

CURRICULUM VITAE

Sushobhan Mukhopadhyay, Ph.D.

Assistant Scientist

Department of Medicinal Chemistry

University of Florida,

1345 Center Drive, Room P5-10

Gainesville, FL, USA, 32610

E-mail: sus2sovon.positive@gmail.com

smukhopadhyay@ufl.edu

Cell: +918173819747 (P)/ +1 (352) 284-9649 (O)

Google Scholar: <https://scholar.google.co.in/citations?user=991N2L0AAAAJ&hl=en>

LinkedIn: <http://www.linkedin.com/in/sushobhan-mukhopadhyay-31218474>

Education

Ph.D. (Medicinal Chemistry): from CSIR-Central Drug Research Institute- Lucknow, India in 2020.

Master of Science (Organic Chemistry) degree from “University of Kalyani, Kalyani, West Bengal, India” in 2011.

Bachelor of Science (Chemistry) degree from “Krishnath College, Berhampore, West Bengal, India” in 2009.

Academic/Research Experience

Assistant Scientist:

July 2022-Present

University of Florida (Department of Medicinal Chemistry), Gainesville, Florida.

- Working on the semi-synthetic structural modification of Kratom alkaloids.
- ADMET properties optimization at the preclinical stage for the treatment of pain and opioid use disorder.

Postdoctoral Associate:*Dec 2020-June 2022*

University of Florida (Department of Medicinal Chemistry), Gainesville, Florida.

Mentor: Prof. Christopher McCurdy, Director of the UF Translational Drug Development Core, Department of Medicinal Chemistry, University of Florida, Gainesville, 32610, USA.

- Worked on the isolation, purification, and characterization of Kratom alkaloids.

Ph.D. Research:*Jan 2014-Feb 2020*

Dissertation Title: “Decarboxylative Coupling- and Sodium Nitrite-mediated Synthesis of Heterocycle of Biological Interest”.

Mentor: Prof. Sanjay Batra, Ph.D., Chief Scientist, Medicinal and Process Chemistry Division, CSIR-Central Drug Research Institute, Lucknow 226031, India

- Worked on Sodium nitrite and iodine-mediated cascade strategy to synthesize different heterocycles like- isoxazoles, nitrosoimidazoheterocycles, 1,2,3-Benzotriazin-4(3*H*)-ones, thiohydroxamic acids and direct transformation of arylamines to aryl halides.
- Development of metal free greener protocols for the transformation of alkyl 3-nitro-5-(aryl/alkyl) isoxazole-4-carboxylates into 3-amino- and 3-hydrazinyl-5-aryl/alkyl-isoxazole-4-carboxylates in aqueous solution. Synthesis of Quinazolin-4(3*H*)-ones and Quinazolines by oxidative amination using TBHP as methyl source.
- Synthesis of *bis*-Heterosystem fused-pyrazines *via* Pd-catalyzed intermolecular double decarboxylative C-N Coupling. Room-temperature chemoselective reduction of nitro groups using non-noble metal nanocatalysts in water.
- Synthesized and evaluated a series of MBH allyl urea derivatives towards both anticancer and antibacterial agent. Synthesized isoxazole-based derivatives as potential antileishmanial agents.
- Designing and synthesis of chemical libraries of drug-like molecules for identifying leads for the treatment of various diseases such as Leishmania, Cancer and Microbial infection.

Research Fellow:*Jan 2013-Dec 2013*

Indian Institute of Technology Indore, Madhya Pradesh, India (Department of Chemistry)

- Theoretical and computational chemistry using Gaussian and VASP.

- DFT calculation for the development of new type of mixed metal amido borane as a hydrogen storage compound
- DFT calculation using Ni, Cu and Co nanoclusture for the ease of reduction from $-\text{NO}_2$ to $-\text{NH}_2$

M.Sc. Research:

Sept 2010-August 2011

Mentor: Prof. Shakti P. Das and Prof. Kumaresh Ghosh, University of Kalyani, West Bengal

Dissertation Title: Isolation and transformation of triterpenoids natural products (Friedelin and Putranjivadione) from the bark of *Putranjiva Roxburghii*.

Analytical Instrument and Techniques Known/ Skills

- Synthetic organic chemistry: Successful handling of milligram to multigram scale reactions
- Experienced in handling air, light, hazardous, and moisture sensitive compounds, and performing reactions under an inert atmosphere and their proper purification
- Spectroscopic data characterization and interpretation skills [IR, 1-D and 2-D NMR (COSY, HMQC, HMBC etc.), MS]
- Modern analytical techniques such as NMR (*Bruker*), Mass-spectroscopy, FT-IR
- Microwave synthesizer (*Anton Paar, Monowave-400*)
- Analytical and preparative High-Performance Liquid Chromatography (HPLC) -*Agilent Technologies*
- Experience in lab safety and management
- Basic understanding of Theoretical and Computational Chemistry

Publications:

Research Article

1. **Mukhopadhyay, S.;** Barak D. S.; Ramalingam, K.; Goyal, N.; Batra, S. Antileishmanial assessment of isoxazole derivatives against *L. donovani*. *RSC Med. Chem.*, 2020, *11*, 1053–1062.

2. Barak, D. S.; **Mukhopadhyay, S.**; Dahatonde, D. J.; Batra, S. NaNO₂/I₂ as an Alternative Reagent for the Synthesis of 1,2,3-Benzotriazin-4(3H)-ones from 2-Aminobenzamides. *Tetrahedron Lett.* 2019, 60, 248–251.
3. **Mukhopadhyay, S.**; Barak, D. S.; Batra, S. TBHP as Methyl Source under Metal-Free Aerobic Conditions to Synthesize Quinazolin-4(3H)-ones and Quinazolines by Oxidative Amination of C(sp³)-H Bond. *Eur. J. Org. Chem.* 2018, 2784–2794.
4. **Mukhopadhyay, S.**; Batra, S. Direct Transformation of Arylamines to Aryl Halides via Sodium Nitrite and N-Halosuccinimide. *Chem. Eur. J.* 2018, 24, 14622–14626.
5. **Mukhopadhyay, S.**; Barak, D. S.; Avasthi, I.; Batra, S. Efficient Transformation of Alkyl 3-nitro-5-(aryl/alkyl) isoxazole-4-carboxylates into 3-amino- and 3-hydrazinyl-5-aryl/alkyl-isoxazole-4-carboxylates in Aqueous Solution. *Adv. Synth. Catal.* 2017, 359, 4050–4056.
6. **Mukhopadhyay, S.**; Dighe, S. U.; Kolle, S.; Shukla, P. K.; Batra, S. NaNO₂/I₂-Mediated Regioselective Synthesis of Nitrosoimidazoheterocycles from Acetophenones by a Domino Process. *Eur. J. Org. Chem.* 2016, 3836–3844.
7. Dighe, S. U.[#]; **Mukhopadhyay, S. (Co-first author)**; Priyanka, K.; Batra, S. Metal-free Oxidative Nitration of α -Carbon of Carbonyls leads to One-Pot Synthesis of Thiohydroxamic acids from Acetophenones. *Org Lett*, 2016, 18, 4190–4193.
8. Dighe, S. U.[#]; **Mukhopadhyay, S. (Co-first author)**; Kolle, S.; Kanojiya, S.; Batra, S. Synthesis of 3,4,5-Trisubstituted Isoxazoles from Morita–Baylis–Hillman Acetates by an NaNO₂/I₂-Mediated Domino Reaction. *Angew. Chem. Int. Ed.* 2015, 54, 10926–10930.
9. Rai, R. K.; Mahata, A.; **Mukhopadhyay, S.**; Gupta, S.; Li, P. -Z.; Nguyen, K. T.; Zhao, Y.; Pathak, B.; Singh, S. K. Room-Temperature Chemoselective Reduction of Nitro Groups Using Non-noble Metal Nanocatalysts in Water. *Inorg. Chem.*, 2014, 53, 2904–2909.

Review Articles

1. **Mukhopadhyay, S.;** Batra, S. Applications of Sodium Nitrite in Organic Synthesis. *Eur. J. Org. Chem.* 2019, 6424–6451.

Published Abstracts

1. Hiranita, T.; Gonzalez, J. Z.; Patel, R. C.; Mazpule-Carrigan, C. C.; Rocha, J. M.; Jimenez, L. R. G.; Ho, N. P.; Patel, A.; Obeng, S.; Leon, F.; Mottinelli, M.; **Mukhopadhyay, S.;** McCurdy, C. R.; McMahon. L. R.; Effects of Mitragynine and its Active Metabolites on the Reinforcing Effects of Remifentanil and Cocaine in Rats Self-Administering Remifentanil. *The FASEB Journal* 2022; 36(S1): 1.

Mentoring/Project co-supervision

Undergraduate students during PhD:

- Kumari Priyanka- NIPER, Raebareli student (March 2015-March 2016) *Title of the project:* Synthesis of 3,4,5-trisubstituted isoxazoles from Morita-Baylis-Hillman acetates by NaNO_2/I_2 -mediated domino reaction and their derivatization.
- Ayushi Gubarele- Indian National Science Academy fellow- (May-July 2015) *Title of the project:* Synthesis and characterization of MBH (Morita Baylis Hillman) adduct and acetate and its further utilization.

Undergraduate students and trainees in University of Florida:

- Dawson Jackson, Edgardo Duran, Andrew Siegel, Nicholas Guadagnoli.

Conferences/ Seminars/ Workshops attended

- Poster presented in “**21st International Conference on Organic Synthesis**” (ICOS-21), Department of chemistry, IIT Bombay, 11-16th December 2016.
- Attended 6th International Conference on “**Current trends in Drug discovery and Research**” (CTDDR), CSIR-CDRI, Lucknow, 25-28th February 2016.
- “**National Seminar on Chemistry for Better World on The International Year of Chemistry**” sponsored by University Grand Commission on March 29, 2011, at Department of Chemistry, University of Kalyani, Kalyani, West Bengal, India.

- “**National Seminar on Current Trends in Chemistry–V (NSCTC–V)**” sponsored by University Grand Commission on February 25, 2011, at Department of Chemistry, University of Kalyani, Kalyani, West Bengal, India.
- National Level Workshop on “**The Origin of Modern Chemistry**” August-2010, At Scottish Church College, Kolkata, West Bengal, Sponsored by DST.
- Three-Day Lecture Workshop On “**Concept In Chemistry-II**” February-2008, At Department of Chemistry, K.N College, Berhampore, West Bengal. By: IAS -Bangalore, INSA -Delhi, NASI -Allahabad.

Awards and Honors

- **2019** (February): Dr. J. M. Khanna Memorial Early Career Achievement Award-**2019** in Chemical Sciences by CSIR-CDRI.
- **CSIR-CDRI Incentive Award in 2015-** for publication in *Angew. Chem. Int. Ed.*
- **2016-2018** (January): Awarded Senior Research Fellowship by Council of Scientific and Industrial Research (CSIR), Government of India.
- **2014-2015:** Awarded Junior Research Fellowship by Council of Scientific and Industrial Research (CSIR), Government of India.
- **2013:** Qualified National Eligibility Test (CSIR NET Examination).
- **2012:** Qualified Graduate Aptitude Test (GATE Examination).

Volunteer Reviewer

- Trends in Chemistry
- Molecules
- CCS Chemistry
- Chemistry

Membership of professional organizations

- Member of Royal Society of Chemistry (723993)
- Member of American Chemical Society (33164364)
- Life member of Indian Chemical Society MR/1381
- Life member of Chemical Research Society of India LM 3447
- Life member of Society of Chemists and Biologists LF 1168/2022