

Curriculum Vitae

Dr. Santosh J. Gharpure

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Education:

- Aug. 1996 – July 2001: Dept. of Organic Chemistry, Indian Institute of Science, Bangalore, India
Ph.D. in Synthetic Organic Chemistry with Professor A. Srikrishna
“Enantiospecific Approaches to Neopupukeananes”
- July 1994 – April 1996: Dept. of Chemistry, Indian Institute of Technology Bombay, India
M.Sc. in Organic Chemistry, M.Sc. Project with Professor S. V. Bhat
“Synthesis and Evaluation of Biological Activity of Polyenes”
- July 1989 – June 1994: V. G. Vaze College, University of Bombay, Mumbai, India
B.Sc. with First Class in Chemistry

Professional Experience:

- May 2019 – Present: Society for Innovation and Entrepreneurship (SINE), IIT Bombay
Professor In-Charge
- Dec. 2016 – Present: Dept. of Chemistry, Indian Institute of Technology Bombay, India
Professor
- July 2012 – Nov. 2016: Dept. of Chemistry, Indian Institute of Technology Bombay, India
Associate Professor
- May 2004 – July 2012: Dept. of Chemistry, Indian Institute of Technology Madras, India
Assistant Professor
- Aug. 2001 – April 2004: Dept. of Chemistry, Indiana University, Bloomington, IN 47405, USA
Post-Doctoral Fellow with Professor P. Andrew Evans

Honors and Awards:

- October 2021: Awarded ‘INSA Teachers Award 2021’ by Indian National Science Academy, New Delhi, India
- March 2021: Admitted as Fellow of Royal Society of Chemistry
- January 2020: International Advisory Board *European Journal of Organic Chemistry*
- September 2019: Departmental award for excellence in teaching, IIT Bombay
- December 2018-present: Rasiklal Hemani Fragrance and Flavour Chair Professor, Department of Chemistry, IIT Bombay
- July 2018: Chemical Research Society of India (CRSI) Bronze Medal
- February 2016: Themis Medicare UICT Diamond Jubilee Distinguished Fellow in Pharmaceutical Science for the year 2015-16 of ICT, Mumbai.
- September 2015: IIT Bombay Excellence in Teaching Award
- January 2013: KET’s V. G. Vaze Alumni Achievers Award
- December 2012: Selection as one of the Thieme Chemistry Journal Awardees 2013
- November 2012: B. M. Birla Science Prize in Chemistry
- September 2010: Awarded Young Faculty Recognition Award (YFRA) by IIT Madras, Chennai

April 2008:	Awarded INSA Medal for Young Scientist by Indian National Science Academy, New Delhi, India
Aug. 1996-July 2001:	Junior and Senior Research Fellow of Council for Scientific and Industrial Research, New Delhi, India
March 1996:	Qualified Graduate Aptitude Test in Engineering, All India Rank-1
March 1995:	Winner of the Gold Medal at the Chemistry Aptitude Test held by the Indian Chemical Society
July 1989:	17 th Rank in the Merit List of the S.S.C. Board Examination Held by Maharashtra Board

Memberships:

Chemical Research Society of India (CRSI)

American Chemical Society (ACS)

Indian Association of Chemistry Teachers (IACT)

India-UK Innovation and Sustainability Chemistry Consortium (ISCC) (Founder member)

Royal Society of Chemistry (RSC)

Publications:

1. "An Intramolecular Rhodium Carbenoid C-H Insertion Approach to Chiral Isotwistanes. Synthesis of (-)-Neopupukean-4,10-dione and (-)-Neopupukean-10-one" A. Srikrishna, S. J. Gharpure, *Chem. Commun.* **1998**, 1589.
2. "Enantiospecific First Total Synthesis of (-)-4-Thiocyanatoneopupukeanane" A. Srikrishna, S. J. Gharpure, *Tetrahedron Lett.* **1999**, 40, 1035.
3. "A Simple, Enantiospecific Approach to both Enantiomers of 1 α ,25-Dihydroxyvitamin D-3 A-Ring Precursors from (R)-Carvone" A. Srikrishna, S. J. Gharpure, P. P. Kumar, *Tetrahedron Lett.* **2000**, 41, 3177.
4. "Enantiospecific Total Synthesis of both Enantiomers of 2-Thiocyanatoneopupukeanane from (R)-Carvone" A. Srikrishna, S. J. Gharpure, *J. Chem. Soc. Perkin Trans. 1* **2000**, 3191.
5. "Novel Formation of Chloromethanesulfinates in the Methanesulfonylation Reaction of Hindered Alcohols" A. Srikrishna, S. J. Gharpure, *Synlett* **2000**, 1354.
6. "An Enantiospecific Synthesis of (-)-2-Pupukeanone via a Rhodium Carbenoid C-H Insertion Reaction" A. Srikrishna, P. R. Kumar, S. J. Gharpure, *Tetrahedron Lett.* **2001**, 42, 3929.
7. "Enantiospecific Total Synthesis of (-)-4-Thiocyanatoneopupukeanane" A. Srikrishna, S. J. Gharpure, *J. Org. Chem.* **2001**, 66, 4379.
8. "Enantiospecific Synthesis of B-seco-C-Aromatic Taxanes" A. Srikrishna, T. J. Reddy, P. P. Kumar, S. J. Gharpure, *Ind. J. Chem. B* **2001**, 40B, 905.
9. "A Ring Closing Metathesis Based Approach for the Spiroannulation of Cyclopentanes and Cyclohexanes. Formal Synthesis of (\pm)-Acorones" A. Srikrishna, M. S. Rao, S. J. Gharpure, N. C. Babu, *Synlett* **2001**, 1986.
10. "Chiral Synthons from Carvone. Part 56. Enantiospecific Synthesis of (-)-4-Thiocyanatoneopupukeanane" A. Srikrishna, S. J. Gharpure, *ARKIVOC* **2002**, 7, 52.
11. "Stereochemistry of the Marine Sesquiterpene 2-Thiocyanatoneopupukeanane: Crystal Structure of Neopupukean-2-yl 4-nitrobenzoate" A. Srikrishna, S. J. Gharpure, P. Venugopalan, *Ind. J. Chem. B* **2003**, 42B, 129.

12. "Stereoselective Construction of Cyclic Ethers using a Tandem Two-Component Etherification: Elucidation of the Role of Bismuth Tribromide" P. A. Evans, J. Cui, S. J. Gharpure, R. J. Hinkle, *J. Am. Chem. Soc.* **2003**, *125*, 11456.
13. "Stereoselective Construction of cis-2,6-Disubstituted Tetrahydropyrans via the Reductive Etherification of δ -Trialkylsilyloxy Substituted Ketones: Total Synthesis of (-)-Centrolobine" P. A. Evans, J. Cui, S. J. Gharpure, *Org. Lett.* **2003**, *5*, 3883.
14. "Enantioselective Total Synthesis of the Potent Antitumor Agent (-)-Mucocin using a Temporary Silicon-Tethered (TST) Ring-Closing Metathesis (RCM) Cross-Coupling Reaction" P. A. Evans, J. Cui, S. J. Gharpure, A. Polosukhin, H. -R. Zhang, *J. Am. Chem. Soc.* **2003**, *125*, 14702.
15. "Enantiospecific Synthesis of (+)-2-Thiocyanatoneopupukeanane" A. Srikrishna, S. J. Gharpure, *Proc. of AP Akademi of Sciences* **2005**, *9*, 115.
16. "A Central Strategy for Converting Natural Products into Fluorescent Probes" M. D. Alexander, M. D. Burkart, M. S. Leonard, P. Portonovo, B. Liang, X. Ding, M. M. Joulli, B. M. Gullidge, J. B. Aggen, A. R. Chamberlin, J. Sandler, W. Fenical, J. Cui, S. J. Gharpure, A. Polosukhin, H.-R. Zhang, P. A. Evans, A. D. Richardson, M. K. Harper, C. M. Ireland, B. G. Vong, T. P. Brady, E. A. Theodorakis, J. J. La Clair, *Chem. Bio. Chem.* **2006**, *7*, 409.
17. "An Enantiospecific Synthesis of 2-Pupukeanone" A. Srikrishna, P. R. Kumar, S. J. Gharpure, *Ind. J. Chem. B* **2006**, *45B*, 1909.
18. "An Enantiospecific Strategy to All Four Diastereomers of A-Ring Enyne Synthons of 1 α ,25-Dihydroxyvitamin D₃" A. Srikrishna, S. J. Gharpure, P. P. Kumar, *Ind. J. Chem. B* **2006**, *45B*, 2736.
19. "Stereoselective Synthesis of 1,2,2-Trisubstituted Indane Derivatives Using Tandem S_N2-Michael Addition Sequence" S. J. Gharpure, S. R. B. Reddy, U. Sanyal, *Synlett* **2007**, 1889.
20. "Stereoselective Synthesis of New Oxa-Cages via Alkyl Radical Cyclization to Vinylogous Carbonates" S. J. Gharpure, S. K. Porwal, *Synlett* **2008**, 242.
21. "o-Quinone Methide Based Approach to Isoflavans: Application to the Total Syntheses of Equol, 3'-Hydroxyequol and Vestitol" S. J. Gharpure, A. M. Sathiyarayanan, P. Jonnalagadda, *Tetrahedron Lett.* **2008**, *49*, 2974.
22. "Tandem Alkylation-Michael Addition to Vinylogous Carbonates for the Stereoselective Construction of 2,3,3,6-Tetrasubstituted Tetrahydropyrans" S. J. Gharpure, S. R. B. Reddy, *Org. Lett.* **2009**, *11*, 2519.
23. "Topologically Driven Tandem Radical Cyclization Based Strategy for the Synthesis of Oxa and Aza-Cages" S. J. Gharpure, S. K. Porwal, *Tetrahedron Lett.* **2009**, *50*, 7162.
24. "Stereoselective Synthesis of Donor-Acceptor Substituted Cyclopropafuranones by Intramolecular Cyclopropanation of Vinylogous Carbonates: Divergent Synthesis of Tetrahydrofuran-3-one, Tetrahydropyran-3-one and Lactones" S. J. Gharpure, M. K. Shukla, U. Vijayasree *Org. Lett.* **2009**, *11*, 5466.
25. "Tandem Radical Cyclization Based Strategy for the Synthesis of Oxa- and Aza-Cages: A Case of Fragmentation v/s Cyclization" S. J. Gharpure, S. K. Porwal, *Tetrahedron Lett.* **2010**, *51*, 3324.
26. "Tandem S_N2-Michael Addition to Vinylogous Carbonates for the Stereoselective Construction of 2,3,3,5-Tetrasubstituted Tetrahydrofurans" S. J. Gharpure, S. R. B. Reddy, *Tetrahedron Lett.* **2010**, *51*, 6093.

27. "Alkyl Radical Cyclization to Vinylogous Carbonates for the Stereoselective Synthesis of Unsymmetrical Dioxo-Cage Compounds: Effect of Conformation on the Rate of Cyclization v/s Reduction" S. J. Gharpure, S. K. Porwal, *Tetrahedron*, **2011**, 67, 1216.
28. "Stereoselective Synthesis of Oxazino[4,3-a]indoles Employing Oxa-Pictet-Spengler Reaction of Indoles Bearing N-Tethered Vinylogous Carbonate" S. J. Gharpure, A. M. Sathiyarayanan, *Chem. Commun.*, **2011**, 47, 3625.
29. "Stereoselective Synthesis of 2,3-Disubstituted Dihydrobenzofuran using Alkyne Prins Type Cyclization to Vinylogous Carbonates" S. J. Gharpure, V. Prasath, *J. Chem. Sci.* **2011**, 123, 943. (invited article – International Year of Chemistry)
30. "Enantioselective Total Synthesis of (+)-Hagen's Gland Lactones" S. J. Gharpure, L. N. Nanda, and M. K. Shukla, *Eur. J. Org. Chem.* **2011**, 6632. (Among the top 10 most downloaded paper for October 2011)
31. "Stereoselective Synthesis of C-Substituted Morpholine Derivatives using Reductive Etherification Reaction: Total Synthesis of Chelonin C" S. J. Gharpure and J. V. K. Prasad, *J. Org. Chem.* **2011**, 76, 10325.
32. "Stereoselective Synthesis and Applications of Nitrogen Substituted Donor-Acceptor Cyclopropanes (N-DACs) in the Divergent Synthesis of Azacycles" S. J. Gharpure, U. Vijayasree and S. R. B. Reddy, *Org. Biomol. Chem.*, **2012**, 10, 1735.
33. "Stereoselective Synthesis of Oxa- and Aza-Angular Triquinanes Using Tandem Radical Cyclization to Vinylogous Carbonates and Carbamates" S. J. Gharpure, P. Niranjana and S. K. Powal, *Org. Lett.*, **2012**, 14, 5476.
34. "Synthesis of Oxa-, Aza- and Thia-Bowls and Cages" S. J. Gharpure and S. K. Porwal, *Org. Prep. Proc. Int.*, **2013**, 45, 81. (Invited review)
35. "Stereoselective Synthesis of Substituted 1,4-Oxazepanes by Intramolecular Reductive Etherification" S. J. Gharpure and J. V. K. Prasad, *Eur. J. Org. Chem.* **2013**, 2076.
36. "Stereoselective Synthesis of Benzoxepines Using Tandem Alkylation-Michael Addition to Vinylogous Carbonates" S. J. Gharpure and S. R. B. Reddy, *Eur. J. Org. Chem.* **2013**, 2981.
37. "Deciphering the Photophysical Role of Conjugated Diyne in Butadiynyl Fluorophores: Synthesis, Photophysical and Theoretical Study" A. Pati, M. Mohapatra, P. Ghosh, S. J. Gharpure, A. K. Mishra, *J. Phys. Chem. A*, **2013**, 117, 6548.
38. "Hetero Diels-Alder Reaction of Olefin with o-Quinone Methides Generated Using (\pm)-Binolphosphoric Acid for the Stereoselective Synthesis of 2,4-Diarylbenzopyrans: Application to the Formal Synthesis of Myristinin B/C" S. J. Gharpure, A. M. Sathiyarayanan, V. P. Kumar, *RSC Adv.* **2013**, 3, 18279.
39. "Coordination Polymers via Self-assembly of Silver(I) and *cis*-Bis-Nitrile Oxa-Bowl Derivatives" P. Niranjana, A. Pati, S. K. Porwal, V. Ramkumar, S. J. Gharpure, D. K. Chand, *CrystEngComm*, **2013**, 15, 9623.
40. "Stereoselective Synthesis of Oxa-bowls by Nucleophilic Addition to Oxonium Ions: Observation of Nucleophile Dependent Hydride Migration" S. J. Gharpure, S. K. Porwal, *Eur. J. Org. Chem.* **2013**, 7277.

41. "Tandem Nucleophilic Addition-Oxa-Michael Reaction for the Synthesis of *cis*-2,6-Disubstituted Tetrahydropyrans" S. J. Gharpure, J. V. K. Prasad, K. Bera, *Eur. J. Org. Chem.* **2014**, 3570.
42. "Substituted Diphenyl Butadiynes: A Computational Study of Geometries and Electronic Transitions Using DFT/TD-DFT" A. K. Pati, S. J. Gharpure, A. K. Mishra, *Phys. Chem. Chem. Phys.*, **2014**, *16*, 14015.
43. "Stereoselective Synthesis of C-Fused Pyranoindoles, Pyranobenzofurans and Pyranobenzothiophene Scaffolds Using Oxa-Pictet Spengler Type Reaction of Vinylogous Carbonates" S. J. Gharpure, V. Prasath, *Org. Biomol. Chem.* **2014**, *12*, 7397.
44. "Synthesis of Isochromene Derivatives Using an Intramolecular Benzylic C(sp³)-C(sp²) Bond Forming Heck Reaction on Vinylogous Carbonates" S. J. Gharpure, Y. G. Shelke, S. R. B. Reddy, *RSC Adv.* **2014**, *4*, 46962.
45. "Donor Acceptor Substituted Cyclopropane to Butanolide and Butenolide Natural Products: Enantiospecific First Total Synthesis of (+)-Hydroxyancepsenolide" S. J. Gharpure, L. N. Nanda, M. K. Shukla, *Org. Lett.* **2014**, *16*, 6424.
46. "On the Photophysics of Butadiyne Bridged Pyrene-Phenyl Molecular Conjugates: Multiple Emissive Pathways Through Locally Excited, Intramolecular Charge Transfer, and Excimer States" A. K. Pati, S. J. Gharpure, A. K. Mishra, *Faraday Discuss.* **2015**, *177*, 213.
47. "Stereoselective Synthesis of *cis*-2,6-Disubstituted Morpholines and 1,4-Oxathianes by Intramolecular Reductive Etherification of 1,5-Diketones" S. J. Gharpure, D. Anuradha, J. V. K. Prasad, P. Srinivasa Rao, *Eur. J. Org. Chem.* **2015**, 86.
48. "Counter Ion Dependent Alkyne Iminium Ion Cyclization for Divergent Synthesis of N-Fused Indolyldine, Indole and Indoline Derivatives Promoted by the Lewis/Bronsted Acid" S. J. Gharpure, Y. G. Shelke, D. P. Kumar, *Org. Lett.* **2015**, *17*, 1926.
49. "Stereoselective Synthesis of 2,3-Disubstituted Indoline, Pyrrolidine and Cyclic Ether-Fused 1,2-Dihydroquinoline Derivatives Using Alkyne Iminium Ion Cyclization of Vinylogous Carbamates: Switch of Regioselectivity Using an Internal Hydroxy Group as a Nucleophile" S. J. Gharpure, V. Prasath, V. Kumar, *Chem. Commun.* **2015**, *51*, 13623.
50. "Contrasting Solid-State Fluorescence of Diynes with Small and Large Aryl Substituents: Crystal Packing Dependence and Stimuli-Responsive Fluorescence Switching" A. Pati, S. J. Gharpure, A. K. Mishra, *J. Phys. Chem. A*, **2015**, *119*, 10481.
51. "Stereoselective Synthesis of Donor-Acceptor Cyclopropapyranone by Intramolecular Cyclopropanation of Vinylogous Carbonates: Application to the Total Synthesis of (±)-Diospongin B" S. J. Gharpure, S. P. Mane, L. N. Nanda, M. K. Shukla, *Isr. J. Chem.* **2016**, *56*, 553.
52. "Stereoselective Synthesis of Thiazino[4,3-*a*]indoles Using Thia-Pictet-Spengler Reaction of Indoles Bearing N-Tethered Thiols and Vinylogous Thiocarbonates" S. J. Gharpure, S. K. Nanda, *Org. Biomol. Chem.* **2016**, *14*, 5586. (Invited article, New Talent themed issue)
53. "Photophysics of Diphenylbutadiynes in Water, Acetonitrile-Water and Acetonitrile Solvent Systems: Application to Single Component White Light Emission" A. K. Pati, R. Jana, S. J. Gharpure, A. K. Mishra, *J. Phys. Chem. A*, **2016**, *120*, 5826.

54. "White Light Emission in Butadiyne Bridged Pyrene-Phenyl Hybrid Fluorophore: Understanding the Photophysical Importance of Diyne Spacer and Utilizing the Excited State Photophysics for Vapor Detection" A. K. Pati, S. J. Gharpure, A. K. Mishra, *J. Phys. Chem. A*, **2016**, *120*, 5838.
55. "Application of Oxygen/Nitrogen Substituted Donor-Acceptor Cyclopropanes in the Total Synthesis of Natural Products" S. J. Gharpure, L. N. Nanda, *Tetrahedron Lett.* **2017**, *58*, 711. (Invited digest article).
56. "Lewis Acid Promoted Oxonium Ion Driven Carboamination of Alkynes for the Synthesis of 4-Alkoxy Quinolines" S. J. Gharpure, S. K. Nanda, P. A. Adate, Y. G. Shelke, *J. Org. Chem.* **2017**, *82*, 2067.
57. "Metal-free Hydroalkoxylation-Formal [4+2] Cycloaddition Cascade for the Synthesis of Ketals" S. J. Gharpure, S. K. Nanda, Padmaja, Y. G. Shelke, *Chem. Eur. J.* **2017**, *23*, 10007.
58. "Enantiospecific Total Synthesis of (+)-3-epi-Epohelmin A Using a Nitrogen-Substituted Donor-Acceptor Cyclopropane" S. J. Gharpure, L. N. Nanda, D. Kumari, *Eur. J. Org. Chem.* **2017**, 3917.
59. "Cascade Radical Cyclization of *N*-Propargylindoles: Substituents Dictate Stereoselective Formation of *N*-Fused Indolines versus Indoles" S. J. Gharpure, Y. G. Shelke, *Org. Lett.* **2017**, *19*, 5022.
60. "Lewis Acid Mediated Cascade Friedel-Craft/Alkyne Indol-2-yl Cation Cyclization/Vinyl Cation Trapping for the Synthesis of *N*-Fused Indole Derivatives" S. J. Gharpure, Y. G. Shelke, *Org. Lett.* **2017**, *19*, 5406.
61. "Synthesis of Benzo[1,4]heterocycles using Palladium Catalyzed Heck Reaction to Vinylogous Carbonates/Carbamates: Unexpected Formation of Indoles via Carbopalladation Intercepted by Nucleopalladation" S. J. Gharpure, D. Anuradha, *Org. Lett.* **2017**, *19*, 6136.
62. "Lewis Acid Mediated "endo-dig" Hydroalkoxylation-Reduction on Internal Alkynols for the Stereoselective Synthesis of Cyclic Ethers and 1,4-Oxazepanes" S. J. Gharpure, D. S. Vishwakarma, S. K. Nanda, *Org. Lett.* **2017**, *19*, 6534.
63. "Cascade Radical Cyclization to Vinylogous Carbonates/Carbamates for the Synthesis of Oxa- and Aza-Angular Triquinanes: Diastereoselectivity Depends on the Ring Size of Radical Precursor" S. J. Gharpure, P. Niranjana, S. K. Porwal, *Synthesis* **2018**, *50*, 2954. (Invited article, *Special Topic on Modern Radical Methods and their Strategic Applications in Synthesis*)
64. "Homogeneous Catalysis: Powerful Technology for the Modification of Important Bio Molecules" Y. G. Shelke, A. Yashmeen, A. V. A. Gholap, S. J. Gharpure, A. R. Kapdi, *Chem. Asian J.* **2018**, *13*, 2991. (Invited review)
65. "Transition-Metal Acetate-Promoted Intramolecular Nitrene Insertion to Vinylogous Carbonates for Divergent Synthesis of Azirinobenzoxazoles and Benzoxazines" S. J. Gharpure, S. Naveen, G. Samala, D. S. Vishwakarma, *Chem. Eur. J.* **2019**, *25*, 1456.
66. "Cascade Radical Cyclization on Alkynyl Vinylogous Carbonates for the Divergent Synthesis

- of Tetrasubstituted Furans and Dihydrofurans” S. J. Gharpure, Padmaja, V. Prasath, Y. G. Shelke, *Org. Lett.* **2019**, *21*, 223.
67. “TMSOTf Mediated ‘5/6-endo-dig’ Reductive Hydroamination for the Stereoselective Synthesis of Pyrrolidine and Piperidine derivatives” S. J. Gharpure, D. S. Vishwakarma, R. K. Patel, *Chem. Commun.*, **2019**, *55*, 6858.
68. “Expeditious Diastereoselective Synthesis of Medium Ring Heterocycle-Fused Chromenes via Tandem 8/9-endo-dig and 8-exo-dig Hydroalkoxylation-Formal-[4+2]-Cycloaddition” S. J. Gharpure, S. K. Nanda, D. J. Fartade, *Org. Biomol. Chem.*, **2019**, *17*, 8806.
69. “Regioselective Synthesis of Halotriazoles and their Utility in Metal Catalyzed Coupling Reactions” S. J. Gharpure, S. Naveen, R. S. Chavan, Padmaja, *Eur. J. Org. Chem.*, **2020**, 6870 (Invited article)
70. “Lewis Acid Catalyzed Intramolecular [4+2] Cycloaddition of In Situ Generated Aza-Quinone Methides for the Stereoselective Synthesis of Furo/pyrano[3,2-c]tetrahydroquinolines” S. J. Gharpure, D. S. Vishwakarma, *Eur. J. Org. Chem.*, **2020**, 6887. (Invited article)
71. “Domino Hydroalkoxylation-[4+2]-Cycloaddition for Stereoselective Synthesis of 1,4-Heterocycle-Fused Chromenes: Rapid Access to the [6-6-7-6] Tetracyclic Core of Cytosporhizins B-D” S. J. Gharpure, S. K. Nanda, D. J. Fartade, D. S. Vishwakarma *Eur. J. Org. Chem.*, **2020**, 6892. (Invited article)
72. “Design and Expeditious Synthesis of Quinoline-Pyrene-Based Ratiometric Fluorescent Probes for Targeting Lysosomal pH” P. E. Hande, M. Mishra, F. Ali, S. Kapoor, A. Datta, and S. J. Gharpure, *ChemBioChem*, **2020**, *21*, 1492.
73. “Notorious Radicals and Their Fate” Padmaja, S. J. Gharpure, *INTERWOVEN Interdiscip. J. Navrachana Univ.*, **2020**, *2(2)*, 1. (Invited article)
74. “Formal [4+2] Cycloaddition of o-Aza-Quinone Methide for the Synthesis of 1,4-Heterocycle-Fused Quinolines” S. J. Gharpure, S. K. Nanda, D. J. Fartade, *Adv. Synth. Catal.*, **2021**, *363*, 2562.
75. “Recent Advances in the Synthesis of Pyrrolo[1,2-a]indoles and their Derivatives” Y. G. Shelke, P. E. Hande, S. J. Gharpure, *Org. Biomol. Chem.*, **2021**, *19*, 7544. (Invited article)
76. “Recent Advances in Small Molecule-Based Intracellular pH Probes” P. E. Hande, Y. G. Shelke, A. Datta, S. J. Gharpure, *ChemBioChem*, **2021**, *22*, *accepted*.
77. “TMSOTf-Mediated Formal [4 + 2] Cycloaddition-Retro-aza-Michael Cascade of Vinylogous Carbamates for the Synthesis of Highly Fluorescent Pyridocarbazoles” S. J. Gharpure, P. E. Hande, S. K. Pandey, G. Samala, *J. Org. Chem.*, **2021**, *86*, 16652.
78. “Acid-Catalysed Iterative Generation of O-Quinone Methides for the Synthesis of Dioxabicyclo[3.3.1]nonanes: Total Synthesis of Myristicyclins A-B” S. J. Gharpure, S. Jegadeesan, D. S. Vishwakarma, *Chem. Commun.*, **2021**, *57*, 13333.

Editorial role:

1. Volume Editor, Comprehensive Heterocyclic Chemistry IV, 4th Edn., Volume 9, 2018-2021, Publisher: Elsevier.

Book Chapter:

1. Padmaja, Y. G. Shelke, S. J. Gharpure, H. Ila, "1,2,3-Oxadiazines and 1,2,3-Thiadiazines" in Comprehensive Heterocyclic Chemistry IV, 4th Edition; Janine Cossy, Eds.; Santosh J. Gharpure, Sec. Eds., Elsevier, 2021, Vol. 9, *accepted*.

Patent Applications Filed:

1. "One Pot Process for Synthesizing Functionalized Quinolines *via* Metal-Free, Oxonium Ion Driven Carboamination of Alkynes" S. J. Gharpure, S. K. Nanda, P. A. Adate, Y. G. Shelke, Indian Patent Application No.: 201621041730 dated December 06, 2016.
2. "A Process For Synthesis Of Chroman Derivatives" S. J. Gharpure, Jegadeesan S., D. S. Vishwakarma, Indian Patent Application No: 202121026202 dated June 11, 2021.
3. "A Process For Synthesis of Bicyclic Ethers" S. J. Gharpure, Jegadeesan S., D. S. Vishwakarma, Indian Patent Application No: 202121026203 dated June 11, 2021.
4. "A Process For Synthesis of Bicyclic Acetals" S. J. Gharpure, Jegadeesan S., D. S. Vishwakarma, Indian Patent Application No: 202121026205 dated June 11, 2021.
5. "A Process For Synthesis of Bicyclic Ketals" S. J. Gharpure, Jegadeesan S., D. S. Vishwakarma, Indian Patent Application No: 202121026206 dated June 11, 2021.

Patent Applications Granted:

1. "Process for synthesis of 1,4-heterocycle fused chromene" S. J. Gharpure, S. K. Nanda, D. J. Fartade, D. S. Vishwakarma, Indian Patent Application No: 201921002268 dated January 18, 2019.
2. "Process for synthesis of 1,4-heterocycle fused quinolines" S. J. Gharpure, S. K. Nanda, D. J. Fartade, D. S. Vishwakarma, Indian Patent Application No: 201921002269 dated January 18, 2019.

Posters and Presentations:

1. S. J. Gharpure, P. A. Evans, "Intramolecular Lewis Acid Mediated Reductive Etherification Reactions: Applications to the Total Synthesis of Mucocin and Polycyclic Ethers" oral presentation at the 225th ACS National Meeting, New Orleans, LA, March 23-27, 2003.
2. A. I. Polosukhin, H. -R. Zhang, S. J. Gharpure, P. A. Evans, "Enantioselective Total Synthesis of Annonaceous Acetogenin (-)-Mucocin" poster presentation at 38th National Organic Symposium, Bloomington, IN, June 8-12, 2003.
3. S. J. Gharpure, R. J. Hinkle, Jian Cui, P. A. Evans, "Bismuth Catalyzed Diastereoselective Etherification Reactions: Application to the Synthesis of Non-Adjacent and Fused Polycyclic Ethers" poster presentation at 38th National Organic Symposium, Bloomington, IN, June 8-12, 2003.

4. S. J. Gharpure, "Synthetic and Mechanistic Investigations of Bismuth(III) Mediated Etherifications" oral presentation in 'Inorganic Bag-Lunch Seminar' at Department of Chemistry, Indiana University, Bloomington, IN, February 5, 2004.
5. S. J. Gharpure, "On the Role of Bismuth(III) in Etherification Reactions" oral presentation in '48th Science Club Meet' at Department of Chemistry, IIT Madras, Chennai, India, April 2, 2005.
6. S. J. Gharpure, "Bismuth(III) Mediated Etherifications in the Synthesis of Cyclic Ethers" oral presentation in 'IITMadras – University of Rennes: Joint Seminar in Organic Chemistry' at Department of Chemistry, IIT Madras, Chennai, India, October 29, 2005.
7. U. Vijayasree, M. K. Shukla and S. J. Gharpure, "Intramolecular cyclopropanation of Vinylogous carbonates for stereoselective construction of cyclic ethers" poster presentation at Annual IIT Madras Chemistry Symposium and The first Mid-Year Meeting of the Chemical research society of India, July 12-13, 2006 IIT Madras, India.
8. S. K. Porwal, S. R. B. Reddy, M. K. Shukla, U. Vijayasree and S. J. Gharpure, "Vinylogous Carbonates in the Synthesis of Cyclic Ethers" poster presentation at 10th Chemical research society of India, National Symposium in Chemistry, January 30-February 5, 2008, IISc Bangalore, India.
9. A. M. Sathiya Narayanan, Prasad Jonnalagadda, Santosh J. Gharpure "o-Quinone methide Based Approach to Flavans and Isoflavans", oral presentation, 4th J-NOST conference at Madurai Kamaraj University, Madurai, December 6-9, 2008.
10. Suheel Kumar Porwal and Santosh J. Gharpure, "Stereoselective Synthesis of New Oxa-bowl and Cages", poster presentation, 4th J-NOST conference at Madurai Kamaraj University, Madurai, December 6-9, 2008.
11. S. J. Gharpure, "Tandem Reactions for the Synthesis of Carba- and Heterocycles" oral presentation at Indian Science Congress 2009, Young Scientist Session on "Frontiers of Science", January 5, 2009, NEHU, Shilong, Assam.
12. S. J. Gharpure, "New Methods for the Synthesis of Cyclic Ethers Based on Vinylogous Carbonates" oral presentation at Department of Chemistry, IIT Guwahati, Assam, January 6, 2009.
13. S. Raja Bhushan Reddy and Santosh J. Gharpure, "Tandem Alkylation-Michael Addition to Vinylogous Carbonates for the Synthesis of Cyclic Ethers", oral presentation, 5th J- NOST Conference at IIT Kanpur, December 4-7, 2009.
14. S. J. Gharpure, "Tandem Reactions for the Synthesis of Oxa- and Azacycles" Invited talk at 4th CRSI-RSC Symposium in Chemistry at NIPER, Hyderabad, February 4, 2010.
15. U. Vijayasree, S. R. B. Reddy and S. J. Gharpure, "New Synthesis of Donor-Acceptor Cyclopropanes *via* Intramolecular Cyclopropanation of Vinylogous Carbamates: Applications in the Divergent Synthesis of Azacycles" poster presentation at 12th Chemical research society of India, National Symposium in Chemistry, February 5-7, 2010 ICT, Hyderabad, India (**won the best poster award**).
16. S. J. Gharpure, "New Synthesis and Applications of Donor-Acceptor Substituted Cyclopropanes (DACs)" Invited talk at Gregynog Synthesis Workshop, September 24-26, 2010.
17. S. J. Gharpure, "Tandem Reactions in the Synthesis of Natural and Unnatural Products" Invited talk at Department of Chemistry, Cardiff University, on September 27, 2010.

18. S. J. Gharpure, "Vinylogous Functional Groups for the Synthesis Oxa- and Aza-cycles" Invited talk at Department of Chemistry, University of Bath on September 28, 2010.
19. S. J. Gharpure, " β -Alkoxyacrylates in the Synthesis of Cyclic Ethers" Invited talk at Refresher Course in Chemistry, Bharthidasan University, Tiruchirappalli on October 9, 2010.
20. S. J. Gharpure, "*o*-Quinone Methides in Organic Synthesis", Invited talk at Refresher Course in Chemistry, Bharthidasan University, Tiruchirappalli on October 9, 2010.
21. S. J. Gharpure, "Vinylogous Functional Groups in Organic Synthesis" Invited talk at XIVth NOST Organic Chemistry Conference, Cidade de Goa, Goa, December 5-8, 2010.
22. S. J. Gharpure, "New Strategies for the Synthesis of Oxa- and Aza-cycles" invited talk in Lecture Series of Department of Organic Chemistry, University of Madras, Chennai on January 27, 2011.
23. Jonnalagadda V. K. Prasad and Santosh J. Gharpure, "Stereoselective Synthesis of Substituted Morpholines and Tetrahydropyrans", oral presentation, 6th J-NOST conference at University of Hyderabad, Hyderabad, January 28-31, 2011.
24. S. R. B. Reddy and S. J. Gharpure, "Tandem Alkylation-Michael Addition for the Synthesis of THF, THP and Indane Derivatives" poster presentation at Chennai Chemistry Conference, IIT Madras, Chennai, February 11-13, 2011 (*won the best poster award*).
25. S. J. Gharpure, "New Strategies for the Stereoselective Synthesis of Bio-active Oxa and Aza-cycles" Invited talk at Chemical Technologies in Drug Discovery, Novotel Hotel, Hyderabad, April 23-24, 2011.
26. S. J. Gharpure, "*o*-Quinone Methides (*o*-QMs) in Organic Synthesis", Invited talk at Refresher Course on 'Recent Advances in Chemistry' Madurai Kamraj University, Madurai on July 25, 2011.
27. S. J. Gharpure, "Stereoselective Synthesis of Oxa- and Aza-cycles: A Vinylogous Functional Group Based Approach", Invited talk at Refresher Course on 'Recent Advances in Chemistry' Madurai Kamraj University, Madurai on July 25, 2011.
28. J. V. K. Prasad, D. Anuradha, P. Srinivasarao, S. J. Gharpure, "Stereoselective Synthesis of Substituted Morpholine Derivatives using Reductive Etherification Reaction", poster presentation at Chemistry in House Symposium 2011, Department of Chemistry, IIT Madras, Chennai on August 24, 2011.
29. Prasath V., L. N. Nanda, Niranjana P. and S. J. Gharpure, "Stereoselective Synthesis of Oxa- and Aza-cycles using Vinylogous Functional Groups" poster presentation at Chemistry in House Symposium 2011, Department of Chemistry, IIT Madras, Chennai on August 24, 2011.
30. S. J. Gharpure, "Stereoselective Synthesis of Oxa- and Aza-cycles using Vinylogous Functional Groups" Invited talk at 3rd Indo-German Symposium, IIT Bombay, Powai, Mumbai, September 27-29, 2011.
31. L. N. Nanda, Prasath V., Niranjana P. and S. J. Gharpure, "Stereoselective Synthesis of Oxa- and Aza-cycles using Vinylogous Functional Groups" poster presentation at MEDCHEM 2011, IIT Madras, Chennai, October 28-29, 2011 (*won the best poster award*).
32. S. J. Gharpure, "Stereoselective approaches to oxa- and aza-cycles using vinylogous functional groups" Invited talk at Department of Organic Chemistry, I.I.Sc. Bangalore, November 18, 2011

33. S. J. Gharpure, "Stereochemistry of Organic Compounds" Invited talk during the national level seminar on "*Asymmetric Synthesis and Chiral Separation Techniques*" at JSS College of Pharmacy, Mysore, November 19, 2011.
34. S. J. Gharpure, "Asymmetric Organic Synthesis" Invited talk during national level seminar on "*Asymmetric Synthesis and Chiral Separation Techniques*" at JSS College of Pharmacy, Mysore, November 19, 2011.
35. S. J. Gharpure, "Stereochemistry of Organic Compounds" Invited talk at IYC-CRSI Interaction Meeting with under-Graduate and post-graduate Chemistry students, Triple Helix, CSIR-CLRI, Adyar, Chennai – 600020.
36. S. J. Gharpure, "New Strategies for the Stereoselective Synthesis of Bio-active Oxa and Aza-cycles" Invited talk at 7th Indo-French Symposium on Organic Synthesis (IFCOS), NCL, Pune, December 7-9, 2011.
37. Prasath, V. and S. J. Gharpure, "Synthesis of Oxa-and Aza-cycles using Vinylogous Functional Groups" oral presentation, 7th J-NOST conference at IISER Mohali, December 15-18.
38. S. J. Gharpure "Stereoselective Synthesis of Oxa- and Aza-cycles using Vinylogous Functional Groups" Invited talk at National Seminar on 'Recent Trends in Chemical and Biological Sciences', Govt. Holkar Science College, Indore, January 13-15, 2012.
39. S. J. Gharpure, "New Strategies for the Stereoselective Synthesis of Oxa and Aza-Cycles" Invited talk in 'INDIGO PhD research conference and intensive course' at Ideal Beach Resort Mahabalipuram, Chennai, India, February 12-16, 2012.
40. S. J. Gharpure, "Stereoselective synthesis of cyclic ethers using vinylogous carbonates" Invited talk in 'NIIST (CSIR)-Act National Workshop on Frontiers in Organic Synthesis and Drug Discovery' at NIIST, Thiruvananthapuram, March 1-2, 2012.
41. S. J. Gharpure, "Vinylogous Functional Groups in the Stereoselective Synthesis of Donor-Acceptor Substituted Cyclopropanes (DACs) and More" – Seminar on "Current Trends" in Chemistry at Department of Chemistry, Pondicherry University, March 16, 2012.
42. S. J. Gharpure, "Vinylogous functional groups in stereoselective synthesis of oxa- and aza-cycles" – National Seminar on Recent Research Trends in Synthetic Organic and Natural Products Chemistry (RRTSONPC-12), Department of Chemistry, S.V. University, Tirupati, March 19-20, 2012.
43. S. J. Gharpure, "Tandem reactions in the synthesis of oxa- and aza-cycles" Invited talk in National Seminar on Recent Trends In Catalysts And Fine Chemicals Synthesis- A Green Approach at VIT University, Chennai, April 20, 2012.
44. S. J. Gharpure, "Stereoselective Synthesis and Applications of Donor-Acceptor Substituted Cyclopropanes (DACs)" – IITB-ACS Symposium in Chemistry, October 1-2, 2012.
45. S. J. Gharpure, "Stereoselective Synthesis and Applications of Donor-Acceptor Substituted Cyclopropanes (DACs)" – Advances and Opportunities in Chemical Sciences CHEMISTRY OUTREACH EVENT by RSC-WIS in association with K.T.H.M. College, Nashik, October 20, 2012.
46. S. J. Gharpure, "Aromaticity and Aromatic Substitution" – Workshop on BASIC CONCEPTS in ORGANIC CHEMISTRY KET's V. G. Vaze College of Arts, Science and Commerce, Mulund; October 22, 2012.

47. S. J. Gharpure, "Stereoselective synthesis of cyclic ethers using vinylogous carbonate" – 2nd International Conference on "Emerging Trends in Chemical Sciences"(ETCS-12) Organized by School of Chemical Sciences, Solapur University, Solapur; November 2-4, 2012.
48. S. J. Gharpure, "New Strategies for the Stereoselective Synthesis of Oxa and Aza-Cycles " – Invited talk in Frontiers in Chemical Sciences (FICS) – 2012, Department of Chemistry, Indian Institute of Technology Guwahati, December 2- 4, 2012.
49. S. J. Gharpure, "Synthesis of oxa and aza-cycles using tandem reactions" – Invited talk in "New Direction in Chemical Sciences" (NDCS), Department of Chemistry, Indian Institute of Technology Delhi, December 7-9, 2012.
50. Sathiyarayanan A. M., Prasanna K. V. and S. J. Gharpure, "A Mild and Efficient Generation of o-Quinone methides using (\pm)-Binolphosphoric Acid: Application to the Formal Synthesis of Myristinins B/C" – Poster presentation in 'CATALYST 2013' Dr. Reddy's Chemistry Conclave, Journey towards sustainability at Hyderabad, Jan 9, 2013. (*won second prize*)
51. S. J. Gharpure, "Diversity Oriented Synthesis using Vinylogous Functional Groups" – 8th Indo-French Conference in Organic Synthesis (IFCOS) at Goa, April 1-3, 2013.
52. S. J. Gharpure, "Pericyclic Reactions" – Invited lecture, RSC WEST INDIA SECTION In associations with Chemical Research Society of India (Mumbai Local Chapter) and K.E.T's V. G. Vaze College of Arts, Science and Commerce, July 26-27, 2013.
53. S. J. Gharpure, "Stereochemistry of organic compounds" – Invited lecture, KET's V. G Vaze College, Mulund, Mumbai, October 23, 2013.
54. S. J. Gharpure, "Tandem reactions for the synthesis of oxa and aza-cycles" – Invited talk, Green Chemistry: A Route to Sustainable Development, Maharshi Dayanand College of Arts, Science and Commerce, December 3, 2013.
55. S. J. Gharpure, "Synthesis of oxa and aza-cycles using tandem reactions" – Invited lecture at Madurai Kamraj University, January 28, 2014.
56. S. J. Gharpure, "New Strategies for the stereoselective synthesis of bio-active oxa and aza-cycles" – Invited lecture at National Conference on Evolutionary Trends in Biological and Pharmaceutical Chemistry (NCETBP – 2014), Department of Chemistry, Holy Cross College, Tiruchirappalli – 620 002, January 30-31, 2014.
57. S. J. Gharpure, "Aromaticity and Aromatic Substitution" – Invited lecture in Workshop on Problem solving in Organic Chemistry at KET's V. G. Vaze College of Arts, Science and Commerce, Mulund, March 27, 2014.
58. S. J. Gharpure, "Organometallics in Organic Synthesis" – Invited lecture at VES College of Pharmacy, Chembur, Mumbai, March 20, 2014.
59. S. J. Gharpure, "Catalysis in Organic Synthesis" – Invited lecture at VES College of Pharmacy, Chembur, Mumbai, April 3, 2014.
60. S. J. Gharpure, "Synthesis of oxa and aza-cycles using vinylogous functional groups" – BASF, Ludwigshafen, Germany, June 25, 2014.
61. S. J. Gharpure, "New Strategies for the stereoselective synthesis of oxa and aza-cycles" – ESPCI, Paris, France, June 27, 2014.
62. S. J. Gharpure, "Stereoselective Synthesis and Applications of Donor-Acceptor Substituted Cyclopropanes (DACs)" – 20th International Conference on Organic Synthesis (ICOS 20), Budapest, Hungary; June 29-July 4, 2014.

63. S. J. Gharpure, "Synthesis of Oxa and Aza-Cycles using Tandem Reactions" – Chemical Frontiers, Majorda Beach Resort, Goa, August 16-19, 2014.
64. S. J. Gharpure, "Synthesis of oxa and aza-cycles using vinylogous functional groups" – Workshop on 'Coalescence of Chemical Sciences to confront the challenges of sustainability' Organized by RSC-WIS and Amravati University at Amravati University, September 19-20, 2014.
65. S. J. Gharpure, "Stereoselective Synthesis and Applications of Donor-Acceptor Substituted Cyclopropanes (DACs)" – New Directions in Chemical Synthesis – I, IIT Bombay, December 8-9, 2014.
66. S. J. Gharpure, "Aromaticity and Aromatic Substitution Reactions" PGT Chemistry Orientation Programme, Atomic Energy Junior College, Anushaktinagar, Mumbai, December 22, 2014
67. S. J. Gharpure, "Aromaticity and Aromatic Substitution Reactions" University Grants Commission Academic Staff College, Sant Gadge Baba Amravati University, Amravati, January 12, 2015
68. S. J. Gharpure, "Stereochemistry of Organic Compounds" Refresher Course in Chemistry, University Grants Commission Academic Staff College, Sant Gadge Baba Amravati University, Amravati, January 12, 2015
69. S. J. Gharpure, "New Strategies for the Stereoselective Synthesis of Oxa- and Aza-cycles" invited lecture at Department of Chemistry, IIT Kanpur, February 19, 2015.
70. S. J. Gharpure, "Organometallics in Organic Synthesis" – Workshop for M.Sc. Students RSC WEST INDIA SECTION In associations with Chemical Research Society of India (Mumbai Local Chapter) and K.E.T's V.G.Vaze College of Arts, Science & Commerce, February 23, 2015.
71. S. J. Gharpure, "New Strategies for the Stereoselective Synthesis of Oxa- and Aza-cycles" Invited lecture at BASF, Navi Mumbai, June 3, 2015.
72. S. J. Gharpure, "Aromaticity and Aromatic Substitution Reactions" PGT Chemistry Orientation Programme, Kendriya Vidyalaya, IIT Bombay, June 4, 2015.
73. S. J. Gharpure, "New Strategies for the Stereoselective Synthesis of Oxa- and Aza-cycles" Catalyst – 2015 Dr. Reddy's Laboratories, Hyderabad, July 3-4, 2015.
74. S. J. Gharpure, "Stereoselective synthesis and applications of donor-acceptor substituted cyclopropanes (DACs) in divergent synthesis of natural products" Invited lecture at 10th Mid-Year CRSI Symposium in Chemistry, NIT-Trichy, July 23-25, 2015.
75. S. J. Gharpure, "Stereoselective Synthesis of Oxa- and Aza-cycles using Reactions Of Alkynes" oral presentation at 25th International Society of Heterocyclic Chemistry (ISHC) Congress, University of California, Santa Barbara, C.A., USA; August 23 – 28, 2015.
76. S. J. Gharpure, "New Strategies for the Stereoselective Synthesis of Oxa- and Aza-cycles" Invited Lecture at Department of Chemistry, IISER Bhopal, September 7, 2015.
77. S. J. Gharpure, "Diversity Oriented Synthesis of Oxa- and Aza-cycles" invited lecture in Indo-German Workshop on 'Molecular Amplification' at Evangelische Akademie Tutzing, Germany, October 20-23, 2015.
78. S. J. Gharpure, "Stereoselective Synthesis of Oxa- and Aza-cycles using Reactions of Alkynes" Invited lecture at XVII-NOST Organic Chemistry Conference, Hotel Le Meridien, Jaipur, October 27-30, 2015.

79. S. J. Gharpure, "New Strategies for the Stereoselective Synthesis of Oxa- and Aza-cycles" Invited lecture at Department of Organic Chemistry, IISc Bangalore, November 26, 2015.
80. S. J. Gharpure, "Aromaticity and Aromatic Substitution Reactions" University Grants Commission Academic Staff College, Sant Gadge Baba Amravati University, Amravati, December 3-4, 2015
81. S. J. Gharpure, "Organometallics in Organic Synthesis" University Grants Commission Academic Staff College, Sant Gadge Baba Amravati University, Amravati, December 3-4, 2015
82. S. J. Gharpure, "New Strategies for the Stereoselective Synthesis of Oxa- and Aza-cycles" Invited lecture at Syngenta Research and Technology Centre Goa, December 7, 2015.
83. S. J. Gharpure, "Story of Molecules That Changed the World" invited lecture at DST - INSPIRE Internship Science Camp Chikitsak Samuh's S. S. & L. S. Patkar College of Arts and Science V. P. Varde College of Commerce and Economics Goregaon (W), Mumbai – 400062, December 8, 2015.
84. S. J. Gharpure, "New Strategies for the Stereoselective Synthesis of Bio-active Oxa- and Aza-cycles" Invited lecture at RSC-WIS Symposium "Frontiers in Advanced Chemistry and Technology-2015" Department of Chemistry, North Maharashtra University (NMU), Jalgaon, December 11-12, 2015.
85. S. J. Gharpure, "Exciting Discoveries in Organic Chemistry" Workshop on Organic Chemistry for the second spell In-service Course for PGT Chemistry" KV IIT Bombay, Powai, Mumbai – 400076, December 28, 2015.
86. S. J. Gharpure, "Configuration and Conformation" lecture at Workshop on Stereochemistry at Srinivasa Ramanuja Institute for Basic Sciences, Kottayam January 8-10, 2016.
87. S. J. Gharpure, "New Strategies for the Stereoselective Synthesis of Oxa- and Aza-cycles" Invited lecture at RSC-Symposium Department of Chemistry, Devanga Arts College, Aruppukottai – 626101, Tamil Nadu, February 12, 2016.
88. S. J. Gharpure, "Organometallics in Organic Synthesis" Invited lecture at Workshop for M.Sc. Students, K.E.T's V.G.Vaze College of Arts, Science & Commerce, March 14, 2016.
89. S. J. Gharpure, "Story of Molecules That Changed the World" Invited lecture at 'Summer School in Science', Virtual Classroom, Phirozshah Mehta Bhavan, Kalina Campus, Mumbai University - 400098, May 7, 2016
90. S. J. Gharpure, "Stereoselective Synthesis of Oxa- and Aza-cycles using Reactions of Alkynes" Invited lecture at 'Frontiers in Organic Symposium – I' Biocon-Bristol-Myers Squibb R&D Center (BBRC), Bangalore, August 10, 2016.
91. S. J. Gharpure, "Tandem Reactions for the Stereoselective Synthesis of Oxa- and Aza-cycles" Invited lecture at Department of Chemistry, University of Mumbai, Vidyanagari, Mumbai - 400098, September 3, 2016.
92. S. J. Gharpure, "Pericyclic Reactions" – Invited lectures, RSC WEST INDIA SECTION In associations with Chemical Research Society of India (Mumbai Local Chapter) and K.E.T's V. G. Vaze College of Arts, Science and Commerce, September 26-29, 2016.
93. S. J. Gharpure, "Stereoselective Synthesis of Oxa- and Aza-cycles Using Reactions of Alkynes" Invited lecture at 21st International Conference on Organic Synthesis (ICOS-21), IIT Bombay, Mumbai, December 11-16, 2016.

94. S. J. Gharpure, "Stereochemistry in Action" lecture at NIUS Camp in Chemistry, Homi Bhabha Centre for Science Education (HBCSE), Mumbai, December 24, 2016.
95. S. J. Gharpure, "Asymmetric Synthesis" – Lecture at Workshop for M.Sc. Students, K.E.T's V. G. Vaze College of Arts, Science & Commerce, March 1, 2017.
96. S. J. Gharpure, Invited talk at 2nd International conference on "Recent Trends of Chemical & Biological Sciences in Medicine, Natural Product and Drug Discovery (RTCBSMNPDD-2017)" at Department of Chemistry Berhampur University, Odisha, March 3-5, 2017.
97. S. J. Gharpure, "Conformational Analysis" lecture at Science Academies' Lecture Workshop on 'Emerging Trends in Chemical Sciences' at Department of Chemistry Lady Doak College, Madurai, March 9-11, 2017.
98. S. J. Gharpure, "New strategies for the synthesis of oxa- and aza-cycles" Themis Medicare UICT Diamond Jubilee Distinguished Fellow in Pharmaceutical Science Lecture Organized by Department of Pharmaceutical Sciences and Technology Institute of Chemical Technology Mumbai, March 16, 2017
99. S. J. Gharpure, "Functional Group Based Approach to the Synthesis of Oxa- and Aza-cycles" Invited lecture at 'National Seminar on Modern Methods in Organic Synthesis (MMOS-2017)' at Department of Chemistry, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur, March 20-21, 2017.
100. S. J. Gharpure, "Reactions of Al-kynes for Synthesis of Oxa- and Aza-Cycles" Invited lecture at 'Satellite Conference on Chemical Synthesis-2017' at Department of Chemistry, IIT Bombay, Mumbai, December 5-6, 2017.
101. S. J. Gharpure, "Stereoselective synthesis of oxa- and aza-cycles using reactions of alkynes" Invited lecture at "Symposium on Contemporary Facets in Organic Synthesis 2017 (CFOS-17)" at Department of Chemistry at the Indian Institute of Technology (IIT), Roorkee, December 22-24, 2017.
102. S. J. Gharpure, "Reactions of Al-kynes for the Synthesis of Oxa- and Aza-Cycles" Invited lecture at 'Emerging Trends in Drugs Development and Natural-Products (ETDDNP-2018)' at Department of Chemistry, University of Delhi, New Delhi, January 12-14, 2018.
103. S. J. Gharpure, "Reactions of Al-kynes for the Synthesis of Oxa- and Aza-Cycles" Invited lecture in 'Advances in Organometallic and Bio-Organometallic Chemistry (AOBOC-2018)' at Institute of Chemical Technology, Matunga, Mumbai, February 20-21, 2018.
104. S. J. Gharpure, "Reactions of al-kynes for the synthesis of fused indole derivatives" Invited lecture in the conference on "Advanced Perspectives in Chemistry" at Department of Chemistry, Savitribai Phule Pune University, February 24-25, 2018.
105. S. J. Gharpure, "Reactions of Al-kynes for the Synthesis of Oxa- and Aza-Cycles" invited talk in UGC SAP DRS-I sponsored "National Seminar on Heterocyclic Chemistry" Department of Chemistry, Rashtrasant Tukadoji Maharaj Nagpur University March 27-28, 2018.
106. S. J. Gharpure, "Reactions of Al-kynes for the Synthesis of Oxa- and Aza-Cycles" invited talk Department of Chemistry, IISER Bhopal, Bhopal, April 13, 2018.
107. S. J. Gharpure, "Stereoselective and Stereospecific Reactions" lecture at OCSS, Homi Bhabha Centre for Science Education (HBCSE), Mumbai, May 28, 2018.
108. S. J. Gharpure, "Reactive Intermediates in Organic Chemistry" lecture at Organic Chemistry Summer Camp (OCSS), Department of Chemistry, IIT Bombay, May 30-June 8, 2018.

109. S. J. Gharpure, "Reactions of al-kynes for the synthesis oxa- and aza-cycles" Invited lecture in the conference 'Cemical Frontiers Goa 2018 (CFG-2018)' at Goa, August 19-22, 2018.
110. S. J. Gharpure, "Reactions of al-kynes for the synthesis oxa- and aza-cycles" Invited lecture in 'IITB-NTU – Joint Research Workshop' at IIT Bombay, September 20, 2018.
111. S. J. Gharpure, "Pericyclic Reactions" – Invited lectures, RSC WEST INDIA SECTION In associations with Chemical Research Society of India (Mumbai Local Chapter) and K.E.T.'s V. G. Vaze College of Arts, Science and Commerce, September 19-22, 2018.
112. S. J. Gharpure, "Reactions of al(l)kynes for the synthesis of oxa- and aza-cycles" invited talk in 'Department of Organic Chemistry, IISc, Bangalore on November 14, 2018.
113. S. J. Gharpure, "Stereochemistry and conformation" lecture at NIUS Camp in Chemistry, Homi Bhabha Centre for Science Education (HBCSE), Mumbai, December 23, 2018.
114. S. J. Gharpure, "Conformational Analysis" invited talk at Department of Chemistry, Rashtrasant Tukadoji Maharaj Nagpur University January 18, 2019.
115. S. J. Gharpure, "Tandem reactions in the synthesis of oxa and aza-cycles" invited talk in 'Conference on "Energy and Environmental Challenges" (CE2C-2019)' VNIT, Nagpur, January 18-19, 2019.
116. S. J. Gharpure, "Diverse functionalization of alkynes for the synthesis of heterocycles" invited talk in 24th CRSI National Symposium in Chemistry (NSC-24) at CSIR-Central Leather Research Institute (CLRI), Chennai, February 8-10, 2019.
117. S. J. Gharpure, "Diverse functionalization of alkynes for the synthesis of heterocycles" invited talk in National Symposium on Advances in Chemical Research, Department of Chemistry, The Maharaja Sayajirao University of Baroda, February 24, 2019.
118. S. J. Gharpure, "Asymmetric Synthesis" – Lecture at Workshop for M.Sc. Students, K.E.T.'s V. G. Vaze College of Arts, Science & Commerce, March 6-7, 2019.
119. S. J. Gharpure, "Reactions of al-kynes for the synthesis of oxa- and aza-cycles" invited talk in 'Recent Advances in Organic and Bioorganic Chemistry (RAOBC)' at IISER Mohali, March 22-24, 2019.
120. S. J. Gharpure, "Reactive intermediates in organic synthesis" lecture at OCSC-2019 Orientation cum-Selection Camp for Chemistry Olympiad HBCSE (TIFR), Mumbai, June 3, 2019.
121. S. J. Gharpure, "Pericyclic Reactions" – lecture at RSC WEST INDIA SECTION In associations with Chemical Research Society of India (Mumbai Local Chapter) and K.E.T.'s V.G.Vaze College of Arts, Science & Commerce, September 16-17, 2019.
122. S. J. Gharpure, "Reactions of al-kynes for the synthesis of oxa- and aza-cycles" invited talk in 'India-Unistra workshop' University of Strasbourg, September 23-24, 2019.
123. S. J. Gharpure, "Stereochemistry: Conformational Analysis" lecture at RSC Sponsored National Workshop on 'Stereochemistry and Pericyclic Reactions', Department of Chemistry, N. B. Mehta Science College, Bordi, November 25, 2019.
124. S. J. Gharpure, "Stereochemistry: Conformational Analysis" lecture at NIUS Camp (Chemistry), HBCSE, TIFR, Mumbai, December 23, 2019.
125. S. J. Gharpure, "Reactions of al-kynes for the synthesis of oxa- and aza-cycles" invited talk in 107th Indian Science Congress Science and Technology: Rural Development University of Agricultural Sciences, GKVK Campus, Bangalore, January 3-7, 2020.

126. S. J. Gharpure, "Story of Molecules That Changed the World" invited lecture at Department of Chemistry (Junior College) Thakur College of Science and Commerce, Mumbai, August 1, 2020.
127. S. J. Gharpure, "Conformational analysis of substituted cyclohexanes" Invited lecture in Jmol Application Advanced Workshop Jointly conducted by NMEICT, Spoken Tutorial, and FOSSEE, September 12, 2020.
128. S. J. Gharpure, "Conformational Analysis" Invited lecture in 'Across Borders of Chemistry - Basics to Applications' UGC refresher course for College and University teachers under aegis of UGC Human Resource Development Centre, University of Mumbai, October 19, 2020.
129. S. J. Gharpure, "Conformational Analysis" Invited lecture SGB Amravati University Amravati – 444602, November 25, 2020.
130. S. J. Gharpure, "Entrepreneurship and Motivation" RYLA- Rotary Youth Leadership Awards RCTS, RTCTS IN ASSOCIATION WITH VPM's POLYTECHNIC, THANE, December 23, 2020
131. S. J. Gharpure, "Entrepreneurship and Institution" National Seminar on Emerging Trends in Entrepreneurship Research, Rayat Shikshan Sanstha's Karmaveer Bhaurao Patil College, Vashi, Saturday, February 20, 2021.
132. S. J. Gharpure, "Conformational Analysis" Invited lecture at UGC Sponsored - National Level Five Days Online Faculty Development Programme On "Recent Advances In Chemistry Teaching & Learning" Dwaraka Doss Goverdhan Doss Vaishnav College Chennai, February 22, 2021.
133. S. J. Gharpure, "New strategies for the synthesis of oxa- and aza-cycles" invited talk in "Recent Advances in Chemical Sciences" P. G. Department of Chemistry, Berhampur University, Odisha, March 25, 2021.
134. S. J. Gharpure, "Reactions of al-kynes for the synthesis of oxa- and aza-cycles" invited talk in "International E-Conference On Advances in Chemical Research 2021 (ACR-2021)" organized by Department of Chemistry, GITAM Institute of Science, GITAM (Deemed to be University), Visakhapatnam, April 19-20, 2021.
135. S. J. Gharpure, "Reactions of al-kynes for the synthesis of oxa- and aza-cycles" invited talk in "RSC-IISER Desktop Seminar with ChemComm" August 5-6, 2021.
136. S. J. Gharpure, "NEP and Innovation: SINE of Times to Come" Webinar on Research, Innovation and Ranking (NEP 2020) organized by The Maharaja Sayajirao University of Baroda, Vadodara, Faculty of Science and Internal Quality, Assurance Cell, Monday, August 9, 2021.
137. S. J. Gharpure, "Organometallics in Organic Synthesis" – Refresher Course in Chemistry on Emerging Trends in Chemical Sciences UGC-Human Resource Development Centre Morabadi Campus, Ranchi University, Ranchi – 834008, August 17, 2021.
138. S. J. Gharpure, "Stereochemistry" – Invited lecture in 'Training programmes for higher education teachers of Odisha state' conducted by UGC-Human Resource Development Centre, Savitribai Phule Pune University, October 22, 2021.
139. S. J. Gharpure, "Vinylogous Functional Groups in the Synthesis of Oxa- and Aza-cycles" Invited lecture at Organic Chemistry Conference (OCC) National Organic Symposium Trust (NOST), The Leela Palace, Chennai, November 25-28, 2021.

140. S. J. Gharpure, "Sustainable Ways to Heterocycle Synthesis" Invited lecture at International Linkage Degree Program (ILDLP)-START plus 2021 Hiroshima University, December 20, 2021.
141. S. J. Gharpure, "Organic Reaction Mechanism" In-service Course for PGT Chemistry" KVS IIT Bombay, Powai, Mumbai – 400076, December 28, 2021.

Research Highlights:

1. "Shortest Route to Mucocin"
C & E News **2003**, 81(49), 32.
2. "Synthesis of Heterocyclic Triquinanes via Sequential Radical Cyclizations"
Victor Snieckus and Nathan E. Genung (Pfizer), *Synfacts* **2013**, 9, 33.
3. "Young Career Focus: Dr. Santosh J. Gharpure (Indian Institute of Technology Bombay, Mumbai, India)"
Synstories, SYNFORM, 2014/03, Published online: 17.02.2014, DOI: 10.1055/s-0033-1340792.
4. "Stereoselective Synthesis of Cyclic Ethers by Reductive Cyclization of Alkynols"
Victor Snieckus and Andy Tsai (Pfizer), *Synfacts* **2018**, 14, 0245.
5. "Benzoxazoles and Benzoxazines by Intramolecular Aryl Azide Insertion"
Victor Snieckus and Andy Tsai (Pfizer), *Synfacts* **2019**, 15, 0486.
6. "Author Profile: Dr. Santosh J. Gharpure (Indian Institute of Technology Bombay, Mumbai, India)"
Eur. J. Org. Chem. **2020**, 6818, DOI: doi.org/10.1002/ejoc. 202001391.
7. "Lewis Acid Catalyzed Intramolecular [4+2] Cycloaddition of In Situ Generated Aza-Quinone Methides for the Stereoselective Synthesis of Furo/pyrano[3,2-c]tetrahydroquinolines" S. J. Gharpure, D. S. Vishwakarma, *Eur. J. Org. Chem.*, **2020**, 6887. Featured on the Front Cover of Special Issue: Institute Feature: IIT Bombay.

Research Guidance:

Ph.D.: Awarded Degree: 17; On-going: 17

M.Sc.: Awarded Degree: 26; On-going: 2

Post-doctoral Fellows: 11; On-going: 2

Summer Fellows: 21 undergraduate students (M.Sc.), 3 Teachers (Ph.D.)

Teaching activities:**At IIT Madras:****B.Tech.**

Theory:

- i. CY 102: Chemistry – II (2005, 2007, 2009)
- ii. CY 201: Organic Chemistry – Basic Principles (2004, Summer 2005 and 2007)
- iii. CY 1001: Chemistry: Structure, Bonding and Reactivity (2011)

Practical:

- i. CY 103: Chemistry Lab-I (2004-07)

M.Sc.

Theory:

- i. CY 505: Stereochemistry, Reaction Mechanism and Aromaticity (2008-09)
- ii. CY 5050: Stereochemistry, Reaction Mechanisms and Aromaticity (2010)
- iii. CY 551: Advanced Organic Chemistry of Multiple Bonds (2005-06, 2008)
- iv. CY 5510: Advanced Organic Chemistry of Multiple Bonds (2011)
- v. CY 605: Synthetic Methodology in Organic Chemistry (2006-07, Summer 2008)
- vi. CY 651: Chemistry of Natural Products and Biomolecules (2006)
- vii. CY 674: Organometallic chemistry for Organic Synthesis (2008, 2010)
- viii. CY 5014: Reactive Intermediates and Concerted Reactions (2012)

Practical:

- i. CY 511: Organic Chemistry Lab-I (2005)
- ii. CY 562: Organic Chemistry Lab-II (2006-07, 2009, 2011)

Ph.D.

- i. CY 734: Modern Concepts in Organic Synthesis (2006)

Preparatory Course

Theory:

- i. CY PCT: Preparatory Course Theory I (2010)
- ii. CY PCT: Preparatory Course Theory II (2010)

At IIT Bombay:**B.Tech.**

Theory:

- i. CH 105: Organic and Inorganic Chemistry (Summer 2014/2021,2014,2016-20)

Practical:

- i. CH 117: Chemistry Lab (2014)

B.S./M.Sc.

Theory:

- i. CH 221: Organic Chemistry I (2013)
- ii. CH 222: Organic Chemistry II (2015)
- iii. CH 401: Organic Reactions (Summer 2018,2021)
- iv. CH 402: Thermal and Photochemical Reactions (2013-14, 2016-17)
- v. CH 423: Organic Chemistry III (2015, Summer 2016)
- vi. CH 510: Heterocyclic Chemistry (2022)
- vii. CH 557: Topics in Chemistry (2017)
- viii. CH 588: Organic Synthesis (2018-21)

ix. CH 807: Organic Synthesis (2020-21)

Practical:

- i. CH 317: Organic Chemistry Laboratory I (2013)
- ii. CH 318: Organic Chemistry Laboratory II (2015)
- iii. CH 417: Organic Chemistry Laboratory III (2016)
- iv. CH 418: Organic Chemistry Laboratory III (2013,2018-20)

Other

B.Tech. at IIT Hyderabad

Theory:

- i. CY 102: Chemistry – II (2009)

Participated in National Program on Technology Enhanced Learning (NPTEL)

CY102: Developed Web based course

Conference/Symposium/Workshop conducted:

Co-convener of “**MEDCHEM 2009 Conference cum Workshop on Current Trends in Medicinal Chemistry**” during April 2-4, 2009 at Department of Chemistry, Indian Institute of Technology Madras, Chennai-600036.

Continuing Education/Executive Education Programme:

1. Online Course on ‘Organic Synthesis and Spectroscopy’ for BASF Chemicals India Pvt. Ltd. August 2-October 8, 2021.
2. Online Course on ‘Basic Organic Chemistry, Glenmark LifeSciences Ltd., September 23-26, 2021.

Research Projects at IIT Madras:

Sponsored Projects:

1. Start-up Grant (New Faculty Scheme)
Funding Agency: IIT Madras
Duration: August 2004 to August 2006
2. Funding Agency: CSIR, New Delhi.
Title: Enantio- and Diastereoselective Addition of Substituted Allylorganometallics to Carbonyl Compounds: Application towards the Asymmetric Total Synthesis of Balanol
Duration: June 2005 to June 2008
3. Funding Agency: DST, New Delhi
Title: New Methods for the Synthesis of Cyclic Ethers Based on Vinylogous Carbonates
Duration: November 2005 to November 2008
4. Funding Agency: CSIR, New Delhi.
Title: Synthetic Approaches to Potent DNA-Damaging Agent Myristinins
Duration: April 2009 to June 2012
5. Funding Agency: DST, New Delhi
Title: New methods for the synthesis of medium-ring azacycles based on vinylogous carbamates
Duration: March 2010 to March 2013

Research Based Industrial Consultancy Projects:

Name of the Company: SRF Limited

Title: Improvements in synthesis of glycerol glycidyl ether.

Co-PI: Late Prof. G. Sundararajan

Duration: October 2006 to January 2008.

Research Projects at IIT Bombay:

Sponsored Projects:

1. Seed Grant
Funding Agency: IRCC, IIT Bombay
Duration: July 2012 to July 2014
2. Funding Agency: CSIR, New Delhi.
Title: New Methods for the Stereoselective Synthesis of 6- and 7-Membered 1,4-Heterocyclic Compounds
Duration: November 2013 to November 2016
3. Funding Agency: BRNS, Department of Atomic Energy.
Title: Stereoselective strategies for the synthesis of N-fused indoles: Application to the total synthesis of yuremamine
Duration: November 2013 to March 2017
4. Funding Agency: School Education and Sports Department, Government of Maharashtra
Title: Quality improvement of classroom teaching through video-based teachers' training program
Duration: July 2014 to July 2020 (as Co-PI)
5. Funding Agency: SERB, New Delhi.
Title: Hydrofunctionalisation of alkynes for the stereoselective synthesis of oxa- and aza-cycles
Duration: December 2015 to December 2018
6. Funding Agency: Ministry of Earth Sciences
Title: Synthesis of Bioactive Marine Butanolides and their Analogues
Duration: February 2016 to February 2017
7. Funding Agency: Wadhvani Research Centre For Bioengineering (WRCB), IIT Bombay
Title: A Central Strategy for Expeditious Synthesis of Bioactive Flavans
Duration: July 2018 to June 2020
8. Funding Agency: CSIR, New Delhi.
Title: Nitrene insertion to C-H and C-C multiple bonds for the stereoselective synthesis of aza-cycles
Duration: August 2019 to August 2022
9. Funding Agency: SERB, New Delhi and S. H. Kelkar Co. Ltd. (Industry Relevant R&D Project)
Title: "Synthesis of Musk and its Analogues: New Entities, Process Optimization and Structure-Odour Understanding"
Duration: January 2020 to January 2023
10. Funding Agency: SERB, New Delhi
Title: "Hydroxylamine derivatives in the synthesis of 12-heterocycles: Application to the stereoselective synthesis of [1,n]-amino alcohols"
Duration: February 2020 to February 2023
11. Funding Agency: DST, New Delhi under Indo-Egypt joint project
Egypt PI: Ass. Prof. Ziad Khalifa, British University
Title: "High performance biofuel cells based on novel conducting polymers nanocomposites"

Duration: February 2021 to February 2023

CSR Funding:

1. S. H. Kelkar Co. Ltd. Group companies, for the year FY 2020-21 and 2021-22.

Industrial Consultancy:

1. Embio Limited
2. Narcotics Control Bureau
3. Jay Chemicals Limited (Consultant, on-going)
4. Gland Pharma Limited (Consultant, on-going)
5. Bajaj Health Care
6. BASF
7. Indofil Industries
8. S. H. Kelkar Co. Ltd.
9. Ravi Dyeware Co. Ltd.
10. Abhitech Enterprises (Consultant, on-going)
11. AVA Chemicals
12. Omega-Kemix Pvt. Ltd. (Consultant, on-going)