

Dr. Debajyoti Saha

M.Sc., Ph.D.

Assistant Professor (W.B.E.S.)

Department of Chemistry

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Education

- **Ph.D. in Chemistry**
[Indian Association for Cultivation of Science (IACS), 2015]
Title of thesis: Variation of Structural Motifs in Phosphine Ligands for Efficiency in Palladium Catalyzed Coupling Reaction
- **M.Sc. in Chemistry**
[Indian Institute of Technology (IIT), Kanpur 2009]
- **B.Sc in Chemistry**
[Presidency College, Calcutta University (CU), 2007]

Areas of Expertise

- Organic Chemistry
- Organometallic Chemistry

Research Interests

- Transition Metal Catalysis
- Visible Light Mediated Organic Reaction

Professional Details

- **Date of joining W.B. Education Service:** 27th May, 2015
- **Date of joining Maulana Azad College:** 19th May, 2026
- **ORCID ID:** <https://orcid.org/0000-0002-1822-979X>
- **Google Scholar:** <https://share.google/vIzVY3w6ynhVO98KG>
- **Research Gate:** <https://www.researchgate.net/profile/Debajyoti-Saha-4>

Service History

- Maulana Azad College, Kolkata (19th May, 2026 - Present)
- Krihnagar Govt. College, Krishnagar (27th May, 2015 – 18th May, 2026)

Teaching Experience

Since 2015, I have been actively teaching Organic chemistry to students covering fundamental concepts such as Stereochemistry, Reaction Mechanism (Nucleophilic, Electrophilic and Radical Substitution Reaction, Elimination Reaction), Organic Spectroscopy (UV, IR, NMR), Carbohydrate Chemistry, Chemistry of different functional groups etc.

I emphasize a concept-oriented approach in my lessons, incorporating interactive and practical applications. This method aims to broaden students' comprehension while enhancing their capacity for critical thought and problem-solving in their undergraduate chemistry education.

Research Interests

My research interests lie in transition metal catalysis and visible-light photocatalysis for the development of sustainable and efficient synthetic methodologies. I am particularly interested in the design of catalytic systems that enable selective bond-forming transformations, activation of inert chemical bonds and the synthesis of biologically relevant and functional molecules. By integrating transition metal catalysis with visible-light-driven processes, I aim to explore novel reaction pathways and environmentally benign strategies for organic synthesis.

Research Projects

- **Project Title:** Pd-Catalyzed enantioselective desymmetrization of aldehydes and amines via C-H functionalization using transient directing group.
- **Funding Agency:** TARE/SERB/DST
- **Type:** Major Research Project (File No. TAR/2018/000075 dt. 22/02/2019)
- **Duration:** 2019-2023
- **Total Project Cost:** 18,30,000/-

Publications

1. "Stereoselective Synthesis of Z-Styrenyl-1,2-bis Dithiocarbamate via Metal-Free Activation of Alkynyl Bromide", S Mondal, T Naskar, R K Roy, S Mondal, **D Saha***, A Saha*, *Eur. J. Org. Chem.* **2026**, 29, e202501174. [ISSN 1434-193X ; **IF: 2.7**]
2. "Identification of CC σ -hole $\cdots \pi$ interactions in the designed organometallic chloro-pyrazole-Pd (II) complex", **D Saha***, AK Das, M Raish, N Sepay*, *J. Mol. Struct.* **2025**, 1329, 141363. [ISSN 0022-2860; **IF: 4.7**]
3. "Exploring NHCs as organocatalysts: a modern synthetic tool", **D. Saha***, *Arkivoc*, **2025**, 1-18. [ISSN: 1551-7012 (online ed.); **IF: 1.14**].
4. "Exploring sterically-demanding triarylphosphine ligands to enhance activation of challenging C-Cl bonds in palladium catalysis", **D. Saha***, *Arkivoc*, **2024**, 1-16. [ISSN: 1551-7012 (online ed.); **IF: 1.14**]
5. "Catalytic Dearomative Cycloaddition Reactions Enabled by Visible Light", **D Saha***, *Asian J. Org. Chem.* **2024**, 13, e202400374. [ISSN 2193-5807; **IF: 2.6**]
6. "Metal-free trifunctionalization of phenylacetylenes: an efficient one-pot two-step synthesis of gem-bis(dithiocarbamates)", M Mondal, **D Saha***, A Saha*, *Org. Biomol. Chem.* **2023**, 21, 5924-5928.
7. "Identification of natural flavonoids as novel EGFR inhibitors using DFT, molecular docking and molecular dynamics", N Sepay*, R Mondal, A Muhanna, **D Saha**, *New Journal of Chemistry*, **2022**, 46, 9735-9744 [ISSN 0040-4020; **IF: 3.59**]
8. " β -Pinene and camphor based, pyrazole-tethered triarylphosphines as chiral P,N ligands for palladium" **D Saha***, T Das, A Pal, *Arkivoc*, **2021**, 217 - 233, [ISSN: 1551-7012 (online ed.); **IF: 1.14**].
9. "Nickel Catalyzed Ligand- And Base-Free One-Pot Diazotization/Cross-Coupling of Aryl Amine With Aryl Boronic Acid", A Bej, **D Saha*** *Asian J of Org. Chem.* (**IF: 3.32**), **2021**, 10, 2347 - 2350, [ISSN: 2193-5815; **IF: 3.32**].
10. "Fluxional chloro-pyrrole-Pd(II) complex to cationic η^2 -pyrrole-Pd(II) complex: subtlety in structure-directed bonding mode", **D Saha***, N Sepay* *New Journal of Chemistry*, **2021**, 45, 10594-10598, [ISSN 0040-4020; **IF: 3.59**].
11. "Catalytic Enantioselective Radical Transformations Enabled by Visible-Light", **D Saha***, *Chemistry-An Asian Journal*, **2020**, 15, 2129- 2152, [ISSN 1861-471X; **IF: 4.57**].
12. "Synthesis of Phenolic Compounds via Palladium Catalyzed C-H Functionalization of Arenes", **D.Saha***, P.Das, P. Biswas, J.Guin*, *Chem. Asian. J.*, November **2019**, 14, 4534-4548 [ISSN 1861-471X; **IF: 4.57**].

13. "Aerobic Direct C(sp²)-H Hydroxylation of 2-Arylpyridines by Palladium Catalysis Induced with Aldehyde Auto-Oxidation", P.Das, **D.Saha**, D.Saha and J.Guin*, *ACS Catal.*, June **2016**, 6, 6050-6054 [ISSN 2155-5435; **IF: 12.22**].
14. "Palladium-mediated Coupling Reaction with Aryl Chlorides: Stericvis-à-visElectronic Influence of Phosphineson Biaryl Motif", **D.Saha**, R.Ghosh, A. K. Mandal, A.Sarkar*, *J.Organomet. Chem.*, January, **2015**, 776, 89-97 [ISSN 0022-328X; **IF: 2.17**].
15. "A 'Hemilabile' Palladium–Carbon Bond: Characterization and Its Implicationin Catalysis", **D.Saha**, R.Verma, D.Kumar, S.Pathak, S.Bhunya and A.Sarkar*,*Organometallics*,**2014**, 33, 3243-3246 [ISSN 0276-7333; **IF: 4.12**].
16. "3-Indolyphosphines as Ligand for Palladium in Suzuki-Miyaura Coupling Reaction of Chloroarenes: Substituent Effects", **D. Saha**, R.Ghosh and A.Sarkar*, *Tetrahedron*, **2013**, 69, 3951-3960 [ISSN 0040-4020; **IF: 2.64**].

Conference Presentations

1. **Presented a Poster** entitled "An unusual Pd-C bond" in the One-day **International Seminar** on 'International Conference: Frontiers in Science: An Integrative Approach in Solving Global Challenges ' organized by Krishnagar Govt. College, Krishnagar on **10th and 11th September, 2025**.
2. **Presented a Poster** entitled "Characterization of a cationic η^2 -pyrrole-Pd(II) complex" in the One-day **International Seminar** on 'Innovation, Expansion, Impacts and Challenges in Chemical and Biological Sciences (ICBS-2025)' organized by Surendranath College, Kolkata on **3rd January, 2025**.
3. **Presented a Poster** entitled "Chiral P,N Ligands for Palladium Catalysis: Pyrazole-Tethered Triarylphosphines Derived from beta Pinene and Camphor" in the One-day **International Seminar** on 'Current Advancement in Science towards our Better Future' organized by Raja Rammohun Roy Mahavidyalaya, Hoogly on **23rd December, 2024**.
4. **Presented a Poster** entitled "Characterization of an unusual Pd-C bond and its importance in catalysis" in the Two days **International Seminar** on 'Innovation, Expansion, Impacts and Challenges in Chemical and Biological Sciences (ICBS-2020)' organized by Surendranath College, Kolkata on **8th – 9th January, 2020**.
5. Participated in the **Science Academies' Lecture Workshop** on 'Basic Chemistry for Advanced Future' organized by Dept. of Chemistry, Chakdaha College on **19th - 20th January, 2018**.
6. **Presented a Poster** entitled "Characterization of Pd-C bond" in the One-day **National Seminar** on 'Recent Advances in Chemistry' organised by Sripat Singh College, Murshidabad on **21st December, 2015**.

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Other Notable Activities:

1. Acted as a **Resource person** to "create an interest in Science among the students" in the **District level Science Fair**, organized by Vidyanagar G.D. Vidyamandir, Vidyanagar, Bardhaman, in collaboration with the Department of Science and Technology, Govt. of West Bengal from **20th - 22nd January, 2016**.
2. Acted as **Joint Convener** of "**Initiation**", **Inter-college Chemistry Quiz competition** (Nadia and Murshidabad districts), organized by the Department of Chemistry, Krishnagar Government College on **25th January, 2018**.

3. Acted as **Evaluator** of the projects presented by child scientists at **the state level congress, 2022** held on **6th – 7th November, 2022** at Bidhan Sishu Udyan, Ultadanga, Kolkata.

Participation in OP/RC:

1. Participated in the UGC sponsored **Refresher Course** organized by UGC-HRDC, Burdwan University from **07th August to 23rd August, 2025**.
2. Participated in the UGC sponsored **Refresher Course** organized by UGC-HRDC, Burdwan University from **20th August to 2nd September, 2022**.
3. Participated in the UGC sponsored **Refresher Course** organized by UGC-HRDC, Burdwan University from **25th June to 8th July, 2019**.
4. Participated in the UGC sponsored **Orientation Programme (OP-64)** organized by UGC-HRDC, Jadavpur University from **6th February to 4th March, 2017**.

Awards:

1. Secured **008 (Eight) rank (General)** in Joint Admission Test for **M.Sc (JAM-2007)**, an All India based admission test conducted by all the IIT's in India.
2. Received **Summer Fellowship in summer' 2008** from Indian Academy of Science (**IAS**), Bangalore for carrying out a project under the supervision of Prof. S Ghosh, IACS, Kolkata.
3. Received "**Young Scientist Award**" for **presenting a paper (oral presentation)** entitled "*Ligand 'Hemilability'-How important it is?*" in the **National Symposium** on '*Recent Advances in Chemistry & Industry (2015)*' organized by the **Indian Chemical Society**, Kolkata on **31st July - 1st August, 2015**.
4. Received "**Best Poster Award**" for **presenting a Poster** entitled "*The role of hemilabile Pd-C bond in C-C cross-coupling reaction*" in the **National Seminar** on '*Enthralling Facets of Molecular Manifestation in Chemical Sciences*' organized by Bidhannagar College, Salt lake on **15th - 16th September, 2016**.

Professional Memberships

1. Life Member of Indian Association for the Cultivation of Science
2. Editorial Board of Referees (ERB) at 'Arkivoc' Journal