



# Miranda House

## UNIVERSITY OF DELHI

**Name:** Dr. Poonam

**Department:** Chemistry

**Current Designation:** Assistant Professor

**Email id:** [poonam.chemistry@mirandahouse.ac.in](mailto:poonam.chemistry@mirandahouse.ac.in)

**Google Scholar:** <https://scholar.google.co.in/citations?user=xpgpUq8AAAAJ&hl=en>

**Researchgate:** <https://www.researchgate.net/profile/Poonam-5>

**Orcid ID:** 0000-0002-3759-1057

**Academic Qualifications** (reverse chronological order):

Institution	Degree	Date	Field of Study
Hansraj College, University of Delhi, Delhi	<b>M.Sc.</b>	2005	Chemistry
Daulat Ram College, University of Delhi, Delhi	<b>B.Sc.</b>	2003	Chemistry, Maths, Physics

**Research Degree(s)** (reverse chronological order):

Institution	Degree	Date	Field of Study
Department of Chemistry, University of Delhi, Delhi	<b>Ph.D.</b>	2008-2012	Chemistry
Department of Chemistry, University of Delhi, Delhi	<b>M.Phil.</b>	2006-2007	Chemistry

**Field of Specialization under the Subject/Discipline:** Organic Chemistry

**Total Teaching Experience:** 10 Years

**Teaching at Miranda House since:** 23 July 2015

**List of Publications:**

(Articles in referred/peer-reviewed/UGC Care journals/ Books/Book Chapters)



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- 2023** R Bhuvaneshwari, Sejal Jain, Shweta, Zainab Fatima, Brijesh Rathi, **Poonam\*** Pesticide-loaded Nanocapsules: A Sustainable route for pesticide management to enhance crop productivity. *Current nanoscience*, **Accepted** (IF, 1.53; Bentham Science; ISBN/ISSN 1573-4137)
- 
- 2023** Charu Upadhyay, Shreya Bhattacharya, Sumit Kumar, Dharmender Kumar, Neha Bhadula, Brijesh Rathi\*, Agam Prasad Singh\*, **Poonam\*** Novel fluorinated piperazine based-amino acid derivatives as antiplasmodial agents: Synthesis, bioactivity and computational studies. *Chem. Biol. Lett.* **2023**, 10 (3), 543 (IF, 4.4; Integrated Science; ISBN/ISSN 2347-9825)
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- 2023** Sharma, H.; Kumar, M.; Sethi, A.; **Poonam**; Rathi, B. Metal-free construction of aminated isoquinoline frameworks from 2-(2-oxo-2-arylethyl) benzonitrile in an aqueous medium. *Green Chem.* **2023**, 25, 167-171 <https://doi.org/10.1039/D2GC04044A> (IF, 11.03; Royal Society of Chemistry; ISBN/ISSN 1463-9262)
- 
- 2022** Sharma, P. P.; Bhardwaj, S.; Sethi, A.; Grishina, M.; **Poonam\***, Rathi B. **2022** Chitosan based architectures as biomedical carriers. *Carbohydrate Research*, **2022**, 522, 108703 <https://doi.org/10.1016/j.carres.2022.108703> (IF, 1.92; Elsevier; ISBN/ISSN 0008-6215)
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- 2022** Kumar, S.; Sharma, N.; Dantas, W.; Nascimento, J. C. F. do ; Maus, H.; Oliveira, R. ; Pandit, U.; Singh, A. P.; Schirmeister, T.; Hazari, P.; Pena, L.; **Poonam\***; Rathi, B. A potent candidate against Zika virus infection: Synthesis, bioactivity, radiolabelling and biodistribution studies. *New J. Chem.* **2022**, 46, 18764-18775 <https://doi.org/10.1039/D2NJ02482A> (IF, 3.92; Royal Society of Chemistry; ISBN/ISSN 1144-0546)
- 
- 2022** Sharma, N.; Sharma, H.; Kumar, M.; Pandit, U.; **Poonam**; Rathi, B. Immaculate mechanochemical grinding facilitates hassle free sustainable synthesis of N-substituted amines. *Org. Biomol. Chem.*, **2022**, 20, 6673-6679 <https://pubs.rsc.org/en/content/articlepdf/2022/OB/D2OB01148D> (IF, 3.89; Royal Society of Chemistry; ISBN/ISSN 1477-0539)
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- 2022** Chhikara, B. S.; Singh, N. **Poonam**; Bazard, P.; Verma, R. S.; Parang, K. Nanotherapeutics and HIV: Four decades of infection canvass the quest for drug development using nanomedical technologies. **2022** *Appl. Nanomed.* 22 (1), 354 (ScienceINPublishing; ISBN/ISSN 2394-0867)
- 
- 2022** Singh, V.; Hada, R.; Jain, R.; Vashistha, M.; Kumari, G.; Singh, S.; Sharma, N.; Bansal, M.; **Poonam**; Zoltner, M.; Caffrey, C.; Rathi, B.; Singh, S.. Designing and Development of Phthalimides as Potent Anti-Tubulin Hybrid Molecules Against Malaria. **2022** *Eur. J. Med. Chem.*, 239, 114534. <https://doi.org/10.1016/j.ejmech.2022.114534> (IF, 7.02; Elsevier; ISBN/ISSN 0223-5234)
- 
- 2022** Gupta Y.; Sharma, N.; Singh, S.; Romero, J. G.; Rajendran, V.; Mogire, R. M.; Kashif, M.; Beach, J.; Jeske, W.; **Poonam**, Ogutu, B. R.; Kanzok, S. M.; Akala, H. M.; Legac, J.; Rosenthal, P.; Rademacher, D. J.; Durvasula, R. V.; Singh, A. P.; Rathi, B.; Kempaiah, P. The multistage antimalarial compound Calxinin pertuberates *P. falciparum* Ca<sup>2+</sup> homeostasis by targeting a unique ion channel.



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- 2022** Pharmaceutics, 14, 1371. <https://www.mdpi.com/1999-4923/14/7/1371> (IF, 6.52; MDPI; ISBN/ISSN 1999-4923)
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- 2022** Kumar, S.; Kovalenko, S.; Bhardwaj, S.; Sethi, A.; Gorobets N. Y.; Poonam\*; Rathi B., Drug Repurposing against SARS-CoV-2 forecasted by computational approaches. Drug Discov. Today **2022**, 27 (5), 2015-2027. (IF, 7.851; Elsevier; ISSN: 1359-6446) <https://doi.org/10.1016/j.drudis.2022.02.004>
- 2022** Upadhyay, C.; Sharma, N.; Kumar, S.; Sharma, P. P.; Fontinha, D.; Chhikara, B. S.; Mukherjee, B.; Kumar, D.; Prudencio, M.; Singh, A. P.; Poonam\* Synthesis of new analogs of morpholine and their antiplasmodial evaluation against human malaria parasite Plasmodium falciparum New J. Chem. **2022**, 46, 250-262. (IF, 3.59; Royal Society of Chemistry; ISBN/ISSN 1144-0546) <https://pubs.rsc.org/en/content/articlelanding/2021/nj/d1nj04198c/unauth>
- 
- 2022** Gupta Y.; Goicoechea S.; Pearce M. C.; Mathur M.; Romero G. J.; Kwofie, S. K.; Weyenberg C. M.; Daravath B.; Sharma N.; Poonam; Akala M. H.; Kanzok M. S.; Durvasula R.; Rathi B.; Kempaiah, P., The emerging paradigm of Calcium channels as drug targets among Protozoan Parasites. Med. Res. Rev. **2022**, 42, 56-82. <https://doi.org/10.1002/med.21804> (IF, 12.11; Wiley; ISBN/ISSN: 1098-1128)
- 
- 2021** Sharma, P. P.; Bansal, M.; Sethi, A.; Poonam; Pena, Li.; Goel, V. K.; Grishina, M.; Chaturvedi, S.; Kumar, D.; Rathi B., **2021** Computational methods directed towards drug repurposing for COVID-19: advantages and limitations. RSC Adv. **2021**, 11, 36181-36198. (IF, 3.36; Royal Society of Chemistry; ISBN/ISSN 2046-2069)
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- 2021** Chhikara, B. S.; Kumar, R.; Poonam; Bazard, P.; Varma, R. S. Viral infection mitigations using advanced nanomaterials and tools: lessons from SARS-CoV-2 for future prospective interventions. 2021 Journal of Materials Nanoscience **2021**, 8 (2), 71 <https://pubs.thesciencein.org/journal/index.php/jmns/article/view/260>
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- 2021** Gupta Y.; Kumar, S.; Zak, S. E.; Jones, K. A.; Upadhyay, C.; Sharma, N.; Azizi, S.-A.; Kathavat, R. S.; Poonam; Herbert, A. S.; Durvasula, R.; Dickinson, B. C.; Dye, J. M.; Rathi B.; Kempaiah, P., **2021** Antiviral Evaluation of Hydroxyethylamine Analogs: Inhibitors of SARS-CoV-2 Main Protease (3CLpro), A Virtual Screening and Simulation Approach. Bioorg. Med. Chem. **2021**, 47, 116393 <https://doi.org/10.1016/j.bmc.2021.116393> (IF, 3.641; Elsevier; ISBN/ISSN 0968-0896)
- 
- 2021** Kumar, S.; Gupta Y.; Zak, S. E.; Upadhyay, C.; Sharma, N.; Herbert, A. S.; Durvasula, R.; Dye, J. M.; Poonam\*; Kempaiah, P.; Rathi B., A novel compound active against SARS-CoV-2 targeting Uridylate-specific endoribonuclease (NendoU/NSP15): in silico and in vitro investigations. RSC Med. Chem. **2021**, 12, 1757-1764. <https://doi.org/10.1039/D1MD00202C> (IF, 3.35; Royal Society of Chemistry; ISSN, 2632-8682)
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- 2021** Bansal, M.; Upadhyay, C.; Poonam; Kumar, S.; Rathi B. Phthalimide Analogs for Antimalarial Drug Discovery. RSC Med. Chem. **2021**, 12, 1854-1867



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<https://doi.org/10.1039/D1MD00244A> (IF, 3.35; Royal Society of Chemistry; ISSN, 2632-8682)

- 2021** Sharma, P. P.; Kumar, S.; Srivastava, S.; Srivastava, M.; Jee, B.; Gorobets, N. Y.; Kumar, D.; Kumar, M., Asthana, S.; Zhang, P.; **Poonam**; Zoltner, M.; Rathi B., Computational Study of Novel inhibitory molecule, 1-(4-((2S,3S)-3-amino-2-hydroxy-4-phenylbutyl) piperazin-1-yl)-3-phenylurea, with high potential to competitively block ATP binding to the RNA dependent RNA polymerase of SARS-CoV-2 virus. *J. Biomol. Struct. Dyn.* **2021** <https://doi.org/10.1080/07391102.2021.1940281> (IF, 3.3549; Taylor & Francis; ISSN, 1538-0254)
- 2021** Kumar, S.; Sharma, P. P.; Kempaiah, P.; Rathi B.; **Poonam\*** Multi-targeting approach for nsp3, nsp9, nsp12 and nsp15 protein targets of SARS-CoV-2 by Diosmin as illustrated by Molecular Docking and MD simulation methodologies. *Methods* **2021**, 195, 44-56 <https://doi.org/10.1016/j.ymeth.2021.02.017> (IF, 3.64; Elsevier; ISBN/ISSN 1046-2023)
- 2021** Sharma, P. P.; Kumar, S.; Kumar, K.; Singh, A.; Singh, I. K.; Grishina, M.; Pandey, K. C.; Singh, P.; Potemkin, V.; **Poonam**; Singh, G.; Rathi, B., In silico validation of novel inhibitors of malarial aspartyl protease, plasmepsin V and antimalarial efficacy prediction, *J. Biomol. Struct. Dyn.* **2021** <https://doi.org/10.1080/07391102.2021.1911855> (IF, 3.39; Taylor & Francis; ISSN, 1538-0254).
- 2020** Sharma, N.; Gupta, Y.; Bansal, M.; Singh, S.; Pathak, P.; Shahbaaz, M.; Mathur, R.; Singh, J.; Kashif, M.; Grishina, M.; Potemkin, V.; Rajendran, V.; **Poonam**; Kempaiah, P.; Singh, A. P.; Rathi, B., Multistage antiplasmodial activity of hydroxyethylamine compounds, in vitro and in vivo evaluations. *RSC Adv.* **2020**, 10 (58), 35516-35530 [\[https://pubs.rsc.org/en/content/articlehtml/2020/ra/d0ra03997g\]](https://pubs.rsc.org/en/content/articlehtml/2020/ra/d0ra03997g) (IF, 3.119; Royal Society of Chemistry; ISBN/ISSN 2046-2069)
- 2020** Kumar, S.; Upadhyay, C.; Bansal, M.; Grishina, M.; Chhikara, B. S.; Potemkin, V.; Rathi, B.; **Poonam\***, Experimental and Computational Studies of Microwave-Assisted, Facile Ring Opening of Epoxide with Less Reactive Aromatic Amines in Nitromethane. *ACS Omega* **2020**, 5 (30), 18746-18757 <https://pubs.acs.org/doi/10.1021/acsomega.0c01760> (IF, 2.87; ACS Publications; ISBN/ISSN 2470-1343)
- 2020** Kumar, S.; Goicoechea, S.; Kumar, S.; Pearce, C. M.; Durvasula, R.; Kempaiah, P.; Rathi, B.; **Poonam\***, Oseltamivir analogs with potent anti-influenza virus activity. *Drug Discov. Today* **2020**, 25 (8), 1389-1402 <https://doi.org/10.1016/j.drudis.2020.06.004> (IF, 7.851; Elsevier; ISSN: 1359-6446)
- 2020** Kumar, S.; Sharma, P. P.; Shankar, U.; Kumar, D.; Joshi, S. K.; Pena, L.; Durvasula, R.; Kumar, A.; Kempaiah, P.; **Poonam\***; Rathi, B., Discovery of New Hydroxyethylamine Analogs against 3CLpro Protein Target of SARS-CoV-2: Molecular Docking, Molecular Dynamics Simulation, and Structure–Activity Relationship Studies. *J. Chem. Inf. Model.* **2020**, 60 (12), 5754-5770



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- <https://pubs.acs.org/doi/10.1021/acs.jcim.0c00326> (IF, 4.549; ACS Publications; ISBN/ISSN 1549-9596)
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- 2020** Kumar, S.; **Poonam** and Rathi, B., Coronavirus Disease COVID-19: A New Threat to Public Health. *Curr Top Med Chem.* **2020**; 20(8) 599-600 [Editorial] DOI: [10.2174/1568026620999200305144319](https://doi.org/10.2174/1568026620999200305144319) (IF, 3.218; Bentham Science; ISBN/ISSN 1568-0266)
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- 2020** Upadhyay, C.; Chaudhary, M.; De Oliveira, R. N.; Borbas, A.; Kempaiah, P.; **Poonam\***; Rathi, B., Fluorinated scaffolds for antimalarial drug discovery. *Expert Opin. Drug Discov.* **2020**, 15 (6), 705-718 (<https://doi.org/10.1080/17460441.2020.1740203> (IF, 6.098; Taylor & Francis; ISBN/ISSN 1746-0441)
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- 2020** Chhikara, B. S.; Rathi, B.; Singh, J.; **Poonam**, Corona virus SARS-CoV-2 disease COVID-19: Infection, prevention and clinical advances of the prospective chemical drug therapeutics. *Chem. Biol. Lett.* 2020, 7 (1), 63-72 <http://pubs.iscience.in/journal/index.php/cbl/article/view/995> (IF, 4.4; Integrated Science; ISBN/ISSN 2347-9825)
- 
- 2020** Sumit, K.; Devender, S.; Pooja, K.; Rajender Singh, M.; **Poonam**; Keykavous, P.; Rakesh Kumar, T., PEGylation and Cell-Penetrating Peptides: Glimpse into the Past and Prospects in the Future. *Curr. Top. Med. Chem.* 2020, 20 (5), 337-348. <https://www.eurekaselect.com/node/178744/article/pegylation-and-cell-penetrating-peptides-glimpse-into-the-past-and-prospects-in-the-future> (IF, 3.218; Bentham Science; ISBN/ISSN 1568-0266)
- 
- 2020** Kelemen, V.; Csávás, M.; Hotzi, J.; Herczeg, M.; **Poonam**; Rathi, B.; Herczegh, P.; Jain, N.; Borbás, A., Photoinitiated Thiol-Ene Reactions of Various 2,3-Unsaturated O-, C- S- and N-Glycosides – Scope and Limitations Study. *Chem. Asian J.* 2020, 15 (6), 876-891 <https://doi.org/10.1002/asia.201901560> (IF: 3.69; Wiley; ISBN/ISSN 1861-471X)
- 
- 2020** Singh, S.; El-Sakkary, N.; Skinner, D. E.; Sharma, P. P.; Otilie, S.; Antonova-Koch, Y.; Kumar, P.; Winzeler, E.; **Poonam**; R Caffrey, C.; Rathi, B., Synthesis and Bioactivity of Phthalimide Analogs as Potential Drugs to Treat Schistosomiasis, a Neglected Disease of Poverty. *Pharmaceuticals* 2020, 13 (2), 25 <https://pubmed.ncbi.nlm.nih.gov/32028743/> (IF: 5.68; MDPI; ISBN/ISSN 1424-8247)
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- 2019** Sharma N.; Verma A.; **Poonam**; Kempaiah P.; Rathi B.; Chemical libraries targeting Liver Stage Malarial infection. *Chem. Biol. Lett.* 2019, 6 (1), 14-22 <http://www.pubs.iscience.in/journal/index.php/cbl/article/view/924> (IF, 4.4; Integrated Science; ISBN/ISSN 2347-9825)
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- 2019** Kumar, S.; Wu, L.; Sharma, N.; Ayushee; Kaushik, K.; Grishina, M.; Chhikara, B. S.; **Poonam**; Potemkin, V.; Rathi, B., Theoretical and experimental studies of an oseltamivir–triazole-based thermoresponsive organogel. *RSC Adv.* 2019, 9 (36), 21031-21041 <https://doi.org/10.1039/C9RA02463H> (IF, 3.119; Royal Society of Chemistry; ISBN/ISSN 2046-2069)
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- 2019** Poonam; Kumari, P.; Grishina, M.; Potemkin, V.; Verma, A.; Rathi, B., Oxygen mediated highly efficient cobalt(ii) porphyrin-catalyzed reduction of functional chromones: experimental and computational studies. *New J. Chem.* 2019, 43 (13), 5228-5238 <https://doi.org/10.1039/C9NJ00266A> (IF, 3.59; Royal Society of Chemistry; ISBN/ISSN 1144-0546)
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- 2019** Singh, S.; Rajendran, V.; He, J.; Singh, A. K.; Achieng, A. O.; Vandana; Pant, A.; Nasamu, A. S.; Pandit, M.; Singh, J.; Quadiri, A.; Gupta, N.; Poonam; Ghosh, P. C.; Singh, B. K.; Narayanan, L.; Kempaiah, P.; Chandra, R.; Dunn, B. M.; Pandey, K. C.; Goldberg, D. E.; Singh, A. P.; Rathi, B., Fast-Acting Small Molecules Targeting Malarial Aspartyl Proteases, Plasmepsins, Inhibit Malaria Infection at Multiple Life Stages. *ACS Infect. Dis.* 2019, 5 (2), 184-198. <https://pubs.acs.org/doi/10.1021/acsinfecdis.8b00197> (IF, 4.614; ACS Publications; ISBN/ISSN: 0022-1899)
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- 2018** Poonam; Gupta, Y.; Gupta, N.; Singh, S.; Wu, L.; Chhikara, B. S.; Rawat, M.; Rathi, B., Multistage inhibitors of the malaria parasite: Emerging hope for chemoprotection and malaria eradication. *Med. Res. Rev.* 2018, 38 (5), 1511-1535 <https://doi.org/10.1002/med.21486> (IF, 12.11; Wiley; ISBN/ISSN: 1098-1128)
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- 2018** Singh, S.; Sharma, N.; Upadhyay, C.; Kumar, S.; Rathi, B.; Poonam, Small Molecules Effective Against Liver and Blood Stage Malarial Infection. *Curr. Top. Med. Chem.* 2018, 18 (23), 2008-2021 <https://www.eurekaselect.com/node/167899/article/small-molecules-effective-against-liver-and-blood-stage-malarial-infection> (IF, 3.29; Bentham Science; ISBN/ISSN 1568-0266)
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- 2018** Singh, A. K.; Rajendran, V.; Singh, S.; Kumar, P.; Kumar, Y.; Singh, A.; Miller, W.; Potemkin, V.; Poonam; Grishina, M.; Gupta, N.; Kempaiah, P.; Durvasula, R.; Singh, B. K.; Dunn, B. M.; Rathi, B., Antiplasmodial activity of hydroxyethylamine analogs: Synthesis, biological activity and structure activity relationship of plasmepsin inhibitors. *Bioorg. Med. Chem.* 2018, 26 (13), 3837-3844 <https://doi.org/10.1016/j.bmc.2018.06.037> (IF, 3.641; Elsevier; ISBN/ISSN 0968-0896)
- 
- 2018** Rathi B, Kumar Y, Kumar S, Poonam. Molecules Effective against Infectious Diseases – Part II. *Curr Top Med Chem.* 2018;18(23):2007 [Editorial] (IF, 3.218; Bentham Science; ISBN/ISSN 1568-0266)
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- 2018** Rathi B, Kumar Y, Kumar S, Poonam. Anti-infectious Drugs: Approaches and Achievements – Part I. *Curr Top Med Chem.* 2018;18(22):1925 [Editorial] IF, 3.218; Bentham Science; ISBN/ISSN 1568-0266)
- 
- 2017** Nikolay Yu, G.; Yuriy, V. S.; Brajendra, K. S.; Poonam; Brijesh, R., An Overview of Currently Available Antimalarials. *Curr. Top. Med. Chem.* 2017, 17 (19), 2143-2157 <https://pubmed.ncbi.nlm.nih.gov/28137228/> (IF, 3.218; Bentham Science; ISBN/ISSN 1568-0266)
- 
- 2017** Rathi B, Feletrov Y, Latha N, Poonam, Vladimir S. New Avenues in Controlling Infectious Diseases. *Curr Top Med Chem.* 2017;17(18):2005. [Editorial] IF, 3.218; Bentham Science; ISBN/ISSN 1568-0266)



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- 2017** Rathi B, **Poonam**. Special issue: Infection Diseases. Chem. Biol. Lett. 2017; 4 (1): 20-26. (IF, 4.4; Integrated Science; ISBN/ISSN 2347-9825)
- 
- 2016** **Poonam**; Nagpal, R.; Arora, S.; S Chauhan, S. M., Efficient synthesis of metallated thioporphyrazines in task specific ionic liquids and their spectroscopic investigation of binding with selected transition metal ions. J. Chem. Sci. 2016, 128 (9), 1417-1422 <https://link.springer.com/article/10.1007/s12039-016-1143-8> (IF, 1.573; Springer Link; ISBN/ISSN 0973-7103)
- 
- 2015** **Poonam**; Aggarwal, N., Recent advances in development of Inhibitors of Dengue infection. Chem. Biol. Lett. 2015, 2 (2), 22-29 <http://www.pubs.iscience.in/journal/index.php/cbl/article/view/355>(IF,4.4; Integrated Science; ISBN/ISSN 2347-9825)
- 
- 2014** Yadav, K. K.; Poonam; Chauhan, S. M. S., Convenient and Efficient Method for the Synthesis of Phthalocyanines and Metallophthalocyanines in Task-Specific 2-Hydroxyethyl Ionic Liquids. Synth. Commun. 2014, 44 (19), 2797-2807 <https://doi.org/10.1080/00397911.2013.867505> (IF, 2.007; Springer Link; ISBN/ISSN 0039-7911)
- 
- 2011** **Poonam**; Kumari, P.; Ahmad, S.; Chauhan, S. M. S., Reductive dechlorination of atrazine using sodium-borohydride catalysed by cobalt (II) phthalocyanines. Tetrahedron Lett. 2011, 52 (52), 7083-7086 <https://doi.org/10.1016/j.tetlet.2011.10.080> (IF, 2.415, Elsevier; ISBN/ISSN 0044-4039)
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- 2011** **Poonam**; Kumari, P.; Nagpal, R.; Chauhan, S. M. S., Formation of hydridocobalt(iii) phthalocyanine by reaction of cobalt(ii) phthalocyanines with sodium borohydride and its reactions with antioxidant isoflavones. New J. Chem. 2011, 35 (11), 2639-2646 <https://doi.org/10.1039/C1NJ20582J> (IF, 3.59; Royal Society of Chemistry; ISBN/ISSN 1144-0546)
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- 2009** Kumari, P.; **Poonam**; Chauhan, S. M. S., Efficient cobalt(ii) phthalocyanine-catalyzed reduction of flavones with sodium borohydride. Chem. Commun. 2009, (42), 6397-6399 <https://doi.org/10.1039/B912928F> (IF, 6.22; Royal Society of Chemistry; ISBN/ISSN 1359-7345)
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### Patents

- 2022** Brijesh Rathi Prakasha Kempaiah, Agam P. Singh, Snigdha Singh, Yash Gupta, Neha Sharma, **Poonam**, Ravi Durvasula. Title of Invention: Hydroxyethyl amine based piperazine compounds and methods of producing and using the same for treating disease. **CALXININ; US patent No. US 11,485,714 B2; Date of patent: 1 Nov. 2022**
- 2022** Steven Bradfute, Ravi Durvasula, Prakasha Kempaiah, Brijesh Rathi, **Poonam**, Yash Gupta. Title of Invention: Calxinin Compositions and Method for Treating Viral Infections. [US provisional patent app. STC Ref. No.2020-095-01, 28 April 2020] **US patent app. Serial no. PCT/US22/26943, 29 April 2022**



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**2020** Brijesh Rathi Prakasha Kempaiah, Agam P. Singh, Snigdha Singh, Yash Gupta, Neha Sharma, **Poonam**, Ravi Durvasula **Indian Patent Application is 202011056923, filed on December 29, 2020** Title of Invention: Hydroxyethyl amine based piperazine compounds and methods of producing and using the same for treating disease.

### Book Chapters

- 2021** Charu Upadhyay, Sumit Kumar, **Poonam** (2022) Recent advances on the discovery of plants derived bioactive scaffolds/extracts against parasitic diseases. Springer -nature (**Accepted**)
- 2018** Brijesh Rathi and **Poonam** (2018) ALCOHOLISM: Causes, Symptoms Effects and Treatment. Manakin Press, New Delhi, India [ISBN: 9789-38667-7488, Chemical Therapeutics for the treatment of alcoholism, Pg. 237-248]
- 2017** **Poonam** (2017) (1st ed). Indian and Western Aspects of Identity, Shree Kala Prakashan, Delhi. [ISBN ISBN: 978-9385329-21-0, Current Scenario of Malarial Chemotherapeutics, Pg. 146-156]

### Educational Resource Material Developed:

**2021** Development of MOOC course for undergraduate students as ILLL fellow

### Research Guidance:

#### Ph.D Awarded:

<b>2018- 2023</b>	Ph.D Awarded	Charu Upadhyay (CSIR-JRF)	<b>Thesis Topic</b> : <i>Novel fluorinated compounds potent against malaria parasite: In vitro and in vivo anti-plasmodial studies</i>
<b>2018-2023</b>	Ph.D Awarded	Sumit Kumar (CSIR-JRF)	<b>Thesis Topic</b> : <i>Computationally accelerated development of potent scaffolds and their biological assessment against SARS-CoV-2</i>

#### Ph.D Student/ Project Fellows:

<b>2023</b>	Ph.D Student	Dharmender Kumar (CSIR-JRF)	<b>Thesis Topic</b> : <i>Design and development of chemical scaffolds and their application in medicinal and material chemistry.</i>
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<b>2023-24</b>	Project Fellow	Neha Bhadula (DST/TDT/AGRO-54/2021)	<b>Topic</b> : Sustainable route for pesticide management using nano based efficient pesticide formulation technique to enhance crop productivity.
<b>2022-23</b>	Project Fellow	Dharmender Kumar (DST/TDT/AGRO-54/2021)	<b>Topic</b> : Sustainable route for pesticide management using nano based efficient pesticide formulation technique to enhance crop productivity.
<b>2018-2019</b>	Project Fellow	Sonu Kumar (DST/TDT/DDP-14/2018)	<b>Topic</b> : Development of Nanoantenna Sensors for Infrared Detection

### Research Interns:

<b>2022</b> (9June-14 July 2022)	DSKC Research Interns	R Bhuvaneshwari, Shweta, Zainab Fatima, Sejal Jain	<b>Topic</b> : Nanocpsules an important tool for controlled release of pesticides.
<b>2022</b> (9June-14 July 2022)	DSKC Research Interns	Dharna Yadav, Divya Singh, Kriti Shakya	<b>Topic</b> : Recent advances in the study Argentine haemorrhagic fever caused by the Junin Virus
<b>2018-2019</b>	Rasayanika Interns	Rupal Garg (undergraduate students)	<b>Topic</b> : Detoxification of environmental persistent organic pollutants primarily pesticides using functionalized nanomaterials
<b>2018-2019</b>	Rasayanika Interns	Sheetal Kalra (undergraduate students)	<b>Topic</b> : Detoxification of environmental persistent organic pollutants primarily pesticides using functionalized nanomaterials

### Research Projects:

#### Ongoing Research Support

- **DST/TDT/AGRO-54/2021 (DST, Govt. of India) [46.77 Lakh]** Poonam (PI) 17/Dec/21-16/Dec/23  
Sustainable route for pesticide management using nano based efficient pesticide formulation technique to enhance crop productivity.
- **CRG/2020/005800 (SERB, Govt. of India) [46.41 Lakh]** Poonam (Co-PI) 13/Nov/20 - 12/Nov/23



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Lead Optimization of Potent Multistage Antimalarials

## **Completed Research Support**

- **DST/TDT/DDP-14/2018 (DST, Govt. Poonam (Co-PI) 19/Feb/19 - 18/Feb/21 of India) [63.08 Lakh]**  
Development of Nanoantenna Sensors for Infrared Detection.
- **INT/HUN/P-11/2016 (DST, Govt. of Poonam (Co-PI) 24/Nov/16 - 23/Nov/19 India) [36 Lakh]**  
Thio-click approach for the synthesis of stable glycomimetics and chiral oxathiacrown ethers (Indo-Hungarian Bilateral Research Grant).
- **F.30-375/2017 (BSR) (UGC, Govt. of Poonam (PI) 7/Mar/17 - 6/Feb/19 India) [10 Lakh]**  
Detoxification of environmental persistent organic pollutants primarily pesticides using functionalized nanomaterials

## **Membership of Professional Bodies (reverse chronological order):**

<b>2022</b>	Advisory team member, Dean Students' Welfare, University of Delhi, Delhi.
<b>2021-</b>	Editorial Team member, Journal of Molecular Chemistry ( <a href="https://pubs.thesciencein.org/journal/index.php/jmc/about/editorialTeam">https://pubs.thesciencein.org/journal/index.php/jmc/about/editorialTeam</a> )
<b>2021-</b>	Assistant Editor-Medicinal Chemistry; Chemical Biology Letters <a href="https://pubs.thesciencein.org/journal/index.php/cbl/about/editorialTeam">https://pubs.thesciencein.org/journal/index.php/cbl/about/editorialTeam</a>
<b>2020- 2021</b>	Member (32255116) The American Chemical Society, USA
<b>2019- 2021</b>	Coordinator: Life Science Department, Miranda House, University of Delhi
<b>2018-</b>	Member of MH-Vatavaran, Miranda House, University of Delhi, Delhi
<b>2017- 2018</b>	Guest Editor: Current Topics in Medicinal Chemistry
<b>2017- 2018</b>	Guest Editor: Chemical Biology Letters
<b>2017-</b>	Life Member (L32927), The Indian Science Congress Association, Kolkata
<b>2016-2018</b>	Member of Placement Cell, Miranda House, University of Delhi
<b>2016-</b>	Jury Member, DST Inspire Programme by Ministry of Science & Technology

## **Administrative Responsibilities (reverse chronological order):**

<b>2021-2023</b>	Student Advisor- Rasayanika, The Chemical Society, Miranda House
<b>15.10.21</b>	Admissions Department of Chemistry 2021-22 (Online mode)
<b>10.10.20</b>	Admissions Life Science Society 2020-21 (Online mode)
<b>10.06.20</b>	Admissions Life Science Society 2019-20



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2019- 2021 **Coordinator:** Life Science Society, Miranda House, University of Delhi

### Invited talks/Session chair/Resource person:

- 1.07.2022** **Resource person** for the Online Orientation Cum Guidance Program for Common University Entrance Test (CUET) 2022 under the aegis of Dean Student's Welfare in collaboration with Institute of Life Long Learning (ILLL) from June 27<sup>th</sup> – July 7<sup>th</sup>, 2022.  
[https://www.youtube.com/watch?v=ekXo\\_MxGx0Y](https://www.youtube.com/watch?v=ekXo_MxGx0Y)
- 2 Feb 2022** **Resource person** in online two week FDP on chemical sciences, title of the talk "Simple heterocyclic chemistry leading to potential molecules valuable for management of infectious diseases" organized by Ramanujan College, India
- 28 Oct 2021** **Distinguished Panellist** - Women in Science in 27th International Conference (CONIAPS XXVII) on the theme of "Interdisciplinary Research in Biomedical Sciences" organized by Amity University, Noida
- 13 July 2021** **Talk Show-** Women in Science Pandemic and Beyond organized by Her World India.
- 22 May 2019** Physico-Chemical Studies of Bioactive Scaffolds in a Three-day International workshop on Chemistry and Chemical Biology of Carbohydrates, Nucleic acids and Antibiotics organized by Hungarian Academy of Sciences in Mátrafüred, Hungary.
- 2018 June 12** Applications of Catalysts; Efficient way to solve the Environmental Crisis, Department of Pharmaceutical Chemistry, University of Debrecen, Hungary

### Conferences Organised:

- **Organizing Secretary** for the 2<sup>nd</sup> International Conference on Integrative Chemistry, Biology and Translational Medicine (ICBTM-2022) held at Conference Center, University of Delhi, North Campus, Delhi, India. 6.12.2022 - 8.12.2022.
- **Participated** in the Workshop on Implementation of NEP 2020: Implications for Undergraduate Colleges by Dr. Leena Gahane held at Miranda House, University of Delhi. 23.09.2022.
- **Facilitator/Mentor** at the summer workshop "**Flavor of Research**" for undergraduate science students organized by DS Kothari centre for research and innovation in science education, Miranda house, University of Delhi, Delhi-110007. 09.06.2022 to 21.07.2022
- **Organizing Secretary** for the online international conference on "science and society" held at Miranda House, University of Delhi. Delhi-110007. 23.02.2022 - 25.02.2022  
[Supported by Rs. 50,000 /- from CSIR]
- **Member Secretary** for the Open House Discussion on NEP 2020 with special emphasis on National Professional Standards for Teachers (NPST) (para 5.20) and National Mission for Mentoring (NMM) (para 15.11), organized by the National Council for Teacher



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Education (NCTE) *in collaboration with* University of Delhi. 16.12.2021.

[https://www.youtube.com/watch?v=QpTV6D\\_ST0Y](https://www.youtube.com/watch?v=QpTV6D_ST0Y)

- **Organizing Secretary** for the International virtual conference on “Chemistry- the catalyst for change” held at Miranda House, University of Delhi. Delhi-110007. 19.02.2021 - 20.02.2021
- **Organizing Committee member** for the International Webinar on “Empowering diversity in Science” held at Miranda House, University of Delhi. Delhi-110007. 12.02.2021
- **Convener** for the International One Day Webinar on “Drug Discovery approaches for emerging and drug resistant pathogens” held at Miranda House, University of Delhi. Delhi-110007. 02.02.2021
- **Convener** for the National One Day Webinar on “Battling Environmental Woes: Peace Policy for the Future” held at Miranda House, University of Delhi. Delhi-110007. 10.10.2020
- **Organizing Committee member** for the National Webinar on “Learnings from the Corona Pandemic” held at Miranda House, University of Delhi. Delhi-110007. 24.08.2020 - 25.08.2020
- **Organizing Committee member** for the Symposium” on “Empowering Women in Chemistry; A Global Networking Event” organized by Department of Chemistry at DS Kothari centre for research and innovation in science education, Miranda house, University of Delhi, Delhi-110007. 12.02.2020
- **Organizing Committee member** for the “National workshop” on “Nano Road Show-2020” organized by Department of Chemistry, Miranda house, University of Delhi, Delhi-110007. 1.02.2020
- **Organizing Committee member** for the Symposium” on “Empowering Women in Chemistry; A Global Networking Event” organized by Department of Chemistry at DS Kothari centre for research and innovation in science education, Miranda house, University of Delhi, Delhi-110007. 12.02.2019
- **Organizing Secretary** for the One-day “Indo-Hungarian Symposium” on “*Recent Advances in Chemistry and Biology*” (INH CAB-2017) organized by Department of Chemistry, Miranda House in association with Department of Pharmaceutical Chemistry, University of Debrecen, Debrecen, Hungary, in Miranda House campus, University of Delhi, Delhi-110007. 11.12.17
- **Organizing Committee member** for the Workshop on “Green Chemistry and Environment” organized by Department of Chemistry at DS Kothari centre for research and innovation in science education, Miranda house, University of Delhi, Delhi-110007. 06.02.2017-07.02.2017

### Seminars/Workshops/Conferences attended:

- Participated in International webinar on “Post Covid Challenges and Opportunities for the Chemist” jointly organised by Indian Science Congress Association, Delhi Chapter and Department of Chemistry, University of Delhi, Delhi. 28.12.2021 in Hybrid Mode.



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- **Participated in Five days Training Programme** on “Understanding the vulnerability and risk associated with urban areas” organized by Institute of Disaster Management In collaboration with Centre for Environmental Studies and Disaster Management, Miranda House and Department of Environmental Studies, University of Delhi, India. 23.11.2021 - 27.11.2021
- **Online Two-week National Faculty Development Program/Refresher course in Chemistry-The Catalyst for Change**, organized by Teaching Learning Centre, Ramanujan College in collaboration with Miranda House, under the aegis of Ministry of Education under PMMMNTT scheme. India. 14.07.2021 - 28.07.2021 Ramanujan\_Miranda\_FDP-84.
- **Online one-week National Faculty Development Program: Academic Report Writing and Research Methodology**, organized by Guru Angad Dev Teaching Learning Centre (GAD-TLC) of MHRD under PMMMNTT scheme. India. 04.03.2021 - 10.03.2021 [Dr. Poonam OFDP39-219]
- **Online one-week National Faculty Development Program/Refresher course: Enhancing Quality of Chemistry Education in India**, organized by Guru Angad Dev Teaching Learning Centre (GAD-TLC) of MHRD under PMMMNTT scheme. India. 25.02.2021 - 03.03.2021 [Dr. Poonam OFDP38-126]
- Participated in One day national workshop “ICT Tools for Chemistry Teachers, organized by Guru Angad Dev Teaching Learning Centre (GAD-TLC) of MHRD under PMMMNTT scheme. India. 22.02.2021
- **Online Refresher Course in Chemistry for higher education faculty-2019-20** by Annual Refresher Programme in Teaching (**ARPIT**), Ministry of Human Resource Development, Government of India at Delhi. [Roll no. ARP20107575; Application no. 200710003831].
- Participated in national conference on “Technological Empowerment of Women” organized by the national academy of sciences, India (NASI) at Vigyan Bhavan, Delhi. 8.03.2018 to 9.03.2018
- Participated in “India International Science Festival” India International Science Festival, Indira Gandhi Pratishthan, Lucknow, India. 5.10.2018 to 8.10.2018 [**Supported by DBT Star College, Miranda House~ 9000**]
- Participated in “Bonsai Workshop” organized by Department of Botany, Miranda house, University of Delhi under the DBT Star College Scheme in collaboration with Indian Bonsai Association, New Delhi. 22.03.2018
- Poster Presentation on “New Plasmepsin Inhibitors Targeting Multiple Life Stages of the Malaria Parasite” at International Conference on Emerging Trends in Drugs Development and Natural Products organized by Department of Chemistry, University of Delhi, Delhi, India. 12.01.2018 to 14.01.2018.
- Participated as **Teacher Mentor** in the Inspire Internship Programme 2017, innovation in science pursuit for inspired research, an initiative of Department of Science and Technology, Government of India, organized by DS Kothari centre for research and innovation in science education held at Miranda house, University of Delhi, Delhi-110007. 18.12.2017-22.12.2017
- Participated in Workshop on “catalyzing a cultural shift in youth entrepreneurship” held at DS Kothari centre for research and innovation in science education, Miranda house, University of Delhi, Delhi-110007. 09.11.2017



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- Participated in national conference on “recent advances in chemical sciences towards green and sustainable environment; swachh bharaat abhiyaan perspective organized by Aditi Mahavidyalaya, University of Delhi, Delhi. 10.10.2017 to 11.10.2017
- Participated in Workshop on “Active Learning as a Transformational Tool for the University Classroom” held at DS Kothari centre for research and innovation in science education, Miranda house, University of Delhi, Delhi-110007. 15.05.2017
- Poster Presentation on “Design and Synthesis of Functionalized Organic Inorganic Hybrid Nanomaterials and its Application in Biomass Conversion Process” organized by Material Research Society in 2017 MRS Spring Meeting at the Phoenix Convention Center and Sheraton Grand Phoenix Hotel in **Phoenix, Arizona, USA**, April 17-21, 2017 [**Supported by UGC ~ 2,20,000**]
- Participated in Indo-UK scoping Workshop on “Development of Rural Biorefineries In India: From Waste to Wealth” Department of Chemistry, University of Delhi, Delhi, India. 20.02.2017
- **Orientation Programme** (OR-86) on the topic of Indian and western aspects of identity from 25th November 2016 to 23rd December 2016, at CPDHE (UGC-HRDC), University of Delhi, Delhi-110007
- Participated in Indo-Portuguese Workshop on “Emerging Trends of Nanotechnology in Chemistry and Biology” Department of Chemistry, Hansraj College and Deshbandhu College, University of Delhi, Delhi, India. 12.02.2016 to 13.02.2016
- Paper Presentation on “Importance of catalyst on environmental safety” in the event “Frontiers of Research” in VigZest 2017 at Miranda House, University of Delhi, Delhi, India.
- Participated as a volunteer in “India International Science Festival” Indian Institute of Technology Delhi, Delhi, India. 4.12.2015 to 8.12.2015
- Participated as member of organizing committee for the workshop on “Computational Chemistry and Bioinformatics”, Department of Chemistry, Miranda House, University of Delhi, Delhi, India. 26.08.2015 to 28.08.2015
- Participated in national seminar on “Emerging Trends In Higher Education” Commission for Scientific and Technical Terminology, Ministry of Human Resource and Development, Department of Higher Education, Ramakrishnapuram New Delhi, India. 23.07.2015 to 24.07.2015
- Participated in 2<sup>nd</sup> Indo-German Workshop on “Supramolecular Chemistry” Department of Chemistry, University of Delhi, Delhi, India. 30.03.2015
- Participated in IUCr Workshop on “X-ray diffraction systems and related applications” containing XRD basics, experimental techniques and data analysis using high score plus software held at Department of Chemistry, University of Delhi, Delhi, India. 25.09.2014 to 26.09.2014
- Poster Presentation on “Synthesis of Subphthalocyanines as Photosensitizers for Photodynamic Therapy” at a 20th ISCB International Conference on chemistry and medicinal plants in translational medicine for healthcare. Department of Chemistry, University of Delhi, Delhi, India. 1.03.2014 to 4.03.2014
- Poster Presentation on “Efficient Synthesis of Substituted Metalloporphyrines as Photodynamic Agents and Its Interaction with Transition Metal Ions.” at a Conference on



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Emerging Trends in Development of Drugs and Devices Department of Chemistry, University of Delhi, Delhi, India. 21.01.2013 to 23.01.2013

- Participated in Indo-German Workshop on “New Perspectives for Nano-Carriers in Biomedical Applications” Department of Chemistry, University of Delhi, Delhi, India. 14.01.2013 to 14.01.2013
- Poster Presentation on “Green Synthesis of Potential Photonic and Optoelectronic Porphyrazines and Its Interaction with Transition Metal Ions” at a 4th Indo-Italian Seminar on Green Chemistry and Natural Products. Department of Chemistry, University of Delhi, Delhi, India. 17.11.2010 to 17.11.2010
- National Conference on Green and Sustainable Chemistry. Birla Institute of Technology and Science, Pilani, Rajasthan. National Pilani, Rajasthan, India. 19.02.2010 to 21.02.2010
- Poster Presentation on “The Reduction of Biologically Active Isoflavones with Sodium Borohydride Catalyzed by Cobalt (II) Phthalocyanines” at aT3D- 2010 International Symposium on Trends in Drug Discovery and Development. Department of Chemistry, University of Delhi, Delhi, India. 5.01.2010 to 8.01.2010
- Poster Presentation on “Synthesis of Subphthalocyanines as Photosensitizers for Photodynamic Therapy” at a 13th ISCB International Conference on Interplay of Chemical and Biological Sciences; Impact on Health and Environment. Department of Chemistry, University of Delhi, Delhi, India. 26.02.2009 to 1.03.2009
- Poster Presentation on “Biomimetic Oxidation of Atrazine with Hydrogen Peroxide Catalysed by Iron(III)Phthalocyanines In Ionic Liquid” at a Indo-Italian Seminar on Green Chemistry and Natural Products. Department of Chemistry, University of Delhi, Delhi, India. 5.12.2008 to 6.12.2008
- Poster Presentation on “Oxidation of Chlorophenols With Hydrogen Peroxide and Related Oxidants Catalysed by Iron(III)Phthalocyanines In Ionic Liquids at a Symposium on Modern Trends In Inorganic Chemistry “MTIC-III”, Indian Institute of Technology Madras, Chennai, India. 2008
- Chemical Research Society of India (CRSI) Sponsored 9th National Symposium in Chemistry. Department of Chemistry, University of Delhi, Delhi, India. 1.02.2007 to 4.02.2007
- Symposium on The Application of Nuclear Magnetic Resonance to Materials and Medicine Department of Chemistry, Indian Institute of Technology Delhi, Delhi, India. 21.11.2006 to 21.11.2006

### **Synergy** (work with other organizations outside the college):

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|------------------|--|
| <b>2022-2024</b> | <b>IoE Fellow</b> at Delhi School of Public Health, Institute of Eminence, University of Delhi, Delhi. |
| <b>2021-2022</b> | <b>ILLL Fellow</b> at Institute of Life Long Learning, University of Delhi, Delhi                      |
| <b>2019-2021</b> | <b>Affiliate Assistant Professor</b> – Loyola University, Chicago, USA                                 |
| <b>2019</b>      | <b>Visiting Fellow</b> , Department of Pharmaceutical Chemistry, University of Debrecen, Hungary       |
| <b>2019</b>      | <b>CAPES Fellow</b> , Federal Rural University of Pernambuco-UFRPE in Recife, Pernambuco, Brazil.      |



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- 2018-2020** **Adjunct-Visiting Senior Researcher**, South Ural State University, Chelyabinsk, Russia.
- 2018** **Visiting Fellow**, Department of Pharmaceutical Chemistry, University of Debrecen, Hungary

### Awards and Recognitions:

- 2023** SERB International Research Experience (**SIRE**) Fellow, SERB, DST, Government of India.
- 2019** **Distinguished Investigator Award-** International Conference ICBTM-2019, at University of Delhi, India
- 2018** Recognized as **Ph.D. Supervisor** by Department of Chemistry, University of Delhi, Delhi.
- 2017** **International Travel Award** [F. No. 6-13/2017(TG)] from UGC, Govt of India.
- 2009** **Senior Research Fellowship**, supported by CSIR, Government of India.
- 2008** **Science Meritorious Fellowship**, supported by UGC, Government of India.