Dr. Bhaskar Biswas
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Academic Experiences

I have been a Chemistry Professor at the University of North Bengal, Darjeeling since 1st February 2019.

Teaching Experience: July 2008 to date.

Research Experiences & Selected Publications (2024-2022)

Research Interest: Bioinspired Chemistry, Coordination-driven functional materials, Electrocatalysis.

Number of research articles: 147; Total citation= 2113; h-index= 30; i-10 index= 63

Review Article (Selected)

- Coordination-driven electrocatalysts as an evolving wave of enthusiasm for sustainable hydrogen production Sangharaj Diyali, Nilankar Diyali, Bhaskar Biswas, ***Coordination Chemistry Reviews***, 500 (2024) 215496 **(Corresponding Author)**. (I.F. 24.8)
- Metal–Organic Framework: An Emergent Catalyst in C–N Cross-Coupling Reactions Nilankar Diyali, Sagarmoni Rasaily, Bhaskar Biswas, ***Coordination Chemistry Reviews***, 469 (2022) 214667 **(Corresponding Author)**. (I.F. 24.8)
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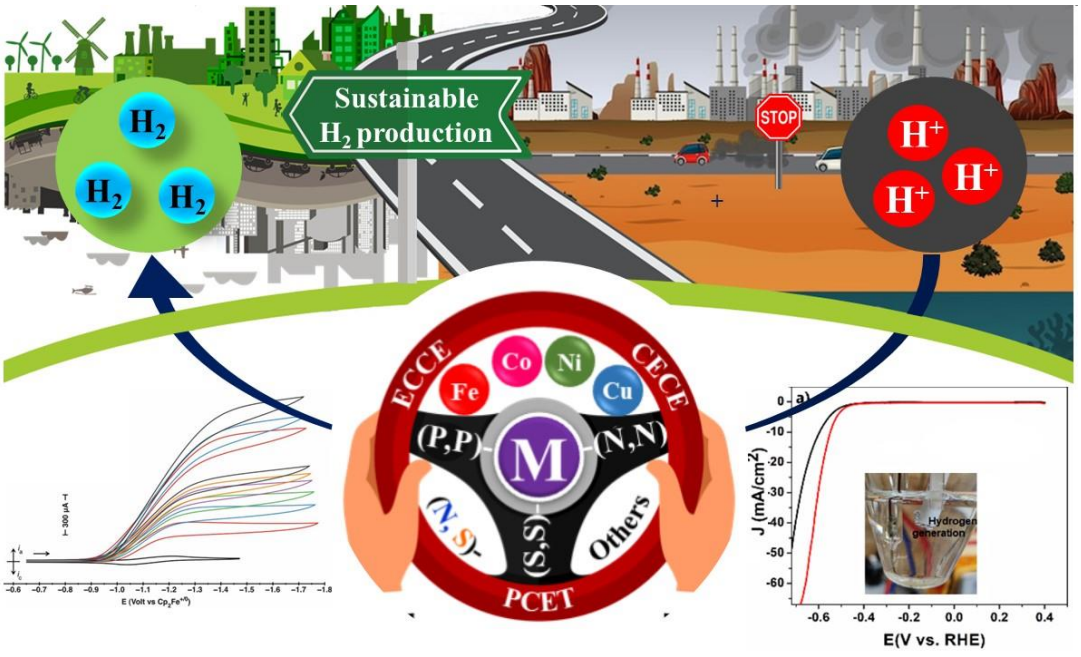

Book (Editor)

- A tribute to People's man APJ Abdul Kalam who served our nation through his life and works, ISBN No. 978-81-929996-9-2; page 1-92
- Ligand, Edited by Dr. Chandraleka & Dr. B Biswas, 2017-18, ISBN No. 978-1-78923-182-3

Book Chapter (2024)

- Fundamentals of Reaction, Kinetics and Mechanism of Methanol Production, **Nilankar Diyali**, Subhajit Saha, Meena Chettri, and Bhaskar Biswas, ; Reference Module in Chemistry, Molecular Sciences and Chemical Engineering; Elsevier; DOI:10.1016/B978-0-443-15740-0.00030-6 (2024)
- Using Solar Energy in Methanol Production: Efficiency, Environmental Impact and Economical Performance, **Meena Chettri**, Subhankar Kundu, Nilankar Diyali, and Bhaskar Biswas, Reference Module in Chemistry, Molecular Sciences and Chemical Engineering, Elsevier; doi.org/10.1016/B978-0-443-15740-0.00022-7; (2024).

Award and Fellowship

• **Teachers Associateship for Research Excellence (TARE)** TAR/2018/000473 by SERB, INDIA

YOUNG SCIENTIST from DST, NEW DELHI (SB/FT/CS-088/2013)

• UGC-CSIR JRF under CSIR scheme, 2004

Member of the Learned Society

• Indian Chemical Society (**F/8097/LM**)
• American Chemical Society (**32182808**)

Selected Research Publications

2024

117. Deciphering electrocatalytic hydrogen production in water through a bioinspired water-stable copper(II) complex adorned with (N2S2)-donor sites, **Sangharaj Diyali**, Subhajit Saha, Nilankar Diyali, Avantika Bhattacharjee, Abhishek Mallick, Suraj Kumar Agarwal, Chandra Shekhar Purohit, and Bhaskar Biswas*, ***ChemSusChem***, 2024, e202401089, https://doi.org/10.1002/cssc.202401089.

116. A pdc-pinched copper complex for sustainable hydrogen production through ligand supported-metal centric proton-coupled electron transfer, **Meena Chettri**, Subhajit Saha, Nilankar Diyali, Rakesh Debnath, Harshita Bagdwal, Monika Singh, and Bhaskar Biswas*, ***Sustainable Energy & Fuels***, 2024, DOI: 10.1039/D4SE00953C.

115. Decrypting the hydrogen evolution through alkaline water splitting with newfangled magnetoactive cobalt(II) complexes, **Subhajit Saha**, Nilankar Diyali, Sangharaj Diyali, Subhra Jyoti Panda, Mainak Das, Prafullya Kumar Mudi, Partha Pratim Ray, Chandra Shekhar Purohit, and Bhaskar Biswas*, ***Dalton Transactions***, 2024, 53, 13805-13814.

114. Phenalenyl-ruthenium synergism for effectual catalytic transformations of primary amines to amides, **Nilaj Bandopadhyay**, K. Pramanik, G. Sarkar., S.J. Panda, C.S. Purohit, Bhaskar Biswas, H.S. Das, ***Dalton Transactions***, 2024, 53, 13795-13804**.**

113. Chelation Therapy-inspired Design of a Water-stable Fluorescent Probe for Effectual Monitoring of Copper(II) ions in Water, **Suvojit Roy**, Prosenjit Choudhury, and Bhaskar Biswas*, ***Analytical Methods***, 16 (2024) 5003-5011.

112. Electrocatalytic Facets of a Newly Designed Cobalt(III) Complex Towards Sustainable Hydrogen Evolution, **Subhankar Kundu**, Nilankar Diyali, Subhajit Saha, Meena Chettri, Rajani Kanta Mahato, Suraj Kumar Agarwalla, Chandra Shekhar Purohit and Bhaskar Biswas*, ***Inorganica Chimica Acta***, 570 (2024)122161.

111. An oxo-acetato-bridged trinuclear cobalt(III) cluster-persuaded cobalt oxide active electrocatalyst for efficient hydrogen evolution activity, **Gayetri Sarkar**, Nilankar Diyali, Bipul Mondal, Suraj Agarwala, Chandra Sekhar Purohit, Hari Sankar Da*, and Bhaskar Biswas*, ***Applied Organometallic Chemistry***, 38 (2024) e7544, 10.1002/aoc.7544.

107. AIE Active Fluorescent Organic Nanoparticles based Optical Detection of Cu^{2+} ion in Pure Water: A Case of Aggregation-disaggregation Reversibility, **Subhajit Saha**, Suvendu Paul, Rakesh Debnath, Nilanjan Dey, Bhaskar Biswas*, ***Analytical Methods***, 16 (2024) 1058-1068.

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103. Electrocatalytic hydrogen production activity with a copper(II)-dipyridylamine complex in acidic water, **Nilankar Diyali**, Meena Chettri, Subhajit Saha, Ankita Saha, Subhankar Kundu, Debasish Mondal, Debasis Dhak and Bhaskar Biswas, ***CrystEnggComm.***, 25 (2023) 6837-6844.

102. Harnessing hydrogen evolution reaction (HER) through electrical mobility of embossed Ag(I)-molecular cage and Cu(II)-coordination polymer, **Ananya Debnath**, Sangharaj Diyali, Mainak Das, Subhrajyoti Panda, Debasish Mondal, Debasis Dhak, Chandra Shekhar Purohit, Partha Pratim Roy, and Bhaskar Biswas*, ***Dalton Transactions***, 2023, 52, 8850–8856.

101. Lattice-Water Tweaked *Cis-Trans* Isomerism of a Copper(II)-Dipyridylamine-Azide Complex and their Aggregation Features, **Nilankar Diyali**, Meena Chettri, Abhranil De, Subhra Jyoti Panda, Chandra Sekhar Purohit, and Bhaskar Biswas***, GIANT***, 15, 2023, 100167.

100. An efficient 2-(2-Pyridyl)imidazole based copper catalyst for N-Arylation of N-heterocycles, **Gayetri Sarkar**, Nilaj Bandopadhyay, Krishnendu Paramanik, Subhajit Saha,

Subhra Jyoti Panda, Chandra Shekhar Purohit, Bhaskar Biswas*, Hari Sankar Das*, ***Molecular Catalysis*** 545 (2023) 113212 **.**

99. Catalytic fate of structurally characterized manganese(III)–salen complexes towards efficient transformation of primary amides to amines or nitriles using hydrosilane† **Nilaj Bandopadhyay**, Krishnendu Paramanik, Gayetri Sarkar, Souvik Chatterjee, Suvojit Roy, Subhra Jyoti Panda, Chandra Shekhar Purohit, **Bhaskar Biswas*** and **Hari Sankar Das*,** ***New Journal of Chemistry***, 2023, 47, 9414.

98. Ligand-Metal Cooperativity in Quinonoid Based Nickel(II) and Cobalt(II) Complexes for Catalytic Hydrosilylative Reduction of Nitrile to Amine: Electron Transfer and Mechanistic Insight, **Krishnendu Paramanik**, Nilaj Bandopadhyay, Gayetri Sarkar, Souvik Chatterjee, Suvojit Roy, Subhra Jyoti Panda, Chandra Sekhar Purohit, Bhaskar Biswas*, and Hari Sankar Das*, ***Dalton Transactions***, 2023, 52, 4964–4972.

97. Tailor-made isostructural copper(II) and nickel(II) complexes with a newly designed (N,N)-donor scaffold for functional mimics of alkaline phosphatase, **Subhankar Kundu**, Subhajit Saha, Subhra Jyoti Panda, Chandra Shekhar Purohit, and Bhaskar Biswas*, ***New Journal of Chemistry***, 2023,**47**, 5894-5902.

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95. Supramolecular framework-driven electrical conductivities and hydrogen evolution activities of hybrid Ni(II)-Ce(IV) complex salts cooperativity**,** **Sangharaj Diyali,** Mainak Das, Mayank Joshi, Partha Pratim Ray, Angshuman Roy Choudhury, Md. Selim Arif Sher Shah, and **Bhaskar Biswas*,** ***Crystal Growth & Design*****,** 22 (2022) 7590-7602.

93. Hybrid Lead Bromide Perovskite Single Crystals coupled with Zinc(II) Complex for White Light Emission, **Sangharaj Diyali**, Mihir Manna, Shreya Mahato, Virendra Kumar, Angshuman Roy Choudhury, **Bhaskar Biswas*** and Satyapriya Bhandari*, ***Journal of Physical Chemistry Letters*****,** 13, 46, (2022) 10759-10766.

92. A Hemilabile 2-(2'-pyridyl)-imidazole Based Nickel(II) Complex: Proton-coupled-electron-transfer, Bactericidal and Cytotoxicity Studies, **Krishnendu Paramanik**, Nilaj Bandopadhyay, Rakesh Debnath, Suvojit Roy, Muddukrishnaiah Kotakonda, Mrinal Kanti Adak, Bhaskar Biswas*, and Hari Sankar Das*, ***New Journal of Chemistry*****,** 46 (2022) 17517-17526.

91. A Visible light-triggered Pyrazole-Functionalized Reversible Ionophore for Selective Monitoring of Aluminium(III) ion, **Suvojit Roy**, Subhankar Kundu, Subhajit Saha, K. Muddukrishnaiah, Rajib Paramanik, **Bhaskar Biswas***, ***Applied Organometallic Chemistry*****, 36 (2022)** e6865.

89. Supramolecular Encapsulation of Nanocrystalline Schiff base into β-Cyclodextrin for Multifold Enrichment of Bio-potency" **Rajani Kanta Mahato**, Ananya Debnath, Ajit Das,

Debanjan Sarkar, Sankar Bhattacharyya, and **Bhaskar Biswas***, ***Carbohydrate Polymer***, 291 (**2022**) 119614.

87. A thiomethyl-substituted imidazolyl imine functionalized copper(II) complex: synthesis, structural characterization, phenoxazinone synthase mimics and biological activities, **Nilaj Bandopadhyay,** Krishnendu Paramanik, Prafullya Kumar Mudi, Gayetri Sarkar, Muddukrishnaiah Kotakonda, Madhusudan Shit, Hari Sankar Das, **Bhaskar Biswas***, ***Polyhedron***, 218 (**2022**) 115783.

86. Schiff Base Driven Denticity-Fluctuated Structural Assortment of Zinc-pseudohalide Complexes: Synthesis, Structures and Electrical Transport Properties, **Prafullya Kumar Mudi**, Labhini Singla, Anil Chamuah, Sanjib Bhattachariya, Angshuman Roy Choudhury, and Bhaskar Biswas***, Crystal Engineering Communications***,** 24 (2022) 2418.

85. Hydroboration and reductive amination of ketones and aldehydes with HBpin by a bench stable Pd(II)-catalyst, **Shreya Mahato**, Parveen Rawal, Ajitaro Devadkar, Mayank Joshi, Angshuman Roychoudhury, **Bhaskar Biswas***, Puneet Gupta, Tarun Panda, ***Organic & Biomolecular Chemistry***, 20 (2022) 1103.

84. Methyl group: A Potential Building Block for Edge-to-Face Interlocking of Benzimidazole Scaffolds in Developing Blue Light Emitting Molecular Aggregates, **Subhankar Kundu**, S. Saha, A. Das, L. Singla, A.R. Choudhury, **Bhaskar Biswas***, ***J. Mol. Liq.*** 347 (**2022**) 118340.

82. *De Novo* synthesis of hybrid d-f block complex salts and their electronic Charge Transport Properties, **Shreya Mahato**, Amit Mondal, Mainak Das, Mayank Joshi, Partha Pratim Ray, Angshuman Roy Choudhury, C. Malla Reddy, and Bhaskar Biswas*, ***Dalton Transactions***,** 51 (**2022**), 1561.

Invited Talk:

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1. Invited Lecture at National Seminar on ***Emerging Materials in Energy, Water & Environment for Sustainable Development*** (EMEWE-2024) 11-12 March 2024, *Organized by* Department of Chemistry, Sidho-Kanho-BirshaUniversity, Purulia, India
2. Invited Lecture at State Level Seminar on ***Recent Advances in Chemistry and Chemical Technology***, organized by Dept. of Chemistry, Cooach Beher Panchanan Berma University on 10th January 2024 *De Novo* design of water-stable copper(II) electrocatalysts adorning bioinspired (N_2S_2)-driven active site for sustainable hydrogen evolution
3. Invited Lecture at ***International Symposium on Trends in Green and Sustainable Chemistry 2024*** organized by Amity Institute of Click Chemistry Research and Studies (AICCRS) on 5th January, 2024. Water-stable copper(II) molecular electrocatalysts adorned with bioinspired (N_2S_2)-driven active site deciphering electrocatalytic hydrogen production in acidic water splitting
4. Invited Lecture on "***Synthetic Coordination Chemistry: Biological Perspectives***" in One Day Webinar on "Advance Level Study on Chemical Sciences" by Netaji Subhas Open University(NSOP) on 23rdSeptember, 2020

5. Invited Lecture on "***Metallo-supramolecular Chemistry: Synthetic strategy, self-assembly and smart functionalities***" in One Day National Level Webinar on "National Science Day Celebrations" by Urumu Dhanalakshmi College, Tiruchirapally, India on 26 February, 2021.

Convener/Coordinator in National Level Seminar/Workshop/Conference

- **National Conference** on ***Chemistry for Sustainability***, by Dept. of Chemistry, University of North Bengal, Darjeeling 734013, India & Sponsored by IASc, INSA, NASI (13^{th} – 14^{th} August, 2024) **(Convenor)**
- **Science Academies' Lecture Workshop** on *New Facets in Chemical Sciences*, by Dept. of Chemistry, University of North Bengal, Darjeeling 734013, India & Sponsored by IASc, INSA, NASI (22^{nd} – 23^{rd} March, 2024) **(Coordinator of Lecture Workshop)**
- **Science Academies' Lecture Workshop** on *New Facets in Chemical Sciences*, by Dept. of Chemistry, University of North Bengal, Darjeeling 734013, India & Sponsored by IASc, INSA, NASI (22^{nd} – 23^{rd} March, 2024) **(Coordinator of Lecture Workshop)**
- **SERB sponsored KARYASHALA hands-on training program** Synthesis, Characterization and Understanding of Smart Materials Employing Advance Scientific Equipments and Computational Modelings **during 4-11 July 2022 (Event Organizer)**
- **One day International Seminar** on *Frontier in Chemistry 2020*, by Dept. of Chemistry, University of North Bengal, Darjeeling 734013, India in collaboration with CRSI (North Bengal Local Chapter) (15^{st} October, 2020) **(Jt. Convener)**
- **International Seminar on IYPT 2019** on *The Periodic Table of Chemical Elements: A Fundamental Resource for the Advancement of Chemical & Material Sciences*, by Dept. of Chemistry, University of North Bengal, Darjeeling 734013, India (22^{nd} – 23^{rd} November, 2019) **(Jt. Convener of International Seminar)**
- **Science Academies' Refresher Course** on *Fundamentals & applications of Chemistry in Material & Biological Sciences: Recent Trends*, by Dept. of Chemistry, Surendranath College, Kolkata 700009, India & Sponsored by IASc, INSA, NASI (02^{nd} – 17^{th} January, 2019) **(Coordinator of Refresher Course)**
- **Indian Chemical Society Workshop** on *Revisit of Chemistry on Undergraduate Course: Past, Present and Future*, by Dept. of Chemistry, Surendranath College, Kolkata 700009, India & collaboration with **Indian Chemical Society** (16 February, 2018) **(Coordinator of Lecture Workshop)**

Research Guidance

LAB ALUMNI

 **Dr. Dhananjay Dey** **Assistant Professor** CSJM University Kanpur, India.	 **Dr. Abhranil De** **Assistant Professor** Hooghly Eng. & Tech. College West Bengal, India.	 **Dr. Subrata Das** **Assistant Teacher** GaralGacha High School, Hooghly, India.	 **Dr. Biswajit Chowdhury** **Assistant Teacher** AdiSaptagram High School, Hooghly, India.
 **Dr. Prafullya K. Mudi** **Assistant Professor** Department of Chemistry University of Burdwan Burdwan Burdwan, India.	 **Dr. Rajani K. Mahato** **Assistant Professor** Department of Chemistry Rajendra University Odisha, India.	 **Dr. Shreya Mahato** **Senior Research Associate** Gland Pharma Limited Telangana, India.	 **Dr. Chanchal K. Pal** **Assistant Teacher** Bhadrakali High School, Hooghly, India.

1) Dhananjay Dey (**Thesis Awarded on 14th November 2017**)
2) Abhranil De (**Thesis Awarded on 03rd December 2018**)
3) Subrata Das (**Thesis Awarded on 07th June 2019**)
4) Biswajit Chowdhury (**Thesis Awarded on 30th October 2019**)
5) Mamoni Garai (**Thesis Awarded on 21st August 2021**)
6) Prafullya Kumar Mudi (**Thesis Awarded on 10th August 2022**)
7) Rajani Kanta Mahato (**Thesis Awarded 20th September 2023**)
8) Shreya Mahato (**Thesis Awarded 06th February 2024**)
9) Chanchal Kr. Pal (**Thesis Awarded 16th February 2024**)

Laboratory of Structural Engineering and Sustainable Catalysis

Ongoing students

Suvojit Roy-Suvam Mukherjee-Nilaj Bandopadhyay-Sangharaj Diyali-Subhankar Kundu-Subhajit Saha-Ananya Debnath-Nilankar Diyali-Meena Chetri-Ankita Saha-Gopal Sarkar-Madhumita Samanta