Debasree Saha

Present Work status: Working as Assistant Professor of Chemistry at Raidighi College, West Bengal (affiliated to University of Calcutta).

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Scopus Author ID: 55213489000

Academic Qualifications

- Passed ICSE in 2000 from 'The Future Foundation School' with 89% marks.
- Passed ISC in 2002 from 'The Future Foundation School' with 86% marks.
- Completed B.Sc. with Honours in Chemistry in 2005 from 'The Lady Brabourne College', (University of Calcutta) with 73.25% marks.
- Completed M.Sc. in Chemistry with specialization in Organic Chemistry in 2007 from University of Calcutta with 74.7% marks.
- Completed Ph. D. in Synthetic Organic Chemistry as CSIR research fellow at Indian Association for the Cultivation of Science, Kolkata in May, 2012.

Work and Experience Details

- **Ph.D.**

Ph.D. Thesis Title : Development of Green Synthetic Procedures Using Metal Nanoparticles, Ionic Liquids and Other Benign Chemicals as Catalysts.

Ph. D. Supervisor : Prof. Brindaban C. Ranu

Research work: Ph.D. research work is based on the development of synthetic procedures for the construction of useful molecules by employing transition metal based (palladium and copper) homogeneous and heterogeneous catalytic systems and ionic liquids in a sustainable framework.

- **Postdoctoral**

1. Worked as postdoctoral fellow in the group of Prof. Belen Martin Matute at the Department of Organic Chemistry, Stockholm University from May 2012 to Dec 2012.

Research Work: Postdoctoral work consisted of two projects. The first one was an industrial project and the second one was an academic project. The industrial project involved stereoselective reduction of natural products. The academic project involved transition metal catalyzed coupling of α-halocarbonyl compounds with aryl/alkyl-metal compounds to produce α-aryl/alkyl substituted carbonyl moieties.

2. Worked as Research Associate in the group of Dr. Subhabrata Sen at the Chemistry Department of Shiv Nadar University, Greater Noida from May 2016 to Dec 2016 (on extraordinary leave for research from Raidighi College)

Research Work: Carried out research on solid supported metal catalysed organic reactions focusing mainly on C-H activation reactions.

- **Previous Employment**

Worked as Assistant Professor of Chemistry at Neotia Institute of Technology, Management and Science, Kolkata from Jan 2013 to March 2015.

Work profile:

- Teaching Chemistry and Environmental Chemistry in the undergraduate level.
- Setting and correcting University (WBUT) papers.
- Incharge of the training and placement cell of the institute.

- **Current Position**

Working as Assistant Professor of Chemistry at Raidighi College, West Bengal (affiliated to University of Calcutta) since April 2015; selected through West Bengal College Service Commission.

Work profile:

- Teaching Chemistry in the undergraduate level.
- Head of the Department of Chemistry
- Lab-incharge of the Department of Chemistry
- Examiner and Paper setter for University (CU) examinations
- Convenor of Grievance Redressal Cell, Raidighi College
- Convenor of Campus Maintenance and Development subcommittee, Raidighi

College

- Deputy Convenor of Research subcommittee, Raidighi College
- Deputy Convenor of seminar/webinar subcommittee, Raidighi College
- Active member of other different subcommittees like Admission, Academic, Career development and placement, Result, etc.
- Reviewer of Wiley, Elsevier and Springer journals.

Awards and Achievements

- Lady Brabourne College topper in B.A./B.Sc. examination (University of Calcutta), 2005.
- Awarded the "Hasina Murshid Memorial Award" for securing the highest marks in B.A./B.Sc. examination among all students at Lady Brabourne College.
- Awarded "Dr. Gouri Nag Memorial medal" for securing highest marks in B.Sc. examination, 2005 among all B.Sc. students at Lady Brabourne College
- Awarded "Srimati Kananbala Sen Smriti Puroshkar" for securing highest marks in Chemistry Honours, B.Sc. examination, 2005 at Lady Brabourne College
- Awarded the "Meghnad Saha Memorial medal" at Lady Brabourne College in 2005.
- Awarded the merit certificate for securing 10th position in B.Sc. (Chemistry Hons.) examination by the University of Calcutta in 2005.
- Stood 2nd in Organic Chemistry class (M.Sc. Chemistry, C.U. 2007)
- Qualified CSIR-NET -JRF in Dec, 2006 and subsequently awarded Doctoral research fellowship (Junior research fellowship from July 2007- July 2009 and Senior research fellowship from July 2009 –May 2012)
- Qualified GATE in 2007 with 99.47 percentile (All India rank 25).
- Won the Best Poster Award at the 14th CRSI National Symposium in Chemistry held at NIIST, Trivandrum in Feb, 2012.

Publications

Papers

1) Remarkable influence of substituent in ionic liquid in control of reaction: simple, efficient and hazardous organic solvent free procedure for the synthesis of 2-aryl benzimidazoles promoted by ionic liquid, [pmim]BF_4: **D. Saha**, A. Saha and B. C. Ranu, *Green Chem*. **2009**, *11*, 733–737; **ISSN** : 1463-9262 (print) 1463-9270 (web).

2) Aerobic ligand-free Suzuki coupling catalyzed by in situ-generated palladium nanoparticles in water: **D. Saha**, K. Chattopadhyay and B. C. Ranu, *Tetrahedron Lett*. **2009**, *50*, 1003–1006; **ISSN**: 0040-4039.

3) Ionic liquid-promoted dehydration of aldoximes: a convenient access to aromatic, heteroaromatic and aliphatic nitriles: **D. Saha**, A. Saha and B. C. Ranu, *Tetrahedron Lett*. **2009**, *50*, 6088–6091; **ISSN**: 0040-4039.

4) Copper nano-catalyst: sustainable phenyl-selenylation of aryl iodides and vinyl bromides in water under ligand free conditions: A. Saha, **D. Saha** and B. C. Ranu, *Org. Biomol. Chem.* **2009**, *7*, 1652–1657; **ISSN**: 1477-0520 (print); 1477-0539 (web).

5) A simple and efficient one-pot synthesis of substituted benzo[b]furans by Sonogashira Coupling-5-endo-dig cyclization catalyzed by palladium nanoparticles in water under ligand and copper-free conditions: **D. Saha**, R. Dey and B. C. Ranu, *Eur. J. Org. Chem.* **2010**, 6067–6071; **ISSN**: 1434-193X (print). 1099-0690 (online).

6) Palladium(0) nanoparticles catalyzed ligand-free direct arylation of benzothiazole via C-H bond functionalisation : **D. Saha**, L. Adak and B. C. Ranu, *Tetrahedron Lett*. **2010**, *51*, 5624–5627; **ISSN**: 0040-4039.

7) Hydroxyapatite–supported Cu(I) catalysed cyanation of styrenyl bromide with $K_4[Fe(CN)_6]$: an easy access to cinnamonitriles - **D. Saha,** L. Adak, M.Mukherjee and B. C. Ranu, *Org. Biomol. Chem.* **2012**, *10,* 952-957 (featured on the inside cover); **ISSN**: 1477-0520 (print); 1477-0539 (web).

8) Solvent-free transesterification in a ball-mill over alumina surface – T. Chatterjee, D. Saha and B. C. Ranu, *Tetrahedron Lett*. **2012**, *31*, 4142–4144 (Highlighted in *Synfacts*, **2012**, *8*, 1160); **ISSN**: 0040-4039.

9) Copper (I) Hydroxyapatite Catalyzed Sonogashira Reaction of Alkynes with Styrenyl Bromides. Reaction of *Cis*-Styrenyl Bromides Forming Unsymmetric Diynes
D. **Saha,** T. Chatterjee, M. Mukherjee and B. C. Ranu, *J. Org. Chem.* **2012**, 77, 9379-9383; **ISSN**: 0022-3263 (print); 1520-6904 (web).

10) Solid Supported nano structured Cu-Catalyst for solvent/ligand free **C2** Amination of Azoles- P. Dutta, S. Sen (corresponding author), **D. Saha (corresponding author)** and B. Dhar, *Eur. J. Org. Chem.* **2018**, 657–665; **ISSN**: 1434-193X (print). 1099-0690 (online).

Reviews

11) Potential of metal nanoparticles in organic reactions: B. C. Ranu, K. Chattopadhyay, A. Saha, L. Adak, R. Jana, S. Bhadra, R. Dey and **D. Saha**, *Journal of Physics: Conference Series*, **2008**, *106*, 012003; **ISSN**: 1742-6588 (print); 1742-6596 (web).

12) Metal nanoparticles as efficient catalysts for organic reactions, B. C. Ranu, K. Chattopadhyay, L. Adak, A. Saha, S. Bhadra, R. Dey and **D. Saha**, *Pure Appl. Chem.* **2009**, *81*, 2337–2354; **ISSN**: 1365-3075.

13) Green recyclable supported-metal catalyst for useful organic transformations: B. C. Ranu, S. Bhadra and **D. Saha**, *Curr. Org. Synth.* **2011**, 146-173; **ISSN**: 1570-1794.

14) Metal Nanoparticles: An Efficient Tool for Heterocycles Synthesis and Their Functionalization *via* C-H Activation: **D. Saha** and C. Mukhopadhyay, *Curr. Organocatal*. **2019**, *6*, 79-91; **ISSN**: 2213-3380

15) Recent developments in C–C bond formation catalyzed by solid supported palladium: a greener perspective – **D. Saha** and C. Mukhopadhyay, *Physical Sciences Reviews,* **2023**, 8(10), 3287–3302.

16) Recent Progress in Palladium Catalysed Sustainable Synthesis of Heterocycles- **D. Saha** (**corresponding author**) and C. Mukhopadhyay (corresponding author), *Curr. Organocatal.* **2023,** 10(3), pp. 147–159.

17) Current progress in the synthesis of imidazoles and their derivatives via the use of green tools- **D. Saha** (**corresponding author**) and C. Mukhopadhyay (corresponding author), *Heterocycl. Commun*, **2024,** DOI: 10.1515/hc-2022-0175

18) Potential of solid supported copper catalyst in sustainable organic synthesis, **D. Saha**, *RP Cur. Tr. Appl. Sci*. **2024**, 3, 10–13.

19) Current Progress in Visible Light-induced Synthesis and Functionalization of N- and S-Heterocycles: A Sustainable Perspective, D. Saha (corresponding author) and B.C. Ranu (corresponding author), *Curr. Green Chem.* **2024,** DOI: 10.2174/0122133461344399241001071524

Book chapter

20) "Aryl carbon-heteroatom coupling reactions using nano-catalyst''– a chapter in the book entitled "Nano-Catalysis: Synthesis and Applications", B. C. Ranu, **D. Saha**, D. Kundu and N. Mukherjee, **2013**, 189-220, Publisher: Wiley-Blackwell John Wiley & Sons, Inc, 2013; **ISBN**: 978-1-118-14886-0.

21) "Recent developments in C–C bond formation catalyzed by solid supported palladium: a greener perspective" – a chapter in the book entitled "Volume 1 Carbon-Carbon and Carbon-Heteroatom", **D. Saha** and C. Mukhopadhyay, **2022,** Publisher: Walter de Gruyter GmbH, Berlin/Boston.

22) "Current advances in the application of actinide complexes for useful organic transformations" – a chapter in the book entitled "Rare Earth Elements", **D. Saha** and C. Mukhopadhyay, **2023**, Publisher: Walter de Gruyter GmbH, Berlin/Boston.

Participations

I) In Conferences and symposiums

Name of symposium	**Topic of presentation**	**Duration**	**Nature of participation**
A) Seminars			
1. UGC-sponsored Workshop on Statistical Mechanics (Scottish Church College, Kolkata)		October 7-12, 2004	Attended
2. 9th Inter College Chemistry Quiz Contest (Presidency College, Kolkata)		December 22, 2004	Participated and secured 2nd position
3. Fifth CRSI (Kolkata Chapter) Symposium		August 2, 2007	Attended

(Jadavpur University, Kolkata, India)			
4. 10th CRSI National Symposium in Chemistry (IISc, Bangalore, India)	Metal Nanoparticles as Efficient Catalyst for Carbon-Carbon and Carbon-Hetero atom Bond Formation	February 1-3, 2008	Poster Presentation
5. International Symposium on Organic Chemistry: Trends in 21st Century (IACS, Kolkata, India)		December 10-12, 2009	Attended and was part of the Organizing Committee
6. 12th CRSI National Symposium in Chemistry & 4th CRSI-RSC Symposium in Chemistry (IICT, Hyderabad, India)		February 4-7, 2010	Attended
7. National Symposium in Organic Chemistry (Jadavpur University)		February 2-3, 2011	Attended
8. 13th CRSI National Symposium in Chemistry (NISER and KIIT University, Bhubaneswar, India).		February 4-6, 2011	Attended

9. 14th CRSI National Symposium in Chemistry (NIIST, Trivandrum, India)	Hydroxyapatite–supported Cu(I) catalysed cyanation of styrenyl bromides with $K_4[Fe(CN)_6]$: an easy access to cinnamonitriles	February 3-5, 2012	Poster presentation- Won the Best Poster award
10. UGC sponsored National Seminar on Nutritional Deprivation in the Midst of Plenty- an Attempt to Create Awareness. (Raidighi College, S.24 Pgs, West Bengal)		September 22-23, 2015	Was part of the Organizing committee and also served as Chairperson in one of the technical sessions.
11. UGC sponsored National Seminar on Socio-Economic Impact of Cottage and Small Scale Industries in west Bengal with Special Reference to South 24		September 11-12, 2015	Was part of the Organizing committee and also served as Rapporteur in one of the technical sessions.

Parganas District. (Raidighi College, S. 24 Pgs, West Bengal).			
12. UGC sponsored National Seminar entitled Chemistry Education and Research in daily Life (Dept. of Chemistry, RamKrishna Mission Vidyamandir,Howrah, West Bengal) 13. TEQUIP sponsored National Seminar and Workshop on Scientific Devices, Technology Applications and Community Linkage. (TEQUIP and Centre of Excellence, University of Calcutta)		January 6-7, 2017 March 18-19, 2017	Attended. Participated.
14. WBSCST sponsored State Level seminar on Recent advances in Bio-inorganic and Bio-organic Chemistry. (Bangabasi Morning College, Kolkata, West Bengal)	Copper (I) Hydroxyapatite Catalyzed Sonogashira reaction of Alkynes with Styrenyl Bromides: An Unprecedented Reaction of Cis Styrenyl Bromides Forming Unsymmetric Diynes.	May 6, 2017	Powerpoint (Oral) presentation.

15. One Day National Seminar on Material Chemistry For better Tomorrow (Ashutosh College, Kolkata, West Bengal)	Copper Hydroxyapatite catalysed cyanation of styrenyl bromides with $K_4[Fe(CN)_6]$: an easy access to cinnamonitriles	Nov 7, 2017	Poster presentation
16. A National Level seminar on Nurturing Chemistry: Bonding and Beyond (Dept of Chemistry, The Bhawanipur Education Society College, Kolkata, West Bengal)	Copper Hydroxyapatite catalysed cyanation of styrenyl bromides with $K_4[Fe(CN)_6]$: an easy access to cinnamonitriles	Dec 5, 2017	Poster presentation
17. Science Academies' lecture workshop on Fundamentals of Chemistry (Dept. of Chemistry, Bethune College, Kolkata, West Bengal)		Nov 17-18, 2017	Participated
18. UGC-CPE sponsored International Conference on Facets of Basic Sciences and Applications (Bijoy Krishna girls' College, Howrah, West Bengal)	Copper Hydroxyapatite catalysed cyanation of styrenyl bromides with $K_4[Fe(CN)_6]$: an easy access to cinnamonitriles	Feb 5-7, 2018	Powerpoint (Oral) presentation

18. National Seminar on Recent Trends and scopes of Modern Biology (Raidighi College, South 24 Parganas , West Bengal)		March 27, 2018	Was part of the Organizing Committee and served as the anchor
19. One Day University Level Workshop Towards ICT Empowerment for Teaching-Learning Process (Vijaygarh Jyotish Ray College, Kolkata, West Bengal)		March 28, 2018	Participated
20. One Day Workshop on Choice Based Credit System in Chemistry (Gokhale Memorial Girls' College, Kolkata, West Bengal)		May 24, 2018	Participated
21. Seminar on WBGHS & CAS (Organised by WBCUPA)		Oct 11, 2018	Attended
22.State level Seminar			

on CAS & MOOCS (Organised by Magrahat College, South 24 Pgs)		March 30, 2019	Attended
23. National Seminar on Recent Advances in Chemical &Biological Sciences (Organised by Department of Chemistry, St. Xaviers' College, Kolkata)	Solid Supported nano structured Cu-Catalyst for solvent/ligand free C2 Amination of Azoles	October 23, 2019	Paper presentation
24. An International Seminar on Itinerary of Classical to Modern Era of Chemistry (Organised by Department of Chemistry, The Bhawanipur Education Society College, Kolkata)	Hydroxyapatite Supported Copper Catalyzed Sonogashira Reaction of Alkynes with Styrenyl Bromides: Unprecedented Reaction of *Cis*-Styrenyl Bromides.	November 4, 2019	Paper presentation
25. Two Day International Seminar on Innovation, Expansion, Impacts and Challenges in Chemical and Biological Sciences (Organised by Department of Chemistry, Surendranath College, Kolkata)	Metal Nanoparticles Catalysed Synthesis and Functionalization of Heterocycles via C-H Activation	January 8-9, 2020	Paper presentation
26. Multiple Applications of Mathematics in Science, Engineering			

and Real World (Organised by department of Mathematics, Raidighi College, South 24 Pgs, WB)	NA	July 23, 2019	Participated and served as the Anchor
27. Save Water Campaign- a community awareness program on water scarcity and water safety, inspired by Ministry of Human Resource Development, Govt. of India (Organised by Raidighi College South 24 Pgs, WB)	NA	September 12, 2019	Participated and served as the Anchor
B)Webinars# 1. Lecture 1 of student webinar series "Sustainable Living", jointly organized by Dept. of Chemistry and Dept. of Food & Nutrition, Raidighi College **Speaker:** *Dr. Sounak Dutta, Assistant Professor, Department of Chemistry, Ananda Mohan College, Kolkata* **Title of lecture:** *The Magical Mangroves: Biodiversity and Challenges*	NA	24.06.2020 4-6:30 pm	Served as the Convenor

2. Lecture 2 of student webinar series "Sustainable Living", jointly organized by Dept. of Chemistry and Dept. of Food & Nutrition, Raidighi College **Speaker**: *Dr. Sohini Roy (Assistant Professor, Department of Food and Nutrition, Women's College, Kolkata* **Title of lecture**: *Dietary Guidelines and Food Safety in post COVID Socio-economic Scenario*	NA	01.07.2020 4-6:30 pm	Served as the Convenor
3. Lecture 3 of student webinar series "Sustainable Living", jointly organized by Dept. of Chemistry and Dept. of Food & Nutrition, Raidighi College **Speaker:** *Dr. Olivia Ganguly, Consultant Psychological Counsellor and Assistant Professor, Department of Human Development, RKVM, Sarada Ma Girls'College, Barasat, 24 Pgs (N)* **Title of lecture:** *Addressing Mental Health of*	NA	14.07.2020 4-6:30 pm	Served as the Convenor

Students amidst Current Hazardous Situation: An Integrative Approach.			
4. Lecture 4 of student webinar series "Sustainable Living", jointly organized by Dept. of Chemistry and Dept. of Food & Nutrition, Raidighi College **Speaker:** *Dr. Amit Saha, Assistant Professor, Department of Chemistry, Jadavpur University, Kolkata* **Title of lecture:** *Chemistry in Managing Coronavirus Outbreak for a Better Living Tomorrow*	NA	22.08.2020 4-6:30 pm	Served as the Convenor

[#] Participated in a number of webinars and online workshops. However, only the webinars for which Convenor position is held, have been included here.

II) <u>In UGC HRDC Faculty Programmes:</u>

A. **<u>Orientation Course:</u>** From 8th Jan, 2018 to 2nd Feb, 2018 at UGC- HRDC, JNU

B. **<u>Refresher Course in Chemistry</u>** From 30th Nov,2018 to 20th Dec, 2018 conducted by Dept of Chemistry, CU (UGC-HRDC, CU)

C. **<u>Interdisciplinary Refresher Course in E Content, OER and MOOCs</u>** From 3rd-15th Feb, 2020 conducted by UGC-HRDC, CU

D. **Online Short Term Faculty Development Program on Resurgence of Mental Health During Uncertain Times and Beyond (Chemical Sciences)** From 14th-20th Jun, 2020 conducted by UGC-HRDC, Savitribai Phule Pune University

E. **Online Short term course on soft skill** From 9th-15th Feb, 2021 conducted by UGC-HRDC, CU

F. **Online Short Term Faculty Development Program on Soft Skill** From 21st-27th Feb, 2022 conducted by UGC-HRDC, Savitribai Phule Pune University

Extra-curricular activities

- Trained Bharatnatyam (Indian classical dance) dancer – completed Sangeet Bhushan Final (senior diploma) with distinction from Pracheen Kala Kendra, Chandigarh, India.