Curriculum Vitae

Dr. Karishma Tiwari
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https://scholar.google.com/citations?user=OHYrfNMAAAAJ&hl=en&oi=ao

https://www.researchgate.net/profile/Karishma-Tiwari

https://www.scopus.com/authid/detail.uri?authorId=57214612596

https://independent.academia.edu/KarishmaTiwari

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https://orcid.org/0000-0002-9930-6549

https://publons.com/researcher/1812377/karishma-tiwari/

https://www.webofscience.com/wos/author/record/Y-2094-2018

EDUCATION & QUALIFICATIONS

High School	:	2000, *first division* with ***78.8%*** marks, C.B.S.E., JNV, Farrukhabad
Intermediate	:	2002, *first division* with ***76.2 %*** marks, C.B.S.E., JNV, Farrukhabad
B. Sc.	:	2005, *first division* with **71.*6 %*** marks, CSJM. University Kanpur, Uttar Pradesh, India.
M. Sc.	:	2007, *second division* with ***58.1%*** marks, CSJM University Kanpur, Uttar Pradesh, India.
M.Phil.	:	2009, *first division* with ***76.6 %*** marks CSJM University Kanpur, Uttar Pradesh, India.
Title of Thesis	:	*"Pharmacophoric features of long-acting bronchodilators"*
Project Supervisor	:	Dr. Arpita Yadav
Ph. D.	:	2015, (Session 2014, *coursework* with ***76.4%*** marks), Department of Chemistry, Institute of Science, Banaras Hindu University, India.

Title of Thesis : "*Synthesis and Characterization of some Schiff bases as Chemosensors for the Detection of Al^{3+} and water content*"

Thesis Supervisor : Prof. Vinod P. Singh

FELLOWSHIP/AWARDS

- Selected for CSIR-RA, (New Delhi) Post-doctoral Fellowship **2017**.
- Selected for Dr. D. S. Kothari Post-doctoral Fellowship (New Delhi) **2016**.
- Selected for SERB Project Scientist, Indian Institute of Technology, Kanpur, **2015**.
- Selected for CSIR-Senior Research Fellowship, (New Delhi) **2014**.
- Selected for CSIR-Junior Research Fellowship (Project), Banaras Hindu University, Varanasi, **2011**.
- Qualified for National Eligibility Test (NET) two times in *Chemical Sciences* conducted by CSIR-UGC, New Delhi, **2010** (December and June).
- Selected for UGC-CRET Fellowship, Banaras Hindu University, Varanasi, **2009**.

POST-DOCTORAL RESEARCH/ TEACHING EXPERIENCE

Name of Fellowship	Funding Agency	Period	Name of the Institution
Assistant Professor	SRM IST	12/03/2024 – till date	SRM IST Delhi NCR
Assistant Professor	VIT Bhopal	01/12/2022 – 11/03/2024	VIT Bhopal, MP, India
Assistant Professor	Galgotias University	01/12/2021– 30/11/2022	Galgotias University, Greater Noida- 201310, Uttar Pradesh, India
DSK-Postdoctoral Fellow	UGC	01/03/2016 – 30/04/2017	GNDU Amritsar, Punjab, India
CSIR-Research Associate	CSIR	01/09/2017 – 31/08/2020	CSIR-CSMCRI, Bhavnagar, Gujarat, India
Project Scientist	SERB	16/07/2015 – 31/12/2015	IIT Kanpur, UP, India

TEACHING / ACADEMIC EXPERIENCES

Subject Taught:

- **At UG Level:** Inorganic Chemistry III, Environmental Science, Biology for Engineers, Inorganic Chemistry Lab, Physical Chemistry III Lab, Biochemical Analysis, Engineering Chemistry Lab

@ Department of Chemistry, Galgotias University, Greater Noida, India.

Computational Chemistry, Engineering Chemistry and Environmental Sustainbility@ SASL, VIT Bhopal, MP, India.

- **At PG Level:** Reaction mechanism and Basics of group theory and Analytical Chemistry Lab – I @ Division of Chemistry, Galgotias University, Greater Noida
- Worked as divisional exam coordinator, divisional Ph.D. coordinator, and team member of NAAC criteria 6 @ Department of Chemistry, Galgotias University, Greater Noida, India
- B.Sc.students dissertation guided-02 @ Department of Chemistry, Galgotias University, Greater Noida, India
- Anti ragging squad at VIT Bhopal.

MEMBERSHIP IN SCIENTIFIC ASSOCIATION

1. American Chemical Society (ACS)- Annual membership (2019-2020)

RESEARCH HIGHLIGHTS

- Synthesis of Schiff bases and their characterization by FT-IR, UV-visible, $^{1}H/^{13}C$ NMR, ESI-MS, single crystal X-Ray crystallography.
- Investigation of solvatochromism of Schiff bases.
- Application of Schiff bases towards Al^{3+} ions sensing in aqueous and organic medium.
- Utilization of deprotonated Schiff bases in the colorimetric determination of water content in aprotic organic solvents.
- Energy optimization of molecules by Density Functional Theory (DFT).
- Synthesis of the azine-based sensor for the selective colorimetric detection Cu^{2+} and its copper complex for sensing of phosphate ions in physiological conditions and in living cells.
- Preparation of ultrathin polyimine nanofilms at the liquid-liquid interface and their morphological characterization by SEM, TEM, and AFM.
- Preparation of thin film composite membrane of polyimine nanofilms to utilize them for selective separation of dyes and salts.

PROFESSIONAL COMPETENCE

- Capable of both independent and collaborative research.
- Proficiency in synthesis and characterization of complex molecules, and their separation through thin layer, column chromatography.
- Interpretation of Routine Spectroscopic Data such as XPS, NMR, FTIR, UV/Vis, HRMS, MALDI-TOF, XRD, DSC, TGA, dynamic light scattering (DLS) and single crystal structure data, etc.
- Photophysical Studies: UV/Vis-NIR spectrophotometer and spectrofluorimeter etc.

- Morphological Characterization through SEM, AFM and TEM measurements.
- Handling of equipment such as NMR, FT-IR, UV/Vis and Fluorescence Spectrophotometer.
- Crystal structure solution and refinement through SHELXL-97 Program for Crystal Structure Refinement, University of Gottingen, Germany, 1997.

  Competent in doing molecular modeling work at the level of density functional theory (DFT) and TD-DFT using Gaussian 09 and Gauss View, Computer proficiency: Chembiodraw, ORIGIN, SciFinder Scholar,

LIST OF PUBLICATIONS (Total IF: 160.484)

1. Remarkably Selective Naked-Eye Sensing of Phosphate Ions and Molecular Logic Gate Based on N-(4-Nitrophenyl)-Substituted Thiazol-2-amines, Arindam Mukhopadhyay,* Karishma Tiwari,* Krishna J. Mandal, Honnappa Nagarajaiah and Jarugu Narasimh Moorthy* ChemistrySelect, slct.202401331 (Submitted)

2. Interfacial synthesis of large-area ultrathin polyimine nanofilms as molecular separation membrane, Karishma Tiwari; Solagna Modak; Pulak Sarkar; Santanu Ray; Vasista Adupa; K. Anki Reddy; Sumit Kumar Pramanik; Amitava Das; Santanu Karan, *iScience*, 2022, 25, 104027 (IF = 6.107,Q1).

3. The Colorimetric Signaling of Water Content by a Deprotonated Schiff Base in some Aprotic Organic Solvents, **Karishma Tiwari**, Monika Mishra, Saumya Singh and Vinod P. Singh, *ChemistrySelect*, 2020, 5, 9547 –9553 (IF = 2.307,Q2).

4. Large Area Self-Assembled Ultrathin Polyimine Nanofilms Formed at the Liquid-Liquid Interface Used for Molecular Separation, **Karishma Tiwari**, Pulak Sarkar, Solagna Modak, Harwinder Singh, Sumit Kumar Pramanik, Santanu Karan, and Amitava Das, *Advanced Materials* 2020, 32, 1905621 (IF = 29.4., Q1).

5. Small Molecule as Fluorescent Probes for Monitoring Intracellular Enzymatic Transformations, Harwinder Singh, **Karishma Tiwari**, Rajeshwari Tiwari, Sumit Kumar Pramanik and Amitava Das, *Chemical Reviews*, 2019, 119, 22, 11718-11760 (IF = 62.1,Q1).

6. Two photon excitable graphene quantum dots for structured illumination microscopy and imaging applications: lysosome specificity and tissue-dependent imaging, Harwinder Singh, Sreejesh Sreedharan, **Karishma Tiwari**, Nicola H Green, Carl Smythe, Sumit Kumar Pramanik, Jim A Thomas, Amitava Das, *Chem. Commun*. **2019**, 55, 521-524 (IF = 6.222,Q1).

7. Mitochondria Targeting Non-isocyanate-based Polyurethane Nanocapsules for Enzyme-Triggered Drug Release, S. K. Pramanik, S. Sreedharan, H. Singh, M. Khan, **Karishma Tiwari**, A. Shiras, C. G. W. Smythe, J. A. Thomas, and A. Das, *Bioconjugate Chem*., **2018** Bioconjugate chemistry 29 (11), 3532-3543 (IF = 4.7,Q1).

8. An azine based sensor for selective detection of Cu^{2+} ions and its copper complex for sensing of phosphate ions in physiological conditions and in living cells, **Karishma Tiwari**, S. Kumar, V. Kumar, J. Kaur, S. Arora, R. K. Mahajan, *Spectrochim. Acta A*, **2018**, *191*, 16–26 (IF = 4.478, Q2).

9. Versatile coordination behaviour of a multi-dentate Schiff base with manganese(II), copper(II) and zinc(II) ions and their corrosion inhibition study, M. Mishra, **Karishma Tiwari**, A. K. Singh and V. P. Singh, *Inorg. Chim. Acta*, **2015**, *425*, 36-45 (IF= 2.304, Q2).

10. Synthesis, characterization and corrosion inhibition property of nickel(II) and copper(II) complexes with some acylhydrazine

    Schiff bases, M. Mishra, **Karishma Tiwari**, P. Mourya, M. M. Singh, V. P. Singh, *Polyhedron*, **2015**, *89*, 29–38 (IF = 2.68, Q3).

11. Synthesis, structural investigations and corrosion inhibition studies on Mn(II), Co(II), Ni(II), Cu(II) and Zn(II) complexes with 2-amino-benzoic acid (phenyl-pyridin-2-yl-methylene)-hydrazide, P. Singh, D. P. Singh, **Karishma Tiwari**, M. Mishra, A. K. Singh and V. P. Singh, *RSC Advances*, **2015**, *5*, 45217-4523 (IF = 3.9,Q2).

12. 8(E)-4-[{2-(2,4-dinitrophenyl)hydrazono}benzene-1,3-diol] as a solvatochromic Schiff base and chromogenic signaling of water content by its deprotonated form in acetonitrile, **Karishma Tiwari**, M. Mishra and V. P. Singh, *RSC Advances*, **2014**, *4*, 27556–27564 (IF = 3.9, Q2).

13. Synthesis, structural investigation, DNA and protein binding study of some 3d-metal complexes with N-(phenyl-pyridin-2-yl- methylene)-thiophene-2-carboxylic acid hydrazide, M. Mishra, **Karishma Tiwari**, S. Shukla, R. Mishra, and V. P. Singh, *Spectrochim. Acta A*, **2014**, *132*, 452–464 (IF = 4.478, Q2).

14. Synthesis, structural and corrosion inhibition studies on Mn(II), Cu(II) and Zn(II) complexes with a Schiff base derived from 2- hydroxypropiophenone, M. Mishra, **Karishma Tiwari**, A. K. Singh, and V. P. Singh, *Polyhedron*, **2014**, *77*, 57–65 (IF = 2.68).

15. Synthesis, spectroscopic (electronic, IR, NMR and ESR) and theoretical studies of transition metal complexes with some unsymmetrical Schiff bases, V. P. Singh, S. Singh, D. P. Singh, **Karishma Tiwari**, M. Mishra, *J. Mol. Struct*., **2014** , *1058*, 71– 78 (IF = 3.841,Q2).

16. 5-[{(2-Hydroxynaphthalen-1-yl)methylene}amino]pyrmidine-2,4(1H,3H)-dione as Al^{3+} selective colorimetric and fluorescent chemosensor, V. P. Singh, **Karishma Tiwari**, M. Mishra, N. Srivastava, S. Saha, *Sens. Actuator B-Chem.*, **2013**, *182*, 546–554 (IF = 8.82,Q1).

17. A highly sensitive and selective fluorescent sensor for Al^{3+} ions based on thiophene-2-carboxylic acid hydrazide Schiff base,

Karishma Tiwari, M. Mishra and V. P. Singh, *RSC Advances.*, **2013**, *3*, 12124–12132 (IF = 3.9).

18. Structural investigations on bis-(semicarbazido)dihydrazine nickel(II) complex synthesized by using uracil and hydrazine hydrate, V. P. Singh, M. Mishra, **Karishma Tiwari**, *Inorg. Chim. Acta*, **2013**, *398*, 89–97 (IF =2.304).

19. Synthesis, spectral and single crystal X-ray diffraction studies on Co(II), Ni(II), Cu(II) and Zn(II) complexes with o-amino acetophenone benzoyl hydrazone, V. P. Singh, S. Singh, D. P. Singh, P. Singh, **Karishma Tiwari**, M. Mishra, R. J. Butcher, *Polyhedron*, **2013**, *56*, 71–81(IF = 2.68).

20. Synthesis, spectral and thermal studies of some polymeric mixed ligand uracil–hydrazide complexes with transition metal ions,

    V. P. Singh, **Karishma Tiwari,** and M. Mishra, *Des Monomers Polym.*, **2012**, 1–9 (IF = 3.683,Q2).

LIST OF PATENTS

Sl No.	Title	Country	Filed on (Date)	(Date) Granted	Name of other inventors
1	A compound for the detection of 2,4,6-trinitrophenol and its method for preparation thereof	India	IN201811032672	31/08/2018	Harwinder Singh, Karishma Tiwari, Sumit Kumar Pramanik and Amitava Das
2	A compound for live imaging of lysosome and process for preparation thereof	India	IN201811046957	12/12/2018	Rajeshwari Tiwari, Karishma Tiwari, Sumit Kumar Pramanik and Amitava Das

CONFERENCES

1. "Ferrocene Derived Two New Schiff Bases: Synthesis, Structural, Electrochemical and Corrosion Inhibition Properties, Karishma Tiwari, M. Mishra and V. P. Singh, *17th CRSI National Symposium In Chemistry*, CSIR-NCL, Pune, India, February 05-08, 2015.

2. "Synthesis, spectral and thermal studies of some polymeric mixed ligand uracil–hydrazide complexes with transition metal ions" Karishma Tiwari, M. Mishra and V. P. Singh, *National Symposium on Chemistry and Environment* (NSCE-2013), March, BHU, Varanasi, 15-16, 2013.

3. "Structural investigations on bis-(semicarbazido)dihydrazine nickel(II) complex synthesized by using uracil and hydrazine hydrate" Karishma Tiwari, M. Mishra and V. P. Singh, 15*th CRSI National Symposium In Chemistry*, BHU, Varanasi, India, Jan. 31st – Feb.03, 2013.

4. Attended the 7th RSC-CRSI Symposium in Chemistry, 31st January 2013.

5. "Structural studies on Co(II), Ni(II), Cu(II) and Zn(II) complexes with 2-acetyl thiophene benzoyl

hydrazone, Karishma Tiwari,

M. Mishra and V. P. Singh, *14th CRSI National Symposium In Chemistry*, CSIR-NIIST, Thiruvananthapuram, India, February 03-05, 2012.

6. Attended the Science Academies Lecture workshop, Molecular Spectroscopy: Theory, Instrumentation and Applications, Department of Chemistry, BHU, Varanasi March 02-03 2012.

7. "Structural studies on Co(II), Ni(II), Cu(II) and Zn(II) complexes with 2-acetyl thiophene benzoyl hydrazone" Karishma Tiwari,

   M. Mishra, and V. P. Singh 13th*CRSI National Symposium In Chemistry*, NISER, Bhubaneswar, February 04-06, 2011.

8. Attended the *International Conference on Chemistry: Frontiers and Challenges*, Department of Chemistry, AMU, Aligarh, March 05-06, 2011.

9. Attended the "*National Symposium on Emerging Trends in Chemistry"*, *Department of Chemistry*, BHU, Varanasi; 11-12 February 2011.

10. Attended the "*National Symposium-cum-Workshop on Single Crystal XRD*", *Department of Chemistry*, BHU, Varanasi; 08-09 March 2010.

REFERENCES

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