

## Dr. Abhineet Verma

30/03/1992

DEPARTMENT OF CHEMISRTY.  
INSTITUTE OF SCIENCE –  
BANARAS HINDU UNIVERSITY



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## OBJECTIVE

Highly motivated in research, my primary objective is to be a positive force and assist others.

## SKILLS

Have a good knowledge of computing skills: M.S. Office and other computer languages like (HTML; JAVA; C++; FORTRAN; DFT; TD-DFT)

## EXPERIENCE

**Assistant Professor:** MNIT Jaipur 18/12/2023 to till date

**Project Assistant • DST • 28 Nov 2017 to 15 Nov 2018**

DST sponsored project (ref. No. SS/DST-YSS/16-18/STAFF/02) entitled as “Exploring Schiff Base/Non-Schiff Base Transition and/or Inner Transition Metal Complexes as *Molecular Nano Magnets* (P-07/607)” under *Dr. Sailaja S. Sunkari*, MMV, Banaras Hindu University, Varanasi.

**Project • CARS-DMSRDE July 2016 to Oct., 2017**

**M. Sc. Project work • BHU • 2015 (Nov.) to (June) 2016**

Probing the Heterogeneity of Ionic Liquids in Solution Through Phenol-Water Phase Behavior.

Published in **ChemistrySelect [Wiley]**

**Skill development Program • BHU • 2012 to 2014**

Academique, Employability Skill Development Program, An Interdisciplinary Discussion Group.

## PH.D.

**Ph.D. in Chemistry • Thesis Title:** “Towards Modulation of NIR Emission: Design, Synthesis, Structural and Photophysical Studies of Lanthanide Complexes.”

## AWARDS

**CSIR – JRF and SRF (2018)**

**IoE-Teach for BHU: 2022.**

**Editorial board member:** American Journal of Applied Chemistry



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## Academic / Professional record

From*	To*	Position*	Institution, City*	Country*	Degrees / Remarks* <sup>3</sup>
12.2023	Till date	Assistant Professor	MNIT Jaipur	India	Research and Teaching to UG and PG students
07.2023	12.2023	Assistant Professor	NIMS University, Jaipur	India	Research and Teaching to UG and PG students
07.2022	06.2023	Teacher	Banaras Hindu University, Varanasi	India	Teaching to UG and PG Students
01.2019	08.2022	PhD scholar	Banaras Hindu University, Varanasi	India	PhD research work (100 %)
11.2017	11.2018	Research Assistant	Banaras Hindu University, Varanasi	India	RA research work(100 %)
10.2016	10.2017	Project Assistant	Banaras Hindu University, Varanasi	India	Research Work (100 %)
06.2014	09.2016	Student	Banaras Hindu University, Varanasi	India	M.Sc. research (50%)
05.2011	05.2014	Student	Banaras Hindu University, Varanasi	India	B.Sc.
06.2009	05.2011	Student	St. Mary's Orthodox School, Kanpur	India	Intermediate
06.2007	05.2009	Student	St. Mary's Orthodox School, Kanpur	India	High School

### Skills

- (1) UV-Visible (also Reflectance) and fluorescence spectroscopy (solid and solution).
- (2) Quantum Yield (Integrated sphere).
- (3) Single Crystal X-Ray Diffraction (Data collection, Solving and Refinement).
- (4) Fluorescence and lifetime studies.
- (5) Raman Spectroscopy.
- (6) Theoretical studies (DFT & TD-DFT).
- (7) Single molecular magnetic studies.
- (8) XPS and XRF.

### Course Taught in Teach for BHU Program:

- (a) Inorganic Chemistry.
- (b) Physical Chemistry: Spectroscopy (Fluorescence, Raman and Lifetime).

### Publications:

- (1) First Lanthanide Polymer Chain Exhibiting NIR luminescence and Antiferromagnetism - Pr(dipicH)(dipic)(OH<sub>2</sub>)<sub>2</sub>·4H<sub>2</sub>O. [Abhineet Verma](#), K. Raghuvanshi, a E. G. Jayasree, M. Wakizaka, M. Yamashita, S. S. Sunkari. (Under Review - *Inorganic Chemistry Frontiers*).
- (2) Slow Magnetic Relaxation in a Ferromagnetic CuII Chain Complex, Induced by Phonon Bottleneck Effect. S. S Sunkari, [Abhineet Verma](#), O. Pandey, S. Gupta, M. Wakizaka, S. Takaishi, H. Kawasoko, T. Fukumura, M. Yamashita. *Dalton Trans.* 52, **2023**, 12604-12607.
- (3) Counterion Influenced Metal-Organic Frameworks of Cyclam with Cu<sup>II</sup>. [Abhineet Verma](#), N. Bhuvanesh, J. Reibenspies, S. S. Sunkari. *ChemistrySelect*, 8(29), **2023**, e202301810.

- (4) Unusual Effect of Minor Change in Ligand Substitution in Modulation of NIR Emission: A Case Study with [L-Zn<sup>II</sup>-Ln<sup>III</sup>] Complexes. [Abhineet Verma](#), Daichi Enomoto, Koichi Iwata, Satyen Saha. *J. Phys. Chem. B* 127, **2023**, 4154–4164.
- (5) From ACQ to AIE: The CN( $\pi$ )-( $\pi$ )Ar Interaction Driven Structural and Photophysical Properties of Aromatic Ring Conjugated Novel Diaminomaleonitrile Derivatives. [Abhineet Verma](#), Monika, M. K Tiwar; Navin Subba; S. Saha. *J. Photochem. Photobiol. A: Chem*, 433, **2022**, 114130.
- (6) Confocal Raman Microscopic Evidence for Cyclic Water Pentamer, at High Temperatures in a Supramolecular Host of [Cu(cyclam)(N<sub>3</sub>)<sub>2</sub>] $\cdot$ 4H<sub>2</sub>O. [Abhineet Verma](#), N. Bhuvanesh; J. Reibenspies; S. Saha; S. S. Sunkari, *Spectrochim. Acta A*, 274(8), **2022**, 121121.
- (7) Introductory Chapter: Magnesium - A Perspective", in Current Trends in Magnesium (Mg) Research. London, United Kingdom: IntechOpen, [Abhineet Verma](#), S. S. Sunkari. *IntechOpen*, **2022**, 1-9.
- (8) Structurally Characterised New Twisted Conformer for Cyclen, Controlled by Metal ion Complexation as Seen in Ni<sup>II</sup> and Cu<sup>II</sup> Complexes with halides and pseudohalides. [Abhineet Verma](#), N. Bhuvanesh; J. Reibenspies; S. B. Tayade; A. Kumbhar; K. Bretosh, J-P Sutter; S. S. Sunkari. *CrysEngComm*. 24, **2022**, 119-131.
- (9) Ligand Influence Versus Electronic Configuration of d-Metal Ion in Determining the Fate of NIR Emission from Ln<sup>III</sup> Ions: a Case Study With Cu<sup>II</sup>, Ni<sup>II</sup> and Zn<sup>II</sup> Complexes. [Abhineet Verma](#), SK. Hossain; S. S. Sunkari; J. Reibenspies; S. Saha. *New J. Chem.*, 45, **2021**, 2696-2709.
- (10) Drastic influence of amide functionality and alkyl chain length dependent physical, thermal and structural properties of new pyridinium-amide cation based biodegradable room temperature ionic liquids. [Abhineet Verma](#), S. Verma; Monika, M. Mondal; N. E. Prasad; J. Srivastava; S. Singh; J. P. Verma; S. Saha. *J. Mol. Structure*, 1250, **2022**, 131679.
- (11) Probing the Heterogeneity of Ionic Liquids in Solution Through Phenol-Water Phase Behavior. [Abhineet Verma](#), J. Srivastava; N. E. Prasad; S. Saha. *ChemistrySelect*, 4, **2019**, 49-58.
- (12) Molecular Packing Dependent Solid-State Fluorescence Response of Supramolecular Metal-Organic Frameworks: Phenoxo-bridged Trinuclear Zn (II) Centered Schiff Base Complexes With Halides and Pseudohalides. [Abhineet Verma](#), S. Sunkari; N. Dwivedi; S. Saha. *Cryst. Growth Des.* 18(9), **2018**, 5628–5637.
- (13) Detection of Non-permitted Food Color Metanil Yellow in Turmeric – A Threat to the Public Health and Ayurvedic Drug Industry. [Abhineet Verma](#), S. Bhatt, S. Saha. *J. Ayurv.*, 6(2), **2022**, 134-139.
- (14) Multiple Magnetic Phases and Anomalous Hall Effect in Sb<sub>1.9</sub>Fe<sub>0.1</sub>Te<sub>2.85</sub>S<sub>0.15</sub> Topological Insulators. D. Pal, [Abhineet Verma](#), M. Alam, S. Dan, A. Kumar, S. M. Yusuf, S. Banik, S. Chakravarty, S. Saha, S. Patil, S. Chatterjee. *J. Phys. Chem. C*, 127(5), **2023**, 2508-2517.
- (15) Water in Ionic Liquids: Raman Spectroscopic Studies. S. Saha, [Abhineet Verma](#), K. Bandyopadhyay. *J. Raman Spectrosc.* 53, **2022**, 1-9.
- (16) Achieving AIE from ACQ in positional Isomeric triarylmethanes. S. Singh, [Abhineet Verma](#), S. Saha, *New J. Chem.* 46, **2022**, 7212-7222.
- (17) Recent Development of Carbenes: Synthesis, Structure, Photophysical Properties and Applications. A. Manna, [Abhineet Verma](#), S. K. Panja; S. Saha. **2022**. *IntechOpen* (10.5772/intechopen.101413) (Book Chapter).

- (18) Development of robust folded scaffold as fluorescent materials using butylidene linked pyridazinone based systems via aromatic  $\pi\cdots\pi$  Stacking Interactions. P. Yadav, [Abhineet Verma](#), V. P. Sharma; R. Singh; T. Yadav; R. Kumar; S. Pal; H. Gupta; S. Saha, A. K. Tewari. *New J. Chem.*, 46, 2022. 5830-5838.
- (19) The enthralling effect of Packing on the light emission of pyridazinone based luminophore: Crystallographic, electronic absorption and computational studies. P. Yadav, [Abhineet Verma](#), P. Sonker, V. P. Sharma, A. Kumar, T. Yadav, S. Pal, S. Saha, A. K. Tewari. *J. Mol. Struct.* 1267, 2022, 133513.
- (20) Important role of the position of a functional group in isomers for Photophysical and Antibacterial Properties: A case study with Naphthalenemalonitrile Positional Isomers. M. Das; [Abhineet Verma](#), S. Verma; N. Pandey; R. Tilak; S. Saha. *New J. Chem.*, 44, 2020, 14116-14128.
- (21) Synthesis, structural, thermal, photophysical and vibrational spectroscopic studies of potassium-polynitrile based 3D coordination polymer M. K. Tiwari; [Abhineet Verma](#), Monika; A. Raj; S. Saha. *Spectrochim. Acta A*, 246, 5, 2020, 118958.
- (22) Metal free highly efficient C-N bond formation through 1,6-addition: Synthesis and photophysical studies of diaryl methyl amino acid esters (DMAAEs). D. Roy, [Abhineet Verma](#), A. Benerjee, S. Saha, and Gautam Panda. *New J. Chem.*, 44, 2020, 14859-14864.
- (23) Modulation of Weak Interactions in Structural Isomers: Positional Isomeric Effects on Crystal Packing and Physical Properties and Solid-State Thin-Film Fabrication. Monika; [Abhineet Verma](#), M. K. Tiwari; B. Show; S. Saha. *ACS Omega* 5, 1, 2020, 448-459.
- (24) Ionic Liquids as High-Performance Lubricant: A New Alternative to Oil. S. Saha; [Abhineet Verma](#), S. K. Panja. *Int. J. Petrochem. Res.* 2019 (Conference paper- Kuala Lumpur, Malaysia).
- (25) Template Directed Synthesis of Half Condensed Schiff base Complexes of Cu(II) and Co(III) : Structural and Magnetic Studies. P. Pandey; [Abhineet Verma](#), K. Bretosh; J.-P. Sutter; S. S. Sunkari. *Polyhedron*, 164, 2019, 80-89.
- (26) Conformationally Restricted Triarylmethanes: Synthesis, Photophysical Studies and Applications. S. Mondal; [Abhineet Verma](#), S. Saha, *Eur. J Org. Chem.*, 5, 2019, 2019, 864-894.
- (27) Asparagus racemosus root-derived carbon nanodots as a nano-probe for biomedical applications. G. G. Naik, T. Minocha, [Abhineet Verma](#), S. K. Yadav, S. Saha, A. K. Agrawal, S. Singh, A. N. Sahu. *J. Mater. Sci.* 578, 2022, 20380-20401.
- (28) Biocompatible thermoresponsive N-isopropyl- N-(3-(isopropylamino)-3-oxopropyl) acrylamide- based random copolymer: synthesis and studies of its composition dependent properties and anticancer drug delivery efficiency. S. Mondal, A. Kumari, K. Mitra, [Abhineet Verma](#), S. Saha, B. Maiti, R. Singh, P. P. Manna, P. Maiti, H. Watanabe, M. Kamigaito, B. Ray. *J. Mater. Chem. B* 10, 2022, 8462-8477.
- (29) One-Pot Access to Tetrasubstituted 2-Aminothiophenes via Regio- and Chemoselective Domino Reactions of Dithioesters with Fumaronitrile at Room Temperature. A. K. Yadav, V. Kumar, P. Pali, S. Ray, [Abhineet Verma](#), M. S. Singh, *Adv. Synth. Catal.* 365, 2023, 1-7.
- (30) Anharmonic phonon interactions and Kondo effect in FeSe/Sb<sub>2</sub>Te<sub>3</sub>/FeSe hetero-structure: Proximity effect between ferromagnetic chalcogenide and di-chalcogenide. L. Ghosh, M. Alam, M. Singh, S. Dixit, S. V. Kumar, [Abhineet Verma](#), P. Shahi, Y. Uwatoko, S. Saha, A. Tiwari, A. Tripathi, S. Chatterjee. *Nanoscale*, 14, 2022, 10889-10902.

- (31) Lattice Dynamics of Bi<sub>1-x</sub>Dy<sub>x</sub>Te<sub>3</sub> Topological Insulator L. Ghosh; V. K. Gangwar; M. Singh; S. V. Kumar; S. Dixit; [Abhineet Verma](#), D. K. Sharma; S. Kumar; S. Saha; A. K. Ghosh; S. Chatterjee. *Physica B: Phy. Conden. Matt.* **2022**, 640, 414050.
- (32) Unraveling the obscure electronic transition and tuning of Fermi level in Cu substituted Bi<sub>2</sub>Te<sub>3</sub> compound. S. Dan, S. Kumar, S. Dan, D. Pal, S. Patil, [Abhineet Verma](#), S. Saha; K. Shimada; S. Chatterjee. *Appl. Phys. Lett.* **120**, **2022**, 022105.
- (33) Defect induced ferromagnetic ordering and room temperature negative magnetoresistance in MoTeP. D. Pal; S. Kumar; P. Shahi; S. Dan; [Abhineet Verma](#), V.k. Gangwar; M. Singh; C. Sujoy; Y. Uwatoko; S. Saha; S. Patil; S. Chatterjee. *Sci. rep.*, **11**(1), **2021**, 88669-88678.
- (34) NIR Luminescent Heterodinuclear [Zn<sup>II</sup> Ln<sup>III</sup>] Complexes: Synthesis, Crystal Structures and Photophysical properties; N. Dwivedi; S. K. Panja; [Abhineet Verma](#), T. Takayal; K. Iwata; S. S. Sunkari, [S. Saha](#). *J. Luminescence*; **192**, **2017**, 156-165.
- (35) Giant dielectric constant, magnetocaloric effect and spin-phonon coupling in EuTbCoMnO<sub>6</sub> semiconductor. M. Alam, L. Ghosh, S. Dixit, M. Jena, S. Kumari, S. V. Kumar, D. Kumar, [Abhineet Verma](#), A.K. Ghosh, S. Saha, R.J. Choudhary, S. Chatterjee. *Phys. B: Cond. Matt.*, **665**, **2023**, 415043.

## WORKSHOPS/ CONFERENCES

- International Conference on Frontier Areas of Science and Technology (**ICFAST-2023**).
- Celebration of the 99th Foundation Day of the Indian Chemical Society. First prize in Oral Presentation “Modulation of NIR Emission : Role of d-block in Determining the Fate of NIR Emission from Ln(III) Ions”.
- Distinguished Speaker in Workshop on “Advanced Skills in Research and Protection of IPR” at AMITY UNIVERSITY (Uttar Pradesh, India), 7 – 11<sup>th</sup> June 2021.
- National Level Webinar on “Recent Trends and Developments in Chemistry” Organized by Department of Chemistry, Kalna College, West Bengal.
- International Conference on Recent Advances at Interfaces of Physical and Life Sciences (RAIPLS), (**Awarded 1<sup>st</sup> position in Best Poster Presentation**) Department of Chemistry, **University of Rajasthan**, Jaipur, Jan 28-30, 2019.
- International Conference on Advancement in Science & technology (ICAST - 2018). During 3<sup>rd</sup> to 4<sup>th</sup> September, 2018 at Visva-Bharati, Santiniketan organized by Indian JSPS Alumni.
- National Workshop on “**Theory and Application of Single Crystal X-Ray Diffraction**”. Organized by SAIF during 8th to 10th November 2017 at IIT Madras.
- ‘Perovskite Nanocrystals: Photoluminescence and Charge Carrier Dynamics’ Dept. of Chemistry, School of Basic and Applied Sciences, **Adamas University**, dated 04.07.2020.
- Symposium on “Frontiers of Sciences (Present & Future): Physical, Chemical & Earth Sciences”, (**Awarded 1<sup>st</sup> Prize in Poster Presentation**) **Banaras Hindu University**, Varanasi, 8-12<sup>th</sup> March, 2019.
- ‘Insights on writing an impactful manuscript & navigating through peer review process’ Vemana Institute of Technology, Karamangala, Bengaluru – 560034, In association with **Royal Society of Chemistry**.
- SPINGER NATURE, Symposium on “Research Ethics and Scientific Publishing- **Where and How To Publish?**” Department of Molecular and Human Genetics **Banaras Hindu University**, Varanasi,
- Motivational Science Learning Camp, National Council of Science & Technology Communication, DST, Gov. of India, VICAS Allahabad in collaboration with **Banaras Hindu University**, Varanasi, dated Feb 27 to 3 March, 2017.
- Académique, Employability Skill Development Program, An Interdisciplinary Discussion Group, **Banaras Hindu University**, Varanasi,

- International E-Conference on “**Green Chemistry for Sustainable Development**” **June 25-26, 2020** Department of Chemistry Janardan Rai Nagar Rajasthan Vidapeeth & Royal Society of Chemistry, London (WIS).