

CURRICULUM VITAE

Dr. Chandan Kumar Dey

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Education

PDF	Institute of Molecular Science (ICMol), University of Valencia, Spain.
Ph.D. (Chemistry)	Weizmann Institute of Science, Rehovot, Israel.
M.Sc. (Chemistry)	National Chemical Laboratory (NCL), Pune
	Indian Institute of Technology (IIT) Kharagpur

Research Interests

- ❖ Photocatalytic and electrocatalytic reduction of CO₂.
- ❖ Synthesis of novel polyoxometalate based materials.
- ❖ Antimicrobial activity of polyoxometalate based materials
- ❖ Structure determination of small molecules and 3D structure such as, metal organic framework using single crystal X-ray diffraction.

Research/Teaching Experience

Position	Organization	Duration
Assistant Professor	COCAS, Patna	17 th July 2025 to till date
Assistant Professor	SRM University, Sikkim	7 th November 2022 to 16 th July

Experimental/Software Skills

- ❖ Single Crystal X-ray diffraction (Bruker and Oxford)
- ❖ Used several microscopic techniques (TEM, SEM, Optical microscopy).

- ❖ Data analysis and interpretation of X-ray photoelectron spectroscopy (XPS), powder X-ray diffraction (PXRD) and N₂, H₂, CO₂ Adsorption.
- ❖ Data analysis and interpretation of NMR and Elemental Analysis.
- ❖ Operational experience in spectroscopic techniques (FTIR, UV-Vis), thermogravimetric analyzer (TGA).
- ❖ Mass spectroscopy (MS) analysis
- ❖ Operational experience in gas chromatography (GC).
- ❖ Electrochemical analysis (CV, Electrolysis), working in Glovebox

Research Projects (ongoing/completed) : NIL

Research Publications/Patents

1. Effect of Nonconstituent Additive Ions on the Controlled Crystallization of Lanthanide-Based Preyssler Polyoxometalates.
Iván Gómez-Muñoz, **Chandan Dey**[#] and Eugenio Coronado. *Cryst. Growth Des.* **2023**, 23, 3544–3548 ([#]*equal contribution*)
2. Phosphate enriched polyoxometalate based ionic salts for proton conduction.
Chandan Dey, Tanay Kundu, Harshitha Barike Aiyappa, Rahul Banerjee. *RSC Adv.* **2015**, 5, 2333-2337.
3. Ligand-free one-step synthesis of {001} faceted semiconducting BiOCl single crystals and their photocatalytic activity.
Anupam Biswas, Raja Das, **Chandan Dey**, Rahul Banerjee, Pankaj Poddar. *Cryst. Growth & Design*, **2014**, 14, 236-239.
4. A high stereocontrolled asymmetric total synthesis of epimer of (+)-7-deoxypancratistatin.
Subhash P. Chavan, Sumanta Garai, **Chandan Dey**, Rajesh G. Gonnade. *Tetrahedron Letters*. **2013**, 54 (41), 5562-5566.
5. Controlled Synthesis of a Catalytically Active Hybrid Metal-Oxide Incorporated Zeolitic Imidazolate Framework (MOZIF).
Chandan Dey and Rahul Banerjee. *Chem. Commun.*, **2013**, 49 (59), 6617–6619.
6. POM Catalyzed In Situ Ligand Synthesis for Construction of Metal Complexes to Coordination Polymers.
Chandan Dey and Rahul Banerjee. *ChemPhysChem*, **2013**, 14, 1009-1015.
7. Solid phase Morphological Diversity of a Rare Vanadium Cubane(V₄O₁₆) Based Metal Organic Framework.
Chandan Dey, Raja Das, Pankaj Poddar and Rahul Banerjee. *Cryst. Growth & Design*, **2012**, 12, 12-17.
8. Reversible Phase Transformation in Proton Conducting Strandberg-type POM Based Metal Organic Material.
Chandan Dey, Tanay Kundu, and Rahul Banerjee. *Chem. Commun.*, **2012**, 48, 266–268.
9. Design and In situ Synthesis of Cu-Based Porous Framework Featuring Isolated Double Chain Magnetic Character.
Chandan Dey, Raja Das, Binoy K. Saha, Pankaj Poddar and Rahul Banerjee *Chem. Commun.*, **2011**, 47, 11008-11010.
10. Structural and Selective Gas Adsorption Studies of Polyoxometalate and

Tris(ethylenediamine) Cobalt(III) Based Ionic Crystals.

Chandan Dey, Raja Das, Pradip Pachfule, Pankaj Poddar, and Rahul Banerjee *Cryst Growth & Design*, 2011, 11, 139–146.

11. Structural Diversity in Partially Fluorinated Metal Organic Frameworks (F-MOFs) Composed of Divalent Transition Metals, 1,10-Phenanthroline, and Fluorinated Carboxylic Acid.

Pradip Pachfule, **Chandan Dey**, Tamas Panda, Kumar Vanka and Rahul Banerjee *Cryst. Growth Des.*, 2010, 10, 1351–1363

12. Structural diversity in a series of metal–organic frameworks (MOFs) composed of divalent transition metals, 4,4'-bipyridine and a flexible carboxylic acid.

Pradip Pachfule, Tamas Panda, **Chandan Dey** and Rahul Banerjee *CrystEngComm*, 2010, 12, 2381–2389.

13. Synthesis and structural comparisons of five new fluorinated metal organic frameworks (F-MOFs).

Pradip Pachfule, **Chandan Dey**, Tamas Panda and Rahul Banerjee. *CrystEngComm*, 2010, 12, 1600–1609.

Reviews:

1. Preyssler-type polyoxometalates, smallest POM with internal cavity: Synthesis, structure and function,

Chandan Dey, *Coord. Chem. Rev.* 2024, 510, 215847.

2. Polyoxometalate Clusters: Inorganic Ligands for Functional Materials.

Chandan Dey, *J Clust Sci.* 2022, 33, 1839–1856.

3. Crystalline Metal Organic Frameworks (MOFs): Synthesis, Structure and Function.

Chandan Dey, Tanay Kundu, Bishnu P. Biswal, Arijit Mallick and Rahul Banerjee. *Acta Cryst.* 2014, B70, 3-10.

Conference Publications:

1. Structure and selective gas adsorption study on POM-based ionic salts. Chandan Dey and Rahul Banerjee. *Acta Cryst.* (2011) A67, C369 [*IUCr Congress, Madrid 2011*]

Preprint:

1. Photosensitizer attached POM based hybrid material for photocatalytic CO₂ reduction.

Chandan Dey, Ronny Neumann, *ChemRxiv*, 2018, DOI: 10.26434/chemrxiv.7177892

Conferences (Participation/poster/oral)

1. “Structural and Selective Gas Adsorption Studies of Polyoxometalate and Tris(ethylenediamine) Cobalt (III) based Ionic Crystals”- at 1st CRSI ZONAL MEETING, NCL, Pune, India (May 2011).
2. ‘Structural and Selective Gas Adsorption Studies of Polyoxometalate and Tris(ethylenediamine) Cobalt (III) based Ionic Crystals’- at XX INTERNATIONAL CONFERENCE ON THE CHEMISTRY OF THE ORGANIC SOLID STATE, Bangalore, India (June, 2011).
3. ‘Structure and Selective Gas Adsorption Study on POM-Based Ionic Salts’ at International Union of Crystallography XXII Congress and General Assembly, Madrid, Spain (August 2011).
4. ‘Adsorption and Reversible Phase Transformation Studies on Polyoxometalate Based Hybrid Materials’ at 3rd Asian Conference on Coordination Chemistry, New Delhi, India,

(October 2011)

5. '*Organic Photosensitizer attached Polyoxometalate as Catalyst for Reduction of CO₂*' at Frontiers in Metal-Oxide Cluster Science IV (FMOCS IV @ PoCheMoN 2016), Newcastle, United Kingdom (July 2016)

Oral presentations in Conferences and Symposia:

'Covalently Attached Photosensitizers to Anderson Type Polyoxometalate Based Photocatalysts for CO₂ Reduction' at Frontiers in Metal Oxide Cluster Science V (FMOCS-V), Changchun, China (August 2017)

Awards/Achievements

- ❖ National Scholarship (at the end of Class VIII), Government of West Bengal, Directorate of School Education, 1997.
- ❖ Qualified IIT-JAM (IIT-Joint Admission Test) with AIR 19 in 2005.
- ❖ Merit-Cum-Means (MCM) Scholarship, IIT Kharagpur, 2007.
- ❖ Qualified GATE (Graduate Aptitude Test in Engineering) in the year of 2008.
- ❖ Awarded Junior and Senior Research Fellowship by Council of Scientific and Industrial Research (CSIR NET), India, for 5 years duration.
- ❖ Awarded Alternative and Sustainable Energy Research Initiative (AERI) postdoctoral fellowship from Weizmann Institute of Science, Israel.
- ❖ Acted as reviewer for manuscripts submitted in SCI journals (CrystEngCom, Journal of Chemical Crystallography, ChemistrySelect and Current Organocatalysis).
- ❖ Participated in the Faculty Induction Programme (FIP)-16 conducted University of Calcutta (from 6th November to 3rd December 2025) and obtained Grade 'A'.

Date: 17.08.2026

Place: Patna

(Dr. Chandan Kumar Dey)