Curriculum Vitae

Dr. Bhanushree Gupta

Assistant Professor (Chemistry)
Center for Basic Science
Pt. Ravishankar Shukla University,
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ACADEMIC PROFILE

- Worked as **Research Associate**; Process Technology Development Division, DRDE, Gwalior, India. (**24/06/2016** to **21/02/2017**)
- Worked as **Project Scientist**; Department of Chemistry, Indian Institute of Technology, Kanpur, India. **(01/04/2015** to **30/09/2015**)
- **Ph. D. (2015); M. Phil. (2008-2009)** Research Center: School of Studies in Chemistry, Pt. Ravishankar Shukla University Raipur, (C.G.).
- **M.Sc.** in Chemistry **(2008)** Pt. Ravishankar Shukla University Raipur, C.G.

AWARDS, FELLOWSHIPS AND HONORS

- **Chhattisgarh Young Scientist Award in Chemistry**, 12th Chhattisgarh Young Scientist Congress, Feb. 17-19, **2014** Raipur, India.
- **CSIR Senior Research Fellowship for 2014-2015.**
- **Young Scientist Award (Association of Kineticists Award)**, 50th Annual Convention of Chemists-2013, Dec.3-7, **2013**, Panjab University, Chandigarh, India
- **EUROTOX Fellowship** to attend present poster in EUROTOX **2013**, 49th Congress of the European Societies of Toxicology, Sep. 1-4, Interlaken Switzerland.
- **CSIR Travel award (July 2013)** for attending the EUROTOX **2013**, Sep. 1-4, Interlaken Switzerland.
- **Young Scientist Award (Association of Kineticists Award),** 49th Annual Convention of Chemists-2012, Dec.12-15, **2012**, Bhopal (M. P).

RESEARCH PROFILE

Research Interests:

- In-vitro reactivation kinetics of organophosphates inhibited (Chemical warfare agents and pesticides) enzyme acetylcholinesterase using charged and uncharged oximes based reactivators.

- Study of physicochemical properties (acid dissociation constant: pK_a and lipophilicity: log *P*) of acetylcholinesterase reactivators.
- Structure and Properties of Conventional Cationic Monomeric, Gemini and Functionalized Surfactants.
- Detection systems for organophosphate compounds.
- Hydrolytic Cleavage of Toxic Esters with alpha-Nucleophilic Systems.

PUBLICATIONS : *(Review Articles: 03; Book Chapter:01; Research Articles:12)*

1. Degradation of Organophosphate Pesticides Using Pyridinium Based Functional Surfactants. R. Sharma, **Bhanushree Gupta**, T. Yadav, S. Sinha, A. K. Sahu, Y. Karpichev, N. Gathergood , J. Marek, K. Kuca, K. K. Ghosh ***ACS Sustainable Chem. Eng***., (**2016**) *4* (12), 6962–6973.

2. Synthesis and in-vitro reactivation screening of imidazolium aldoximes as reactivators of sarin and VX-inhibited human acetylcholinesterase (hAChE), R. Sharma, **Bhanushree Gupta**, A. K. Sahu, J. Acharya, M. L. Satnami and K. K. Ghosh, ***Chem. Biol. Intract.*** **(2016)** 259 Part B, 85-92.

3. Thymoquinone, **Bhanushree Gupta**, K. K. Ghosh and R. C. Gupta, Chapter-39, Nutraceuticals, Efficacy, Safety and Toxicity, ISBN: 978-0-12-802147-7, **(2016)** Elsevier. ***(Book Chapter)***

4. Metallosurfactant Aggregates as Catalysts for the Hydrolytic Cleavage of Carboxylate and Phosphate Esters, K. K. Ghosh, **Bhanushree Gupta** and S. Bhattacharya, ***Curr. Organocatal***. **(2016)**, 3 (1), 6-23. ***(Review Article)***

5. Oxime Mediated *In-Vitro* Reactivation Kinetic Analysis of Organophosphates-Inhibited Human and Electric Eel Acetylcholinesterase, A. K. Sahu, R. Sharma, **Bhanushree Gupta**, K. Musilek, K. Kuca, J. R. Acharya and K. K Ghosh. ***Toxicol. Mech. Methods*** **(2016)**, 25 (5), 319-326.

6. From α-Nucleophiles to Functionalized Aggregates: Exploring the Reactivity of Hydroxamate Ion towards Esterolytic Reactions in Micelles, N. Singh, Y. Karpichev, R. Sharma, **Bhanushree Gupta**, A. K. Sahu, M. L. Satnami and K. K. Ghosh, ***Org. Biomol. Chem.*** **(2015)**, 13 (10), 2827-2848. ***(Review Article)***

7. Acid dissociation constants and molecular descriptors of some xylene linked Bispyridinium oximes, N. Singh, O. Soukup, R. Dolezall, Z. Fisar, **Bhanushree Gupta**, K. K. Ghosh, K. Kuca, ***Mil. Med. Sci. Lett.*** **(2015)**, 84, 1-10.

8. Kinetic and physicochemical analysis of structurally different bis-pyridinium oximes against pesticide inhibited AChE, A. K. Sahu, **Bhanushree Gupta,** R. Sharma, Y. Singh, K. Musilek, K. Kuca and K. K Ghosh, ***Ind. J. Chem.*** **(2015)** 54, 40-45.

9. Development and Structural Modifications of Cholinesterase Reactivators against Chemical Warfare Agents in Last Decade: A Review. R. Sharma, **Bhanushree Gupta**, N. Singh, J. Acharya, K. Musilek, K. Kuca and K. K. Ghosh, ***Min. Rev. Med. Chem.* (2015)**, 15, 58-72. **(*Review Article*)**

10. Assessment of Antidotal Efficacy of Cholinesterase Reactivators Against Paraoxon: *In-vitro* Reactivation Kinetics and Physicochemical Properties. **Bhanushree Gupta**, N. Singh, R. Sharma, M. L. Satnami, B. Foretic, K. Musilek K. Kuca and K. K. Ghosh, ***Bioorg. Med. Chem. Lett.* (2014),** 24 (19), 4743-4748**.**

11. Reactivation kinetics of xylene linked carbamoyl bispyridinum mono-oximes against organophosphates inhibited electric-eel AChE. R. Sharma, **Bhanushree Gupta**, J. R. Acharya, M.P. Kaushik, K. K. Ghosh, ***Toxicology* (2014)**, 315,1-8.

12. *In- Vitro* Reactivation Kinetics of Paraoxon and DFP Inhibited Electric eel AChE using Mono- and Bis-Pyridinium Oximes. **Bhanushree Gupta**, R. Sharma, N. Singh , K. Kuca, J. R. Acharya, K. K. Ghosh, ***Arch. Toxicol.* (2014)** 88 (2), 381-390.

13. Physicochemical Properties and Supernucleophilicity of Oxime-Functionalized Surfactants: Hydrolytic Catalysts toward Dephosphorylation of Di- and Triphosphate Esters. N. Singh, Y. Karpichev, **Bhanushree Gupta**, M. L. Satnami, J. Marek, K. Kuca, K. K. Ghosh, ***J. Phys. Chem. B*, (2013)**, 117 (14), 3806-3817.

14. Reactivity Studies of Carbon, Phosphorus and Sulfur Based Acyl Sites with Tertiary Oximes in Gemini Surfactants. **Bhanushree Gupta,** R. Sharma, N. Singh, Y. Karpichev M. L. Satnami , K. K. Ghosh, ***J. Phys. Org. Chem.* (2013)**, 26, 623-642.

15. Evaluation of biological efficiency of oxime based reactivators against organophosphate inhibited AChE: An *in vitro* study. **Bhanushree Gupta**, Kallol K. Ghosh. ***Toxicol. Lett.* (2013)**, 221, S147–S148.

16. Mineral Acid Catalyzed Hydrolysis of Synthesized Organic Phosphate Esters. S. A. Bhoite, N. Choure, **Bhanushree Gupta**, J. Verma, ***J. Indian Chem. Soc.* (2012)**, 89, 1179.

CONFERENCES/TRAINING/SEMINARS

- Paper presented (Oral) in 12th Chhattisgarh Young Scientists Congress- 2014, 17th – 19th Feb. Raipur (C.G.). Assessment of reactivation potency of oxime reactivators against chemical warfare agent inhibited ache: an in-vitro kinetic study. **Bhanushree Gupta (Young Scientist Award).**
- Poster presented in 16th CRSI meeting National Symposium in Chemistry (NSC-16) February 7-9, 2014, IIT Bombay, Effect of connecting linkers in the reactivation potency of Bis-oximes against Nerve Agents Inhibited- AChE. **Bhanushree Gupta,** Rahul Sharma Kallol K. Ghosh.

- Paper presented (Oral) in 50th Annual Convention of Chemists-2013, Dec.3-7, 2013, Panjab University, Chandigarh. Interaction of Oxime Based Reactivators and Chemical Warfare Agent Inhibited AChE: A Kinetic Study **Bhanushree Gupta (Young Scientist Award: Association of Kineticists Award).**

- Poster presented in EUROTOX 2013: 49th Congress of the European Societies of Toxicology, Sep. 1-4, 2013. Evaluation of Biological Efficiency of Oxime Based Reactivators against Organophosphate Inhibited AChE: An *In-vitro* Study. **Bhanushree Gupta** & Kallol. K. Ghosh.

- Poster presented in 15th CRSI meeting National Symposium in Chemistry (NSC-15) February 1-3, 2013, BHU, Varanasi. Physicochemical Aspects of Oxime Based Reactivators of Acetylcholinesterase, Kallol K. Ghosh, **Bhanushree Gupta**, R. Sharma and N. Singh.

- Paper Presented (Oral) in 100th Indian Science Congress, 3-7 Jan 2013, Kolkata. Spectrophotometric Determination of Acid Dissociation Constants of Xylene Linked Quaternary Oxime Based Acetylcholinesterase Reactivators. Kallol K. Ghosh and **Bhanushree Gupta**.

- Paper presented (Oral) in 49th Annual Convention of Chemists-2012, Dec.12-15, 2012, Bhopal (M. P). Functionalized Surfactants as Potent Hydrolytic Catalysts Towards the Cleavage of Phosphate Esters. **Bhanushree Gupta (Young Scientist Award: Association of Kineticists Award).**

- Paper presented in 48th Annual Convention of Chemists-2011, Dec.03-07, 2011, Department of Chemistry, University of Allahabad (U.P.). Structural and Kinetic Aspects of Pyridinium Oximes as Reactivators of Organophosphate Inhibited. N. Singh, **Bhanushree Gupta** and Kallol K. Ghosh.

RESEARCH PROJECT

Underwent project work entitled "Synthesis and Development of Novel Oxime Reactivators of Cholinesterase Inhibited Organophosphate Toxicants" in the **Process Technology Division, Defence Research & Development Establishment, Jhansi Road, Gwalior, India** for three months.

COMPUTER SKILLS

Operating Systems: Window XP, Window 7

Software: GraphPad Prism Chem Draw, Origin 6.0, Discovery Studio, AurgusLab, AutoDockTool, MS Office.