

**Ms. Nimisha Gautam**

**Senior Research Fellow**

**Supervisor- Prof. Swadhin Kumar Mandal**

**Research Interest- *Catalysis using low valent main group compounds***

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***A brief overview about myself:***

I joined Prof. Mandal's lab as a Master's student in July 2018. I have completed my B.Sc with honors in Chemistry from Cotton College and an M.Sc from IISER Kolkata. My research focuses on developing non-classical carbenes, specifically BICAAC and aNHC, along with their derivatives for metal-free catalysis. Notably, we demonstrated the first catalytic application of ambiphilic BICAAC as an efficient catalyst and reported the first catalytic *N*-methylation of primary amides using CO<sub>2</sub> as a C1 source. Both processes were thoroughly studied, incorporating mechanistic insights through spectroscopic and DFT analyses. Currently, my work centers on developing aNHC-derived main-group compounds for homogeneous catalysis. I have expertise in handling air- and moisture-sensitive chemistry using Schlenk line setup and glove box and also possess experience in organic synthesis, catalysis and mechanistic studies. I have been actively involved in organizing several national and international conferences, such as the 30<sup>th</sup> International Conference on Organometallic Chemistry (ICOMC)-2024 in Agra, International Conference in Organometallics and Catalysis-2023 in Goa, (Chemistry)Meet 2023-Kindling in Kaziranga, CRSI 27<sup>th</sup> National Symposium organized by IISER Kolkata (26<sup>th</sup>-29<sup>th</sup> September, 2021), BRICS international symposium between India, China, and Russia in January 2020 in India, and Institute Colloquium by Prof. Herbert W. Roesky organized at IISER Kolkata during my PhD tenure. Currently I am going to submit my thesis by January, 2025.

***List of publications:***

- Gautam, N.; Logdi, R.; Sreejyothi, P.; Rajendran, N. M.; Tiwari, A. K.; Mandal, S. K. *Chem. Commun.* **2022**, 58, 3047-3050.
- Gautam, N.; Logdi, R.; Sreejyothi, P.; Roy, A.; Tiwari, A. K.; Mandal, S. K. *Chem. Sci.* **2023**, 14, 5079-5086.
- Sreejyothi, P.; Gautam, N.; Maji, S.; Bhattacharyya, K.; Mandal, S. K. *J. Am. Chem. Soc.* **2024**, 146, 16743-16752.
- Rajendran, N. M.; Gautam, N.; Sarkar, P.; Ahmed, J.; Das, A.; Das, S.; Pati, S. K.; Mandal, S. K. *Chem. Commun.* **2021**, 57, 5282-5285.