Dr. G. SEKAR

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Department of Chemistry
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PROF. SEKAR'S RESEARCH OUTCOME

- Number of papers published: 122
- Number of Ph.D. students (completed): 23
- Number of Ph.D. students (on-going): 10
- Number of sponsored projects (completed): 09
- Number of sponsored projects (on-going): 02
- Invited/guest lectures delivered: 103
- H-index: 34 ; Total citation: 3,355 (as on 14.5.2020; Source: Scopus; Scopus ID: 6602184820)

RESEARCH INTERESTS

- Organic Synthesis
- Metal Nanocatalysis
- Halogen Bonding Catalysis

EDUCATIONAL PROFILE

1.	B. Sc. (Chemistry)	University of Madras, India	1990-93
2.	M. Sc. (Org. Chemistry)	University of Madras (Guindy campus), India	1993-95
3.	Ph.D. (Org. Chemistry)	Indian Institute of Technology Kanpur, India	1995-99

DOCTORAL DETAILS

Title of Thesis: Studies on Allylic Oxidation of Olefins and Cleavage of Epoxides and Aziridines with Amines: Extension to Asymmetric Synthesis.

Thesis supervisor: Padma Shri, Prof. Vinod K. Singh, IIT Kanpur, India

POSTDOCTORAL EXPERIENCE

1. Postdoctoral scholar in organic chemistry at California Institute of Technology, USA with Prof. Brian M. Stoltz (Feb. 2003 – Dec. 2004)
2. Humboldt (AvH) postdoctoral fellow at University of Goettingen, Germany with Prof. L. F. Tietze (Jul. 2001 – Dec. 2002)
3. JSPS postdoctoral fellow at Toyohashi University of Technology, Japan with Prof. H. Nishiyama (Apr. 2000 – Jun. 2001)
4. Research associate at IIT Kanpur, India with Prof. V. K. Singh (Sep. 1999- Mar. 2000).

PROFESSIONAL POSITIONS HELD (@ IIT Madras)

- Professor, Department of Chemistry, IIT Madras (July 2014 – till date)
- Associate Professor, Department of Chemistry (May 2010 – July 2014)
- Assistant Professor, Department of Chemistry (Dec. 2004 – May 2010)

PERSONAL DETAILS

- Date of birth: 25th July, 1971
- Sex: Male
- Marital status: Married
- Nationality: Indian

PROFESSIONAL RECOGNITION, AWARDS, FELLOWSHIPS ETC.

- Golden Jubilee Alumni endowment award lecture (March 2020), Department of Organic Chemistry, University of Madras (Guindy Campus)
- Joint Secretary, Chemical Research Society of India (CRSI) (April 2020 – March 2023)
- Executive council member, Academy of Sciences, Chennai (2020 – till date)
- Fellow National Academy of Sciences (FNASc., 2019)
- Regional Coordinator (Chennai), KVPY (2019 – till date)
- Our recent research regarding conversion of toluene to benzoic acid using Pt-BNP nano-catalyst in water (in *Applied Catalysis B: Environmental*, **2019**, 250, 325 journal) was highlighted in "**The Hindu**" national English newspaper on 31st March, 2019.
  https://www.thehindu.com/sci-tech/science/iit-madras-converts-petroleum-waste-toluene-into-useful-product/article26688417.ece
- DD national (Science) TV / RS TV news coverage about conversion of toluene to benzoic acid using our Pt-BNP nano-catalyst in water (18.5.2019, Science Monitor)
  https://www.youtube.com/watch?v=p04LbtuWtTk
- National Organic Symposium Trust (NOST) council member (Jan. 2019 – Dec. 2022)
- Fellow of Royal Society of Chemistry (FRSC, 2018)
- Fellow of the Academy of Sciences, Chennai (FASCh., 2018)
- Institute Research & Development Award (IRDA-2017; Mid-career award) by IIT Madras
- Chemical Research Society of India (CRSI) council member (April 2017 – March 2020)
- Bronze medal for the year-2015 by Chemical Research Society of India (CRSI)
- Member, Tamil Nadu's "State Crisis Group" for "management of chemical accidents" (from August, 2013 - till date)
- Editorial board member of "ISRN Organic Chemistry" (Hindawi's open access, peer-reviewed journal) (from Sep. 2010 - 2013)
- AvH Foundation's (Germany) Equipment Grant (2009-10; Euro 19,778)
- DST Fast Track Research Project for Young Scientist (2005-2008, this project was rated as "***Excellent***" by DST expert committee)
- Humboldt Postdoctoral Fellowship (AvH), Germany (July 2001 – December 2002)
- JSPS Postdoctoral Fellowship, Japan (April 2000 – June 2001)
- GATE / CSIR research fellowship and CSIR-RA fellowship
- SSLC (school topper); HSC (branch topper); B. Sc. (college topper)

LIST OF PUBLICATIONS

1. $Cu(OTf)_2$-DBN/DBU complex as an efficient catalyst for allylic oxidation of olefins with *tert*-butyl perbenzoate (**G. Sekar**, A. DattaGupta and V. K. Singh, *Tetrahedron Lett.* **1996**, *37*, 8435).

2. Catalytic enantioselective cyclopropanation of olefins using carbenoid chemistry (V. K. Singh, A. DattaGupta and **G. Sekar**, *Synthesis*, **1997**, 137).

3. Asymmetric Kharasch reaction: allylic oxidation of olefins using chiral pyridine bis (diphenyoxazoline)-copper complexes and *tert*-butyl perbenzoate (**G. Sekar**, A. DattaGupta and V. K. Singh, *J. Org. Chem.*, **1998**, *63*, 2961).

4. An efficient method for cleavage of epoxides with aromatic amines (**G. Sekar** and V. K. Singh, *J. Org. Chem.*, **1999**, *64*, 287).

5. An Efficient method for cleavage of aziridines with aromatic amines (**G. Sekar** and V. K. Singh, *J. Org. Chem.*, **1999**, *64*, 2537).

6. Enantiomerically pure β-amino alcohols by enzymatic resolution (**G. Sekar** R. M. Kamble and V. K. Singh *Tetrahedron: Asymmetry*, **1999**, *10*, 3663).

7. An efficient method for the cleavage of aziridines with hydroxyl compounds (B. A. Bhanu Prasad, **G. Sekar** and V. K. Singh *Tetrahedron Lett.* **2000**, *41*, 4677)

8. An efficient method for opening of non-activated aziridines with TMS azide: application in the synthesis of chiral 1, 2-diaminocyclohexane (M. Chandrasekhar, **G. Sekar** and V. K. Singh *Tetrahedron Lett.* **2000**, *41*, 10079)

9. Nonenzymatic kinetic resolution of secondary alcohols: enantioselective S_N2 displacement of hydroxyl groups by halogens in the presence of chiral BINAP (**G. Sekar** and H. Nishiyama *J. Am. Chem. Soc.* **2001**, *123*, 3603)

10. Nonenzymatic kinetic resolution of β-amino alcohols: chiral BINAP mediated S_N2 displacement of hydroxyl groups by halogens through formation of an aziridinium ion intermediate (**G. Sekar** and H. Nishiyama *Chem. Commun.* **2001**, 1314).

11. Catalyst-Controlled Stereoselective Combinatorial Synthesis (L. F. Tietze, N. Rackelmann and **G. Sekar** *Angew. Chem. Int. Ed.* **2002**, *42*, 4254).

12. Highly stereoselective chlorination of β-substituted cyclic alcohols using PPh_3–NCS: factors that control the stereoselectivity (E. A. Jaseer, A. B. Naidu, S. S. Kumar, R. K. Rao, K. G. Thakur and **G. Sekar,** *Chem. Commun.* **2007**, 867).

13. Aerobic, Chemoselective Oxidation of Alcohols to Carbonyl Compounds Catalyzed by DABCO-Copper Complex under Mild Conditions (S. Mannam, S. K. Alamsetti and **G. Sekar**, *Adv. Synth. Catal.*, **2007**, *349*, 2253).

14. CuCl catalyzed oxidation of aldehydes to carboxylic acids with aqueous tert-butyl hydroperoxide under mild conditions (S. Mannam, and **G. Sekar**, *Tetrahedron Lett.* **2008**, *49*, 1083).

15. An efficient BINAM-Copper(II) catalyzed Ullmann-type synthesis of diaryl ether (A. B. Naidu, O. R. Ragunath, D. J. C. Prasad and **G. Sekar**, *Tetrahedron Lett.* **2008,** *49*, 1057).

16. CuCl catalyzed selective oxidation of primary alcohols to carboxylic acids with *tert*-butyl hydroperoxide at room temperature (S. Mannam, and **G. Sekar**, *Tetrahedron Lett.* **2008**, *49*, 2457).

17. An efficient intermolecular BINAM-copper (I) catalyzed Ullmann type coupling of aryl iodide with aliphatic alcohols (A. B. Naidu, and **G. Sekar**, *Tetrahedron Lett.* **2008,** 49, 3147).

18. Galactose Oxidase Model: Biomimetic, Enantiomer-Differentiating Oxidation of Alcohols by Chiral Copper Complex (S. K. Alamsetti, S. Mannam, P. Muthupandi and **G. Sekar**, *Chem. Eur. J.* **2009**, *15*, 1086)

19. An efficient intermolecular C(aryl)-S bond forming reaction catalyzed by BINAM-copper(II) comple (D. J. C. Prasad, Ajay B. Naidu and **G. Sekar**, *Tetrahedron Lett.*, **2009**, *50*, 1411)

20. An enantiopure galactose oxidase model: synthesis of chiral amino alcohols through oxidative kinetic resolution catalyzed by chiral copper complex (S. Mannam, and **G. Sekar**, *Tetrahedron: Asymmetry* **2009**, *20*, 495)

21. Highly efficient copper catalyzed domino ring opening and Goldburg coupling cyclization for the synthesis of 3, 4-dihydro-2H-1,4-benzoxazines (R. K. Rao, A. B. Naidu, and **G. Sekar,** *Org Lett.* **2009**, *11*, 1923)
(One of the most accessed top 20 papers in *org. Lett.* for the month of April, 2009)

22. Chiral cobalt catalyzed enantiomer-differentiating oxidation of racemic benzoins using molecular oxygen as stoichiometric oxidant (S. K.Alamsetti, P. Muthupandi and **G. Sekar**, *Chem. Eur. J.* **2009**, *15*, 5424)

23. Chiral iron complex catalyzed enantioselective oxidation of racemic benzoins (P. Muthupandi, S. K.Alamsetti and **G. Sekar**, *Chem. Commun.*. **2009**, 3288)

24. An efficient copper(I) complex catalyzed Sonogashira type cross-coupling of aryl halides with terminal alkynes (K. G. Thakur, E. A. Jaseer, A. B. Naidu and **G. Sekar,** *Tetrahedron Lett.*, **2009,** *50*, 2965)
(One of the most accessed top 25 hot Science Direct articles for the months of April- June 2009)

25. An efficient, mild and selective Ullmann-type *N*-arylation of indoles catalyzed by copper(I) complex (R. K. Rao, A. B. Naidu, E. A. Jaseer and **G. Sekar,** *Tetrahedron*, **2009,** *65*, 4619)

26. A general, mild and intermolecular Ullmann-type synthesis of diaryl and alkyl aryl ethers catalyzed by diol-copper(I) complex (A. B. Naidu, E. A. Jaseer and **G. Sekar,** *J. Org. Chem*, **2009,** *74*, 3675)
(One of the most accessed top 10 articles in *J. org. Chem.* For the months of April-June, 2009)

27 Copper(I) Catalyzed c(aryl)-C(alkynyl) bond formation of aryl iodides with terminal alkynes (K. G. Thakur, and **G. Sekar,** *Synthesis*, **2009,** *2785*).

28. An Efficient Copper Catalyzed Synthesis of Hexahydro-1H-phenothiazines (D.J.C. Prasad, and **G. Sekar**, *Org. Biomol. Chem.*, **2009**, 5091).

29. An Efficient, Mild and Intermolecular Ullmann-Type Synthesis of Thioethers Catalyzed by Diol-Copper(I) Complex (D.J.C. Prasad, and **G. Sekar**, *Synthesis*, **2010,** 79).

30. An Efficient Ullmann-type Coupling through C(aryl)-O Bond Forming Intramolecular Cyclization by BINAM Cu(II) Catalyst for the Synthesis of Benzoxazoles (A. B.Naidu, and G. Sekar, *Synthesis*, **2010**, 579)

31. An Efficient CuCl Catalyzed Selective and Direct Oxidation of *β*- and *γ*-Substituted Aliphatic Primary Alcohols to Carboxylic Acids (S. Mannam, and **G. Sekar**, *Synth. Commun.* **2010**, *40*, 2822).

32. Domino Synthesis of 2-Arylbenzo[b]furans by Copper(II)- Catalyzed Coupling of o-Iodophenols and Aryl Acetylene (E. A. Jaseer, D. J. C. Prasad and G. Sekar, *Tetrahedron*, **2010**, *66*, 2077).

33. Halogenative Kinetic Resolution of β-amido Alcohols: Chiral BINAP Mediated S_N2 Displacement of Hydroxy Groups by Chlorides with Inversion of Stereochemistry (E. A. Jaseer and G. Sekar, *Tetrahedron: Asymmetry*, **2010**, *21*, 780)

34. Halogenative kinetic resolution of β-aryloxy cyclic alcohols: chiral BINAP mediated SN2 displacement of hydroxy groups by chlorides with inversion of stereochemistry (E. A. Jaseer, I. Karthikeyan and Govindasamy Sekar, *Tetrahedron: Asymmetry*, **2010**, *21*, 2177)

35. Cu(I) Catalyzed Intramolecular C(aryl)-O Bond Forming Cyclization for the Synthesis of 1,4-Benzodioxins and its Application in Total Synthesis of Sweetening Isovanilines (Ajay B. Naidu, D. Ganapathy and Govindasamy Sekar, *Synthesis*, **2010**, 3509)

36. An efficient copper(II) catalyzed synthesis of benzothiazoles through intramolecular coupling cyclization of N-(2-chlorophenyl)benzothioamides (E. A. Jaseer, D. J. C. Prasad, Arpan Dandapat, G. Sekar, *Tetrahedron Letter*, **2010**, *51*, 5009).

37. Chiral cobalt-catalyzed enantioselective aerobic oxidation of α-hydroxy esters (S. K. Alamsetti and G. Sekar, *Chem. Commun.* **2010**, *46*, 7235)

38. Cu-Catalyzed One-Pot Synthesis of Unsymmetrical Diaryl Thioethers by Coupling of Aryl Halides Using Thiol Precursor (D. J. C. Prasad and G. Sekar, *Org. Let.* **2011**, *13*, 1008).
(**This article was highlighted in Organic Chemistry Portal Abstracts**)

39. D-Glucosamine as a green ligand for copper catalyzed synthesis of primary aryl amines from aryl halides and ammonia (K. G. Thakur and **G. Sekar**, *Chem. Commun.* **2011**, *47*, 5076).

40. D-Glucose as green ligand for selective copper-catalyzed phenol synthesis from aryl halides with an easy catalyst removal (K. G. Thakur and **G. Sekar**, *Chem. Commun.* **2011**, *47*, 6692).

41. Chiral Zinc-catalyzed aerobic oxidative kinetic resolution of a-hydroxy ketones (P. Muthupandi and **G. Sekar**, *Tetrahedren: Asymmetry*, **2011**, *22*, 522).

42. An Efficient CuI Catalyzed Synthesis of Diaryl Selenides through C(aryl)-Se Bond Formation using Solvent Acetonitrile as Ligand (Arpan Dandapat, C. Korupalli, D. J. C. Prasad, Rahul Singh and **G. Sekar**, *Synthesis*, **2011**, 2297).

43. Zinc-catalyzed aerobic oxidation of benzoins and its extension to enantioselective oxidation (P. Muthupandi and **G. Sekar**, *Tetrahedren Letters*, **2011**, *52*, 692).

44. Copper(I)-BINOL Catalyzed Domino Synthesis of 1,4-Benzoxathiines through C(aryl)-O Bond Formation (Invited Paper) (C. Korupalli, A. Dandapat, D. J. C. Prasad and **G. Sekar**, *Organic Chem. Int.*, **2011**, Volume 2011 (2011), Article ID 980765, 7 pages (doi:10.1155/2011/980765).

45. Synthesis of Optically Active 1,4-Benzoxazine Derivatives using Palladium-Catalyzed Coupling Kinetic Resolution (R. Koteshwar Rao and **G. Sekar**, *Tetrahedron: Asymmetry*, **2011**, *22*, 948).

46. D-Glucosamine as an efficient ligand for copper catalyzed selective synthesis of aniline from aryl halides and NaN_3. (K. G. Thakur, K. S. Srinivas, K. Chiranjeevi and **G. Sekar**, *Green Chem.* **2011**, *13*, 2326).

47. Synthesis of unusual dinuclear chiral iron complex and its application in asymmetric hydrophosphorylation of aldehydes (P. Muthupandi and **G. Sekar**, *Org. Biomol. Chem.*, **2012,** 534).
Our artwork related to this article is featured in inside front cover of Organic & Bimolecular Chemistry (Issue 28)

48. An efficient synthesis of α-hydroxy phosphonates and 2-nitroalkanols using $Ba(OH)_2$ as catalyst (P. Muthupandi, Prem K. Chanani, and **G. Sekar**, *Applied Catalysis A: General*, **2012**, *441*, 119).

49. Domino aziridine ring opening and Buchwald-Hartwig type coupling-cyclization by Palladium Catalyst (R. Koteshwar Rao, I. Karthikeyan, **G. Sekar**, *Tetrahedron*, **2012**, *68*, 9090).

50. Cu-catalyzed in situ generation of thiol using xanthate as a thiol surrogate for the one-pot synthesis of benzothiazoles and benzothiophenes (D. J. C. Prasad and **G. Sekar**, *Org. Biomol. Chem.*, **2013**, *11*, 1659).

51. Palladium nanoparticles stabilized by metal-carbon covalent bond: an efficient and reusable nanocatalyst in cross-coupling reactions (D.Ganapathy, and **G. Sekar**, *Cat. Commun.* **2013**, *39*, 50).

52. Enantioselective Oxidative Coupling of 2-Naphthol Derivatives by Cu-BINAM-TEMPO Catalyst (**G. Sekar**, S. K. Alamsetti, E. Poonguzhali and D. Ganapathy, *Adv. Synthe. Cat.* **2013**, *355*, 2803).

53. Iron(II) Chloride–1,1′-Binaphthyl-2,2′-diamine ($FeCl_2$–BINAM) Complex Catalyzed Domino Synthesis of Bisindolylmethanes from Indoles and Primary Alcohols (S. Badigenchala, D. Ganapathy, A. Das, R. Singh, **G. Sekar**, *Synthesis*, **2014**, 101).

54. Isolation and Characterization of Trinuclear Cobalt Complex Containing Trigonal Prismatic Cobalt in Secondary Alcohol Aerobic Oxidation (I. Karthikeyan, S. K. Alamsetti and G. Sekar, *Organometallics*, **2014**, *33*, 1665).

55. Chemoselective reduction of a-keto amides using nickel catalysts (N. Chary Mamillapalli and **G. Sekar**, *Chem. Commun*. **2014**, *50*, 7881)

56. Iron-TEMPO Catalyzed Domino Aerobic Alcohol Oxidation/Oxidative Cross-Dehydrogenative Coupling for the Synthesis of α-Ketoamides (Surya Srinivas Kotha, S. Chandrasekar, Samrat Sahu and **G. Sekar**, *Eur. J. Org. Chem.*, **2014**, 7415).

57. An efficient route to synthesize isatins by metal-free, iodine-catalyzed sequential C(sp3)–H oxidation and intramolecular C–N bond formation of 2′-aminoacetophenones (Rajesh Kumar, S. Chandrasekar and **G. Sekar**, *Org. Biomol. Chem.*, **2014,** *12*, 8512).

58. Iron Catalyzed C–H Bond Functionalization for the Exclusive Synthesis of Pyrido[1,2-*a*]indoles or Triarylmethanols (I. Karthikeyan and **G. Sekar**, *Eur. J. Org. Chem*. **2014**, 8055).

59. Metal free chemoselective reduction of α-keto amides using TBAF catalyst (*N. C. Mamillapalli and G. Sekar, RSC Advances,* **2014**, *4*, 61077*)*

60. An Efficient Synthesis of Polysubstituted Olefins Using Stable Palladium Nanocatalyst: Applications in Synthesis of Tamoxifen and iso-Combretastatin A4 (D. Ganapathy and **G. Sekar**, *Org. Lett.* **2014**, *16*, 3856).

61. Stable Palladium Nanoparticles Catalyzed Synthesis of Benzonitriles Using $K_4[Fe(CN)_6]$ (D. Ganapathy, Surya S. Kothaand **G. Sekar**, *Tet. Lett.* **2015**, 56, 175)

62. Copper-Catalyzed One-Pot Synthesis of α-Ketoamides from 1-Arylethanols (Nidhi Sharma, Nabajit Lahiri, K. Surya Srinivas and **G. Sekar**, *Synthesis*, **2015**, *47*, 726)

63. An Efficient Synthesis of Pyrido[1,2-a]indoles through Aza-Nazarov Type Cyclization (I. Karthikeyan, D. Arun Prasath, and **G. Sekar**, *Chem. Commun*., **2015**, *51*, 1701).

64. A Versatile and One-Pot Strategy to Synthesize α-Amino Ketones from Benzylic Secondary Alcohols using *N*-Bromosuccinimide (Somraj Guha, V. Rajeshkumar, S. Kotha Surya and **G. Sekar**, *Org. Lett*, **2015**, *17*, 406)

65. Iron-Catalyzed Direct Synthesis of Amides from methylarenes (Surya Srinivas K., Sindhura B. and **G. Sekar**, *Adv. Synth. Catal*. **2015**, 357, 1437)

66. Pd-catalyzed direct C2-acylation and C2,C7-diacylation of indoles: pyrimidine as easily removable C-H directing group (G. Kumar, **G. Sekar**, *RSC Advances*, **2015**, *5*, 28292) .

67. Metal Free One-Pot Synthesis of α-Ketoamides from Terminal Alkenes, (Sayan Dutta, S. S. Kotha and **G. Sekar**, *RSC Advances*, **2015**, *5*, 47265).

68. An efficient and metal free synthesis of benzylpyridines using HI through the deoxygenation reaction (S.Chandrasekar, I. Karthikeyan and G. Sekar, *RSC Advances*, **2015**, *5*, 58790).

69. Chemoselective Reductive Deoxygenation and Reduction of α-Keto Amides by using Palladium Catalyst (N. C. Mamillapalli and **G. Sekar**, *Adv. Synth. Catal*. **2015**, *357*, 3273).

70. Metal Free Synthesis of a-Keto Amides from 2-Oxo Alcohols through Domino Alcohol Oxidation-Oxidative Amidation Reaction (S. S. Kotha and **G. Sekar**, *Tetrahedron Lett.*, **2015,** *56*, 6323).

71. Palladium-Catalyzed Intermolecular Carbene Insertion Prior to Intramolecular Heck Cyclization: Synthesis of 2-Arylidene-3-aryl-1-indanones (D. Arunprasath, P. Muthupandi, and **G. Sekar**, *Org Lett.*, **2015**, *17*, 5448).

72. Enantioselective Synthesis of α-Hydroxy Amides and β-Amino Alcohols from α-Keto Amides (N Chary Mamillapalli, and **G. Sekar**, *Chem. Eur. J*., **2015**, *21*, 18584).

73. Cu-Catalyzed Domino Synthesis of 2-Aryl-thiochromanones through Concomitant C-S Bond Formations Using Xanthate as Sulfur Source (S. Sangeetha, P. Muthupandi and **G. Sekar**, *Org lett*, **2015,** *17*, 6006).
(**This article was highlighted in Organic Chemistry Portal Abstracts**)

74. Stable and Reusable Binaphthyl-Supported Palladium Catalyst for Aminocarbonylation of Aryl Iodides (Nidhi Sharma and **G. Sekar**, *Adv. Synth. Catal*. **2016**, *358*, 314).

75. Potassium phosphate catalyzed chemoselective reduction of α-ketoamides: Route to synthesize Passerini adducts and 3-phenyloxindoles (Alagesan Muthukumar, N. Chary Mamillapalli and **G. Sekar**, *Adv. Synth. Catal*. **2016**, *358*, 64).

76. Iodine mediated intramolecular C2-amidative cyclization of indoles: A facile access to indole fused tetracycles (Sindhura B., V. Rajeshkumar and **G. Sekar**, *Org. Biomol. Chem.*, **2016**, *14*, 2297)

77. Stable and Reusable Platinum Nanocatalyst: An Efficient Chemoselective Reduction of Nitroarenes in Water (Surya Srinivas K., Nidhi Sharma and **G. Sekar**, *Tetrahedron Lett.*, **2016**, *57*, 1410).

78. An Efficient Synthesis of Iminoquinones by Chemoselective Domino ortho-Hydroxylation/oxidation/imidation Sequence of 2-Aminoaryl Ketones (S. Chandrasekar and **G. Sekar**, *Org. Biomol. Chem.*, **2016**, *14*, 3053).

79. Iron-catalyzed one-pot N-aroylation of NH- sulfoximines with methyl arenes through benzylic C-H bond oxidation (M. Muneeswara, Surya Srinivas. K and **G. Sekar**, *Synthesis*, ***2016***, *48*, 1541).

80. An efficient, stable and reusable palladium nanocatalyst: Chemoselective reduction of aldehydes with molecular hydrogen in water (Surya Srinivas K, Nidhi Sharma and **G. Sekar**, Adv. *Synth. Catal.*, **2016**, *358*, 1694)

81. Palladium Nanoparticles Catalyzed Aroylation of NH-Sulfoximines with Aryl Iodides (Nidhi Sharma and **G. Sekar** *RSC Advances*, **2016**, *6*, 37226).

82. Sulfoximinocarbonylation of aryl halides using heterogeneous Pd/C catalyst (Balasubramanian Devi Bala, Nidhi Sharma and **G. Sekar**, *RSC Advances*, **2016**, *6*, 97152).

83. Bimetallic Chiral Nanoparticles as Catalysts for Asymmetric Synthesis (Review article) (G. Savitha, Rajib Saha and **G. Sekar**, *Tetrahedron Lett*., **2016**, *57*, 5168).

84. A Transition-Metal-Free and Base-Mediated Carbene Insertion into S-S and Se-Se Bonds: An Easy Access to Thio- and Selenoacetals (D. Arunprasath and **G. Sekar**, *Adv. Synth. Catal*., **2017**, *359*, 698).

85. Zinc-Catalyzed Chemoselective Alkylation of α-Keto Amides with 2-Alkylazaarenes (A. L. Muthukumar and **G. Sekar**, *Org. Biomol. Chem*., **2017**, *15*, 691).

86. Domino Synthesis of Thiochromenes through Cu-Catalyzed Incorporation of Sulfur using Xanthate Surrogate (P. Muthupandi, N. Sundaravelu and **G. Sekar**, *J. Org. Chem*., **2017**, *82*, 1936).

87. CBr_4 as a Halogen Bond Donor Catalyst for the Selective Activation of Benzaldehydes to Synthesize α,β-Unsaturated Ketones (Imran Kazi, Somraj Guha and **G. Sekar**, *Org. Lett*., **2017**, *19*, 1244). **(One of the most accessed top 10 papers in *Org. Lett.* for the month of Feb-Mar, 2017)**

88. Palladium-Nanoparticles Catalyzed Oxidative Annulation of Benzamides with Alkynes for the Synthesis of Isoquinolones (Nidhi Sharma, Rajib Saha, Naziya Parveen and **G. Sekar** *Adv. Synth. Catal*. **2017**, *359*, 1947).

89. Synthesis of 2-Acylbenzo[b]thiophenes via Cu-Catalyzed α-C-H Functionalization of 2-Halochalcones Using Xanthate (S. Sangeetha and **G. Sekar**, *Org. Lett*., **2017**, *19*, 1670). (**This article was highlighted in Organic Chemistry Portal Abstracts**)

90. A Mild and Chemoselective Hydrosilylation of α-Keto Amides using Cs2CO3/PMHS/2-MeTHF System (G. Kumar, A. Muthukumar and **G. Sekar**, *Eur. J. Org. Chem*., **2017,** 4883). Our artwork related to this article is featured in the front cover of *Eur. J. Org. Chem*.) (Issue 33)

91. NIS Mediated Cross-coupling of C(sp2)-H and N-H Bonds: A Transition Metal-free approach towards Indolo[1,2-*a*]quinazolinones (B. Sindhura and **G. Sekar**, *J. Org. Chem*., **2017,** *82*, 7657. ***(One of the most read articles in June-July17)***

92. Role of Lewis Base–Coordinated Halogen(I) Intermediates In Organic Synthesis: The Journey From an Unstable Intermediate to a Versatile Reagent (Invited review article) (Somraj Guha, Imran Kazi, Anuradha Nandy and **G. Sekar**, *Eur. J. Org. Chem*., **2017,** 5497 ***(One of the most accessed papers in the month of October 2017; Highlighted in Outstanding Organics).*** Our artwork related to this article is featured in the front cover of *Eur. J. Org. Chem*.) (Issue 37).

93. Reusable Palladium Nanoparticles Catalyzed Conjugate Addition of Aryl Iodides to Enones: Route to Reductive Heck Product (Naziya Parveen, Rajib Saha and **G. Sekar**, *Adv. Synth. Catal*., **2017**, *359*, 3741)

94. Halogen–bonded Iodonium Ion Catalysis: A Route to α–Hydroxy Ketone via Domino Oxidations of Secondary Alcohol and Aliphatic C–H Bond with High Selectivity and Control (Somraj Guha, Imran Kazi, Pranamita Mukherjee and **G. Sekar**, *Chem. Commun*., **2017**, *53*, 10942)

95. Stereoselective Construction of α-Tetralone-Fused Spirooxindoles via Pd-Catalyzed Domino Carbene Migratory Insertion/Conjugate Addition Sequence (D. Arunprasath, B. Devi Bala and **G. Sekar**, *Org. Lett*., **2017**, *19*, 5280 ***(One of the most read articles in Sep-Oct '17).***

96. Copper Catalyzed Base-Controlled Diastereoselective Synthesis of Tetraarylethanes from 2-Benzylpyridines (S. Chandrasekar and **G. Sekar**, *Synthesis*, **2018**, *50*, 1275).

97. Phosphine-Free and Reusable Palladium Nanoparticles-Catalyzed Domino Strategy: Synthesis of Indanone Derivatives (Rajib Saha, D. Arunprasath and **G. Sekar**, *J. Org. Chem*., **2018**, *83*, 4692). ***(One of the most read articles in Aug-Sep'18)***

98. Domino Oxidative Esterification of 2-Oxo Alcohol Using 2-Iodoxybenzoic Acid/I2: A Route to Synthesize α-Ketoester (Sundaravelu Nallappan, Ankush Chakraborty and **G. Sekar**, *ChemistrySelect* **2018**, *3*, 8167).

99. FriedelCrafts Hydroxyalkylation of Indoles with Keto Amides using Reusable K3PO4/nBu4NBr Catalytic System in Water (A. Muthukumar and **G. Sekar**, *J. Org. Chem.*, **2018**, *83*, 8827). ***(One of the most read articles in Aug-Sep'18)***

100. Recent developments in functionalization of acyclic α-keto amides (A. Muthukumar, S. Sangeetha and **G. Sekar** *Org. Biomol. Chem*., **2018**, *16*, 7068). Our artwork related to this article is featured in inside front cover of Organic & Bimolecular Chemistry (Issue 39)

101. Metal-Free Halogen(I) Catalysts for the Oxidation of Aryl(heteroaryl)methanes to Ketones or Esters: Selectivity Control by Halogen Bonding (Somraj Guha and **G. Sekar**, *Chem. Eur. J*. **2018**, *24*, 14171.

102. Stable Pd-Nanoparticles Catalyzed Domino C-H Activation/C-N Bond Formation Strategy: An Access to Phenanthridinones (Rajib Saha and **G. Sekar**, *J. Catalysis*, **2018**, *366*, 176).

103. Dual Role of N-Bromosuccinimide as Oxidant and Succinimide Surrogate in Domino One-Pot Oxidative Amination of Benzyl Alcohols for the Synthesis of α–Imido Ketones (M. Muneeswara, A. Muthukumar, **G. Sekar**, *ChemistrySelect*, **2018**, *3*, 12524).

104. Dictating the Reactivity of η3-Oxoallyl Pd-Intermediate toward 5- exo-trig Cyclization: Access to Indano-spirooxindoles (D. Arunprasath, B. Devi Bala, **G. Sekar**, *J. Org. Chem.*, **2018**, *83*, 11298).

105. Copper-Catalyzed One-Pot Synthesis of 2-Arylthiochromenones: An in Situ Recycle of Waste Byproduct as Useful Reagent (S. Sangeetha, and **G. Sekar**, *Org. Lett.*, **2019**, *21*, 75).

106. Reusable Palladium Nanoparticles Catalyzed Oxime Ether Directed Mono Ortho-Hydroxylation under Phosphine Free Neutral Condition (R. Saha, N. Perveen, N. Nihesh, and **G. Sekar**, *Adv. Synth. Catal*., **2019**, *361*, 510).

107. Copper(II)-Catalyzed Domino Synthesis of Indolo[3,2- c]quinolinones via Selective Carbonyl Migration (D. Arunprasath, and **G. Sekar**, *Org. Lett.*, **2019**, *21*, 867).

108. Luxury of N-Tosylhydrazones in Transition-Metal-Free Transformations (D. Arunprasath, B. Devi Bala and **G. Sekar**, *Adv. Synth. Catal.*, **2019,** *361*, 1172**,** (Review Article).

109. Selective Oxidation of Alkylarenes to Aromatic Acids/Ketone in Water by Using Reusable Binaphthyl Stabilized Pt Nanoparticles (Pt-BNP) as Catalyst (Rajib Saha and G. Sekar, *Applied Catalysis B: Environmental*, **2019**, 250, 325.

(This research work is highlighted in "The Hindu" national English newspaper on 31st March, 2019 (Page 13 of Chennai Edition)
https://www.thehindu.com/sci-tech/science/iit-madras-converts-petroleum-waste-toluene-into-useful-product/article26688417.ece

110. $Zn(OTf)_2$-catalyzed access to symmetrical and unsymmetrical bisindoles from α-keto amides (A.Muthukumar, G. Narasimha Rao and **G. Sekar** , *Org. Biomol. Chem.*, **2019**, *17*, 3921).

111. Proton-Coupled Electron Transfer: Transition-Metal-Free Selective Reduction of Chalcones and Alkynes Using Xanthate/Formic Acid (R.Prasanna, Somraj Guha, and **G. Sekar**, *Org. Lett.*, **2019**, *21*, 2650.

112. NBS-mediated synthesis of b--keto sulfones from benzyl alcohols and sodium arenesulfinates (M. Muneeswara and **G. Sekar**, *Tetrahedron*, **2019**, 75, 3479.

113. A covalently linked dimer of [Ag25(DMBT)18] (Md Bodiuzzaman, A Nag, R. N. Pradeep, A. Chakraborty, R. Bag, P. Ganesan, G. Natarajan, **G. Sekar**, S. Ghosh and T. Pradeep, *Chem. Commun.*, **2019**, *55*, 5025).

114. Synthesis of 1,3-Disubstituted Imidazo[1,5-a]pyridines through Oxidative C-N Bond Formation from Aryl-2-pyridylmethanols and their Fluorescent Study (S. Chandrasekar, S. Sangeetha and **G. Sekar**, *ChemSelect*, **2019**, *4*, 5651.

115. Halogen Bond–Assisted Electron–Catalyzed Atom Economic Iodination of Heteroarenes at Room Temperature (I. Kazi, S. Guha and **G. Sekar**, *J. Org. Chem.* **2019** , *84*, 6648 ***(One of the most read articles in May-June 2019)***

116. Ligand-Free and Reusable Palladium Nanoparticles-Catalyzed Alkylation of 2-Alkylazaarenes with Activated Ketones under Neutral Conditions (Naziya Parveen,A. Muthukumar, and **G. Sekar**, *Adv. Synth. Catal.*, **2019**, *361*, 4255).

117. Palladium Nanoparticles-Catalyzed Synthesis of Indanone Derivatives via Intramolecular Reductive Heck Reaction (Naziya Parveenaand and **G. Sekar**, *Adv. Synth. Catal.*, **2019**, 361, 4581).

118. Domino Synthesis of Thioflavones and Thioflavothiones by Regioselective Ring Opening of DonorAcceptor Cyclopropane Using In-Situ-Generated Thiolate Anions (N. Sundaravelu, and **G. Sekar**, *Org. Lett.*, 2019, *21*, 6648).

119. Surface enriched palladium on palladium-copper bimetallic nanoparticles as catalyst for polycyclic triazoles synthesis (Rajib Saha and **G. Sekar**, *J. Catal.* **2019**, *377*, 673).

120. An efficient synthesis of benzothiazole using tetrabromomethane as a halogen bond donor catalyst (Imran Kazi and G. Sekar, *Org. Biomol. Chem.*, **2019**, *17*, 9743).

121. Palladium Nanoparticles-Catalyzed Stereoselective Domino Synthesis of 3-Allylidene-2(3H)-oxindoles and 3-Allylidene-2(3H)-benzofuranones (Naziya Parveen and **G. Sekar**, *J. Org. Chem.* **2020**, In Press, https://dx.doi.org/10.1021/acs.joc.9b03397).

122. Iodonium Ion-Catalyzed Domino Synthesis of Z-Selective α,β-Diphenylthio Enones from Easily Accessible Secondary Alcohols (N. Sundaravelu, Somraj Guha, and **G. Sekar**, *J. Org. Chem.* **2020,** In Press, https://dx.doi.org/10.1021/acs.joc.0c00183).

BOOK CHAPTER

Domino Reactions: Concept for efficient Organic Synthesis 2nd Edition, (L.F. Tietze, Ed.), ISBN 978-3-527-33432-2-Wiley-VCH, Weinheim. (**Sekar, G.**; Karthikeyan, I.; Ganapathy, D.)
(Chapter Title: "Oxidation and Reduction Reactions in Domino Processes")

INVITED/GUEST LECTURES

1. Metal-Carbon Covalent Bond Stabilized Transition Metal Nanocatalysts, Guest lecture, 6th March 2020, Department of Chemistry Indira Gandhi National Tribal University, Amarkantak, Madhya Pradesh.
2. Metal-Carbon Covalent Bond Stabilized Transition Metal Nanocatalysts, Golden Jubilee Alumni Endowment Award Lecture, 25th February 2020, Department of Organic Chemistry, University of Madras (Guindy Campus), Chennai.
3. Halogen–Bonding Catalysis, Invited talk, International Conference on Frontier Areas of Chemistry (ICFAC), PL, 28-29th February 2020, School of Physical Sciences, Mahatma Gandhi Central University, Motihari-845401 (East Champaran), Bihar.
4. Conversion of Petroleum Waste Toluene to Benzoic Acid Using Pt-nanocatalyst, 21st February 2020, 4th International Conference on Recent Advances in Material Chemistry (ICRAMC-2020), PL, Department of Chemistry, SRM University, Chennai.
5. Halogen–Bonding Catalysis, PL, 9-11th January 2020, International Conference on Chemistry for Human Development (ICCHD-2020), University of Calcutta & Heritage Institute of Technology, Calcutta.
6. Halogen–Bonding Catalysis, PL, 6th January 2020, International Seminar on Current Trend in Chemistry & Chemical Education, Department of Chemistry, St. Albert's College (Autonomous), Ernakulam, Kerala.
7. Conversion of Petroleum Waste Toluene to Benzoic Acid Using Pt-nanocatalyst, Invited talk, International Workshop on Advanced Functional Materials and Devices, 13th December 2019, NRC & Department of Physics & Nanotechnology, SRM IST, Chennai.
8. Halogen–Bonding Catalysis: An Efficient Tool for Functional Group Activation, Invited talk, 11-12th November 2019, 2nd NTU-India Joint Chemistry Symposium, School of Physical and Mathematical Sciences, NTU, Singapore.
9. Metal-Carbon Covalent Bonds Stabilized Transition Metal Nanoparticles: An Efficient and Reusable Nanocatalyst, 6-8th November 2019, NOST Organic & Biomolecular Chemistry conference, Royal Melbourne Institute of Technology (RMIT), Melbourne, Australia.
10. Halogen–Bonding Catalysis: An Efficient Tool for Functional Group Activation, Guest lecture, 18th October 2019, School of Chemical Sciences, NISER Bhubaneswar.
11. Halogen–Bonding Catalysis: An Efficient Tool for Functional Group Activation, Guest lecture, 30th September 2019, Department of Chemistry, IIT Bombay.
12. Halogen–Bonding Catalysis: An Efficient Tool for Functional Group Activation, Invited talk, 25-27th September 2019, Indo-German Meeting 2019, Universität Duisburg-Essen, Germany.

13. Halogen–Bonding Catalysis: An Efficient Tool for Functional Group Activation, Guest lecture, 5th September 2019, Indian Institute of Chemical Technology, Hyderabad.
14. Halogen–Bonding Catalysis: An Efficient Tool for Functional Group Activation, Chemical Frontiers Goa-2019, 22-25th August 2019, Holiday Inn Resort, Goa.
15. Conversion of Petroleum Waste Toluene to Benzoic Acid Using Pt-nanocatalyst (Key Note Lecture), International Conference on Sustainable Technologies for Industrial Hazardous Waste Management and Bioenergy (STIWMB-2019), 7th August 2019, SRM Institute of Science and Technology, Chennai.
16. Halogen–Bonding Catalysis: An Efficient Tool for Functional Group Activation, Guest lecture, 19th July 2019, School of Chemistry, Madurai Kamaraj University, Madurai.
17. Halogen–Bonding Catalysis: An Efficient Tool for Functional Group Activation, Guest lecture, 25th July 2019, Department of Chemistry, IIT Hyderabad.
18. Halogen–Bonding Catalysis: An Efficient Tool for Functional Group Activation, 12-15th July 2019, International Conference on Emerging Trends in Chemistry, Discipline of Chemistry, IIT Indore.
19. Halogen–Bonding Catalysis: An Efficient Tool for Functional Group Activation, 26th April 2019, Department of Chemistry, BITS Pilani, Rajasthan.
20. Halogen–Bonding Catalysis: An Efficient Tool for Functional Group Activation, 24th April 2019, School of Chemistry, Hyderabad Central University, Hyderabad.
21. Halogen–Bonding Catalysis: An Efficient Tool for Functional Group Activation, 29&30th March 2019, Two – day national seminar, Department of Chemistry, Kakatiya University, Warangal, Telangana.
22. Asymmetric Synthesis: Synthesis of Chiral Alcohols, Recent Advances in Chemistry (REC-2019), Keynote lecture, 8th March 2019, PG & Research Dept. of Chemistry, St. Joseph's College Of Arts & Science (Autonomous), Cuddalore, Tamil Nadu.
23. Halogen–Bonding Catalysis: An Efficient Tool for Functional Group Activation, RAC-19, 4 & 5th January 2019, Department of Chemistry, Anna University, Chennai.
24. Halogen–Bonding Catalysis: An Efficient Tool for Functional Group Activation, Guest Lecture, 6th September 2018, Department of Chemistry, VIT, Vellore, Tamil Nadu.
25. Halogen–Bonding Catalysis: An Efficient Tool for Functional Group Activation, Guest Lecture, 25th July 2018, Department of Chemistry, NIT Trichy, Tamil Nadu.
26. Halogen–Bonding Catalysis: An Efficient Tool for Functional Group Activation, 8-9th June 2018, International Conference on Advances in New Materials, (Ican-2018), Department of Inorganic Chemistry, University of Madras, Chennai.
27. Halogen–Bonding Catalysis: An Efficient Tool for Functional Group Activation, 23 & 24th February 2018, National Seminar on Recent Developments in Chemical Sciences (RDCS – 2018), Department of Chemistry, IGNTU, Amarkantak, Madhya Pradesh.
28. Asymmetric Synthesis: Synthesis of Chiral Alcohols by Enantioselective Oxidation and Reduction, 16th February 2018, Chemistry Association Function, PG & Research Dept. of Chemistry, Govt. Arts College, Dharmapuri, Tamil Nadu.
29. Influence of Chirality in Drug Activity, National level seminar on Modern Trends in Chemical Sciences (MTCS-2018), 15th February 2018, Dept. of Chemistry, Vivekanandha Arts and Science College for Women, Sankari, Salem, Tamil Nadu.
30. Synthesis of Chiral Alcohols by Enantioselective Oxidation and Reduction, 7th February 2018, National Conference on Chemistry Driven Clean Process and Alternate Energies – Scope & Challenges (NCCP 2018), Dept. of Chemistry, Hindustan Institute of Technology and Science, Chennai.

31. Chiral nanocatalysts; 12th December 2017, 17th orientation program on catalysis; NCCR, Dept. of Chemistry, IIT Madras, Chennai.
32. Chiral catalysts; 11th December 2017, 17th orientation program on catalysis; NCCR, Dept. of Chemistry, IIT Madras, Chennai.
33. Synthesis of Chiral Alcohols by Enantioselective Oxidation and Reduction, Guest lecture, 6th December 2017, Department of Chemistry, Bharathidasan University, Trichy, Tamil Nadu.
34. Synthesis of Chiral Alcohols by Enantioselective Oxidation and Reduction, 7-8th November 2017, CHIRAL INDIA-2017, 6th International Conference & Exhibition, Ramada Plaza, Palm Grove, Juhu, Mumbai
35. Synthesis of Chiral Alcohols by Enantioselective Oxidation and Reduction, Guest lecture, 27th October 2017, Department of Chemistry, IIT Kharagpur.
36. The halogen–bonding catalysis: An efficient tool for functional group activation , Poster presentation, 3-6th October 2018, RSC-NOST symposium on Organic and Biomolecular Chemistry" at Leeds, United Kingdom.
37. Synthesis of Chiral Alcohols by Enantioselective Oxidation and Reduction, Keynote address, 30th June & 1st July 2017, International Conference on SOPHISTICATED INSTRUMENTS IN MODERN RESEARCH (ICSIMR – 2017), IIT Guwahati.
38. Synthesis of Chiral Alcohols by Enantioselective Oxidation and Reduction, 16th June 2017, Dept. of Chemistry, BITS Pilani, Rajasthan.
39. Chiral Nanocatalysts for asymmetric synthesis, 2nd June 2017, Summer Training Programme in Chemistry (STPIC-2017), School of chemical sciences, University of Madras, Chennai.
40. Asymmetric Synthesis, 2nd June 2017, Summer Training Programme in Chemistry (STPIC-2017), School of chemical sciences, University of Madras, Chennai.
41. Synthesis of Chiral Alcohols by Enantioselective Oxidation and Reduction, Guest lecture, 22nd May 2017, Dept. of Chemistry, BITS Pilani, Hyderabad Campus.
42. Synthesis of Chiral Alcohols by Enantioselective Oxidation and Reduction, Guest lecture, 10th May 2017, Dept. of Chemistry, VIT Vellore, Tamil Nadu.
43. Synthesis of Chiral Alcohols by Enantioselective Oxidation and Reduction, Guest lecture, 5th May 2017, Dept. of Chemical Sciences, IISER Mohali, Punjab.
44. Synthesis of Chiral Alcohols by Enantioselective Oxidation and Reduction, 24th March 2017, Dept. of Chemistry, Central University of Tamilnadu, Thiruvarur, Tamil Nadu.
45. Synthesis of Chiral Alcohols by Enantioselective Oxidation and Reduction, 3-5th March 2017, International Conference on Recent Trends of Chemical & Biological Sciences in Medicine, Natural Product and Drug Discovery (ICRTCBSMNPDD)-2017, P. G. Dept. of Chemistry, Berhampur University, Odisha.
46. Synthesis of Chiral Alcohols by Enantioselective Oxidation and Reduction, 7th February 2017, UGC sponsored national seminar on Green Chemistry for Environmental Sustainability, Bharata Mata College, Thrikkakara, Cochin, Kerala.
47. Catalysts, Lecture-IX, 2nd February 2017, DST-INSPIRE Science Internship Programme for XI students, Department of Chemistry, School of Basic Sciences, Vels University, Chennai.
48. Metal Nanoparticles Stabilized by Metal-Carbon Covalent Bonds: An Efficient and Reusable Nanocatalyst, 23-25th January 2017, Joint IIT Madras – University of Manchester Catalysis Workshop, ICSR Auditorium: Hall I, IIT Madras, Chennai.
49. Synthesis of Chiral Alcohols by Enantioselective Oxidation and Reduction, 8th December 2016, School of Chemistry, Hyderabad Central University, Hyderabad.
50. Chiral catalysts; 2nd December 2016, 15th orientation program on catalysis, NCCR, Dept. of Chemistry, IIT Madras, Chennai.

51. Chiral nanocatalysts; 2nd December 2016, 15th orientation program catalysis, NCCR, Dept. of Chemistry, IIT Madras, Chennai.
52. Synthesis of Chiral Alcohols by Enantioselective Oxidation and Reduction, 3rd November 2016, Department of Organic Chemistry, IISER Bhopal.
53. Synthesis of Chiral Alcohols by Enantioselective Oxidation and Reduction, 21st October 2016, Department of Organic Chemistry, IISc Bangalore.
54. Asymmetric Synthesis, Colloquium on Organic and Bioorganic Chemistry: 29-31st July 2016, Recent Trends Kottayam, Kerala.
55. Metal Nanoparticles as Efficient and Reusable Nanocatalysts, Colloquium on Organic and Bioorganic Chemistry: 29-31st July 2016, Recent Trends, Kottayam, Kerala.
56. Chiral Nano-catalysts, 30th June 2016, Science City Chennai sponsored Workshop for M.Sc. students, School of chemical sciences, University of Madras, Chennai.
57. Asymmetric Synthesis, 30th June 2016, Science City Chennai sponsored Workshop for M.Sc. students, School of chemical sciences, University of Madras, Chennai.
58. Synthesis of Chiral Alcohols Through Enantioselective Oxidation and Reduction, 10th May 2016, Recent Trends in Organic Chemistry (RTOG-2016), (On the Occasion of Prof. P. Rajakumar's 60th Birthday Celebrations), Department of Organic Chemistry, University of Madras, Chennai.
59. Influence of Chirality in Drug Activity, special lecture (Key-note lecture) 29th January 2016, UGC Sponsored one day National Level Seminar on Moden Trends in Chemical Sciences (SMTCS-2016), Dept. of Chemistry, Govt. Arts College, Nandanam, Chennai.
60. Chiral Nanocatalysts, 28th October 2015, REFRESHER COURSE IN CHEMISTRY, Academic Staff College, University of Madras, Chennai.
61. Chiral Catalysts, 28th October 2015, REFRESHER COURSE IN CHEMISTRY, Academic Staff College, University of Madras, Chennai.
62. Nature Inspired Chiral Catalysts for Asymmetric Synthesis, 13th August 2015, National Seminar on Recent Advances in Chemistry, Kandaswami Kandar's College, Velur, Namakkal, Tamil Nadu.
63. Metal Nanoparticles Stabilized by Metal-Carbon Covalent Bonds: An Efficient and Reusable Nanocatalyst, 12th August 2015, CiHS-2014, Dept. of Chemistry, IIT Madras, Chennai.
64. Metal Nanoparticles Stabilized by Metal-Carbon Covalent Bonds:An Efficient and Reusable Nanocatalyst, 23-25th July 2015, CRSI BRONZE medal Lecture; 10th Mid-Year CRSI Symposium in Chemistry, Dept. of Chemistry, NIT Trichy, Tamil Nadu.
65. Nature Inspired Chiral Catalysts for Asymmetric Synthesis, 16th July 2015, Department of Chemistry, IIT Hyderabad.
66. Chiral Green Catalysts for Asymmetric Synthesis, Key-note lecture, 2nd National Seminar on the Concepts of Green Chemistry (NSCGC'15), 18th April 2015, Department of Chemistry, SRM-Valliammai Engineering College, Kattankulathur, Chennai.
67. Chiral catalysts; 8th December 2014, 15th orientation program, NCCR, Dept. of Chemistry, IIT Madras, Chennai.
68. Chiral nanocatalysts; 8th December 2014, 5th orientation program, NCCR, Dept. of Chemistry, IIT Madras, Chennai.
69. Influence of Chirality in Drug Activity, 18-20th July 2014, KSCSTE's Colloquium/Seminar on Organic- and Bioorganic-chemistry, SRIBS, Kottayam, Kerala.
70. Metal Nanoparticles Stabilized by Metal-Carbon Covalent Bonds: An Efficient and Reusable Nanocatalyst, 4-7th April 2014, NOST - XIV Organic Chemistry Conference, Hotel Jaypee Palace, Agra, Uttar Pradesh.

71. Nature Inspired Chiral Catalysts for Asymmetric Synthesis; 28th March 2014, One Day National Seminar on "Catalysis and Catalyzed Reactions" School of Chemistry, MKU, Madurai, Tamil Nadu.
72. Nature Inspired Chiral Catalysts for Asymmetric Synthesis, 14th March 2014, Dept. of Chemistry, IIT Kanpur.
73. Non-enzymatic Kinetic Resolution; 17-20th December 2013, WCRI2K13, St. Joseph's College, Irinjalakuda, Kerala.
74. Nature Inspired Green Catalysts for Asymmetric Synthesis; 6-8th December 2013, Industrial Green Chemistry World – 2013(Green Catalysts), Renaissance Mumbai Convention Centre Hotel, Mumbai.
75. Advances in Nature Inspired Chiral Catalysts for Asymmetric Synthesis; 14th & 15th November 2013, Chiral India 2013, Mumbai.
76. Design, Synthesis and Application of Metal Nanocatalysts Stabilized Covalent Bond; 11th & 12th October 2013, National Symposium on "Frontiers in Organic Chemistry", (On the Occasion of Prof. M. Periasamy's 60th Birthday Celebrations); School of Chemistry, University of Hyderabad, Hyderabad.
77. Chiral Catalysts in Asymmetric Synthesis; 28th August 2013, Refresher Course in Chemistry, UGC-Academic Staff College, University of Hyderabad, Hyderabad.
78. Chiral Catalysts in Non-enzymatic Kinetic Resolutions; 28th August 2013, Refresher Course in Chemistry, UGC-Academic Staff College; University of Hyderabad, Hyderabad.
79. Influence of Chirality in Drug Activity, 15th March 2013, National Seminar on Emerging Trends in Chemistry, AVS College of Arts and Science, Salem, Tamil Nadu.
80. Nature Inspired Chiral Catalysts for the Synthesis of Enantiomerically Enriched Activated Alcohols, 1-3rd April 2013, IFCOS -VIII, Goa.
81. Nature Inspired Chiral Catalysts for Asymmetric Synthesis, 1st February 2013, School of Chemistry, University of Hyderabad, Hyderabad.
82. Nature Inspired Chiral Catalysts for the Synthesis of Enantiomerically Enriched Activated Alcohols, CHENNAI CHEMISTRY CONFERENCE – 2013, 8-10th February 2013, CLRI, Chennai.
83. Influence of Chirality in Drug Activity, 14th September 2012, Dept. of Chemistry, Hindustan University, Padur, Chennai.
84. Nature Inspired Chiral Green Catalysts for Aerobic Oxidation of Racemic Alcohols, 27-31st July 2012, TWAS-ROESEAP-GCE Symposium on Frontier in Chemical Engineering, Beijing, China.
85. Nature Inspired Chiral Catalysts for Asymmetric Synthesis, 2nd April 2012, Dept. of Chemical Sciences, IISER Bhopal.
86. Nature Inspired Chiral Catalysts for Asymmetric Synthesis, 16th March 2012,Current Trends in Chemistry, Department of Chemistry, Pondicherry University, Pondicherry.
87. Coupling Reactions: From Nobel Success to Modern Trends, 6-7th March 2012, Lecture Workshop on "Modern Trends in Chemistry", Department of Chemistry, St. Joseph's College, Irinjalakuda, Kerala.
88. Synthesis of Enantiomerically Enriched Alcohols by Asymmetric Synthesis, Synthesis of Enantiomerically Enriched Alcohols by Asymmetric Synthesis, 6-7th March 2012, Lecture Workshop on "Modern Trends in Chemistry", Department of Chemistry, St. Joseph's College, Irinjalakuda, Kerala.
89. Nature Inspired Chiral Catalysts for the Synthesis of Enantiomerically Enriched Alcohols, 12-16th February 2012, INDIGO – Ph.D Research Conference and Intensive Course, Chennai.
90. Nature Inspired Chiral Catalysts for the Synthesis of Enantiomerically Enriched Alcohols, 2-5th February 2012, 14th CRSI-NSC and 6th CRSI-RSC symposium in Chemistry, NIIST & IISER Trivandrum, Kerala.
91. Nature Inspired Chiral Catalysts for the Synthesis of Enantiomerically Enriched Alcohols, 10-13th November 2011, Frontiers of Chemistry – An Endo-European-Singapore Symposium, NISER Bhubaneswar.

92. Nature Inspired Chiral Catalysts for the Synthesis of Enantiomerically Enriched Alcohols, 22nd October 2011, Horizon-2011, NIT Trichy, Tamil Nadu.
93. Modern Trends in Chemistry, Guest Lecturer, 30th November 2011, Department of Chemistry, Vels University, Chennai.
94. New Chiral Metal Catalysts for Asymmetric Synthesis, 24th August 2011, Chemistry in-house Symposium-2011, Dept. of Chemistry, IIT Madras, Chennai.
95. Cu-BINAM Complex as an Efficient Catalyst for Organic Synthesis, 27th January 2011, Dept. of Organic Chemistry, University of Madras, Chennai.
96. Nature Inspired Chiral Catalysts for the Synthesis of Enantiopure Alcohols, 5-8th December 2010, NOST – XIV Organic Chemistry Conference – 2010, Goa.
97. Palladium-Catalyzed Cross Coupling in Organic Synthesis, 13th November 2010, Science Club (115th Meet), IIT Madras, Chennai.
98. Galactose Oxidase Enzyme Inspired Chiral Catalysts for the Synthesis of Enantiopure Alcohols, 21-24th September 2010, ICBP-2010, IICT Hyderabad.
99. Nature Inspired Chiral Catalysis for Aerobic Oxidative Kinetic Resolution of Racemic Alcohols, 19-21st February 2010, NCGSC-2010, BITS Pilani, Rajasthan.
100. Nature Inspired Chiral Catalysis for Asymmetric Synthesis, 15th September 2009, University of Nottingham, United Kingdom.
101. Nature Inspired Chiral Catalysis for Asymmetric Synthesis, 14th September 2009, Loughborough University, United Kingdom.
102. Nature Inspired Chiral Catalysis for Oxidative Kinetic Resolution of Alcohols, 11-13th September 2009, Gregynog Conference, University of Wales, United Kingdom.
103. Nature Inspired Chiral Catalysis for Asymmetric Synthesis, 25th April 2009, BITS Pilani, Rajansthan.

RESEARCH HIGHLIGHTS

- H-index: **34;** Total citation: **3,355** (as on 14th Aug., 2020); Source: Scopus; Scopus ID: 6602184820)
- Our recent research regarding conversion of toluene to benzoic acid using Pt-BNP nano-catalyst in water (in *Applied Catalysis B: Environmental*, **2019**, 250, 325 journal) was highlighted in "**The Hindu**" national English newspaper on 31st March, 2019 (Page 13 of Chennai Edition)
  https://www.thehindu.com/sci-tech/science/iit-madras-converts-petroleum-waste-toluene-into-useful-product/article26688417.ece
- DD national (Science) TV / RS TV news coverage about conversion of toluene to benzoic acid using our Pt-BNP nano-catalyst in water (18.5.2019, Science Monitor)
  https://www.youtube.com/watch?v=p04LbtuWtTk
- ACS best Poster Presentation Award for our poster presentation at 24th CRSI-National Symposium in Chemistry (CRSI NSC-24) 8-10 February, 2019.
- Best Poster Presentation Award for our poster presentation at 22nd CRSI-National Symposium in Chemistry (CRSI NSC-22) 2-4 February, 2018.
- Best Poster Presentation Award for our poster presentation at CCC-2013, CSIR-CLRI, Chennai, February 8-10, 2013; Isolation and Characterization of Trinuclear Cobalt Complex in Secondary Alcohol Aerobic Oxidation Reaction.
- Best Poster Presentation Award for our poster presentation at 14th Chemical Research Society of India National Symposium in Chemistry, February 3-5, 2012, NIIST, Trivandrum, India; Cu-catalyzed in situ generation of thiol and its application in synthesis of aryl thioethers, benzothiazoles and benzothiophenes.

- Our recent paper (*Org. Lett.*, **2017**, *19*, 1244) is one of the most accessed top 20 articles in *Org Lett.* for the Month of Feb-Mar, 2017.
- Our paper (*J. Org. Chem*, 2009, 74, 3675) is one of the most accessed top 10 articles in *J. Org. Chem*. for the Month of April-June 2009.
- Our paper (*Org. Lett.* **2009**, *11*, 1923) is one of the most accessed 20 articles in *Org Lett.* for the Month of April 2009.
- The same research article has been featured in *Synfacts*, **2009**, *8*, 841 (Synthesis of 1,4-Benzoxazines by Domino SN2 and Goldberg Coupling).
- Our recent paper (*Chem. Eur. J.* **2009**, 15, 5424) has been featured in *Synfacts*, **2009**, *8*, 870 (Oxidative Kinetic Resolution of Racemic Benzoins).
- Our paper (*Tetrahedron Lett.*, **2009,** *50*, 2965) is one of the most accessed top 25 hot Science Direct articles for the month of April- June 2009.
- Twenty-three of our research articles have been featured in ***ChemInform.***
- DABCO-CuCl complex synthesized and used by us for the oxidation of alcohols (S. Mannam, S. K. Alamsetti and **G. Sekar**, *Adv. Synth. Catal.*, **2007**, *349*, 2253) is added in ALDRICH catalogue with product no: 703141.