Ujjwal Jyoti Goswami, Ph.D.

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Guwahati, Assam, India

Researcher with a strong background in synthetic organic chemistry, focused on developing efficient and sustainable methodologies for constructing heterocyclic frameworks with potential therapeutic relevance. Demonstrated ability to conduct independent research, mentor junior students, and contribute to high-impact publications. Seeking to apply my expertise and enthusiasm for innovative organic synthesis in a challenging postdoctoral research position.

Education

Indian Institute of Technology Guwahati — *2019 – 2025*
Ph.D. | *Synthetic Organic Chemistry* — *Assam, India*
Advisor: Prof. Abu Taleb Khan

National Institute of Technology Calicut | *CGPA: 8.64* — *2017 – 2019*
M.Sc. | *Chemistry* — *Kerala, India*
First Class with Distinction, Graduated with Gold Medal

Gauhati University Institute of Science and Technology | *CGPA: 9.21* — *2012 – 2016*
B.S. | *Chemical Science* — *Assam, India*
First Class with Distinction

Cotton College, Guwahati | *Percentage: 83.4%* — *2010 – 2012*
Higher Secondary | *Science* — *Assam, India*
First Class with Distinction

Board of Secondary Education Assam | *Percentage: 88.83%* — *2010 – 2012*
High School Leaving Certificate — *Assam, India*
First Class with Distinction

Research Experience

Ph.D. Research Scholar — *2019 – 2025*
IIT Guwahati — *Guwahati, India*

Advisor: Prof. Abu Taleb Khan, Professor

- Designed and executed multi-step organic syntheses *via* regioselective functionalization of 4-hydroxythiocoumarin.
- Characterized compounds using NMR, IR, HRMS, and single-crystal XRD techniques.
- Investigated reaction mechanisms using computational DFT calculations.
- Authored and co-authored peer-reviewed journal articles; presented findings at international conferences.
- Mentored undergraduate and master's students in synthetic lab techniques and research methodologies.
- Operated the departmental NMR facility; assisted researchers with acquisition of 1D and 2D NMR spectra.

Master's project Work — *Jan 2019 – May 2019*
NIT Calicut — *Kerala, India*

Advisor: Dr. Raju Dey, Assistant Professor

- Synthesized and characterized Pd/TiO_2 catalysts for Suzuki–Miyaura cross-coupling reactions under heterogeneous conditions.
- Evaluated functional group tolerance and various metrics to quantify catalytic efficiency.

Bachelor's project Work — *Jan 2016 – May 2016*
CSIR-IHBT Palampur — *Himachal Pradesh, India*

Advisor: Dr. Sushil Kumar Maurya, Senior Scientist

- Performed diversity-oriented synthesis of a library of macrocyclic compounds through sequential functionalization of carbohydrate building blocks, click reaction, and final ring-closing metathesis.

Summer Internship *Summer 2015*
IIT Guwahati *Assam, India*

Advisor: Dr. Debapratim Das, Associate Professor

- Assisted in the synthesis and purification of organic substrates for enzymatic reaction studies.

Summer Internship *Summer 2014*
CSIR-NEIST Jorhat *Assam, India*

Advisor: Dr. Amrit Goswami, Chief Scientist

- Assisted in catalytic hydrogenation of steroidal intermediates for the synthesis of Pregnenolone Acetate.

Skills

Laboratory Techniques: Multi-step Synthesis, Methodology Development, Reaction Optimization, Column chromatography, Thin Layer Chromatography, Solvent Distillation and Drying, Recrystallization
Analytical Techniques: NMR (1D, 2D), IR, HRMS, UV-Vis spectroscopy, Single-crystal XRD
Software: ChemDraw, MestReNova, MassHunter, Origin, MS-Office
Coding: LaTeX, Typst, C, Python (Beginner)
Languages: Assamese (native), English, Hindi

Publications

2025 **Goswami, U. J.**, Xalxo, A. and Khan, A. T.; A regioselective and sustainable approach for the synthesis of substituted thieno[2,3-*b*]chromen-4-ones with pendant imine groups *via* a base-promoted multicomponent reaction. *Org. Chem. Front.* **2025**, *12*, 3215-3222.

Xalxo, A., **Goswami, U. J.** and Khan, A. T.; Regioselective synthesis of 3-benzoyl-4-phenyl-4*H*,5*H*-thiopyrano[2,3-*b*]chromen-5-one derivatives through one-pot domino reaction using aromatic aldehyde, β-enaminone, and 4-hydroxy-2*H*-chromene-2-thione. *European J. Org. Chem.* **2025**, .

2024 **Goswami, U. J.**, Xalxo, A., Kusum, Basumatary, M., Soni, K., Bhattacharyya, K. and Khan, A. T.; Reactivity study of 4-hydroxythiocoumarin: a novel synthetic route to fused chromono-thiophene and -thiopyran derivatives through solvent-dependent thio-Claisen rearrangement. *New J Chem* **2024**, *48*, 14697-14717.

Xalxo, A., **Goswami, U. J.**, Das, C., Prasad V, K., Mehta, B. and Khan, A. T.; A reactivity study of 4-hydroxy-2*H*-chromene-2-thione and 4-hydroxy-2*H*-thiochromene-2-thione with *tert*-Butyl nitrite and aromatic amines: an environmentally benign synthesis of new hydrazone derivatives. *Synthesis* **2024**, *57*, 616-628.

2023 **Goswami, U. J.**, Xalxo, A. and Khan, A. T.; Catalyst- and solvent-free synthesis of pentacyclic-dione derivatives from 4-hydroxythiocoumarin and aldehyde using pseudo-three-component reaction. *ChemistrySelect* **2023**, *8*, e202302520.

Xalxo, A., **Goswami, U. J.**, Sarkar, S., Kandasamy, T., Mehta, K., Ghosh, S. S., Bharatam, P. V. and Khan, A. T.; Synthesis of 3-sulfenylindole derivatives from 4-hydroxy-2*H*-chromene-2-thione and indole using oxidative cross-dehydrogenative coupling reaction and anti-proliferative activity study of some of their sulfone derivatives. *Bioorg. Chem.* **2023**, *141*, 106900.

References

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