



# Dr. Yeasin Sikdar

College Whole Time Teacher  
Department of Chemistry

## Contact Information

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## Specialization

- Inorganic Chemistry



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## Biographical Sketch

Dr. Yeasin Sikdar is currently engaged as a College Whole Time Teacher in the Department of Chemistry, The Bhawanipur Education Society College, affiliated to University of Calcutta, Kolkata. Dr. Sikdar graduated with B.Sc. (Hons.) in Chemistry from Scottish Church College, University of Calcutta in July, 2010. He completed his Masters degree (M.Sc. in Chemistry) from Indian Institute of Technology Guwahati in the year of 2012. During his masters degree studies, he gained interest in Inorganic Chemistry. Further, he perused his doctoral research in the same field in the Department of Chemistry, University of Calcutta (Ph. D. in Inorganic Chemistry in 2019). He published several research papers in international journals. He attended workshops and also presented his research works in many conferences/seminars at national level. He was the recipient of CSIR - SRF 2011 fellowship. He also secured positions in GATE examination in Chemistry. After completing his Ph.D., he joined Central Institute of Petrochemicals Engineering and Technology (CIPET), Haldia in September 2019. He continued to teach Engineering Chemistry and Polymer Science in CIPET before joining this college. Dr. Sikdar is passionate about teaching Chemistry, laboratory experiments and he also possesses interest in research in Chemistry. He is also proficient and experienced in handling accreditation related works in institute.

## Academic Qualifications

Abbreviation of the Degree	Name of the College/ University	Class Obtained	Area of Specialization	Year of Passing
Ph.D.	University of Calcutta	N.A.	Inorganic Chemistry (Coordination Chemistry)	2019
M.Sc.	Indian Institute of Technology Guwahati	1 <sup>st</sup> Class	Chemistry (Inorganic Chemistry)	2012
B.Sc. (Hons.)	Scottish Church College/University of Calcutta	1 <sup>st</sup> Class	Chemistry	2010

## Position Holding (Full Time)

- College Whole Time Teacher Department of Chemistry, The Bhawanipur Education Society College, University of Calcutta April 2021 - Till date.



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## Position Held (Full Time)

- Chemistry Faculty CIPET | Central Institute of Petrochemicals Engineering and Technology, Haldia  
September 2019 - April 2021

## Research Experience

- Summer Project Fellow, Department of Chemistry, IIT Guwahati, April 2011 - June 2011
- M.Sc. Dissertation Project, Department of Chemistry, IIT Guwahati, December 2011 - April 2012.

## Administrative Assignment

- AICTE and NBA accreditation related work of Institute, Central Institute of Petrochemicals Engineering and Technology, Haldia.

## Subjects Taught

Radioactivity | Chemistry of Lanthanides and Actinides | Inorganic Reaction Mechanism and Kinetics | Bioinorganic Chemistry | Qualitative Inorganic analysis | Quantitative Inorganic analysis.

## Research Interests

- Molecular Magnetic Material: SMM and SIM | NIR Sensor | Therapeutic application of metal complexes

## Journal Publications

- Bis {2-[(5-hydroxypentyl) iminomethyl] phenolato- $\kappa^2N, O1$ } copper (II) R Modak, S Patra, S Mandal, Y Sikdar, S Goswami Acta Crystallographica Section E: Structure Reports Online (2013), 69 (7), m412-m413.
- Syntheses, crystal structures and catecholase activity of new dinuclear and cyclic trinuclear mixed valence cobalt (II, III) complexes R Modak, Y Sikdar, S Mandal, S Goswami Inorganic Chemistry Communications (2013), 37, 193-196.
- Malachite nanoparticle: a potent surface for the adsorption of xanthene dyes J Saikia, Y Sikdar, B Saha, G Das Journal of Environmental Chemical Engineering (2013), 1 (4), 1166-1173.





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- Syntheses, crystal structures, spectral studies, and DFT calculations of two new square planar Ni(II) complexes derived from pyridoxal-based Schiff base ligands. S Mandal, S Chatterjee, R Modak, Y Sikdar, B Naskar, S Goswami. *Journal of Coordination Chemistry* (2014), 67 (4), 699-713.
- Homo and heterometallic rhomb-like Ni<sub>4</sub> and Mn<sub>2</sub>Ni<sub>2</sub> complexes. R Modak, Y Sikdar, S Mandal, CJ Gómez-García, S Benmansour, S Goswami. *Polyhedron* (2014), 70, 155-163.
- Syntheses, crystallographic characterization, catecholase activity and magnetic properties of three novel aqua bridged dinuclear nickel (II) complexes. R Modak, Y Sikdar, S Mandal, S Chatterjee, A Bieńko, J Mroziński, S Goswami. *Inorganica Chimica Acta* (2014), 416, 122-134.
- Syntheses, crystal structures and spectroscopic characterization of two new octahedral nickel (II) complexes of a Schiff base ligand derived from pyridoxal and 2-(pyrid-2-yl)ethylamine. S Mandal, R Modak, Y Sikdar, B Naskar, S Goswami. *Journal of Molecular Structure* (2014), 1074, 271-278.
- A new pyridoxal based fluorescence chemo-sensor for detection of Zn (II) and its application in bio imaging. S Mandal, Y Sikdar, DK Maiti, GP Maiti, SK Mandal, JK Biswas, S Goswami. *RSC advances* (2015), 5 (89), 72659-72669.
- Doubly chloro bridged dimeric copper (II) complex: magneto-structural correlation and anticancer activity. Y Sikdar, R Modak, D Bose, S Banerjee, D Bieńko, W Zierkiewicz, S Goswami. *Dalton Transactions* (2015) 44 (19), 8876-8888
- Syntheses, crystal structures, spectral study and DFT calculation of three new copper (II) complexes derived from pyridoxal hydrochloride, N, N-dimethylethylenediamine and N, N diethylethylenediamine. S Mandal, B Naskar, R Modak, Y Sikdar, S Chatterjee, S Biswas, T K Mondal, D Modak, S Goswami. *Journal of Molecular Structure* (2015) 1088, 38-49.
- Heterometallic CuI-DyIII Clusters of Different Nuclearities with Slow Magnetic Relaxation. R Modak, Y Sikdar, G Cosquer, S Chatterjee, M Yamashita, S Goswami. *Inorganic chemistry* (2016) 55 (2), 691-699.
- A simple Schiff base molecular logic gate for detection of Zn<sup>2+</sup> in water and its bio-imaging application in plant system. B Naskar, R Modak, Y Sikdar, DK Maiti, A Banik, TK Dangar, S Mukhopadhyay, D Mandal, S Goswami. *Journal of Photochemistry and Photobiology A: Chemistry* (2016), 321, 99-109.





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Coll4, Coll7, and a Series of Coll2LnIII (LnIII = NdIII, SmIII, GdIII, TbIII, DyIII) Coordination Clusters: Search for Single Molecule Magnets. R Modak, Y Sikdar, AE Thuijs, G Christou, S Goswami.

- Inorganic Chemistry (2016), 55 (20), 10192-10202.

Family of MnIII4LnIII2 (LnIII= SmIII, GdIII, DyIII) coordination clusters: Experimental and theoretical investigations. R Modak, Y Sikdar, A Bieńko, M Witwicki, M Jerzykiewicz, S Goswami. Polyhedron (2016), 119, 202-215.

- Experimental and theoretical study on a new copper(II) complex derived from pyridoxal hydrochloride and 1, 2-diaminocyclohexane. S Mandal, Y Sikdar, R Sanyal, S Goswami. Journal of Molecular Structure (2017), 1128, 471-480.
- Fluorescent sensing of Al<sup>3+</sup> by benzophenone based Schiff base chemosensor and live cell imaging applications: Impact of keto-enol tautomerism. B Naskar, R Modak, Y Sikdar, DK Maiti, A Bauzá, A Frontera, A Katarkar, Sensors and Actuators B: Chemical (2017), 239, 1194-1204.
- New pyridoxal based chemosensor for selective detection of Zn<sup>2+</sup>: application in live cell imaging and phosphatase activity response. S Mandal, Y Sikdar, DK Maiti, R Sanyal, D Das, A Mukherjee, SK Mandal, S Goswami. Journal of Photochemistry and Photobiology A: Chemistry (2017), 334, 86-100.
- Diazine based ligand supported Coll3 and Coll4 coordination complexes: role of anions. Y Sikdar, R Goswami, R Modak, M Basak, MJH Ojea, M Murrie, S Goswami. New Journal of Chemistry (2018), 42 (21), 17587-17596.
- A versatile quinoxaline derivative serves as a colorimetric sensor for strongly acidic pH. R Bag, Y Sikdar, S Sahu, DK Maiti, A Frontera, A Bauzá, MGB Drew, S Goswami. Dalton Transactions (2018), 47 (47), 17077-17085.
- A quinoxaline-diaminomaleonitrile conjugate system for colorimetric detection of Cu<sup>2+</sup> in 100% aqueous medium: observation of aldehyde to acid transformation. R Bag, Y Sikdar, S Sahu, P Saha, J Bag, K Pal, S Goswami. Dalton Transactions (2019), 48 (17), 5656-5664.
- Visual detection of fluoride ion based on ICT mechanism. S Sahu, Y Sikdar, R Bag, DK Maiti, JP Cerón-Carrasco, S Goswami. Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy (2019), 213, 354-360.

Slow magnetic relaxation and water oxidation activity of dinuclear CollCollIII and unique triangular CollCollCollIII mixed-valence complexes. R Modak, B Mondal, Y Sikdar, J Banerjee, E Colacio, I Oyarzabal, J Cano, S Goswami. Dalton Transactions (2020), 49 (19), 6328-6340.





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- Fascinating Structures of a Mixed Valence [MnIII]-[MnIIMnIII] Cocrystal and a MnIIINal Complex: Slow Magnetic Relaxation and Theoretical Investigations. R Bag, Y Sikdar, P Saha, P Ghosh, MGB Drew, S Goswami. *Crystal Growth & Design* (2020), 20 (3), 1849-1858.
- Enhancement of the coordinating flexibility in a Schiff-Mannich combo ligand: forced generation of a new NiII-Ophenoxo-LnIII-Oalkoxo-LnIII array (Ln= Gd, Tb, Dy and Ho). R Bag, Y Sikdar, P Saha, P Ghosh, MGB Drew, J Tang, S Goswami. *New Journal of Chemistry* (2021), 45 (11), 5258-5265.
- Slow Magnetic Relaxation in a Co<sub>2</sub>Dy Trimer and a Co<sub>2</sub>Dy<sub>2</sub> Tetramer. R Modak, Y Sikdar, CJ Gómez-García, S Benmansour, S Chatterjee, S Goswami. *Chemistry-An Asian Journal* (2021), 16 (6), 666-677.
- A novel quinoxaline-rhodamine conjugate for a simple and efficient detection of hydrogen sulphate ion. S Sahu, Y Sikdar, R Bag, DK Maiti, JP Cerón-Carrasco, S Goswami. *Compounds* (2021), 1 (1), 29-40
- Benzimidazole-acid hydrazide Schiff-Mannich combo ligands enable the nano-molar detection of Zn<sup>2+</sup> in semi-aqueous media, HuH-7 cells, and plants via a fluorescence turn-on mode. R Bag, Y Sikdar, S Sahu, MM Islam, S Mandal, S Goswami. *New Journal of Chemistry* (2022), 46 (33), 16161-16171.
- Strategic Substitution of -OH/-NR<sub>2</sub> (R=Et, Me) Imparts Colorimetric Switching between F<sup>-</sup> and Hg<sup>2+</sup> by Salicylaldehyde/Benzaldehyde-Quinoxaline Conjugates. R Bag, Y Sikdar, S Sahu, J Bag, MGB Drew, K Pal, S Goswami. *ChemPhysChem* (2022), 23 (4), e202100718.
- Turn on Fluorescence Sensing of Zn<sup>2+</sup> Based on Fused Isoindole-Imidazole Scaffold. S Sahu, Y Sikdar, R Bag, J Cerezo, JP Cerón-Carrasco, S Goswami. *Molecules* (2022), 27 (9), 2859.
- A Quinoxaline - Naphthaldehyde Conjugate for Colorimetric Determination of Copper Ion. S Sahu, Y Sikdar, R Bag, MGB Drew, JP Cerón-Carrasco, S Goswami. *Molecules* (2022), 27 (9), 2908.
- Search for Structurally Resembled Mn/Ca Cubane Core of the Oxygen Evolving Complex of Photosystem II Yielded MnIV, MnIII<sub>3</sub>MnII and MnIII<sub>2</sub>CaII<sub>2</sub> Entities: Structure and Magnetism. R Modak, Y Sikdar, P Bhattacharya, JS Kinyon, N Dalal, JK Bindra, S Goswami. *European Journal of Inorganic Chemistry* (2022), 2022 (13), e202200058.
- Benzimidazole based ESIPT active chemosensors enable nano-molar detection of Cu<sup>2+</sup> in 90% aqueous solution, MCF-7 cells, and plants. R Bag, Y Sikdar, S Sahu, CD Mukhopadhyay, MGB Drew, S Goswami. *Journal of Photochemistry and Photobiology A: Chemistry* (2022), 431, 114006.







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- Experimental and Theoretical Exploration of ESIPT in a Systematically Constructed Series of Benzimidazole Based Schiff Base Probes: Application as Chemosensors. R Bag, Y Sikdar, S Sahu, MM Islam, S Mandal, S Goswami. Chemistry-A European Journal (2023),- doi.org/10.1002/chem.202203399 (Early view of accepted Manuscript).

## Participation In Seminars / Webinars / Workshops / Conferences

- 'Workshop on Electronic Structure of Coordination Complexes (WESCC-2016)' organized by IIT Bombay on May 16-18, 2016. (Role: Participant).
- 'Conference on Modern Trends in Molecular Magnet (MTMM-2016)' organized by IIT Bombay on 19- 21, 2016. (Role: Participant) May.
- 'CRSI- 2016' jointly organized by Panjab University and INST Mohali on 5-7 February 2016. (Role: Poster Presentation).
- 'Asian Academic Seminar and School 2015' jointly organized by IISER Kolkata and IACS Kolkata on 6-10, March 2015 sponsored by DST and JSPS. (Role: Poster Presentation).
- 'Structural Chemistry of Molecules and Materials' jointly organized by Royal Society of Chemistry, University of Calcutta, Jadavpur University and IISER Kolkata held on 30th November to 2nd December 2014. (Role: Poster Presentation).
- 'Modern Trends in Inorganic Chemistry (MTIC-XV)' organized by IIT Roorkee on December 13-16, 2013. (Role: Poster Presentation).

## Awards / Recognitions

- 2016 Senior Research Fellowship (SRF) in Chemical Sciences, Council of Scientific & Industrial Research, New Delhi, India.
- 2012 Project Fellow in Sponsored project of Department of Science and Technology (DST), New Delhi.
- 2012 Graduate Aptitude Test in Engineering (GATE) in Chemistry.
- 2010 Nanda Kishore Mukherjee Memorial Prize in Chemistry Hons. for securing highest marks in theoretical paper in University Examination in Scottish Church College.





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## Other Notable Activities

- Organizing member of Students Seminar 'Chem Voice' 21', at The Bhawanipur Education Society College, 26th June, 2021.
- Coordinator of National Science Day - 2022 organised by Science Section, The Bhawanipur Education Society College on 28th February 2022.
- Organizing member of Students Seminar 'Chem Voice' 22', at The Bhawanipur Education Society College, 24th November, 2022.

## Vision Statement

- Stimulate free thinking and unorthodox mindsets among students.
- Foster open ended discussion and bridge between theoretical and practical perception.

Signature of the  
Faculty Member

Date: 01st September, 2022



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