

## Dr. DEBJIT DAS

Assistant Professor (Chemistry)

PhD

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### » **Overview:**

Dr. Debjit Das earned his B.Sc. with Honors in chemistry from Calcutta University in 2006 and M.Sc. in chemistry in 2008 from Indian Institute of Technology Kharagpur, with a brilliant academic record. He then joined the research group of Prof. Sujit Roy to pursue doctoral studies in the area of organic and organometallic reactivity of palladium-tin heterobimetallic systems. After graduating with a Ph.D., he joined Central University of Jharkhand, Ranchi, as Assistant professor. In 2017, he moved to the Department of Chemistry, Triveni Devi Bhalotia College, Raniganj, India. His research interests include organometallics, green organic synthesis and catalysis.

### » **Date of appointment to the present job:**

06<sup>th</sup> June 2017

### » **Other Academic/ Administrative post:**

- **Convenor, Seminar committee**
- **Coordinator, Department of Chemistry**

### » **Academic background:**

2008–2013	<b>Doctor of Philosophy</b> (in Organometallic Chemistry & Catalysis) in Department of Chemistry, Indian Institute of Technology, Kharagpur, India under the joint supervision of Prof. Sujit Roy & Prof. Dipakranjan Mal.
2006–2008	<b>Master of Science</b> in Chemistry (First Class, CGPA: 8.58) from Indian Institute of Technology, Kharagpur, India.
2003–2006	<b>Bachelor of Science</b> in Chemistry (Hon.) (First Class, 73.0% with Mathematics and Physics as subsidiary subjects) from Ramakrishna Mission Vidyamandira, University of Calcutta, India.
2001–2003	<b>Higher Secondary</b> (12+) (First Division, 83.4%) from Rajbalhat High School, WBCHSE, India.
2001	<b>Secondary</b> (10+) (First Division, 74.6%) from Rajbalhat High School, WBBSE, India.

### » **Information about M Phil/Ph D etc.:**

- **PhD Topic:** Heterobimetallic Catalysis within Palladium–Tin Domain: Carbon–Carbon & Carbon–Heteroatom Bond Formation  
(Weblink:[https://drive.google.com/file/d/1qw0SPmTnPah4aSzPNQPNzeSjC30aDi\\_T/view?usp=sharing](https://drive.google.com/file/d/1qw0SPmTnPah4aSzPNQPNzeSjC30aDi_T/view?usp=sharing))

### » **Area of present academic/ Research interest/ Research Projects & Schemes and Collaborations:**

- **Research interest:** Organometallics, green organic synthesis and catalysis
- **Research projects:** Title: “Synthesis, Characterization and Catalytic Activity Study of Copper Nanoparticles towards Carbon–Carbon and Carbon–Heteroatom Bond Formation” (under SERB YS scheme).
- **Collaborations:** NIL

### » **Publications:**

- Suresh, M; Singh, R. B.; Katlakunta, S.; Patra, S. R.; Tanwer, Y. B. S.; Mallick; S.; Bhunia, S.; Das, D.\* 2024. Starch-supported cuprous iodide nanoparticles catalysed C–C bond cleavage: use of carbon-based leaving groups for bisindolylmethane synthesis. *Monatshefte für Chemie - Chemical Monthly*, 155: 739–745. (Web link: <https://doi.org/10.1007/s00706-024-03215-2>)
- Pal, S.; Bhunia, S. \*; Das, D.\* 2024. p-Toluenesulfonic acid-promoted organic transformations for the generation of molecular complexity. *Org. Biomol. Chem.*, 22: 1527. (Web link: DOI: 10.1039/d3ob01766d)

- Patra, S. R.; Tanwer, Y. B. S.; Das, D.\*; Bhunia, S.\* 2023. Water extract of red mud (WERM): an effective alternative sustainable basic medium for H<sub>2</sub>O<sub>2</sub>-promoted epoxidation of chalcones and hydration of nitriles. *Res Chem Intermed.*, 49: 5395. (Web link: <https://doi.org/10.1007/s11164-023-05118-z>)
- Prajapati, J. P.; Toppo, A.; Majhi, P.; Pradhan, U.; Das, A.; Das, D.; Sriramulu, G.; Mallick, S\*.; Katlakunta, S.\*; Shukla, A. K. 2023. Biogenic Synthesis, Characterization, and Antifungal Activity Studies of Copper Oxide Nanoparticles Using Aqueous Extract of Moringa oleifera Leaves. *ChemistrySelect*, 8: e202300531. (Web link: [doi.org/10.1002/slct.202300531](https://doi.org/10.1002/slct.202300531))
- Hazra, P. P.; Mondal, B.; Das, D.; Majhi, P.; Pradhan, U.; Mallick, S.; Shukla, A. K.; Das, R. K.; Roy, U. K.\* 2023. Multicomponent consecutive Barbier propargylation and CuAAC click reactions using Zn/CuFe<sub>2</sub>O<sub>4</sub> reagent: Entry to anti-fungal triazole compounds. *Tetrahedron*, 139: 133442. (Web link: <https://doi.org/10.1016/j.tet.2023.133442>)
- Kundu, M; Mondal, M.; Das, D.; Roy, U. K.\* 2022. Synthesis and reactivity of copper and copper containing magnetically separable catalysts. *ChemistrySelect*, 7: e202104543. (Web link: <https://doi.org/10.1002/slct.202104543>)
- Patra, S. R; Mallick, S.; Das, D.\*; Bhunia, S.\* 2022. Effective utilization of water extract of red mud (WERM) as an alternative sustainable basic medium in Michael addition reaction. *Results in Chemistry*. 4: 100335. (Web link: <https://doi.org/10.1016/j.rechem.2022.100335>)
- Bhunia, S.\*; Das, D.\*. Carbon-based nucleophiles as leaving groups in organic synthesis via cleavage of C–C sigma bonds. 2022. *Tetrahedron*, 112, 132738. (Web link: <https://doi.org/10.1016/j.tet.2022.132738>)
- Patra, S. R; Bhunia, S.\*; Das, D.\*. 2022. Water extract of red mud: an efficient and renewable medium for environmentally benign synthesis of 2-amino-4H-chromenes. *Molecular Diversity*, 26: 2907 (Web link: <https://doi.org/10.1007/s11030-021-10369-2>)
- Patra, S. R; Choudhary, M.; Mallick, S.; Bhunia, S.\*; Das, D.\*. 2021. Incense sticks ash extract, an efficient and sustainable medium for Michael addition reaction. *ChemistrySelect*, 6: 14077–14081. (Web link: <https://chemistry-europe.onlinelibrary.wiley.com/doi/abs/10.1002/slct.202103891>).
- Das, D.\*. 2021. Ascorbic acid: an efficient organocatalyst for environmentally benign synthesis of indole-substituted 4H-chromenes. *Monatshefte für Chemie - Chemical Monthly* , 152:987–991. (Web link: <https://doi.org/10.1007/s00706-021-02824-5>)
- Prajapati, J. P; Das, D.; Katlakunta, S.; Maramu, N.; Ranjan, V.; Mallick, S. 2021. Synthesis and characterization of ultrasmall Cu<sub>2</sub>O nanoparticles on silica nanoparticles surface. *Inorganica Chimica Acta*. 515: 120069. (Web link: <https://doi.org/10.1016/j.ica.2020.120069>)
- Majhi, S.; Das, D. 2021. Chemical derivatization of natural products: Semisynthesis and pharmacological aspects- A decade update. *Tetrahedron*, 78: 131801. (Web link: <https://doi.org/10.1016/j.tet.2020.131801>)
- Das, D.\*. 2020. Lemon juice mediated efficient and eco-friendly organic transformations. *Tetrahedron Lett.* 61: 152298. (Web link: <https://doi.org/10.1016/j.tetlet.2020.152298>).
- Mallick, S.; Mukhi, P.; Kumari, P.; Mahato, K. R.; Verma, S. K.; Das, D.\*. 2019. Synthesis, Characterization and Catalytic Application of Starch Supported Cuprous Iodide Nanoparticles. *Catalysis Letters*, 149: 3501–3507. (Web link: [10.1007/s10562-019-02909-1](https://doi.org/10.1007/s10562-019-02909-1)).
- Suresh, M.; Kumari, A.; Das, D.; Singh, R. B. 2018. Total Synthesis of Onitin. *J. Nat. Prod.* 81: 2111–2114. (Web link: [10.1021/acs.jnatprod.8b00335](https://doi.org/10.1021/acs.jnatprod.8b00335)).
- Das, D.\*. 2016. Multicomponent Reactions in Organic Synthesis Using Copper-Based Nanocatalysts *ChemistrySelect*, 1: 1959 – 1980. (Web link: [10.1002/slct.201600414](https://doi.org/10.1002/slct.201600414)).
- Das, D.; Mohapatra, S. S., Roy, S. 2015. Recent Advances in Heterobimetallic Catalysis across “Transition Metal–Tin” Motif. *Chemical Society Review*, 44: 3666–3690. (Web link: [10.1039/c4cs00523f](https://doi.org/10.1039/c4cs00523f)).
- Mohapatra, S. S.; Mukhi, P.; Mohanty, A.; Pal, S.; Sahoo, A. O.; Das, D.; Roy, S. 2015. Palladium(II) in electrophilic activation of aldehydes and enones: efficient C-3 functionalization of indoles. *Tetrahedron Lett.* 56: 5709–5713. (Web link: [10.1016/j.tetlet.2015.08.080](https://doi.org/10.1016/j.tetlet.2015.08.080)).

- Das, D.; Roy, S. 2013. Palladium(II) Catalyzed Efficient C-3 Functionalization of Indoles with Benzylic and Allylic Alcohols under Co-Catalyst, Acid, Base, Additive and External Ligand-Free Conditions. *Adv. Synth. Catal.*, 355: 1308–1314. (Web link: 10.1002/adsc.201300048).
- Das, D.; Pratihari, S.; Roy, S. 2013. Heterobimetallic Pd-Sn Catalysis: Michael Addition Reaction with C-, N-, O-, S- Nucleophiles and In-situ Diagnostics. *J. Org. Chem.*, 78: 2430–2442. (Web link: 10.1021/jo302643v).
- Das, D.; Pratihari, S.; Roy, S. 2013. Heterobimetallic Pd-Sn Catalysis: A Selective Intermolecular Hydroarylation of  $\alpha$ -Methyl Substituted Aryl Alkenes. *Tetrahedron Lett.* 54: 335–338. (Web link: 10.1016/j.tetlet.2012.11.038).
- Das, D.; Pratihari, S.; Roy, S. 2012. Heterobimetallic Pd-Sn Catalysis: A Suzuki, Tandem Ring Closing Sequence Towards Indeno[2,1-b]thiophenes and Indeno[2,1-b]indoles. *Org. Lett.*, 14: 4870–4873. (Web link: 10.1021/ol3021995).
- Das, D.; Pratihari, S.; Roy, U. K.; Mal, D.; Roy, S. 2012. First example of a heterobimetallic ‘Pd–Sn’ catalyst for direct activation of alcohol: efficient allylation, benzylation and propargylation of arenes, heteroarenes, active methylenes and allyl-Si nucleophiles. *Org. Biomol. Chem.* 10: 4537–4542. (Web link: 10.1039/c2ob25275a).

» **Books and Chapters:** NIL

Title of book chapter: Nanoparticles in multicomponent reactions toward green organic synthesis

Author: Debjit Das & Sasadhar Majhi, Publisher: Elsevier Science, Year of publication: 2022, ISBN: 9780323959216.

» **Seminars, Webinars and Conferences attended:**

- Participated and presented a paper (poster) in “*Current Trends in Chemical Research and their Correlation with UG Courses.*”, organized by Department of Chemistry & IQAC, Basirhat College, North 24 Parganas, WB, India. on June 23, 2020.
- Participated in “*VCs’ Round Table - Higher Education beyond COVID - 19.*”, organized by ABPEducation.com, India. on May 30, 2020.
- Participated in “*Living on the Edge with COVID-19.*”, organized by Triveni Devi Bhalotia College, WB, India. on June 04, 2020.
- Participated in “*Arsenic Contamination in Ground water and in Soil and subsequent bioaccumulation in Edible plants in Bengal Delta*”, organized by Dumdum Motijheel College, WB, India. on June 27, 2020.
- Participated in “*Current Trends in Chemical and Material Sciences*”, organized by Kazi Nazrul University, WB, India. on June 03 & 04, 2020.
- Participated and presented a paper in “National Seminar on Frontiers in Chemical Sciences (NSFCS-2018)” held on 05-06<sup>th</sup> April, 2018 at Triveni Devi Bhalotia College, Raniganj.
- Participated in “Diamond Jubilee Symposium on Recent Trends in Chemistry” at Indian Institute of Technology, Kharagpur, India, October 21-23, 2011.
- Participated in “6<sup>th</sup> One Day National Symposium in Chemistry” at Indian Institute Technology, Kharagpur, India, November 8, 2008.

» **Conference/ Seminar Organised**

Dr. D. Das arranged the seminar titled “National Seminar on Frontiers in Chemical Sciences (NSFCS-2018)” held on 05-06<sup>th</sup> April, 2018 at Department of Chemistry, Triveni Devi Bhalotia College, Raniganj as an organizing secretary.

» **Life Membership** NIL

» **Awards:**

- Awarded **Senior Research Fellowship** (SRF) from Council of Scientific & Industrial Research (CSIR), Govt. of India in 2010.

- Awarded **Junior Research Fellowship (JRF)** through National Eligibility Test (**NET**) from Council of Scientific & Industrial Research (CSIR), Govt. of India in 2007 and 2008.
- Qualified All India Graduate Aptitude Test Examination (**GATE**) with All India Rank **49 (99.22 percentile)** in 2008.
- Awarded **MCM Scholarship** for degree of Master Study (2006–2008).
- Secured **50<sup>th</sup>** Rank in **Joint Admission Test for M.Sc (JAM)** in 2006, conducted jointly by all IITs.
- Awarded Gold medal by R K Mission Vidyamandira, Belur Math.

» **Others/ Miscellaneous:** NIL

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