha Sarathi Mukherjee*
Chemistry–A European Journal **2020**, 26, 15007-15015

5. Covalent Organic Cages in Catalysis

Pallab Bhandari, Partha Sarathi Mukherjee*
ACS Catalysis **2023**, 13, 6126-6143

6. Enhancing Fluorescence in Both Solution and Solid States Induced by Imine Cage Formation

Pallab Bhandari, Shakil Ahmed, Rajib Saha, Partha Sarathi Mukherjee *

Chemistry–A European Journal **2024**, e202303101

7. An Adaptable Water-Soluble Molecular Boat for Selective Separation of Phenanthrene from Isomeric Anthracene

Arppitha Baby Sainaba, Mangili Venkateswarulu, **Pallab Bhandari**, Kasun Sankalpa Athukorala Arachchige, Jack K Clegg, Partha Sarathi Mukherjee*

Journal of the American Chemical Society **2022**, 144, 7504-7513

8. Self-Assembly of a Pd₈ Macrocyclic and Pd₁₂ Homochiral Tetrahedral Cages Using Poly(tetrazolate) Linkers

Prodip Howlader, **Pallab Bhandari**, Debsena Chakraborty, Jack K Clegg, Partha Sarathi Mukherjee*

Inorganic Chemistry **2020**, 59, 15454-15459

9. Water-Soluble Pd₆L₃ Molecular Bowl for Separation of Phenanthrene from a Mixture of Isomeric Aromatic Hydrocarbons

Dharmraj Prajapati, **Pallab Bhandari**, Neal Hickey, Partha Sarathi Mukherjee*

Inorganic Chemistry **2023**, 62, 9230-9239

10. A Water-Soluble Pd₄ Molecular Tweezer for Selective Encapsulation of Isomeric Quinones and their Recyclable Extraction

Dharmraj Prajapati, **Pallab Bhandari**, Ennio Zangrando, Partha Sarathi Mukherjee*

Chemical Science **2024**, 15, 3616-3624

11. Self-Assembly of an [M₈L₂₄]¹⁶⁺ Intertwined Cube and a Giant [M₁₂L₁₆]²⁴⁺ Orthobicupola

Arppitha Baby Sainaba, Mangili Venkateswarulu, **Pallab Bhandari**, Jack K Clegg, Partha Sarathi Mukherjee*

Angewandte Chemie International Edition **2024**, 63, e202315572

12. Hydrazone-Linked Covalent Organic Framework Catalyst via Efficient Pd Recovery from Wastewater

Mahira Bashri, Sushil Kumar, **Pallab Bhandari**, Sasi,Stephen, Matthew J. O'Connor, Safa Gaber, Tina Škorjanc, Matjaž Finšgar, Gisha Elizabeth Luckachan, Blaž Belec, Emad Alhseinat, Partha Sarathi Mukherjee, and Dinesh Shetty*

ACS Appl. Mater. Interfaces **2025**, 17, 17804-17812

13. Artificial Light-Harvesting Pt(II) Amine Cage and Its Application as Security Ink

Dikshit Bokotial, **Pallab Bhandari**, Mukesh Jaisawal, Trisha Das, Gokul Raj Mini Rajendran, Moupriya Mukherjee, Sunita Kyndait, Goutam Pramanik, Suvankar Dasgupta, Aniket Chowdhury*

Chemistry–A European Journal **2025**, 31, e202500114
