

Profile Page



Name : Dr Vimal Kumar
Designation : Associate Professor
Department : Chemistry
Qualification : PhD Chemistry
Address : Department of Chemistry, Dr B. R. Ambedkar National
Institute of Technology (NIT), Jalandhar
Grand Trunk Road, Bye pass
Jalandhar, Punjab - 144011
Email : bhardwajvk@nitj.ac.in
Phone : +91-8968155223

Research Interests :

- Bioinorganic Chemistry,
- Crystallography,
- Supramolecular Chemistry,
- Optical Chemo-sensor Development

Other Profile Links :

Personal Web Link :

Dr. Vimal Kumar [Click Here](#)

Journal Publications :

Year	Journal	Publication
2019	Tetrahedron, 2019, 75, 2506-2520	Cationic Pd(II) catalyzed regioselective intramolecular hydroarylation for the efficient synthesis of 4-aryl-2-quinolones, K. Singh, B. K. Malviya, V.P. Verma , S. S. Badsara , Vimal K. Bhardwaj , Siddharth Sharma,
2019	Nanoscale Advances, 2019, 1, 1035-1044.	A green biomimetic preparation of efficient Ag-ZnO heterojunctions with excellent photocatalytic performance under solar light irradiation: A novel biogenic-deposition-precipitation approach, M. K. Choudhary, J. Kataria, Vimal K. Bhardwaj, Shweta Sharma,
2018	New J. Chem., 42, 2204-2215	Pooja Joshi, Navid Hussain, Shah Raj Ali, Rishu, and Vimal K. Bhardwaj, "Enhanced Activity of Trinuclear Zn(II) Complex towards Phosphate Ester Bond Cleavage by Introducing Three Metal Cooperativity"
2018	European Journal of Organic Chemistry, Issue 30, 4081-4088	A. Kumari, J. Kaur, Vimal K. Bhardwaj, S.S. Chimni, "Organocatalytic asymmetric decarboxylative addition of β - ketoacids to methyleneindolinones derivatives"

2018	Chemistry Select, 3, 5348-5352	V. Sharma, Vimal K. Bhardwaj, and S. S. Chimni, "Stereoselective Organocatalytic Synthesis of α,β -Disubstituted Butenolides.
2018	Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy, 201, 46–53.	J. Singh, V. Kaur, R. Singh, Vimal K. Bhardwaj, "Exploration of solvent responsive Cr ³⁺ -Schiff base conjugates for monitoring Cr ³⁺ ions and organophosphates: Fabrication of spot-testing devices"
2018	The Journal of Organic Chemistry, 83, 57768	Karandeep Singh, Bhanwar Kumar Malviya, Tapta Kanchan Roy, Venus Singh Mithu, Vimal K. Bhardwaj, "Catalyst-Controlled Structural Divergence: Selective Intramolecular 7-endo-dig and 6-exo-dig Post-Ugi Cyclization for the Synthesis of Benzoxazepinones and Benzoxazinones"
2017	Adv. Synth. Catal., 359, 1725-1734	J. Kaur, A. Kumari, Vimal K. Bhardwaj, S.S. Chimni, "Chiral Squaramide-Catalyzed Enantioselective Decarboxylative Addition of α -Keto Acids to Isatin Imines"
2016	RSC Adv., 6, 61528.	Navid Hussain, Pooja Joshi, Shah Raj Ali, Vimal K. Bhardwaj, "Comparative structure activity relationship for heterogeneous phosphatase-like catalytic activities of one-dimensional Cu(II) coordination polymers"
2016	Tetrahedron, 72, 8042-8049	Navid Hussain, Vimal K. Bhardwaj, "The influence of different coordination environments on one-dimensional Cu(II) coordination polymers for the photo-degradation of organic dyes"
2016	Dalton Trans, 45, 7697-7707	Navid Hussain, Vimal K. Bhardwaj, "The influence of different coordination environments on one-dimensional Cu(II) coordination polymers for the photo-degradation of organic dyes"
2015	Dalton Trans, 44, 8801-8804	Vimal K. Bhardwaj, "Potassium induced stitching of a flexible tripodal ligand into a bi-metallic two-dimensional coordination polymer for photo-degradation of organic dyes"
2015	Polyhedron, 87, 79-85	Shashikant Pawar, Umesh Fegade, Vimal K. Bhardwaj, Narinder Singh, Ratnamala Bendre, Anil Kuwar, "2-((E)-(2-Aminophenylimino)methyl)-6-isopropyl-3-methylphenol based fluorescent receptor for dual Ni ²⁺ and Cu ²⁺ recognition: Nanomolar Detection"
2014	Inorganic Chemistry, 53, 10731–10742	Vimal K. Bhardwaj, Ajnesh Singh, "Comparative DNA Binding Abilities and Phosphatase-Like Activities of Mono-, Di-, and Trinuclear Ni(II) Complexes: The Influence of Ligand Denticity, Metal-Metal Distance, and Coordinating Solvent/ Anion on Kinetics Studies"
2014	Eur J. Inorg chem, 5424–5431	Hemant Sharma, Vimal K. Bhardwaj, Narinder Singh, "Nanomolar Detection of Ag ^I Ions in Aqueous Medium by Using Naphthalimide-Based Imine-Linked Fluorescent Organic Nanoparticles – Application in Environmental Samples"
2014	Talanta, 129, 198-202	Vimal K. Bhardwaj, Hemant Sharma, and Narinder Singh, "Ratiometric Fluorescent Probe for Biothiol in Aqueous Medium with Fluorescent Organic Nanoparticles"
2014	Biosensors and Bioelectronics, 61, 429-433	K. Tayade, S. K Sahoo, B. Bondhopadhyay, Vimal K. Bhardwaj, Narinder Singh, Anupam Basu, Ratnamala Bendre, Anil Kuwar, "Highly selective turn-on fluorescent sensor for nanomolar detection of biologically important Zn ²⁺ based on isonicotinohydrazide derivative: Application in cellular imaging"
2014	RSC Adv., 4, 21079–21088	Ajneesh Singh, Vimal K. Bhardwaj, M S Bakshi, Kamalpreet Kaur, Narinder Singh, "Organic – Inorganic Nanohybrids and their applications in Silver Extraction, Chromogenic Cu ²⁺ detection in Biological Systems, and Hemolytic Assay"

2014	Dyes and Pigments., 106, 45-50.	Shweta Chopra, Narinder Singh, Pandiyan Thangarasu, Vimal K. Bhardwaj, Navneet Kaur, "Fluorescent Organic Nanoparticles as Chemosensor for Nanomolar Detection of Cs ⁺ in Aqueous Medium"
2014	RSC Adv., 4, 9784-9790	Preeti Saluja, Vimal K. Bhardwaj, Thangarasu Pandiyan, Simanpreet Kaur, Navneet Kaur, Narinder Singh, "Imine-Linked Chemosensors for the Estimation of Zn ²⁺ in Biological Samples"
2014	Journal of Experimental Nanoscience, 9, 877-891	Satbir Singh, Tilak Raj, Amarpal, Singh, Vimal K. Bhardwaj, Navneet Kaur, "Influence of surface modification by 2-aminothiophenol on optoelectronics properties of ZnO nanoparticles"
2014	Journal of Nanoelectronics and Optoelectronic, 9, 479-486	Shashi B. Rana, Vimal K. Bhardwaj, Satbir Singh, Amarpal Singh, Navneet Kaur, "Characterization and Optoelectronics Investigations of Polymer Directed Semiconductor ZnO Nanoparticles, Satbir Singh, Tilak Raj, Amarpal, Singh, Vimal K. Bhardwaj, Navneet Kaur"
2013	New J. Chem., 2013, 37, 4192-4198	Fluorescent organic nanoparticles (FONs) of rhodamine-appended dipodal derivative: highly sensitive fluorescent sensor for the detection of Hg ²⁺ in aqueous media, Vimal K. Bhardwaj*, Hemant Sharma, Navneet Kaur, Narinder Singh,
2013	Tetrahedron Letters, 2013, 54, 5967–5970	A benzimidazole-based Co ³⁺ complex for electrochemical and spectroscopic recognition of I ⁻ and HSO ₄ ⁻ in semi-aqueous media; Hemant Sharma, Vimal K. Bhardwaj, Navneet Kaur, Narinder Singh, Doo Ok Jang,
2013	Materials Letters, 2013, 107, 154–157.	Differential recognition of anions with ZnO based urea-coupled sensors; Simanpreet Kaur, Vimal K. Bhardwaj, Amanpreet Kaur, Narinder Singh, Navneet Kaur.
2013	Inorganic Chim. Acta., 2013, 399, 1–5	Fluorescent Primary Sensor for Zinc and Resultant Complex as Secondary Sensor towards Phosphorylated Biomolecules: INHIBIT Logic Gate; Kamalpreet Kaur, Vimal K. Bhardwaj, Navneet Kaur, Narinder Singh
2013	Tetrahedron, 2013, 69, 1606.	Benzthiazole-Based Multifunctional Chemosensor: Fluorescent Recognition of Fe ³⁺ and Chromogenic Recognition of HSO ₄ ⁻ ; Vimal K. Bhardwaj, Preeti Saluja, Geeta Hundal, M. S. Hundal, Narinder Singh, Doo Ok Jang;
2013	J Mater Sci: Mater Electron, 2013, 24, 20-26.	Synthesis and optical characterization of ZnO nanoparticles capped with 2-aminothiols; Shashi B. Rana, Vimal K. Bhardwaj, Satbir Singh, Amarpal Singh, Navneet Kaur;
2012	Inorganic Chem. Comm., 2012, 26, 31-36.	29. Fluorescent chemosensor for Al ³⁺ and resultant complex as a chemosensor for perchlorate anion: First molecular security keypad lock based on Al ³⁺ and ClO ₄ ⁻ inputs; Kamalpreet Kaur, Vimal K. Bhardwaj, Navneet Kaur, Narinder Singh
2012	Inorganic Chem. Commun. 2012, 18, 79–82.	Imine Linked Fluorescent Chemosensor for Al ³⁺ and Resultant Complex as a Chemosensor for HSO ₄ ⁻ Anion, Kamalpreet Kaur, Vimal K. Bhardwaj, Navneet Kaur, Narinder Singh;
2012	Polyhedron, 2012, 38, 224–234	Salicylaldimine Schiff bases - generation of self-assembled and chiral complexes with Ni(II) and Zn(II) ions. An unusual antiferromagnetic interaction in a triply bridged Ni(II) dimer; Vimal K. Bhardwaj, Maninder Singh Hundal, Montserrat Corbella, Verónica Gómez, Geeta Hundal;
2011	Supramolecular Chemistry, 2011, 23, 790–800.	New tripodal and dipodal colorimetric sensors for anions based upon tris/bis –urea/thiourea moieties; Vimal K. Bhardwaj, Sanyog Sharma, Narinder Singh, Maninder Singh Hundal and Geeta Hundal,
2010	Inorganica Chimica Acta, 2010, 363, 97–106.	Synthesis, crystal structure, spectral and magnetic studies and catecholase activity of copper(II) complexes with di- and tri-podal ligands; Vimal K. Bhardwaj, Núria Aliaga-Alcalde, Montserrat Corbella, Geeta Hundal,

2009	Tetrahedron, 2009, 65,8556-8562	A tripodal receptor bearing catechol groups for the chromogenic sensing of F ⁻ ions via frozen proton transfer; Vimal K. Bhardwaj, Maninder Singh Hundal, Geeta Hundal,
2008	Tetrahedron, 2008, 64, 5384-91	Synthesis of new tripodal receptors- A 'PET' based 'off-on' recognition of Ag ⁺ ; Vimal K. Bhardwaj, Narinder Singh, Ajay pal Singh Pannu, Maninder Singh Hundal and Geeta Hundal,
2006	Tetrahedron, 62, 2006, 7878-7886	Mesitylene based azo-coupled chromogenic tripodal receptors—a visual Detection of Ag(I) in aqueous medium; Vimal K. Bhardwaj, Narinder Singh, Maninder Singh Hundal and GeetaHundal,

Conference Publications :

Year	Conference	Publication
2015	16th International Symposium on Modern Trends in Inorganic Chemistry (MTIC-VI), Paper presented, Department of Chemistry, Jadavpur University	Vimal K. Bhardwaj, "Influence of structural diversities in one-dimensional Cu(II) coordination polymers on heterogeneous and homogeneous catalytic activities: A structure activity relationship"
2014	International Conference(Gold-CT-2014), Invited Talk, North Maharashtra University, Jalgaon	Vimal K. Bhardwaj, "Fluorometric Sensing of Hg ²⁺ Ions in Aqueous Medium by Nano aggregates of a Tripodal Receptor"
2014	UGC sponsored National seminar, Invited Talk, S.S.M. College Dinanagar (Gurdaspur)	Vimal K. Bhardwaj, "Selective Bond Cleavage (Phosphodiester and S-S bonds) in the presence of Transition Metal Complexes : Bio-mimicking of Natural Enzymes "
2014	IVth National Symposium on Advances in Chemical sciences, Paper presented, G.N.D.U. Amritsar	Vimal K. Bhardwaj, "Fluorescent Organic Nanoparticles (FONs) of Dipodal Rhodamine : Primary sensor for Hg ²⁺ and Resultant Complex as Ratiometric Sensor for Thioacetic Acid"

Book/Chapter Publications :

Type	Title	Publisher	Authors	ISBN/ISSN No.	Year
	Surface Decoration of Organic Ligands on Quantum Dots: Fine Tuning of Photo-physical Properties	Springer	N. Kaur Vimal K. Bhardwaj, K. Kaur, N. Singh,	DOI 10.1007/978-3-319-13188-7_51-1, Page 1-20	2015

Research Projects :

Role	Project Type	Title	Funding Agency	From	To	Amount	Status	Co-Investigator
------	--------------	-------	----------------	------	----	--------	--------	-----------------

Principal Investigator	Research Project	Synthesis, Characterization and Investigation of comparative Catalytic Activities of Transition Metal Complexes of Mono, Di, Tri and Tetrapodal Schiff Bases and their reduced Products	Department of Science and Technology (DST)	23.02.2012	22.02.2017	Rs. 35 Lakh	Completed	NA
------------------------	------------------	---	--	------------	------------	-------------	-----------	----

PhD Supervised :

Scholar Name	Research Topic	Status	Year	Co-Supervisor
Pooja Joshi (PhD student)	Synthesis of Multidentate Podands and Their Complexes for Chemosensor Development and Catalytic Applications	Thesis Submitted	2019	
Navid Hussain (MTech Student)	Synthesis, Spectral Characterization, X-Ray Crystal Structure Analysis And Photo-Catalytic Applications of Cu (II) Containing Pseudo Nano-Tubular 1D Coordination Polymers	Completed	2015	NA

Award and Honours :

Title	Activity	Given by	Year
Young Scientist Award	International Conference on Global Opportunities for Latest Developments in Chemistry and Technology (Gold-CT-2014)	North Maharashtra University, Jalgaon	2014
Invited Talk	UGC sponsored National seminar	S.S.M. College Dinanagar (Gurdaspur)	2014
Invited Talk	in International Conference on Global Opportunities for Latest Developments in Chemistry and Technology (Gold-CT-2014)	North Maharashtra University, Jalgaon	2014
DST-INSPIRE Faculty Award	Faculty Award	Department of Science and Technology (DST)	2012
Senior Research Fellowship		CSIR	2008