

Dr. SUVANKAR DEBBARMA

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PERSONAL INFORMATION: Sex: Male

Marital Status: Married

Date of Birth: 22-05-1990

Nationality: Indian

OBJECTIVE:

“Committed to do good & quality research in Synthetic Organic Chemistry”

EDUCATIONS:

Ph. D., (Jul-2014 to Aug-2019): Department of Chemistry, Indian Institute of Technology Kharagpur (**IIT-Kharagpur**), India. (Supervisor **Prof. Dr. Modhu Sudan Maji**).

Thesis title: ‘*Transition-Metal-Catalyzed External Oxidant Free C–C and C–N Bond Formation*’

M. Sc., (Jul-2011 to Jul-2013): Department of Chemistry, Indian Institute of Technology Madras (**IIT-Madras**), India. (Supervisor **Prof. Dr. S. Baskaran**).

Thesis title: ‘*Synthesis of New Organocatalyst for Asymmetric Transformation*’

B. Sc., (Aug-2008 to Jun-2011): Chemistry Honors (First class), **Vidyasagar University**, West Bengal, India.

RESEARCH EXPERIENCE:

Apr, 2023 – Jan, 2025:

Post-Doctoral Fellow (Fixed-Term Researcher)

Principal Investigator: **Prof. Dr. Tsuyoshi Mita**. Institute for Chemical Reaction Design and Discovery (WPI-ICReDD), Hokkaido University.

- Radical fixation reactions of carbon dioxide (CO₂) under visible light photoredox chemistry.
- Visible light photoredox catalysis for carbocyclization using excited state palladium.

Apr, 2022 – Nov, 2022:

Assistant professor, Department of Chemistry, Department of Chemistry, Tohoku University, Sendai, Japan. (**Principal Investigator:** **Prof. Dr. Yujiro Hayashi**)

- Asymmetric total synthesis of **Amphidinolide N**.

Jun, 2020 – Mar, 2022: Institute Research Associate (RA), Department of Chemistry, Indian Institute of Technology Kharagpur (IIT-Kharagpur), India. (Supervisor *Prof. Dr. Modhu Sudan Maji*).

- Development of a novel strategy for asymmetric C–H functionalization using peptide ligand assisted Cp*Co(III)-catalysis.

Sep, 2019 – Jan, 2020: Post-Doctoral Fellow (Fixed-Term Researcher)

Principal Investigator: *Prof. Dr. Shengming Ma*. Department of Chemistry, Fudan University/Shanghai Institute of Organic Chemistry (SIOC), CAS, China.

- Developed a novel strategy for *Asymmetric Synthesis of Allene Carboxyliclate through Dynamic Kinetic Resolutions*. (manuscript communicated).

AWARDS & HONORS:

- ICREDD, Hokkaido University post-doctoral fellowship (Apr-2023 to Jan-2025),
- Tohoku University post-doctoral fellowship (Apr-2022),
- Fudan University post-doctoral fellowship (Sep-2019), CAS.
- Full time research fellowship (Jul-2014 to Mar-2019) by IIT Kharagpur, India.
- Full time junior research fellowship (May-2013 to Apr-2015), UGC, India.
- Graduate Aptitude Test in Engineering (GATE, Dec-2013).
- Awarded IIT Madras Merit Scholarship during M.Sc. (Aug-2011 to May-2013), India.
- CSIR-UGC National Eligibility Test (NET) (Dec-2012).
- CSIR-UGC National Eligibility Test (NET) (Jun-2012).
- Joint Admission Test for MSc (JAM) 2011.

RESEARCH ACHIEVEMENTS (Publications):

9. Wei-Feng Zheng, **Suvankar Debbarma**, Yuling Li, Jie Wang, Wanli Zhang, Hui Qian, Yin-Long Guo and Shengming Ma. Metal-Catalyzed Enantioselective Carboxylation Boosted by Aryl Bromides. (Communicated).
8. **Suvankar Debbarma**, Hiroki Hayashi, Yamato Ueno, Wataru Kanna, Kosaku Tanaka, III, and Tsuyoshi Mita. Photoredox-Catalyst-Free Carboxylation of Unactivated Alkenes in DMSO: Synthesis of Polycyclic Indole Derivatives and Aliphatic Acids. *Org. Lett.* **2024**, 26, 10897–10902. <https://doi.org/10.1021/acs.orglett.4c04051>
7. Saeesh R. Mangaonkar, Hiroki Hayashi, Wataru Kanna, **Suvankar Debbarma**, Yu Harabuchi, Satoshi Maeda and Tsuyoshi Mita. γ -Butyrolactone Synthesis from Allylic Alcohols Using the CO₂ Radical Anion. *Precis. Chem.* **2024**, 2, 88 - 95. <https://dx.doi.org/10.1021/prechem.3c00117>

6. **Suvankar Debbarma**, Md Raja SK, Biswabrata Modak and Modhu Sudan Maji. On-Water Cp*Ir(III)-Catalyzed C–H Functionalization for the Synthesis of Chromones through Annulation of Salicylaldehydes with Diazo-Ketones. *J. Org. Chem.* **2019**, *84*, 6207–6216. <https://doi.org/10.1021/acs.joc.9b00418>
(Invited for cover picture)
5. **Suvankar Debbarma**, Sourav Sekhar Bera and Modhu Sudan Maji. Harnessing Stereospecific Z-Enamides through Silver-Free Cp*Rh(III) Catalysis by Using Isoxazoles as Masked Electrophiles. *Org. Lett.* **2019**, *21*, 835–839. <https://doi.org/10.1021/acs.orglett.8b04130>
4. Sourav Sekhar Bera, **Suvankar Debbarma** and Modhu Sudan Maji. Cobalt(III)-Catalyzed Construction of Benzofurans, Benzofuranones and One-Pot Orthogonal C–H Functionalizations to Access Polysubstituted Benzofurans. *Adv. Synth. Catal.* **2018**, *360*, 2204–2210. <https://doi.org/10.1002/adsc.201800298>
(Invited for cover picture)
3. Sourav Sekhar Bera, **Suvankar Debbarma**, Avick Kumar Ghosh, Santanu Chand and Modhu Sudan Maji. Cp*CoIII–Catalyzed syn-Selective C–H Hydroarylation of Alkynes Using Benzamides: An Approach Toward Highly Conjugated Organic Frameworks. *J. Org. Chem.* **2017**, *82*, 420–430.
<https://doi.org/10.1021/acs.joc.6b02516>
2. **Suvankar Debbarma** and Modhu Sudan Maji. Cp*Rh^{III}-Catalyzed Directed Amidation of Aldehydes with Anthranils. *Eur. J. Org. Chem.* **2017**, *2017*, 3699–3706. <https://doi.org/10.1002/ejoc.201700457>
1. **Suvankar Debbarma**, Sourav Sekhar Bera, and Modhu Sudan Maji. Cp*Rh(III)-Catalyzed Low Temperature C–H Allylation of *N*-Aryl-trichloro Acetimidamide. *J. Org. Chem.* **2016**, *81*, 11716–11725.
<https://doi.org/10.1021/acs.joc.6b02150>

CONFERENCE PARTICIPATION: (Poster & Oral)

1. *Chemistry in house symposium (CIHS 2011)*. IIT Madras, India (Scientific Volunteer). 24-Aug-2011.
2. “Transition Metal Catalyzed Directed C-H Bond Functionalization” (Poster). *OMSA (Organic Molecules Synthesis and Application) National conference 2017*. Organized by IIT-Kharagpur, India. 17-Feb-2017.
3. “Cp*Rh(III)-catalyzed chelation assisted directed amidation of aldehydes using anthranils” (Poster). *256th ACS National Meeting in Boston, MA*. Organized by American Chemical Society, 19-Aug-2018.
4. “Photoredox Catalysis for the Synthesis of Polycyclic Indole Derivatives via Arylcarboxylation of Unactivated Alkenes with the CO₂ Radical Anion” (Poster). *The 7th ICRéDD International Symposium*. ICRéDD, Hokkaido University. 18-Jan-2024.
5. “Catalytic arylcarboxylation of unactivated alkenes with CO₂ radical anion toward the synthesis of polycyclic indole derivatives” (Oral). *Chemical Society of Japan 104th Spring Annual Meeting*. Chiba: Nihon University, College of Science and Technology, Funabashi Campus. 19-Mar-2024.

6. "Synthesis of Polycyclic Indole Derivatives via Arylcarboxylation of Unactivated Alkenes Using the CO₂ Radical Anion Under Visible Light Photoredox Catalysis" (**Oral**). *The 36th Banyu Sapporo Symposium*. Sapporo, Hokkaido University. 13-Jul-2024.
7. "Visible-Light Induced Photocatalyst-Free Hydro/Aryl-Carboxylation of Unactivated Alkenes Using the CO₂ Radical Anion" (**Poster**). *List Sustainable DX Catalyst Collaborative Research Platform Second Symposium*. ICReDD, Hokkaido University. 29-Aug-2024.
8. "Solvent-Assisted, Visible-Light Induced, Photocatalyst-Free Aryl/Hydro-Carboxylation of Unactivated Alkenes Using the CO₂ Radical Anion" (**Poster**). *The 8th ICReDD International Symposium*. ICReDD, Hokkaido University. 23-Oct-2024.

. **Operating Skill:** Topspin (manual for 1D, 2D NMR), **IR** analysis (ATR & KBr Pallet mode), **LC-MS** analysis (manual operation), **GC-MS** Analysis (manual operation). **Polari meter** (for optical rotation). **HPLC** Analysis (manual operation).

RESEARCH INTEREST:

After acquiring this broad research experience from my masters, doctoral and current post-doctoral study, I want to pursue my research on the following topics

1. Transition-metal-catalyzed/ Photo-redox- catalyzed C-C and C-Y (hetero atom) bond formation.
2. Synthesis of small biologically important molecules through asymmetric catalysis.
3. Design and synthesis of new ligand and its application for catalysis.
4. Radical mediated C-C/C-Y couplings.

Google Scholar Link: <https://scholar.google.com/citations?user=yTyJLn8AAAAJ>

Research Gate Link: https://www.researchgate.net/profile/Suvankar_Debbarma