

Gaurav R. Gupta, Ph.D.

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Education

Post-Doc., Working with Dr. Anant R. Kapdi, on the project funded by Rasayan entitled “*Metal mediated synthesis of heterocyclic compounds*” at Institute of Chemical Technology, Matunga, Mumbai-400019

Aim and objectives:

- Develop a ligand system for Cross-Coupling reactions using Palladium.
- Thermal analysis of the ligands and N-carbene heterocycles.
- Ionic liquid mediated Cross-Coupling reactions.
- High pressure reactions in autoclave.

Ph.D.,Organo-Physical chemistry of ionic liquids and Gas phase studies of ionic liquids, North Maharashtra University, Jalgaon, India. 2009-2014

- Thesis: Synthesis, characterization of ionic liquids and their applications in several organic reactions.

Accomplishments:

- Develops a rapid protocol for the synthesis of ionic liquids using molten tetrabutylammonium bromide as template.
- For a first time, a gas phase study of tetrabutylammonium bromide as a pattern of fragmentation using LC-MS/MS spectrometry with ESI probe is performed.

SLET, Chemical Sciences, University of Pune, Pune, India. 2009

M.Phil., Ground water and soil pollution, Madurai Kamraj University, Madurai, India. 2006-2008

- Thesis: Physico-Chemical and metallic studies of Soil and ground water sources of sugar Molasses dumping land, in Jalgaon District, (MS).

Accomplishment:

- Hands on practice over Atomic Absorption Spectrophotometer (AAS), Flame Photometer, UV-visible spectrophotometer, Gas Chromatograph, FT-IR.

M.Sc.,Organic Chemistry, M. J. College, North Maharashtra University, Jalgaon. 2003-2005.

Research Thrust Area:

Ionic liquids, Organometallic chemistry, Cross-coupling reactions, High pressure organic transformations, Polymer formulations, Polymer degradation, Polyanilines, Specific heat capacity measurements using DSC, TGA-DTA analysis, Biodiesel preparation using ionic liquids, Biodiesel blends, Density measurements, Mass spectrometry, Inclusion complexes of urea and cyclodextrins.

Publications:**Published:**

International: 32, National: 12, Book Chapter: 3

Research Experience

Sr. No.	Title of the project	Principal/Co Investigator	Amount (Rs)	Funding Agency	Status
1	Synthesis and use of ionic liquids in organic reactions.	Principal Investigator	70000/-	NMU	Completed (2013-2016)
2	Impact of Use of fertilizers and pesticides on Underground water and Soil ; A Physicochemical and Metallic study	Principal Investigator	130000/-	UGC	Completed (2009-2013)

Affiliations

- Life member of “**Indian Chemical Society**” [LM-6781]. 2008-present
- Life Member of “**Indian Thermodynamics Society**” [LM-137]. 2010-present
- Fellow Member of “**Indian Council of Chemists**”. AF-7141 (2011)
- Life member of “**Asian Journal of Chemical and Environmental Research**” 2019

Sr. No.	Paper published in Care-List/International Journals
1.	S. R. Bhirud, C. H. Sarode, G.R. Gupta and G. R. Chaudhari. An exceptional valorization of CuO Nanoparticles in ionic liquids as an efficient medium for the electrophilic substitution of indole towards the formation of bis(indolyl)methanes. Current Nanomaterials. 2023 (Accepted)
2.	Gaurav R. Gupta , Vasim R. Shaikh, and Kesharsingh J. Patil. Cyclodextrin –Essential Oil Complexes Studied by Thermal Gravimetry Analysis - Differential Scanning Calorimetry. Current Physical Chemistry. 2023 (Accepted)
3.	G R Gupta . Thermal stability and specific heat estimation of pyridinium cation-based surfactant ionic liquids using TGA-DSC. Current Physical Chemistry. 2022 (Accepted)
4.	S. R. Bhirud, G. R. Gupta , G. R. Chaudhari. Advances and perspectives of fe metal nanoparticles synthesized in ionic liquid and their applications. Heterocyclic Letters. 2022 (Accepted).
5.	Marathe Y. V., Patil C. M., Wagh A. G., Gupta G. R* . Exploring Thermal Gravimetric Analysis Data Towards the Determination of Non-Isothermal Kinetics of picrate compounds. Journal of Scientific Research. 2021, 65(7), 34-40.
6.	J. D. Bhirud, G. R. Gupta* and H. P. Narkhede. An exploration of ChCl/Glycerol based deep eutectic solvent as a sustainable reaction medium for the synthesis of biologically important aminopyrazole and aminopyrazolone compounds. Current bioactive compounds. 2022 (Accepted).
7.	Chandrakant H. Sarode, Sachin D. Yeole, Gaurav R. Gupta** and Govinda P. Waghulde. Diazo-coupling reaction between 2-aminothiazole and thymol; Synthesis, DFT studies, and specific heat capacity calculations using TGA-DSC. Current Physical Chemistry. 2022 (Accepted).
8.	Joshi N. S, Waghulde G. P, Gupta G. R . Thermo-physical Investigations of Oils, N-(2-aminoethyl)-Oleamide and Resulting Gels using TGA-DSC. Orient J Chem 2021;37(6):1496-1500.
9.	Joshi N. S, Waghulde G. P, Gupta G. R , Phalak R. P. Design, Synthesis and Gelation of Low Molecular WeightOrgano-gelators derived from Oleic acid via, amidation. Orient J Chem 2021;37(5):1109-1116.
10.	Gaurav Gupta , Vasim Shaikh, Sachin Kalas and Kesharsingh Patil*, “Specific Heat Capacity Estimations for Biologically and Medicinally Important Compounds:

	Lidocaine Hydrochloride, Clove Oil and β -Piperine using the DSC Technique”, <i>Current Physical Chemistry</i> , 2021 , 11(1), 18-26.
11.	Chandrakant Sarode, Sachin Yeole, Ganesh Chaudhari, Govinda Waghulde and Gaurav Gupta* , “Development of the Room Temperature Protocol based on Room Temperature Ionic Liquids and Surfactant Ionic Liquids for the Synthesis of Derivatives of 2-amino-thiazoles and Thermo-physical Analysis of the Synthesized Derivatives using TGA-DSC”, <i>Current Physical Chemistry</i> , 2021 , 11(1),27-34.
12.	Jayashri D. Bhirud, Gaurav R. Gupta* , Hemant P. Narkhede. Oxidative cyclization of chalcones in presence of sulfamic acid as catalyst. Synthesis, biological activity of thermal properties of 1,3,5-trisubstituted pyrazoles. <i>Russ. J. Org. Chem.</i> , 2020, 56(10), 1815–1822.
13.	T. R. Girase, K. J. Patil, A. R. Kapdi and G. R. Gupta* . Palladium Acetate/[CPy][Br]: An Efficient Catalytic System towards the Synthesis of Biologically Relevant Stilbene Derivatives via Heck Cross-Coupling Reaction. <i>ChemistrySelect</i> , 2020, 5, 4251 – 4262.
14.	P. A. Tomar*, S. M. Yadav, A. A. Jahagirdar and G R Gupta . Exploring the Catalytic Potentials of Supported Molten Salts toward Transesterification of Waste Cooking Oil for the Production of Biodiesel. <i>Catalysis in Green Chemistry and Engineering</i> . 2020, 2, 133-141.
15.	ShatrughnBhilare, Jagrut Shah, Vinayak Gaikwad, Gaurav Gupta , Yogesh S Sanghvi, Bhalchandra M Bhanage, Anant R Kapdi. Pd/PTABS: An Efficient Catalytic System for the Aminocarbonylation of a Sugar-Protected Nucleoside. <i>Synthesis</i> . 2019, 51(22), 4239-4248
16.	Gaurav R. Gupta, Kamlesh S. Vadagaonkar, Aditya G. Lavekar, Jagrut Shah and Anant R. Kapdi*. Hetero-bimetallic cooperative catalysis for the synthesis of heteroarenes. <i>Org. Biomol. Chem.</i> , 2019,17, 7596-7631 (Invited)
17.	Gaurav R. Gupta* , Mahendra R.Nevare, Amardip M. Patil and Vikas V. Gite. Unprecedented exploration of ionic liquids as an additive which astonishes thermal stability of the PVC formulations. <i>Bull. Mater. Sci.</i> 2019. 42(5), 203-214.
18.	G. R. Gupta , V. R. Shaikh, K. J. patil*. Synchronous Thermogravimetry and Differential Scanning Calorimetry Estimates of Urea Inclusion Complexes Using TGA/ DSC. <i>Curr. Phy. Chem.</i> , 2018, 8(3), 175-185.
19.	P. D. Patil, V. R. Shaikh, G. R. Gupta , D. G. Hundiwale, K. J. Patil*. Studies of

	Volumetric and Viscosity Properties in Aqueous Solutions of Imidazolium Based Ionic Liquids at Different Temperatures and at Ambient Pressure. <i>J. Sol. Chem.</i> 2019 , <i>48</i> (1), 45-60 .
20.	C. H. Sarode, G. R. Gupta** , G. R. Chaudhari, P. D. Patil, G. P. Waghulde*. Investigations Related to the Suitability of Imidazolium Based Room Temperature Ionic Liquids and Pyridinium based Sponge Ionic Liquids Towards the Synthesis of 2-aminothiazole Compounds as Reaction Medium and Catalyst. <i>Curr. Green Chem.</i> 2018 , <i>5</i> (3), 191-197 .
21.	K. S. Patil, P. H. Zope, U. T. Patil, P. D. Patil, R. S. Dubey, G. R. Gupta* . Synthesis and thermophysical studies of polyanilines. <i>Bull. Mater. Sci.</i> , 2019 , <i>42</i> , 24-32 .
22.	P. P. Patil, V. R. Shaikh, G. R. Gupta , P. D. Patil, A. U. Borse, K. J. Patil*. Studies of Viscosity Coefficient and Density Properties of Imidazolium Based Ionic Liquids in Aqueous Solutions at Different Temperatures. <i>ChemistrySelect</i> , 2018 , <i>3</i> (20), 5593-5599 .
23.	Gaurav R. Gupta , Pankaj D. Patil, Vasim R. Shaikh, Rahul R. Kolhapurkar, Dilip H. Dagade and Kesharsingh J. Patil*. Analytical estimation of water, specific heat capacity and thermal profiles associated with enzymatic model compound β -cyclodextrin. <i>Curr. Sci.</i> 2018 , <i>114</i> (12), 2525-2529 ,
24.	Nandkishor B. Shirsath, Gaurav R. Gupta , Vikas V. Gite and Jyotsna S. Meshram*, Studies of thermally assisted interactions of polysulphide polymer with ionic liquids. <i>Bull. Mat. Sci.</i> , 2018 . <i>41</i> , 63-69 .
25.	Pankaj D. Patil, Vasim R. Shaikh, Gaurav R. Gupta , Dilip G. Hundiwale, Amulrao U. Borse, Kesharsingh J. Patil*. Studies of Viscosity Coefficient and Expansivity Properties of Aqueous Solutions of Ethylene Glycol and Polyethylene Glycols at 293.15, 298.15 and 303.15 K and at Ambient Pressure. <i>J. Sol. Chem.</i> 2016 , <i>45</i> , 947-969 .
26.	P. A. Tomar*, S. M. Yadav and G. R. Gupta , The thermal gravimetric studies for polymer samples of Poly-vinyl-chloride (PVC) and Poly-vinyl-alcohol (PVA) obtained by treatment with ionic liquid [bmim]Br. <i>Polym. Bull.</i> 2014 , <i>71</i> , 1349-1358 .
27.	Vasim R. Shaikh, Santosh S. Terdale, Gaurav R. Gupta , Dilip G. Hundiwale and Kesharsingh J. Patil*. Thermodynamic Studies of Ionic Interactions in Aqueous Solutions of N-Butyl-Pyridinium Bromide at 298.15 K. <i>J. Mol. Liq.</i> 2013 , <i>186</i> , 14-22
28.	Vasim R. Shaikh, Santosh S. Terdale, Abdul, A., Gaurav R. Gupta , Dilip G.

	Hundiwale and Kesharsingh J. Patil*, Volumetric Studies of 2,2,2-Cryptand in Aqueous and Aqueous-KBr Solutions at 298.15 K: An Example involving Solvent Induced Hydrophilic and Hydrophobic Interactions. <i>J. Solution Chem.</i> 2013 , <i>42</i> , 2087-2103
29.	Vasim R. Shaikh, Santosh S. Terdale, Abdul, A., Gaurav R. Gupta , Dilip H. Dagade, Dilip G. Hundiwale and Kesharsingh J. Patil*, Thermodynamic Studies of Aqueous Solutions of 2,2,2-Cryptand at 298.15 K: Enthalpy-Entropy Compensation, Partial Entropies and Complexation with K ⁺ ions. <i>J. Phys. Chem. B</i> 2013 , <i>117</i> , 16249-16259.
30.	G. R. Gupta , G. R. Chaudhari, P. A. Tomar, Y. Gaikwad, A. Rameez, G. H. Pandya, G. P. Waghulade and K. J. Patil*, Mass Spectrometry of Ionic Liquids: ESI-MS/MS studies. <i>Asian J Chem</i> , 2013 , <i>25(15)</i> , 8261-8265.
31.	G. R. Gupta , G. R. Chaudhari, P. A. Tomar, Y. Gaikwad, A. Rameez, G. H. Pandya, G. P. Waghulade and K. J. Patil*, Synthesis of bis(indolyl)methanes using N-butylpyridinium bromide. <i>Euro J Chem</i> , 2012 , <i>3(4)</i> , 475-479.
32.	G. R. Gupta , G. R. Chaudhari, P. A. Tomar, G. P. Waghulade and K. J. Patil*, Molten ammonium salt as a solvent for Menshutkinquaternization reaction (synthesis of ionic liquids) and other heterocyclic compounds. <i>Asian J Chem</i> , 2012 , <i>24(10)</i> , 4675-4678.
Book Chapters	
1	Gupta G.R*., Girase T.R., Kapdi A.R. Ionic Liquid as a Sustainable Reaction Medium for Diels-Alder Reaction. In: Zhang S. (eds) Encyclopedia of Ionic Liquids. Springer, Singapore, 2019. DOI: https://doi.org/10.1007/978-981-10-6739-6_27-1
2	G. R. Gupta , Shatrughn A. Bhiare, Debabrata Maiti, Anant R. Kapdi. Miscellaneous applications of palladacycles. .Palladacycles: Catalysis and Beyond. Volume 3: Latest Trends in Palladium Chemistry) Eds. A. R. Kapdi, D. Maiti. Elsevier, New York, 2019.371-393.
3	Gaurav R. Gupta , Vasim R. Shaikh, Sachin S. Kalas, Dilip G. Hundiwale, Kesharsingh J. Patil*. Studies of thermal analysis and specific heat capacity for quaternary ammonium salts. Specific Heat. Nova Scientific Publisher. 2020. 53-74.
Paper published in National Journals	
1.	G. R. Gupta* , Y. V. Marathe and V. S. Shrivastava**. Exploring thermal gravimetric analysis data towards the determination of non-isothermal kinetics of oxalic acid. <i>AJ CER</i> , <i>13(1-4)</i> , 2020, 46-50.
2.	G. R. Gupta* , G. R. Chaudhari and V. S. Shrivastava. Assessment of water quality by

	performing physico-chemical and metallic investigations of ground water sources of Raver region of Maharashtra (India). AJCER . 2019, 12,
3.	Kiran Patil, Gaurav Gupta* . Thermal investigations of multiwall carbon nanotubes. International Journal of Management, Technology and Engineering . 2019, 9(1), 1530-1535.
4.	C. H. Sarode, G. R. Gupta** , G. R. Chaudhari, G. P. Waghulde*. Cetylpyridiniumhexafluorophosphate mediated synthesis of 2-amino thiazoles. Res. Jour. 40-44, 2017.
5.	P. D. Patil, N. I. Shaikh, G. R. Gupta , V. R. Shaikh, D. G. Hundiwale and K. J. Patil*, Spectrophotometric Studies of Imidazolium based Ionic Liquids. J. Adv. Sci. Tech. June 2014, 14 (1)(ISSN No. 0971-9563)
6.	G. R. Gupta and G. R. Chaudhari*. Correlation and regression study among ground water quality parameters. AJ CER . 2008, 1(1), 55
7.	G. R. Gupta D. S. Bendale, and G. R. Chaudhari*. An evaluation of underground water quality in Yawal Taluka, Jalgaon: A physico-chemical and metallic study. AJ CER , 2010, 3(1), 65.
8.	G. R. Chaudhari, G. R. Gupta and V. S. Shrivastava*. Impact of Sewage and Industrial Effluents on growth of Plants. J. Chemo Biosphere . 2010, 1(1), 17.
9.	D. S. Bendale, G. R. Gupta and G. R. Chaudhari. Assessment of groundwater quality of anjani and jhiri watersheds of Jalgaon district: A GIS approach. J. Chemo Biosphere . 2011, 1(2), 17.
10.	H. D. Patil, G. R. Gupta , G. R. Chaudhari and G. P. Waghulade*. Water Quality Index of Velhala Lake. AJ CER . 2013, 6(3-4), 91.
11.	R. D. Pawar, G. R. Gupta , G. R. Chaudhari and G. P. Waghulade*, Assessment of water quality by calculating Water Quality Index of ground water sources of Yawal Town of Maharashtra (India). AJ CER . 2013, 6(3-4), 59.
12.	N. S. Patil, G. R. Gupta , G. R. Chaudhari and G. P. Waghulade*, An evaluation of ground water quality: A Correlation and Regression Study AJ CER . 2016, 9.