

GANESH VENKATARAMAN

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PROFESSIONAL EXPERIENCE

INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR, WB

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

Development of new strategies and concepts in synthetic chemistry and catalysis. Providing access to biologically active molecular skeletons.

EDUCATION

INDIAN INSTITUTE OF SCIENCE (IISc), BANGALORE

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

Studies on the Ring-opening of Vinylcyclopropanes, Vinylcyclobutanes and 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)

Enantiospecific sp^2 - sp^3 coupling of chiral boronic esters with aromatics. (Supervisor: Prof. Varinder K. Aggarwal)

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

Enantiospecific sp^2 - sp^3 coupling of chiral boronic esters with aromatics. (Supervisor: Prof. Varinder K. Aggarwal)

INSTITUTE OF MICROBIAL CHEMISTRY (BIKAKEN), TOKYO, JAPAN

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

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

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 drug delivery system (Supervisor: Prof. D. B. Delpon)

MEMBERSHIP OF SOCIETIES

Research Member of Royal Society of Chemistry, London UK.

Life Member of Chemical Research Society of India.

AWARDS & HONORS

- 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

RESEARCH GRANTS

ONGOING PROJECTS

- “Asymmetric Metal-Mediated Difunctionalization of Unsaturated Systems” Institute Scheme for Innovative Research and Development (ISIRD); Feb. 2019. Rs. 28,00,000/-
- “Transition-Metal mediated Enantioselective Reductive Coupling of Alkynes with Electrophiles” Ramanujan Fellowship; Nov. 2018. Rs. 35,00,000/-
- “Metal-Catalyzed Enantioselective Difunctionalization of Fleeting Alkynes and Cyclic Alkyne Intermediates” Science and Engineering Research Board (SERB); Mar. 2019. Rs. 37,00,000/-

MENTORING EXPERIENCE

ONGOING Ph. D. STUDENTS	MASTER’S STUDENTS	GROUP ALUMNI
Sourav Mondal (Jan. 2019 -)	Ajay Vasuniya (2020 -)	Sk. Md. Tofayel (2019 - 2020)
Krishna Biswas (Jul. 2019 -)	Aniruddha Das (2020 -)	Rishab (2019- 2020)
Suman Ghosh (Jul. 2019 -)		
Sudipta Ghosh (Jul. 2019 -)		
Rajesh Chakraborty (Jan. 2020 -)		
Tamal Ballav (Jan. 2020 -)		
Aankhi Khamrai (Sep. 2020 -)		

COURSES TAUGHT @ IIT Kharagpur

Average Teaching Feedback Score (4.1/5.0) – till 2020

Top Teaching Feedback – Spring 2019 (IIT Kharagpur)

CY19001: Basic Organic Chemistry Laboratory Course for B. Tech. Students. [0-0-3] (2018-Present)

CY00001: Basic Organic Chemistry Course for B. Tech. Students. (Prep. Theory). [3-1-0] (2018)

CY31010: Strategies and Methods in Organic synthesis [3-1-0 (Shared)] (2018)

CY39003: Organic Chemistry Laboratory II [0-0-6 (Shared)] (2019-Present)

CY11001: Chemistry [3-1-0] (2019-Present)

CY51003: Spectroscopic Methods of Structure Determination [3-1-0 (Shared)] (2019-Present)

PUBLICATIONS

1. **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.
2. **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.

3. **Enantiospecific sp^2 - sp^3 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].
4. **Alkynyl Moiety for Triggering 1,2-Metallate Shifts: Enantiospecific sp^2 - sp^3 Coupling of Boronic Esters with p-Arylacetylenes.** Ganesh, V.; Odachowski, M.; Aggarwal, V. K.* *Angew. Chem. Int. Ed.* **2017**, *56*, 9752.
5. **Recent Advances in the Synthesis and Reactivity of Vinylcyclopropanes.** Ganesh, V.; Chandrasekaran, S.* *Synthesis* **2016**, *48*, 4347.
6. **Synthetic Applications of Carbohydrate-derived Donor-Acceptor Cyclopropanes.** Ganesh, V.; Ramusridhar, P.; Chandrasekaran, S.* *Isr. J. Chem.* **2016**, *56*, 417.
7. **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.
8. **σ -Ferrier Rearrangement of Carbohydrate Derived Vinylcyclopropanes: A Facile Approach to Oxepane Analogs.** Ganesh, V.; Kundu, T.; Chandrasekaran, S.* *Tetrahedron* **2014**, *70*, 7268.
9. **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.
10. **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.
11. **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]
12. **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.
13. **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.
14. **One-Pot Synthesis of β -Amino/ β -Hydroxy Selenides and Sulfides from Aziridines and Epoxides.** Ganesh, V.; Chandrasekaran, S.* *Synthesis* **2009**, 3267.
15. **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.
16. **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.

17. **Regio- and Stereospecific Synthesis of β -Sulfonamidodisulfides and β -Sulfonamidosulfides from Aziridines using Tetrathiomolybdate as a Sulfur Transfer Reagent.** Sureshkumar, D.; Gunasundari T.; Ganesh, V.; Chandrasekaran, S.* *J. Org. Chem.* **2007**, *72*, 2106.

SUBMITTED ARTICLES:

18. **How to Train a Free-Radical for Organic Synthesis? A Modern Approach.** Khamrai, A; Ganesh, V. *Resonance: Journal of Science Education* (Submitted: August 28th, 2020)

MANUSCRIPT UNDER PREPARATION (Titles are Tentative)

19. **Domino Difunctionalization for the Synthesis of Benzofulvenes.** Mondal, S.; Tofayel, S. M.; Ganesh V. (*Manuscript Under Preparation*)
20. **Copper Catalyzed Regioselective Hydro-/Carboboration.** Ghosh, S.; Chakraborty, R.; Ganesh V. (*Manuscript Under Preparation*)
21. **Transition Metal-Free Stereoselective Approach to Lactones.** Biswas, K.; 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

Indian Institute of Technology Indore (January 2018)
Indian Institute of Technology Roorkee (January 2018)
Indian Institute of Technology Delhi (January 2018)
Indian Institute of Technology Kharagpur (January 2018)
National Chemical Laboratory, Pune (January 2018)
Indian Institute of Technology Bhubaneswar (January 2018)
Indian Institute of Technology Palakkad (January 2018)
University of Hyderabad, Telangana (May 2017)
Indian Institute of Technology Bombay (May 2017)
Indian Association for the Cultivation of Science, Kolkata (April 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

DEPARTMENT ACTIVITIES

- Faculty In-Charge - GCMS Instrument Maintenance.
- Faculty Recruitment Committee – Department of Chemistry.
- MOODLE Coordinator – Department of Chemistry – 2020 - Present
- 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, Department of Chemistry, IIT KGP 2019.

INSTITUTE ACTIVITIES

- Participants & Audience Management Committee, 65th Annual Convocation, IIT Kharagpur 2019.
- Invigilator, GATE Examination, 2020.