

Dr. MANDIRA NANDI

Official Details:

Dr. Mandira Nandi

Assistant Professor of Chemistry

B. P. Poddar Institute of Management and Technology

137, VIP Rd, Mali Bagan, Poddar Vihar, Poddar Vihar, Kolkata, West Bengal 700052



Mobile no: +917003319559

Email Id: mandiranandi.chem@gmail.com

Permanent Address:

C/35 Niranjan Pally, Banskroni, Kolkata- 700070

Date of Birth: 18-11-1991

Sex: Female

Marital status: Married

Research background

June'2023-

April'2024 Project Associate II, Organic and Medicinal chemistry, Indian Institute of Chemical Biology, Kolkata

April'2021-

May'2023 Post-Doctoral RA, School of Chemical Sciences, Indian Association for the Cultivation of Science, Kolkata

2015-2020 Doctor of Philosophy in Science (Ph.D) in Supramolecular Chemistry, under the supervision of **Prof. Pradyut Ghosh**, School of Chemical Sciences, Indian Association for the Cultivation of Science, Kolkata

Title of the thesis: Development of Heteroditopic Wheels Based Pseudorotaxane, Rotaxane and Catenane

Teaching Experiences

- **Assistant Professor (B. P. Poddar Institute of Management and Technology, Feb 2025-Till date)**

Employed as an **Assistant Professor (contractual)** of **Chemistry** in the Department of Applied Science & Technology in **B. P. Poddar Institute of Management and Technology**

- **Guest Faculty (Scottish Church College, February 2023- Till Date)**

Employed as a Guest Faculty for the Master of science Programme in the Chemistry Department of **Scottish Church College, Kolkata**

➤ **Guest Faculty (JIS University, August 2020- July 2022)**

Employed as a Guest Faculty for the Bachelor of Science and Master of science Programme in the Chemistry Department of **JIS University, Kolkata**

➤ **Teaching Assistant (IACS Kolkata, 2019)**

Employed as a **Teaching Assistant (TA)** for the Bachelor's-Master's Program in the School of Chemical Sciences at **IACS**.

Academic background

- 2012-2014** **Master of Science (M.Sc.)** in Chemistry,
IIT (ISM) Dhanbad, Jharkhand 826004 (**88.5%; Gold Medalist**)
- 2009-2012** **Bachelor of Science [B.Sc. (Hons)]**, in Chemistry from Asutosh college,
University of Calcutta, West Bengal, India. (**64.5%**)
- 2007-2009** **Higher Secondary**, W.B.C.H.S.E, West Bengal, India. (**83%**)
- 2007** **Madhyamik**, W.B.B.S.E, West Bengal, India. (**82.63%**)

Awards and Achievements

- Awarded **DST-SERB ITS** to attend **Gordon Research Conference**, at Les Diablerets, VD, **Switzerland**. (**2023**).
- Best Oral presentation award "**Professor B. C. Halder Memorial Award**" in "**Recent Trends in Chemical Sciences-2022**", organized by Indian Chemical Society, IIT (ISM) Dhanbad, India.
- Best poster award in "**MTIC-XVII**", **Pune, India, 2017** on the topic "**INORGANIC CHEMISTRY**".
- Awarded **GOLD MEDAL** in M.Sc. in chemistry, IIT (ISM) Dhanbad (**2014**).
- Awarded **DST-INSPIRE FELLOWSHIP** on **2014**.
- Promotion from **Junior Research Fellow (JRF)** to **Senior Research Fellow (SRF)** on the basis of satisfactory research progress. (**2017**)
- Qualified **Graduate Aptitude Test in Engineering (GATE)**, **2015**
- Qualified **National Eligibility Test (NET)** funded by **Council of Scientific and Industrial Research (CSIR)**. (**December 2014**)
- '**AIR-1**' in **IIT (ISM) Dhanbad M.Sc. entrance exam, 2012**.

Main Skills

Instruments handled:

- UV-VIS-NIR (Perkin-Elmer)
- Spectrofluorometer (Perkin-Elmer)
- EPR Spectrometer (JEOL JES-FA200)
- NMR instrument (Bruker)
- Melting point apparatus (Labtronics)
- Isothermal Titration Calorimetry (Micro-Cal VP-ITC instrument)
- Centrifuge
- Sonicator etc.

Other Instruments used for Research

- HRMS (Micro-Cal VP-ITC instrument)
- MALDI MS
- FT-IR (Bruker and Perkin-Elmer)
- Single Crystal X-ray diffractometer (Bruker APEX-III SMART CCD)
- CHN-analyzer.
- Cyclic voltammeter (CH Instrument potentiostat model 710 D)

Computer skills:

- **Operating Systems:** Windows.
- **Software Familiar with:** MS-Office, Adobe illustrator, Adobe Photoshop, Chem Office, Origin, Masslynx (Mass processing), Mnova (NMR processing), CW-EPR (EPR processing).
- **Crystallography:** All softwares related to crystallography (APEX, SHELXTL, XSELL, PLATON and WINGX) and all softwares related to structural analyses (XP in SHELXTL and MERCURY).

Scientific skills:

- Multistep Synthesis of small organic molecules.
- Organic sample analysis and column chromatographic separation techniques.
- Basic concept on synthetic strategy for new organic compound synthesis.
- Inorganic metal compounds synthesis and analysis techniques
- Characterizations of the new compounds with different physicochemical methods

Symposia and Conferences

Poster Presentation

- *Mandira Nandi and Pradyut Ghosh*, Self-Assembly and Supramolecular Chemistry Gordon Research Conference, at Les Diablerets, VD, Switzerland. [2023]*
- *Mandira Nandi and Pradyut Ghosh*, Modern Trends in Inorganic Chemistry, (MTIC XVII), at NCL, Pune (Awardeed Best Poster Prize). [2017]*
- *Mandira Nandi and Pradyut Ghosh*, Indo-French Symposium, at IACS, Kolkata. [2019]*
- *Mandira Nandi and Pradyut Ghosh*, Modern Trends in Inorganic Chemistry, (MTIC XVIII), at IIT Guwahati. [2019]*

- *Mandira Nandi and Pradyut Ghosh**, *CRSI, National Symposium in Chemistry at IISER, Kolkata. [2021]*

Oral Presentation

- *Mandira Nandi and Pradyut Ghosh**, **Recent Trends in Chemical Sciences-2022**, organized by Indian Chemical Society IIT (ISM) Dhanbad, India (*Awarded Best Presentation Prize*). [2022]
- “[2]pseudorotaxanes composed of „U” shaped axles directed towards catenanes and catenates” at **“School Day Symposium”**, at IACS, Kolkata. [2019]

Conferences Attended:

- **“Current Challenges in Experimental Physical Chemistry”** at IIT (ISM), Dhanbad in association with **The Royal society of Chemistry**. [2020]
- **“Modern Trends in Inorganic Chemistry - MTIC-XVII”** at NCL, Pune. [2017]
- **“Workshop and Training Course on Single Crystal XRD”** at IACS, Kolkata. [2017]
- **“AWSAR”** at IACS. [2018]
- **“School Day Symposium”**, at IACS, Kolkata. [2019]
- **“Indo-French Symposium”** at IACS, Kolkata. [2019]

List of Publications

Sr.No.	Author List	Year	Title of the Paper	JournalDetails (Vol, Pages & DOI)	Publisher	Impact Factor
1.	M. Nandi, S. Bej, T. Jana and P. Ghosh*	2023	From construction to application of a new generation of interlocked molecules composed of heteroditopic wheels	Chemical Communication, 59, 14776-14790; doi.org/10.1039/D3CC03778A	RSC	4.9
2.	M. Nandi, S. Bej and P. Ghosh*	2022	NDI integrated rotaxane/catenane and their interactions with anions	Dalton Transaction, 51, 13507-13514; doi.org/10.1039/D2DT01908F	RSC	4.0
3.	S. Bej, M. Nandi and P. Ghosh*	2022	Development of fluorophoric [2]pseudorotaxanes and [2]rotaxane: Selective sensing of Zn(II)	Organic & Biomolecular Chemistry, 20, 7284-7293; doi.org/10.1039/D2OB01210C	RSC	3.2
4.	S. Bej, M. Nandi and P. Ghosh*	2021	A Cd(II) and Zn(II) selective naphthyl based [2]rotaxane acts as an exclusive Zn(II) sensor upon further functionalization with pyrene	Dalton Transaction, 50, 294-303; doi.org/10.1039/D0DT03645E	RSC	4.0

5.	M. Nandi, S. Bej, S. Bhunia and P. Ghosh*	2020	Template Directed Syntheses of Electrochemically Active [2]rotaxanes: Redox and Anion Binding Properties	Chem ElectroChem, 7, 1038-1047; doi.org/10.1002/celec.201901655	Wiley	4.782
6.	M. Nandi, S. Bej, T. K. Ghosh and P. Ghosh*	2019	A multifunctional catenated host for the efficient binding of Eu ³⁺ and Gd ³⁺	Chemical Communications, 55, 3085-3088; doi.org/10.1039/C9CC00090A	RSC	4.9
7.	S. Bej, M. Nandi, T. K. Ghosh and P. Ghosh*	2019	CuII templated formation of [n]Pseudorotaxanes (n=2,3,4) using a tris-amino ether macrocyclic wheel and multidentate axles	Dalton Transaction, 48, 6853-6862; doi.org/10.1039/C9DT01067J	RSC	4.0
8.	T. K. Ghosh, S. Mondal, S. Bej, M. Nandi and P. Ghosh*	2019	An integrated urea and halogen bond donor-based receptor for superior and selective sensing of phosphates	Dalton Transaction, 48, 4538-4546; doi.org/10.1039/C8DT05066J	RSC	4.0
9.	M. Nandi, S. Santra, B. Akhuli and P. Ghosh*	2017	Threading of various „U“ shaped bidentate axles into a heteroditopic macrocyclic wheel via NiII/CuII templation	Dalton Transaction, 46, 7421-7433; doi.org/10.1039/C7DT00699C	RSC	4.0
10.	S. Santra, M. Nandi, S. Bej, P. Mondal and P. Ghosh*	2017	Syntheses of metallo-pseudorotaxanes, rotaxane and post-synthetically functionalized rotaxane: A comprehensive spectroscopic study and dynamic properties	Dalton Transaction, 46, 13300-13313; doi.org/10.1039/C7DT01364G	RSC	4.0
11.	S. Chakraborty, S. Saha, L.M.P. Lima, U. Warzok, S. Sarkar, B. Akhuli, M. Nandi, S. Bej, N. N. Adarsh, C. A. Schalley*, R. Delgado* and P. Ghosh*	2017	Polyamide-Polyamine Cryptand as Dicarboxylate Receptor: Dianion Binding Studies in the Solid State, in Solution, and in the Gas Phase	Journal of Organic Chemistry, 82, 10007-10014; doi.org/10.1021/acs.joc.7b01431	ACS	3.6

References

Name	Address	Email id	Contact No
1. Prof Pradyut Ghosh	School of Chemical Sciences, IACS Kolkata	icpg@iacs.res.in	9875388914
2. Prof Ashutosh Ghosh	Chemistry Department, Calcutta University	ghosh_59@yahoo.com	94333 44484
3. Prof Samaresh Bhattacharya	Chemistry Department, Jadavpur University	samareshb.chemistry@jadavpuruniversity.in	9830203354
4. Prof. Tapan Kanti Paine	School of Chemical Sciences, IACS Kolkata	ictkg@iacs.res.in	94325 78095

Declaration

I, hereby declare that the above-furnished particulars are true to the best of my knowledge and belief. If a chance is given, I will prove my efficiency, my loyalty and willingness to the work.

Date: 06 . 07. 2025

Mandira Nandi
Signature _____
(Mandira Nandi)