

# Faculty Profile

1. Name: DHRUBA JYOTI MAJUMDAR

2. Designation: ASSOCIATE PROFESSOR IN CHEMISTRY

3. Name of the Department: CHEMISTRY

4. E-mail ID: [dmajumdar30@gmail.com](mailto:dmajumdar30@gmail.com) / [dmajumdar@tmv.ac.in](mailto:dmajumdar@tmv.ac.in)

5. WEB Page, if any:

6. Educational Qualifications (Graduation onwards):

Examination	Name of the University/Institution	Year of Passing	Subject
BSC (H) IN CHEMISTRY	CALCUTTA UNIVERSITY	1990	CHEMISTRY (HONS)
MSC IN PURE CHEMISTRY	CALCUTTA UNIVERSITY	1992	INORGANIC CHEMISTRY
GATE	IIT	1994	CHEMISTRY(CY)BRANCH
SLET	UGC	1998	CHEMICAL SCIENCE
NET	UGC-CSIR	1998	CHEMICAL SCIENCE

7. Research Degree(s): PROCEED TO COMPLETION ON 14.12.21 at IIT (ISM), DHANBAD

Degree	Name of the Degree Awarding Institution	Date of Award	Title

8. Teaching Experience (in Years): 18+ YEARS

9. Specialization/Expertise/Teaching Area: INORGANIC CHEMISTRY

10. Courses Taught: INORGANIC AND GENERAL CHEMISTRY

11. Present Research Activities, if any: Prof. Dhruba jyoti Majumdar is actively engaged in research under the coordination chemistry of Zn, Cd Salen complexes with N, O donor ligand environment. The research area expanded in the spirit of pseudohalides spacers like dicyanamide, azide, and thiocyanate. In the current research scenario, every researcher must identify by research IDs. Henceforth my research IDs are Scopus:57192931576, Web of Science: I-6606-2019, and ORCID:0000-0002-9785-7750. Further, in connection with research activities, Prof. Majumdar has published over **Thirtyone (31)** papers in highly reputed international (Scopus and Web of Science) and UGC-listed journals. The *h*-index is 11, and the Scopus citation of Prof. Majumdar is nearly 210 (2020-2021). Besides routine incremental research work, Prof. Majumdar is a potential reviewer of high reputation in most peer-reviewed international journals like Elsevier, Wiley, Royal Society of Chemistry (RSC), Springer, and Taylor-Francis. Prof. Majumdar joined the



Editorial Board members of journals like 'Indian Journal of Advances in Chemical Science,' Andhra Pradesh, India-516003; a UGC listed Journal up to 2017.

## 12. Major/Minor Research Project(s) Undertaken/Completed (during last 5 years): NA

### 13. Publications and Others:

#### A] Books Published: NA

1. For Example:: M. Pal, S. Samanta, G. Ghorai, Modern Trends in Fuzzy Graph Theory, Springer, 2020.ISBN: 978-981-15-8803-7

#### B] Research Papers in International/National Journals: Published Thirtyone (31) papers

1. Synthesis, spectroscopic characterization, and SC-XRD study of one privileged heteronuclear Ni(II)/Hg(II)-Salen complex: An exclusive DFT outlook, **Dhrubajyoti Majumdar**, Tapan Kumar Pal, Shahenur Alam Sakib, Sourav Das, Kalipada Bankura <sup>a\*</sup>, Dipankar Mishra <sup>a\*</sup>, **Inorg. Chem. Commun.** **2021**, 128, 108609. [Elsevier, Q2, IF 2.495], [ISSN: 1387-7003].

2. Dicyanamide-intertwined assembly of two new Zn complexes based on N<sub>2</sub>O<sub>4</sub>-type pro-ligand: Synthesis, crystal networks, spectroscopic insights, and selective nitroaromatic turn-off fluorescence sensing, **Dhrubajyoti Majumdar**, Swapan Dey\*, Annu Kumari, Tapan Kumar Pal\*, Kalipada Bankura, Dipankar Mishra\*, **Spectrochim. Acta Part A.** **2021**, 254, 119612. [Elsevier, Q1, IF 4.098], [ISSN: 1386-1425].

3. DFT investigations of linear Zn<sub>3</sub>-type complex with compartmental N/O-donor Schiff base: Synthesis, characterizations, crystal structure, fluorescence and molecular docking, **Dhrubajyoti Majumdar**, Tapankumar pal, Dheeraj Kumar Singh, Deepak K. Pandey, DebaprasadParai, Kalipada Bankura, Dipankar Mishra\*, **J. Mol. Struct.** **2020**, 1209, 127936. [Elsevier, Q2, IF 3.196], [ISSN: 0022-2860].

4. A rare hetero-bimetallic Zn(II)/Ca(II) Schiff base complex: Synthesis, crystal structure, DFT, molecular docking and unveiling antimicrobial activity, **Dhrubajyoti Majumdar**, Dhiraj Das, Sudip Nag, Maitree Bhattacharyya, Dheeraj K. Singh, DebaprasadParai, Kalipada Bankura, Dipankar Mishra <sup>a\*</sup>, **J. Mol. Struct.** **2020**, 1222, 128951. [Elsevier, Q2, IF 3.196], [ISSN: 0022-2860].

5. Experimental and theoretical corroboration of antimicrobial and anticancer activities of two pseudohalides induced structurally diverse Cd(II)-Salen complexes, **Dhrubajyoti Majumdar**, Jessica Elizabeth Philip, Sourav Das, Bidyut Kumar Kundu, Reena V. Saini, Gourav Chandan, Kalipada Bankura, Dipankar Mishra\*, **J. Mol. Struct.** **2020**, 1225, 129189. [Elsevier, Q2, IF 3.196], [ISSN: 0022-2860].

6. Syntheses, characterizations, crystal structures, DFT/TD-DFT, luminescence behaviours and cytotoxic effect of bicompartamental Zn(II)-dicyanamide Schiff base coordination polymers: An approach to apoptosis, autophagy and necrosis type classical cell death, **Dhrubajyoti Majumdar**, Yashika Agrawal, Renjith Thomas, Zakir Ullah, Manas Kumar Santra, Sourav Das, Tapan Kumar Pal, Kalipada Bankura, Dipankar Mishra\*, **Appl. Organomet. Chem.** **2020**, 34, e5269. [Wiley, Q1, IF 4.105], [ISSN: 1099-0739].

**7.** Nitrate, Pseudohalo-Linked Zn (II)/Cd (II) Schiff-Base Complexes with 1,3-Diimine Spacer Group: Syntheses, Crystal Structures, DFT, TD-DFT and Fluorescence Studies, [Dhrubajyoti Majumdar](#), Swapan Dey\*, Sreejith S Sreekumar, Sourav Das, Dhiraj Das, Ramesh K Metre, Kalipada Bankura, Dipankar Mishra\*, *ChemistrySelect* **2018**,3(43), 12371-12382. [Wiley, Q2, IF 2.109], [ISSN:2365-6549].

**8.** Syntheses, crystal structures and photo physical aspects of azido-bridged tetranuclear cadmium (II) complexes: DFT/TD-DFT, thermal, antibacterial, and anti-biofilm properties, [Dhrubajyoti Majumdar](#), Swapan Dey\*, SS Sreejith, Jayanta Kumar Biswas, Monojit Mondal, Pooja Shukla, Sourav Das, Tapan Pal, Dhiraj Das, Kalipada Bankura, Dipankar Mishra\*, *J. Mol. Struct.* **2019**,1179, 694-708. [Elsevier, Q2, IF 3.196], [ISSN: 0022-2860].

**9.** Heterometallic Zn(II)-K(I) complex with salen-type Schiff-base ligand: Synthesis, crystal structure, solid-state photoluminescent property and theoretical study, [Dhrubajyoti Majumdar](#), Swapan Dey\*, Dhiraj Das, Dheeraj Kumar Singh, Sourav Das, Kalipada Bankura, Dipankar Mishra\*, *J. Mol. Struct.* **2019**,1185, 112-120. [Elsevier, Q2, IF 3.196], [ISSN: 0022-2860].

**10.** Dicyanamide-interlaced assembly of Zn(II)-schiff-base complexes derived from salicylaldimino type compartmental ligands: Syntheses, crystal structures, FMO, ESP, TD-DFT, fluorescence lifetime, in vitro antibacterial and anti-biofilm properties, [Dhrubajyoti Majumdar](#), Dhiraj Das, SS Sreejith, Sourav Das, Jayanta Kumar Biswas, Monojit Mondal, Debarati Ghosh, Kalipada Bankura, Dipankar Mishra\*, *Inorg. Chim. Acta.* **2019**, 489, 244-254. [Elsevier, Q2, IF 2.545], [ISSN: 0020-1693].

**11.** Syntheses, X-ray crystal structures of two new Zn(II)-dicyanamide complexes derived from H<sub>2</sub>vanen-type compartmental ligands: Investigation of thermal, photoluminescence, in vitro cytotoxic effect and DFT-TDDFT studies, [Dhrubajyoti Majumdar](#), Sourav Das, Renjith Thomas, Zakir Ullah, SS Sreejith, Dhiraj Das, Pooja Shukla, Kalipada Bankura, Dipankar Mishra\*, *Inorg. Chim. Acta.* **2019**, 492, 221-234. [Elsevier, Q2, IF 2.545], [ISSN: 0020-1693].

**12.** Synthesis, characterizations and single crystal structure of di-nuclear azido-bridged Cd(II) coordination polymer with Schiff base precursor (H<sub>2</sub>L<sup>pent</sup><sup>OMe</sup>):DFT, Fluorescence, solvatochromism and *in vitro* antimicrobial assay, [Dhrubajyoti Majumdar](#), Dhiraj Das, S. S. Sreejith, Sudip Nag, Swapan Dey\*, Surajit Mondal, Kalipada Bankura, Dipankar Mishra\*, *Inorg. Chim. Acta.* **2019**, 496,119069. [Elsevier, Q2, IF 2.545], [ISSN: 0020-1693].

**13.** Coordination of N,O-donor appended Schiff base ligand (H<sub>2</sub>L<sup>1</sup>) towards Zinc(II) in presence of pseudohalides: Syntheses, crystal structures, photoluminescence, antimicrobial activities and Hirshfeld surfaces, [Dhrubajyoti Majumdar](#), Jayanta Kumar Biswas, Monojit Mondal, M. S. Surendra Babu, R. K. Metre,

Sourav Das, Kalipada Bankura, Dipankar Mishra\*, *J. Mol. Struct.* **2018**, 1155, 745-757. [Elsevier, Q2, IF 3.196], [ISSN: 0022-2860].

**14.** Cd(II) Pseudohalide Complexes with N,N'-Bis(3-ethoxysalicylideneimino)-1,3-Diaminopropane: Crystal Structures, Hirshfeld Surface, Antibacterial and Anti-Biofilm Properties, Dhrubajyoti Majumdar, Jayanta Kumar Biswas, Monojit Mondal, M. S. Surendra Babu, Sourav Das, Ramesh K Metre, Sreejith S SreeKumar, Kalipada Bankura, Dipankar Mishra\*, *ChemistrySelect* **2018**, 3(11), 2912-2925. [Wiley, Q2, IF 2.109], [ISSN:2365-6549].

**15.** Synthesis, structure, fluorescent property, and antibacterial activity of new Cd(II) metal complex based on multidentate Schiff base ligand N,N'-Bis(3-methoxysalicylideneimino)-1,3-diaminopropane, DhrubajyotiMajumdar, Sourav Das, Jayanta Kumar Biswas, Monojit Mondal, *J. Mol. Struct.* **2017**, 1134, 617-624. [Elsevier, Q2, IF 3.196], [ISSN: 0022-2860].

**16.** Synthesis, X-ray crystal structure, photo luminescent property, antimicrobial activities and DFT computational study of Zn(II) coordination polymer derived from multisite N,O-donor Schiff base ligand (H<sub>2</sub>L<sup>1</sup>), Dhrubajyoti Majumdar, M. S. Surendra Babu, Sourav Das, Jayanta Kumar Biswas, Monojit Mondal, SumanHazra, *J. Mol. Struct.* **2017**, 1138, 161-171. [Elsevier, Q2, IF 3.196], [ISSN: 0022-2860].

**17.** Syntheses, X-ray Crystal Structures, Photoluminescence Properties, Antimicrobial Activities and Hirshfeld Surface of Two New Cd(II) Azide/Thiocyanate Linked Coordination Polymers, Dhrubajyoti Majumdar, M. S. Surendra Babu, Dr. Sourav Das, Chandrajeet Mohapatra, Jayanta Kumar Biswas, Monojit Mondal, *ChemistrySelect* **2017**, 2(17), 4811-4822. [Wiley, Q2, IF 2.109], [ISSN:2365-6549].

**18.** Radiotracer studies for the uptake of silver from aqueous solution by TODGA-impregnated silica gel, M. Mandal, Dhrubajyoti Majumdar, *Radiochemistry* 57(4):417420/DOI:10.1134/S1066362215040141 [Springer, IF 0.0564]

**19.** A new approach of Quantum chemical study on 2,4-Dinitrophenylhydrazine derived Schiff base ligand (H<sub>2</sub>L) using DFT/B3LYP level computation method-Theoretical & Experimental results comparison, Dhrubajyoti Majumdar, *International Journal of Chemical Studies*, **2016**, 4, 30-34. [UGC LISTED]

**20.** Synthesis of two unprecedented Ni(II) & Oxovanadium Azide bridged complexes derived from compartmental Azo-Linked two different Schiff base H<sub>4</sub>L & H<sub>2</sub>L-Characterization by spectroscopic studies (IR, UV-Vis, <sup>1</sup>H NMR) and magneto structural co-relationship, Dhrubajyoti Majumdar, *International Journal of Chemical Studies*, **2016**, 4(4), 46-54. [UGC LISTED]

21. Synthesis, Characterizations, Crystal Structure, Density Functional theory and TDDFT Studies of one new dichloro-bis(pyridine-N)-Cu(II) $C_{20}H_{20}Cl_4Cu_2N_4$  complex, Dhrubajyoti Majumdar, *Imperial Journal of Interdisciplinary Research*, 2016, 4, 28-36. [UGC LISTED]
22. A Novel Approach for Crystal Structure Refinement of 2-hydroxy-1,2 di(phenyl)ethanone-Total Theoretical Survey of IR & UV-Vis Spectra using DFT & TDDFT Computation Method, Dhrubajyoti Majumdar, *J. Chem. & Cheml. Sci.* 2016, 6(4), 370-380. [UGC LISTED]
23. Two Unique Zn(II) & Cd(II) Complexes Derived from Salen Type N<sub>2</sub>O<sub>2</sub> Donor Schiff Base Ligand- A Theoretical IR, UV-Vis Survey of H<sub>2</sub>L Ligand Using DFT & TDDFT, Dhrubajyoti Majumdar, *J. Chem. & Cheml. Sci.* 2016, 6(2), 159-165. [UGC LISTED]
24. Two Novel Azido, Thiocyanato Bridged Co(II)/Cu(II) Complexes Derived from Potential Azo-Schiff Base Blocker Ligand (NN) of N,N'-bis-(2-amino-ethyl)-ethane-1,2-diamine and 1-(5-chloro-2-hydroxy-phenyl)-ethanone-synthesis, Characterization, and Magneto-structural Correlations , Dhrubajyoti Majumdar, *Indian Journal of Advances in Chemical Science*, 2016, 4(3), 327-335. [UGC LISTED]
25. Three New Azido/thiocyanato Bridged Complexes of Co(II)/Ni(II) Derived from Potential Schiff Base Blocker Ligand(H<sub>2</sub>L) of 1-(5-chloro-2-hydroxy-phenyl)-Ethanone and Propane-1,3-diamine---synthesis, Characterization and Magneto-structural Relationship, Dhrubajyoti Majumdar, *Indian Journal of Advances in Chemical Science*, 2016, 4(3), 336-345. [UGC LISTED]
26. Synthesis, X-ray Crystal Structure, Fluorescence Studies and Antimicrobial Screening of Thiocyanato ( $\mu_{1,1}$ -NCS) Linked New Zn(II) Mononuclear Complex Derived from Pyridine Co-ligand, Dhrubajyoti Majumdar, Anjali Jha, Priyanka Bhatt, *Indian Journal of Advances in Chemical Science*, 2016, 4(4), 449-457. [UGC LISTED]
27. Synthesis, Characterization, and Crystal Structure of New Binuclear Cu(II) PyrPzAmide Containing Schiff Base and Azide Bridging Complex: A Combined Experimental and Theoretical Density Functional Theory Computational Analysis, Dhrubajyoti Majumdar, *Indian Journal of Advances in Chemical Science*, 2016, 5(1),16-23. [UGC LISTED]
28. Two Unique Zn(II) Azide and Thiocyanate Bridged Complexes of A Tetradentate Schiff Base Ligand (H<sub>4</sub>L) Derived from N,N'-Bis-(2-Amino-Ethyl)-Ethane-1,2-Diamine and 1-(5-Chloro-2-Hydroxy-Phenyl)-Ethanone, Dhrubajyoti Majumdar, *Journal of Advanced Chemical Sciences*, 2016, 2(3), 305-308. [UGC LISTED]
29. Two Unprecedented Cu(II) Complexes with Versatile Azide/Thiocyanate Bridging derived from Symmetrical Azo-Linked Schiff Base of 1-(5-Chloro-2-Hydroxy-Phenyl)-Ethanone and Propane 1,3-Diamine , Dhrubajyoti Majumdar, *Journal of Advances in Chemical Science*, 2016, 2(3). 323-326. [UGC LISTED]

**30.** An Unprecedented Hydrogen Bonded Crystal Structure Presentation of 1-(5-Chloro-2-Hydroxyphenyl) Ethanone-Complete Theoretical vs Experimental Results Survey using Reliable DFT & TD-DFT Computational Method, **Dhrubajyoti Majumdar**, *Journal of Advances in Chemical Science*, **2016**, 2(3), 341-345. [UGC LISTED]

**31.** An Unique Novel Ni(II) Octahedral Complex Derived from Potential Tetradentate Schiff Base (H4L) Of N,N'-Bis-(2-Amino-Ethyl)-Ethane-1,2-Diamine and 1-(5-Chloro-2-Hydroxy-Phenyl)-Ethanone – Synthesis, Characterization and Magneto Structural Co-Relationship, **Dhrubajyoti Majumdar**, *Journal of Advances in Chemical Science*, **2016**, 2(3), 356-359. [UGC LISTED]

### C] Conference Papers:

#### a) International Conference:

**1. For Example::** K Das, S Samanta, K De, M Pal, Complete Neighbourhood Centrality and its Application, 4th International Conference on Computational Intelligence and Networks (CINE), ISI, Kolkata, IEEE, 2020.

**2. For Example::** S. Samanta, A Study on Packaging of Foods and Their Delivery Using Fuzzy Graph Theory, International Conference on Graph Theory and its Applications - ICGTA20, Amrita University, Tamil Nadu.

**3.**

#### b) National Conference

- 1.
- 2.
- 3.

### D] Conference / Symposium Attended (during last 5 years)

#### • International Level

Name of The Conference	Organizer, Date, Venue	Financially Supported by

#### • National Level

Name of The Conference	Organizer, Date, Venue	Financially Supported by

### E] Invited Lectures Delivered in Seminars/Webinars: (Title, Name of Seminar, Organizer Date and Venue):

**(01) 1.** Silver Nanoparticles: Its Synthetic approaches, Properties and Applications, Kalipada Bankura, **Dhrubajyoti Majumdar**, Department of Physics, Narajole Raj College, Narajole, Paschim Medinipur, West Bengal, 2-Day International Webinar, 14.06.2020-15.06.2020.

**F] Orientation Programme/Refresher Course/Short Term Course Completed: OP (01) + RC (03) + Short term online Course (05)**

1. UGC-Sponsored Orientation program, Jadavpur University, from 28.01.2008-25.02.2008
2. UGC-Sponsored Refresher course Chemical Science, Jadavpur University, from 02.01.2009-22.01.2009.
3. UGC-Sponsored Refresher course Chemical Science, Jadavpur University, from 02.01.2014-22.01.2014
4. UGC-Sponsored Special Winter School, University of Calcutta, from 02.02.2017-22.02.2017
5. Faculty development programme on recent advances on material science, Amity Institute of Applied Sciences (Department of Chemistry), Kolkata, West Bengal, from 08.07.2020-12.07.2020.
6. "Sustainable Biosolutions 2020", Vellore R & D Institute of Science and Technology, Vellore, Tamilnadu, India, from 12.05.2020-18.05.2020.
7. International Virtual Conference on Advanced Nanomaterials Applications (VCAN 2020), Vellore Institute of Technology, Vellore, Tamilnadu, India, from 17.06.2020-19.06.2020.
8. Molecular Modelling of Biological and Macromolecules, NIT, Rourkela, India, from 22.09.2020-26.09.2020.
9. Techno-Pedagogy and Research Methodology, Kalna College IQAC & B. ED Department, Kalna, Purba Bardhaman, West Bengal, from 17.07.2020-23.07.20.

3.

**G] Articles Published in Magazines: NA**

- 1.
- 2.
- 3.

**14. Awards and Recognitions, if any:** Elsevier and Publons Reviewer Recognition.

**15. Membership of Reputed Bodies/Organizations including Professional Associations:**  
Governing body member 2014.

**16. Significant Information, if any:** The significant information concerning my research work is that I have expanded my research with many well-known international and national collaborators. The lists are not limited, but a few are mentioned below-Prof. Jayanta Kumar Biswas, Kalyani University, Prof. Maitree Bhattacharyya, University of Calcutta, Prof. Dr. A. L. Spek (Emeritus), Utrecht University, Bijvoet Center for Biomolecular Research, Padualaan 83584 CH, Utrecht (SC-

XRD critical discussion), Dr. Sourav Das, IITRAM, Ahmedabad, Dr. Tapan Kumar Pal, PDPU, Ahmedabad, Dr. Manas Kumar Santra (Scientist), National Center for Cell Science, Pune 411007, Maharashtra, India, Dr. Reena V. Saini, Department of Biotechnology, Maharishi Markandeshwar (Deemed to be University), Mullana-Ambala, Haryana 133207, India and Dr. Burak Tüzün, Department of Chemistry, Sivas Cumhuriyet University, Sivas, Turkey.