Faculty Profile

Name: Dr. Saroj Kumar Rout, M.Sc. (U.U), Ph.D. (IITG), FNRS Fellow

Qualification: P.G and above:

M.Sc. Utkal University, Odisha
Ph.D. Indian Institute of Technology (IIT) Guwahati, India
Postdoctoral Fellow, UTSA, USA,
F.R.S.-FNRS (Marie Skłodowska-Curie) Postdoctoral Fellow, UCL, Belgium
DFG Postdoctoral Fellow, LMU, Germany

Designation:

Assistant Professor
Department of Chemistry
B.J.B College, Bhubaneswar

Email Id:

saroj.routchem@gmail.com

Area of interest:

Organic Chemistry, Asymmetric Synthesis, Natural Product Synthesis, Medicinal Chemistry & Bio-Orthogonal Chemistry

Area of research:

Key expertise includes total synthesis, asymmetric synthesis, radical chemistry, heterocyclic chemistry, green chemistry, organometallic reactions, C-H activation, and multi-component reactions. Also my research focused on immunotherapy and transition metal catalyst in living cells.

Teaching Area:

- **UG** (Organic Chemistry, Spectroscopy, Inorganic Chemistry)
- **PG** (Organic Chemistry, Spectroscopy, Organometallic Chemistry)

Total No. of Teaching Experience (Yrs): 01, B.J.B (Auto) College & NKC, Angul

- **UG:** One Year
- **PG:** One Year

Research Supervision:

- **Completed (M.Phil/Ph.D):**

Name of the Student	Degree	University	Title of the Thesis	Date of Registration	Date of Submission	Date of Award of Degree

- **Ongoing (M.Phil/Ph.D):**

Name of the Student	Degree	University	Title of the Thesis	Date of Registration

Publication Profile: Citation-2294, h-index-27, i10 index-32
https://scholar.google.co.in/citations?user=Qq2Cl-0AAAAJ&hl=en
https://www.linkedin.com/in/saroj-rout

Research Articles Published: 32

1. Kastrati A.; Kremsmair, A.; Sunagatullina, A. S.; Korotenko, V.; Guersoy, Y. C.; **Rout, S. K**, Lima, F.; Brocklehurst, C. E. Karaghiosoff, K.; Zipse, H.; Knochel, P. "Calculation-assisted regioselective functionalization of the Imidazo [1, 2-a] pyrazine scaffold via zinc and magnesium organometallic intermediates" *Chem. Sci.,* **2023** *DOI: 10.1039/d3sc02893c.* (IF = 8.4)
2. **Rout S. K**.; Kastrati, A.; Jangra, H.; Schwärzer, K.; Sunagatullina, A.; Garny, M.; Lima, F.; Brocklehurst, C. E. Karaghiosoff, K.; Zipse, H.; Knochel, P. Reliable functionalization of 5,6-fused bicyclic *N*-heterocycles pyrazolopyrimidines and imidazopyridazines via zinc and magnesium organometallics" *Chem. Eur. J*. **2022**, e202200733. (IF = 5.02)
3. **Rout S. K**., Marghem, G.; Lan, J.; Leyssens, T.; Riant, O., "A radical exchange process: Synthesis of BCP derivatives of xanthates" *Chem. Commun.*, **2019**, 55, 14976. (IF = 4.9)
4. **Rout, S. K**.; Guin, S.; Ali, W.; Gogoi, A.; Patel, B. K., "A copper catalyzed esterification of alkylbenzenes with cyclic ethers and cycloalkanes via C(sp^3)-H activation following cross dehydrogenative coupling (CDC)", *Org. Lett.* **2014***, 16,* 3086. (IF = 5.20)
5. **Rout, S. K.**; Guin, S.; Gogoi, A.; Majji, G.; Patel, B. K., "Terminal aryl alkenes and alkynes as arylcarboxy surrogates toward *o*-benzoxylation of 2-phenylpyridine catalyzed by copper" *Org. Lett.* **2014**, *16*, 1614. (IF = 5.20)
6. **Rout, S. K**.; Guin, S.; Banerjee, A.; Khatun, N.; Gogoi, A.; Patel, B. K., "Directing group assisted copper-catalyzed chemoselective *O*-aroylation of phenols and enols using alkylbenzenes" *Org. Lett.* **2013**, *15*, 4106. (IF = 5.20)
7. Guin, S[†].; **Rout, S. K**[†].; Gogoi, A.; Nandi, S.;Ghara, K. K.; Patel, B. K., "Desulfurization strategy in the construction of azoles possessing additional nitrogen, oxygen or sulfur using a copper(I) catalyst" *Adv. Synth. Catal.* **2012**, *354*, 2757. ([†]both the author contributed equally) (IF = 5.40)
8. **Rout, S. K**.; Guin, S.; Ghara, K. K.; Banerjee, A.; Patel, B. K., "Copper catalyzed oxidative esterification of aldehydes with alkylbenzenes via cross.dehydrogenative coupling" *Org. Lett.* **2012**, *14*, 3982. (IF = 5.20)

9. **Rout, S. K**.; Guin, S.; Nath, J.; Patel, B. K., "An "on-water" exploration of CuO nano particle catalyzed synthesis of 2-aminobenzothiazole" *Green Chem*. **2012**, *14*, 2491. (IF = 9.8)
10. Schwärzer, K.; **Rout S. K**.; Bessinger, D.; Lima, F.; Brocklehurst, C. E.; Karaghiosoff, K.; Bein, T. and Knochel, P., "Selective functionalization of the 1H-imidazo[1,2-b] pyrazole scaffold. A new potential non-classical isostere of indole and a precursor of push–pull dyes" *Chem. Sci.,* **2021**,.*12*, 12993. (IF = 8.4)
11. Guang, J.; **Rout, S.**; Bihani. M.; Larson J. A.; Arman, H. D.; Zhaol, J. C. –G., "Organocatalyzed enantionselective direct Mannich Reaction of alpha Styrylacetates", *Org. Lett.* **2016**, *18*, 2648. (IF = 5.20)
12. Gogoi, A.; Guin, S.; Rajamanickam, S.; Rout, S. K.; Patel, B. K., "Synthesis of 1,2,4-triazoles via oxidative heterocyclization: Selective C-N over C-S bond formation", *J. Org. Chem.* **2015**, *80*, 9016. (IF = 3.6)
13. Ali, W.; **Rout, S. K.**; Guin, S.; Modi, A.; Banerjee, A.; Patel, B. K., "Copper-catalyzed cross dehydrogenative coupling of *N*,*N*-disubstituted formamides and phenols: A direct access to carbamates", *Adv. Synth. Catal.* **2015**, *357*, 515. (IF = 5.40)
14. Gogoi, A.; Guin, S.; **Rout, S. K**.; Majji, G.; Patel, B. K, "A Cu-catalysed synthesis of substituted 3-methyleneisoindolin-1-one", *RSC Adv.* **2014**, 4, 59902. (IF = 3.9)
15. Behera, A.; **Rout, S. K.**; Guin, S.; Patel, B. K., "Benzyl amine as arylcarboxy surrogate: A copper catalysed *o*-benzoxylation of 2-phenylpyridines using benzyl amines", *RSC Adv.* **2014**, *4*, 55115. (IF = 3.9)
16. Gogoi, A.; Modi, A.; Guin, S.; **Rout, S. K.**; Das, D.; Patel, B. K., "A metal free domino synthesis of 3-aroylindoles via two sp^3 C-H activation", *Chem. Commun.* **2014**, 50, 10445. (IF = 4.9)
17. Majji, G.; Guin, S.; **Rout, S. K**.; Behera, A.; Patel, B. K., "Cyclic ethers to esters and monoesters to bis-esters with unconventional coupling partners under metal free conditions via sp^3 C-H functionalisation", *Chem. Commun.* **2014**, 50, 12193. (IF = 4.9)
18. Ali, W.; Guin, S.; **Rout, S. K**.; Gogoi, A.; Patel, B. K., "Thioesterification of alkylbenzenes with thiols via copper-catalyzed cross dehydrogenative coupling without directing group", *Adv. Synth. Catal.* **2014**, 356, 3099. (IF = 5.40)
19. Guin, S.; **Rout, S. K**.; Gogoi, A.; Ali, W.; Patel, B. K, "A palladium(II)-catalyzed synthesis of α-ketoamides via chemoselective aroyl addition to cyanamides", *Adv. Synth. Catal.* **2014**, 356, 2559. (IF = 5.40)
20. Khatun, N.; Guin, S., **Rout, S. K**.; Patel, B. K., "Divergent reactivities of *o*-haloanilides with CuO nanoparticles in water: a green synthesis of benzoxazoles and *o*-hydroxyanilides" *RSC Adv.* 2014, *4*, 10770. (IF = 3.9)
21. Majji, G.; **Rout, S. K**.; Guin, S.; Gogoi, A.; Patel, B. K., "Iodine-catalysed oxidative cyclization of acylhydrazones to 2,5-substituted 1,3,4-oxadiazoles" *RSC Adv.* **2014**, *4*, 5357. (IF = 3.9)
22. Gogoi, A.; Guin, S.; **Rout, S. K**.; Patel, B. K., "A copper catalyzed synthesis of 3-aroylindoles via a sp^3 C-H bond activation followed by C-C and C-O bond formation" *Org. Lett.* **2013**, *15*, 1802. (IF = 5.20)
23. Majji, G.; Guin, S.; Gogoi, A.; **Rout, S. K**.; Patel, B. K., "Easy access to benzylic esters directly from alkyl benzenes under metal-free conditions" *Chem. Commun.* **2013**, *49*, 3301. (IF = 4.9)
24. Banerjee, A.; Santra, S. K.; Guin, S.; **Rout, S. K**.; Patel, B. K., "Palladium catalyzed *ortho*-aroylation of 2-arylbenzothiazoles and 2-arylbenzoxazoles with aldehydes" *Eur. J. Org. Chem.* **2013**, 1367. (IF = 3.26)

25. Banerjee, A.; Santra, S. K.; **Rout, S. K**.; Patel, B. K., "A ligand free copper(II) catalyst is as effective as a ligand assisted Pd(II) catalyst towards intramolecular C–S bond formation via C–H functionalization" *Tetrahedron* **2013**, *69*, 9096. (IF = 2.36)
26. Banerjee, A.; Bera, A.; Guin, S.; **Rout, S. K**.; Patel, B. K., "Regioselective *ortho*-benzoxylation of 2-arylbenzothiazole via substrate directed C-H activation" *Tetrahedron* **2013**, *69*, 2175. (IF = 2.36)
27. Guin, S.; **Rout, S. K**.; Banerjee, A.; Nandi, S.; Patel, B. K., "Four tandem C-H activations: A sequential C-C and C-O bond making via Pd catalyzed cross dehydrogenative coupling (CDC) approach" *Org. Lett.* **2012**, *14*, 5294. (IF = 5.20)
28. Guin, S.; **Rout, S. K**.; Khatun, N.; Ghosh, T.; Patel, B. K., "Tandem synthesis of [1,2,4]-triazoles mediated by iodine-a regioselective approach" *Tetrahedron* **2012**, *68,* 5066. (IF = 2.36)
29. Guin, S.; **Rout, S. K**.; Ghosh, T.; Khatun, N.; Patel, B. K., "A one pot synthesis of [1,3,4]-oxadiazoles mediated by molecular iodine" *RSC Adv.* **2012**, *2*, 3180. (IF = 3.9)
30. Guin, S.; Ghosh, T.; **Rout, S. K**.; Banerjee, A.; Patel, B. K., "Copper (II) catalyzed imine C-H functionalization leading to synthesis of 2,5-substituted-1,3,4-oxadiazoles" *Org. Lett.* **2011**, *13*, 5976. (IF = 5.20)
31. Yella, R.; Khatun, N.; **Rout, S. K**.; Patel, B. K., "Tandem regioselective synthesis of tetrazoles and related heterocycles using iodine" *Org. Biomol Chem*. **2011**, ***9***, 3235. (IF = 3.20)
32. Ghosh, H.; Baneerjee, A.; **Rout, S. K**.; Patel, B. K., "A convenient *one-pot* synthesis of aryl amines from aryl aldoximes mediated by Koser's reagent" *ARKIVOC* **2011**, 209. (IF = 1.25)

Books Chapters Published:01

Rout, S. K., Riant, O.; Science of Synthesis: Dual catalysis in organic synthesis, Molander, G. A., Ed.; Thieme: Stuttgart, **2019**, *1*, 9-56.

Books Published: 01

Science of Synthesis, Thieme Chemistry (International Publisher)

Review Articles Published in Newspapers/Magazines:

Majji, G[†].; **Rout S. K**[†]; Rajamanickam, S.; Guin, S.; Patel, B. K., "Synthesis of Ester via sp^3 C-H functionalization", *Org. Biomol Chem*, **2016**, *14*, 8178. ([†]both the author contributed equally) (IF = 3.20)

Research Projects:

NAME	DEPARTMENT	TYPE (MAJOR/MINOR)	NAME OF THE FUNDING AGENCY	FUNDS PROVIDED (INR IN LAKHS)	TITLE OF THE PROJECT	MONTH AND YEAR OF RECEIVING GRANT	DURATION OF THE PROJECT

Dr. Saroj Kumar Rout	Department of Chemistry Université catholique de louvain, Belgium	Major	F.R.S.-FNRS	14,440 euro	copper catalysed domino cupro-borylation reactions and valorization of the products	3 year	3 year

Papers presented in Conferences/Seminars:

- 16th Belgian Organic Synthesis Symposium (BOSS XVI), Belgium, 2018: Synthesis of highly functionalized ketones of [1.1.1] propellane by a radical exchange process.
- TexSyn II Conference University of Texas at San Antonio, USA, 2015: Organocatalyzed enantionselective direct Mannich reaction of α– styrylacetates.
- 15thCRSI Conference, Banaras Hindu University, India, 2013: Alkylbenzenes as precursors in transition metal catalysed benzylic sp^3 C-H bond activation via cross dehydogenative coupling (CDC) approach
- 6th J-NOST Conference, University of Hyderabad, India, 2011

Invited/Special Lectures/Resource Persons or Presentations at Conferences/ Workshops:

- Invited talk at RAEM-2020, 23rd December organized by CUTM, Bhubaneswar, Odisha
- Invited talk at OCS-RACS-2020, 29th November organized by Odisha Chemical Society and Dhenkanal (Auto) College, Odisha
- Invited Lecture at Contemporary Ideas, Innovations & Initiatives in Chemical Sciences-2023 (CI3CS-2023)" on the occasion of 150 years of the Department of Chemistry, Presidency University, August 23-24, 2023, Kolkata

Awards and Distinctions:

- Eli Lilly Outstanding Thesis Award, National Organic Symposium Trust (NOST), NISER, India, 2015
- National Eligibility Test, Council of Scientific & Industrial Research (NET(JRF)-CSIR), India, 2009
- Graduate Aptitude Test in Engineering (GATE), India, 2009
- Joint Admission Test to M.Sc. (JAM), India, 2007

Association with Professional Bodies: Patron Member of Orissa Chemical Society