



Dr. Bidyut Kumar Kundu
Visiting Assistant Professor, Chemistry, SOT

Education Qualification:

Ph.D (Molecular Chemistry & Chemical Biology), IIT-Indore, MP
M.Sc (xxxxxxx), Guru Ghasidas University, CG
B.Sc (Chemistry Honours), Burdwan University, WB

Research Interest:

Based on (but not limited to) Analytical (detection and quantification of analytes), Physical (NPs based fluorescent sensors, DFT and Molecular docking simulation), Bio-Inorganic (Enzymatic catalysis, DNA/Protein-complex interplay) Chemistry, etc. More precisely Organometallic & Bioinorganic, Chemical biology and Material chemistry including targeted drug delivery, MOF based energetic materials & CO₂ capture/bio-fuel/energy conversion/environmental research.

Publications:

- [1] Kundu, B.K., Pragti, Mobin, S., Mukhopadhyay, S. (2020), Studies on influence of nuclearity of zinc (II) hemi-salen complexes on some pivotal biological applications (Accepted in **Dalton Transaction**, (Impact factor: 4.174), (DOI: 10.1039/d0dt02941f)
- [2] Kundu, B.K., Das, M., Ganguly, R., Bhoje, A.P., Mukhopadhyay, S. (2020), Role of zeolite encapsulated Cu(II) complexes in electron transfer as well as peroxy radical intermediates formation during oxidation of thioanisole, **Journal of Catalysis**, 389, 305-316, (Impact factor: 7.723), (DOI: 10.1016/j.jcat.2020.06.005)

- [3] Kundu, B.K., Chhabra, V., Malviya, N., Ganguly, R., Mishra, G.S., Mukhopadhyay, S. (2018), Zeolite encapsulated host-guest Cu(II) Schiff base complexes: Superior activity towards oxidation reactions over homogeneous catalytic systems, **Microporous and Mesoporous Materials**, 271, 100-117 (Impact factor: 4.551), (DOI: 10.1016/j.micromeso.2018.05.046)
- [4] Kundu, B.K., Mandal, P., Mukhopadhyay, B.G., Tiwari, R., Nayak, D., Ganguly, R., Mukhopadhyay, S. (2019), Substituent dependent sensing behavior of Schiff base chemosensors in detecting Zn²⁺ and Al³⁺ ions: Drug sample analysis and living cell imaging, **Sensors and Actuators B: Chemical**, 282, 347-358 (Impact factor: 7.100), (DOI: 10.1016/j.snb.2018.11.076)
- [5] Kundu, B.K., Singh, R., Tiwari, R., Nayak, D., Mukhopadhyay, S. (2019), An amide probe as a selective Al³⁺ and Fe³⁺ sensor inside the HeLa and a549 cell lines: Pictet–Spengler reaction for the rapid detection of tryptophan amino acid, **New Journal of Chemistry**, 43, 4867-4877 (Impact factor: 3.288), (DOI: 10.1039/C9NJ00138G)
- [6] Kundu, B.K., Ranjan, R., Mukherjee, A., Mobin, S.M., Mukhopadhyay, S. (2019), Mannich base Cu(II) complexes as biomimetic oxidative catalyst, **Journal of Inorganic Biochemistry**, 195, 164-173 (Impact factor: 3.224), (DOI: 10.1016/j.jinorgbio.2019.03.023)
- [7] Kundu, B.K., Pragti, Reena, Mobin, S., Mukhopadhyay, S. (2019), Mechanistic and thermodynamical aspects of pyrene based fluorescent probe to detect picric acid, **New Journal of Chemistry**, 43, 11483-11492 (Impact factor: 3.288), (DOI: 10.1039/C9NJ02342A)
- [8] Mandal, P., Malviya, N., Kundu, B.K., Singh, D.S., Nagaraja, C.M., Mukhopadhyay, S. (2017), RAPTA complexes containing N-substituted Tetrazole scaffolds: Synthesis, characterization and Antiproliferative activity, **Applied Organometallic Chemistry**, 32, 4179-4191 (Impact factor: 3.581), (DOI: 10.1002/aoc.4179)
- [9] Das, M., Biswas, A., Kundu, B.K., Mobin, S., Udayabhanu, G., Mukhopadhyay, S. (2017), Targeted synthesis of cadmium(ii) Schiff base complexes towards corrosion inhibition on mild steel, **RSC Advances**, 7, 48569-48585 (Impact factor: 3.049), (DOI: 10.1039/C7RA08633D)
- [10] Malviya, N., Sonkar, C., Kundu, B.K., Mukhopadhyay, S. (2018), Discotic Organic Gelators in Ion Sensing, Metallogel Formation, and Bioinspired Catalysis, **Langmuir**, 34, 11575-11585 (Impact factor: 3.683), (DOI: 10.1021/acs.langmuir.8b02352)
- [11] Das, M., Kundu, B.K., Tiwari, R., Mandal, P., Nayak, D., Ganguly, R., Mukhopadhyay, S. (2018), Investigation on chemical protease, nuclease and catecholase activity of two copper complexes with flexidentate Schiff base ligands, **Inorganic Chimica Acta**, 469, 111-122 (Impact factor: 2.433), (DOI: 10.1016/j.ica.2017.09.013)
- [12] Mandal, P., Kundu, B.K., Vyas, K., Sabu, V., Helen, A., Dhankhar, S.S., Nagaraja, C.M., Bhattacharjee, D., Bhabak, K.P., Mukhopadhyay, S. (2018), Ruthenium(II) arene NSAID complexes: inhibition of cyclooxygenase and antiproliferative activity against cancer cell lines, **Dalton Transactions**, 47, 517-527 (Impact factor: 4.052), (DOI: 10.1039/C7DT03637J)
- [13] Das, M., Biswas, A., Kundu, B.K., Adilia Januário Charmier, M., Mukherjee, A., Mobin, S.M., Udayabhanu, G., Mukhopadhyay, S. (2019), Enhanced pseudo-halide promoted corrosion inhibition by biologically active zinc(II) Schiff base complexes, **Chemical Engineering Journal**, 357, 447-457 (Impact factor: 8.355), (DOI: 10.1016/j.cej.2018.09.150)
- [14] Chhabra, V., Kundu, B.K., Mobin, S.M., Mukhopadhyay, S. (2020), Coligand driven efficiency of catecholase activity of Schiff-base copper complexes, **Inorganica Chimica Acta**, 502, 119389- 119398 (Impact factor: 2.433), (DOI: 10.1016/j.ica.2019.119389)
- [15] Majumdar, D., Kundu, B.K., Philip, J., Bankura, K. (2021), Experimental and Theoretical Corroboration of Antimicrobial and Anticancer Activities of Two Pseudohalides Induced Structurally

Diverse Cd(II)-Salen Complexes, **Journal of Molecular Structure**, 1225, 129189-129203 (Impact factor: 2.463), (DOI: 10.1016/j.molstruc.2020.129189)

Industry Experience:

NA

Courses Taught:

(a) Teaching Assistantship (TA) at Indian Institute of Technology Indore for Under Graduate Chemistry Lab (Course: CH-151, Physical Chemistry). (b) Guided more than ten master's as well as intern students. (c) TA-ship in Chemistry to B-tech students (Inorganic Chemistry). (d) Experienced in guiding (lab tutorial and instrumental demonstration) visiting students in bulk. (e) Analytical chemistry specialization at GSFC University for M.Sc course.

Conference & Seminar:

Training Programme (Govt. Funded Workshops)

1. BRNS-AEACI (**BARC**) Twelfth school on analytical chemistry-2016 (SAC-12) organized by board of research in nuclear sciences (BRNS) & association of environmental analytical chemistry of India (AEACI), Goa, India, 15th – 22th Nov 2016
2. **DBT** training course on "Recent Trends in Thin Film Development and their Applications in Biomedical and Bio-sensor Devices", Sathyabama Institute of Science and technology, Chennai, 12th – 28th March 2018
3. GIAN Course entitled "Metal-Ligand Interplay in Advanced Coordination Chemistry" from 5th – 9th February, 2018 (Coordinator: Prof. Pierre Braunstein, U L P Strasbourg, France)

International Conferences/ Poster Presentation

1. Researcher Connect Program' organized by Wiley, 26th Oct 2015
2. International Conference on 'Frontiers in Inorganic and Organometallics', Indore, India, 14th – 15th April 2016. (Poster Presented)
3. Conference on 'Advances in Chemistry with Biological and Industrial Relevance' (Sponsored by MP Council of Science and Technology), Bhopal, February 2016
4. 11th International copper meeting: Bridging Clinical and Fundamental Research in Copper Biology, 23rd – 28th Sep 2018; **Sorrento, Italy** (Poster Presented)
5. Industry Academia Conclave (IAC 2018), Galactose and Catechol oxidase mimicked Cu(II)-Mannich base complexes as multifunctional homogenous catalyst, 20th Nov, 2018

6. In-house Chemistry symposium (CHEM-2019) on National Science Day, IIT Indore, 28th Feb 2019. (Poster Presented)

Awards& Honors:

- Merit Cum Scholarship (W.B.B.S.E) from 2007-2009
- Merit Cum Scholarship (W.B.C.H.S.E) from 2009-2012
- March, 2013: Joint Admission to MSc (IIT-JAM)
- March, 2015: Graduate Aptitude Test in Engineering (GATE)
- Sept, 2018: International Travel Grant (ITS), DST-SERB, 150000 INR
- March, 2020: Graduate Aptitude Test in Engineering (GATE, AIR-755)

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