

GANESH VENKATARAMAN

Assistant Professor,
Department of Chemistry, Indian Institute of Technology Kharagpur – 721 302,
West Bengal, India.

Tel (office): +91 3222 283318

Web URL: <https://sites.google.com/view/ganeshv>

e-mail: ganesh.v@chem.iitkgp.ac.in; ganesh.ochem@gmail.com

PROFESSIONAL EXPERIENCE

INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR, WB

Assistant Professor – Grade-I, Department of Chemistry (08/2018 - Present)

EDUCATION

INDIAN INSTITUTE OF SCIENCE (IISc), BANGALORE

Integrated Ph. D. Chemical Sciences, (08/2004 – 06/2013)

Studies on the Ring-opening of Vinylcyclopropanes, Vinylcyclobutanes, & other Small-ring Systems
(Supervisor: Prof. S. Chandrasekaran)

BISHOP HEBER COLLEGE

B.Sc. Chemistry, (08/2001 – 07/2004).

Bharathidasan University, Tiruchirappalli.

RESEARCH EXPERIENCE

UNIVERSITY OF BRISTOL, UK

Postdoctoral Research Associate (01/2018 – 07/2018)

Newton International Fellow (01/2016 – 01/2018)

(Supervisor: Prof. Varinder K. Aggarwal)

INSTITUTE OF MICROBIAL CHEMISTRY (BIKAKEN), TOKYO, JAPAN

JSPS Postdoctoral Researcher (09/2013 – 08/2015)

Postdoctoral Research Associate (01/2013 – 08/2013)

Direct Catalytic Addition of Alkyl nitriles to Aldehydes by Transition Metal/NHC Complexes
(Supervisor: Prof. M. Shibasaki)

UNIVERSITY OF PARIS-11

ARCUS Short-term Exchange Researcher (10/2009 – 12/2009)

Functionalized mesoporous silica as a drug delivery system (Supervisor: Prof. D. B. Delpon)

AWARDS & HONORS

- Vishnu Ji Ram Award for Best Shotgun Presentation – 27th ISCB Conference Nov. 2022
- Top Teaching Feedback – Spring 2019 (IIT Kharagpur)
- Early Career Research Award – SERB, DST 2019
- Ramanujan Fellowship – SERB, DST – Nov. 2018
- Newton International Fellowship – Royal Society of Chemistry 2016
- JSPS Postdoctoral Research Fellowship – Japanese Science and Technology 2013
- Shyama Prasad Mukherjee Fellowship – CSIR-SPM 2008
- Junior Research Fellowship – CSIR 2007
- Bharathidasan University –Rank Holder

MEMBERSHIP OF SOCIETIES

Chemical Research Society of India (CRSI) Life Member.

Chirantan Rasayan Sanstha (CRS) Life Member

Indian Photobiology Society (IPS) Life Member

RESEARCH GRANTS

ONGOING PROJECTS

- “Stereoselective Hydroboration of Conjugated and Skipped Diynes as a Platform for Iterative Chemistry” Core Research Grant; Jan. 2023.
- “Ligand-Enabled Regioselective Cyclotrimerization of Alkynes Through Ion-Pairing and Other Weak Interactions” MoE-STARS; Sep. 2023

COMPLETED PROJECTS

- “Metal-Catalyzed Enantioselective Difunctionalization of Fleeting Arynes and Cyclic Alkyne Intermediates” Science and Engineering Research Board (SERB); Mar. 2019 – Mar. 2022.
- “Asymmetric Metal-Mediated Difunctionalization of Unsaturated Systems” Institute Scheme for Innovative Research and Development (ISIRD); Feb. 2019 – Feb. 2023.
- “Transition-Metal mediated Enantioselective Reductive Coupling of Alkynes with Electrophiles” Ramanujan Fellowship; Nov. 2018 – Nov. 2023.

MENTORING EXPERIENCE

Students	Ongoing	Completed
Ph. D. Students	10	0
Master's Project	3	8
Bachelor's Project	1	0

COURSES TAUGHT @ IIT Kharagpur

Average Teaching Feedback Score (4.1/5.0) – over 10 Semesters

Top Teaching Feedback – Spring 2019 (IIT Kharagpur)

CY00001: Basic Organic Chemistry Course for B. Tech. Students. (Prep. Theory). [3-1-0]

CY11001: Chemistry [3-1-0]

CY19003: Basic Organic Chemistry Laboratory Course for B. Tech. Students. [0-0-3]

CY31010: Strategies and Methods in Organic Synthesis [3-1-0]

CY39003: Organic Chemistry Laboratory II [0-0-6]

CY51003: Spectroscopic Methods of Structure Determination [3-1-0]

PUBLICATIONS

1. **Ni(0)-Catalyzed Regioselective [2+2+2]-Cyclotrimerization of 1,3-Diynes: An Expeditious Synthesis of Hexa-Substituted Alkynyl Benzenes.** Chakraborty, R.; Ghosh, S.; Ganesh, V.* *Org. Lett.* **2024**; ASAP.
2. **Computational Studies on the Tropylium-Catalyzed Carboxylic Acid O-H Insertion with Diazoesters: The Role of Homoaromaticity.** Anoop, A.*; Ganesh, V.* *Eur. J. Org. Chem.*, **2024**, 27, e20230068.
3. **Benchtop Nickel-Catalyzed Reductive Coupling of Aldehydes with Alkynes and Ynamides.** Khamrai, A.; Ganesh, V.* *Chem. Commun.* **2023**, 59, 11141.
4. **Bis-benzofulvenes: Synthesis and Studies on Their Optoelectronic Properties.** Mondal, S.† Ballav, T.† Tofayel, S. M.; Ganesh, V.* *Org. Lett.* **2023**, 25, 3941.

5. **Organophosphorus-Catalyzed Borylative Ring-Opening of Vinylcyclopropanes: A Stereoselective Route to δ -Valerolactones.** Biswas, K.; Khamrai, A.; Malik, S.; Ganesh, V.* *Org. Lett.* **2023**, 25, 1805.
6. **Copper-Catalyzed Protoboration of 1,3-Diynes as a Platform for Iterative Functionalization.** Ghosh, S.; Chakraborty, R.; Kumar, S.; Das, A.; Ganesh, V.* *ACS Catal.* **2022**, 12, 11660.
7. **Palladium-Catalyzed Dual Catalytic Synthesis of Heterocycles.** Ballav, T.; Chakraborty, R.; Das, A.; Ghosh, S.; Ganesh, V.* *Eur. J. Org. Chem.* **2022**, e202200553.
8. **Recent Advances in Organophosphorus-Catalyzed Borylation and Silylation Reactions.** Biswas, K.; Das, A.; Ganesh, V.* *Adv. Synth. Catal.* **2021**, 363, 4475.
9. **Dual Functionalization of Alkynes Utilizing the Redox Characteristics of Transition Metal Catalysts.** Ghosh, S.; Chakraborty, R.; Ganesh, V.* *ChemCatChem* **2021**, 13, 4262
10. **Exploiting the Versatility of Palladium Catalysis: A Modern Toolbox for Cascade Reactions.** Mondal, S.+; Ballav, T.+; Biswas, K.+; Ghosh, S.+; Ganesh, V.* *Eur. J. Org. Chem.* **2021**, 4566.
11. **How to Train a Free-Radical for Organic Synthesis? A Modern Approach.** Khamrai, A.; Ganesh, V.* *J. Chem. Sci.* **2021**, 133, 5.
12. **Enantiospecific 1,2-Metallate Rearrangement through Strain Release of Cyclopropyl Boronate Complexes.** Gregson, C. H. U.; Ganesh, V.; Aggarwal, V. K.* *Org. Lett.* **2019**, 21, 3412.
13. **Chiral Aniline Synthesis via Stereospecific C(sp³)-C(sp²) Coupling of Boronic Esters with Aryl Hydrazines.** Ganesh, V.; Noble, A.; Aggarwal V. K.* *Org. Lett.* **2018**, 20, 6144.
14. **Enantiospecific sp²-sp³ Coupling of Chiral Boronic Esters with o- and p-Phenols.** Wilson, C. M.;† Ganesh, V.;† Noble, A.; Aggarwal, V. K.* *Angew. Chem. Int. Ed.* **2017**, 56, 16318. [†-Authors Contributed Equally].
15. **Alkynyl Moiety for Triggering 1,2-Metallate Shifts: Enantiospecific sp²-sp³ Coupling of Boronic Esters with p-Arylacetylenes.** Ganesh, V.; Odachowski, M.; Aggarwal, V. K.* *Angew. Chem. Int. Ed.* **2017**, 56, 9752.
16. **Recent Advances in the Synthesis and Reactivity of Vinylcyclopropanes.** Ganesh, V.; Chandrasekaran, S.* *Synthesis* **2016**, 48, 4347.
17. **Synthetic Applications of Carbohydrate-derived Donor-Acceptor Cyclopropanes.** Ganesh, V.; Ramusridhar, P.; Chandrasekaran, S.* *Isr. J. Chem.* **2016**, 56, 417.
18. **Direct Catalytic Addition of Alkyl nitriles to Aldehydes by Transition-Metal/NHC Complexes.** Sureshkumar, D.; Ganesh, V.; Kumagai, N.; Shibasaki, M.* *Chem. Eur. J.* **2014**, 20, 15723.
19. **Sigma-Ferrier Rearrangement of Carbohydrate Derived Vinylcyclopropanes: A Facile Approach to Oxepane Analogs.** Ganesh, V.; Kundu, T.; Chandrasekaran, S.* *Tetrahedron* **2014**, 70, 7268.
20. **Electrophile Induced Indirect Activation of C-C Bond of Vinylcyclopropanes: A Masked Donor-Acceptor Strategy for the Synthesis of Z-Alkylidene Furans** Ganesh, V.; Kundu, T.; Chandrasekaran, S.* *J. Org. Chem.* **2013**, 78, 380.

21. **Bromenium Catalyzed Tandem Ring-Opening/Cyclization of Vinylcyclopropanes and Vinylcyclobutanes: Metal-free [3+2+1]/ [4+2+1] Cascade for the Synthesis of Chiral Amidines and Computational Investigation.** Ganesh, V.; Sureshkumar, D.; Chanda, D.; Chandrasekaran, S.* *Chem. Eur. J.* **2012**, *18*, 12498.
22. **Tandem Ring-Opening/Cyclization of Vinylcyclopropanes: A Facile Synthesis of Chiral Bicyclic Amidines.** Ganesh, V.;† Sureshkumar, D.;† Chandrasekaran, S.* *Angew. Chem. Int. Ed.* **2011**, *50*, 5878. [†-Authors Contributed Equally]
23. **10 Years of Click Chemistry: Synthesis and Applications of Ferrocene-Derived Triazoles.** Ganesh, V.; Sai Sudhir V.; Kundu, T.; Chandrasekaran, S.* *Chem. Asian J.* **2011**, *6*, 2670.
24. **Tetrathiomolybdate Mediated Rearrangement of Aziridinemethanol Tosylates: A Thia-Aza-Payne Rearrangement.** Sureshkumar, D.; Koutha S.; Ganesh, V.; Chandrasekaran, S.* *J. Org. Chem.* **2010**, *75*, 5533.
25. **One-Pot Synthesis of β -Amino/ β -Hydroxy Selenides and Sulfides from Aziridines and Epoxides.** Ganesh, V.; Chandrasekaran, S.* *Synthesis* **2009**, 3267.
26. **Direct Synthesis of Functionalized Unsymmetrical β -Sulfonamido Disulfides by Tetrathiomolybdate Mediated Aziridine Ring-Opening Reactions.** Sureshkumar, D.; Ganesh, V.; Vidyarini, R. S.; Chandrasekaran, S.* *J. Org. Chem.* **2009**, *74*, 7958.
27. **Conformationally Locked Bridged Bicyclic Diselenides: Synthesis, Structure, Se...O Interaction, and Theoretical Studies.** Sureshkumar, D.; Ganesh, V.; Chandrasekaran, S.* *J. Org. Chem.* **2007**, *72*, 5313.
28. **Regio- and Stereospecific Synthesis of β -Sulfonamidodisulfides and β -Sulfonamidodisulfides from Aziridines using Tetrathiomolybdate as a Sulfur Transfer Reagent.** Sureshkumar, D.; Gunasundari T.; Ganesh, V.; Chandrasekaran, S.* *J. Org. Chem.* **2007**, *72*, 2106.

MANUSCRIPT UNDER PREPARATION (Titles are Tentative)

29. **Nickel-catalyzed Cyclization to Access Natural Product Cores.** Ghosh, S.; Ganesh, V. (*Manuscript Under Preparation*)

BOOK CHAPTER

- Chandrasekaran, S.; Ganesh V. "Oxidation Adjacent to Oxygen of Alcohols by Chromium Reagents" *Comprehensive Organic Synthesis II*; Vol. 7, pp 277-294.

INVITED LECTURES & CONFERENCE PRESENTATIONS

- Indo-French Seminar on Catalysis and Sustainability, IISER Trivandrum - 10th-13th-Dec-2023
- International Conference on Organometallics and Catalysis (ICOC-2023) at Goa - 30th-Oct to 2nd-Nov-2023
- 27th ISCB Conference, BIT Mesra, Ranchi, Jharkhand (Nov. 2022)
- Refresher Course on Chemistry, University of Hyderabad (Feb. 2021)
Title: "Boron Compounds: A Spirited Horse in Organic Synthesis and Beyond"
- Indian Institute of Technology Indore (Jan. 2018)
- Indian Institute of Technology Roorkee (Jan. 2018)
- Indian Institute of Technology Delhi (Jan. 2018)
- Indian Institute of Technology Kharagpur (Jan. 2018)
- National Chemical Laboratory, Pune (Jan. 2018)

- Indian Institute of Technology Bhubaneswar (Jan. 2018)
- Indian Institute of Technology Palakkad (Jan. 2018)
- The University of Hyderabad, Telangana (May 2017)
- Indian Institute of Technology Bombay (May 2017)
- Indian Association for the Cultivation of Science, Kolkata (Apr. 2017)
- The 135th Annual Meeting of the Pharmaceutical Society of Japan, Kobe (2015)
- 7th Junior National Organic Symposium Trust conference (J-NOST), IISER Mohali (2011)

OTHER ACADEMIC ACTIVITIES

- PG Lab Coordinator Aug 2023 – Present
 - Department Website Administrator Aug 2023 – Present
 - Co-Principal In-charge - LCMS Lab - ESI MS, Central Research Facility, IIT KGP Jan 2023 - Present
 - Program Officer, NSO (Health & Fitness) IIT KGP Apr 2022 – Present
 - UGPEC Member (Dept.) Mar 2022 – Present
 - MOODLE Coordinator – Department of Chemistry – 2020 – Present
 - Professor In-Charge - GCMS Instrument Jan 2019 - Present
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- UG Lab Coordinator Aug 2021 – Aug 2023
 - Department Timetable In-Charge – Jan 2021 – Dec 2022
 - Department Purchase Committee Member – 400 MHz NMR (~ Rs. 3 crores) 2022-23
 - First-year Subject Coordinator (Theory + Lab) Aug 2021 - 2022
 - Organizer – Guest Lecture of Prof. Carmen Galan, University of Bristol 2018.
 - Organizer – Sir J. C. Ghosh Lecture 2019 – Guest: Prof. Ben L. Feringa (Nobel Prize – 2016 Chemistry)
 - Convener – “Smart Functional Molecules” Workshop, Department of Chemistry, IIT Kharagpur 2019.
 - Organizer – Guest Professor - Prof. Christopher Schofield, University of Oxford July 2019
 - Organizer – “Advances in Functional Materials” Symposium, Dept. of Chemistry, IIT KGP 2019.
 - Participants & Audience Management Committee, 65th Annual Convocation, IIT Kharagpur 2019.