

## CURRICULUM VITAE

**Dr. NARENDRA KUMAR VERMA**

**Assistant Professor (Academic Level - 11)**

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**Courses:** Inorganic Chemistry,  
Organic Chemistry,  
Organometallic Chemistry,  
Materials Science.

### **Research interests:**

- Structure Property Correlations in Materials
- Synthesis of bulk and Nano-crystalline perovskite Piezoceramics
- Investigation of structural and Dielectric properties
- Phosphor Materials
- Solid oxide fuel cell Materials
- Photovoltaic Solar Cell Materials

### **Education**

University	Degree	Year of passing
Indian Institute of Technology (BHU) Varanasi.	Ph.D	2019
D.A-V. College Kanpur, C.S.J.M. University Kanpur.	M.Sc.	2009
S. K. B. B. Govt. Degree College Harakh Barabanki.	B.Sc.	2004

### **Academic Awards:**

'Senior Research Fellow Award' by 'CSIR-UGC, India' in 2012

'Junior Research Fellow Award' by 'CSIR-UGC, India' in 2014

Best Poster Award by GDC Memorial College, Bahal, Haryana, India 201

**Research Projects: Title-** New Insights into the Chemistry of Dioxomolybdenum (VI) Complexes with Macrocyclic Ligands.

From: 2020 To: 2023

Amount: 3 Lakh

**Funded by:** Department of Higher Education Uttar Pradesh.

**Overview:** Co - PI

### **Membership of Scientific Bodies:**

1. Lifetime member of “Indian Crystallographic Association” since July 2017.

### **Recent Publications**

1. Discovery of ordered tetragonal and cubic phases in the morphotropic phase boundary region of  $(1-x)\text{Bi}(\text{Mg}_{3/4}\text{W}_{1/4})\text{O}_3-x\text{PbTiO}_3$  piezoceramics; **Narendra Kumar Verma** and A.K. Singh; **Ceramics International**, 45, 17395–17408 (2019), doi.org/10.1016/j.ceramint.2019.05.300.
2. Energy transfer dynamics and time resolved photoluminescence in  $\text{BaWO}_4:\text{Eu}^{3+}$  nanophosphors synthesized by mechanical activation; P. Jena, S. K. Gupta, **Narendra Kumar Verma**, R.M. Kadam and A.K. Singh; **New Journal of Chemistry**, 41(17), 8947-8958 (2017), DOI.10.1039/c7nj01249g.
3. Synthesis and Structural Investigations on Multiferroic  $\text{Ba}_{1-x}\text{Sr}_x\text{MnO}_3$  Perovskite Manganites; D. Kumar, C.B. Singh, **Narendra Kumar Verma** and A.K. Singh; **Ferroelectrics** **518(1)**, 191-195 (2017), doi.org/10.1080/00150193.2017.1360663.
4. Synthesis of  $\alpha\text{-MoO}_3$  nanofibers for enhanced field-emission properties; S.K.S. Patel, K. Dewangan, S.K. Srivastav, **Narendra Kumar Verma**, P. Jena, A.K. Singh and N.S. Gajbhiye; **Adv. Materials Letters**, 9(8), 585-589, (2018), DOI:10.5185/amlett.2018.2022.
5. Synthesis and Band-gap tuning of (Co, Bi) doped  $\text{PbTiO}_3$  for Photoferroelectrics Applications. C.B. Singh, **Narendra Kumar Verma** and A.K. Singh; **Integrated Ferroelectrics**, 194(1), 145-151 (2018), doi.org/10.1080/10584587.2018.1514886.
6. Structural and Dielectric Properties of  $\text{Y}^{3+}$  Doped  $\text{SrTiO}_3$ : A Novel Anode materials for Solid oxide Fuel cell. Narendra Kumar Verma\*, C. B. Singh, D. Kumar, U. S. Patel and A, K. Singh; **Ferroelectrics**, (2022), doi.org/10.1080/00150193.2023.2271139.
7. Development of Low band gap layered  $\text{Bi}_6\text{FeNiTi}_3\text{O}_{18}$  Aurivillius Phase ceramics for Ferroelectric memory and Cathode for lithium-Oxygen batteries applications; C.B. Singh, A.K. Singh and **Narendra Kumar Verma**, **J. of Materials Science: Materials Electronics**, 35:433 (2024). doi.org/10.1007/s10854-024-12215-1.

8. Synthesis and Crystal Structure-Activity Studies and Possible Therapeutic application of diammine Conjugated Furl Schiff Base as Antibacterial Agent. S. Katiyar, D.P. Rao, Narendra Kumar Verma, A.K. Gautam, A. Verma C.P. Singh and G.P. Gupta, **Chemistry Africa**, 1-12, (2024) doi.org/10.1007/s42250-023-00868-0.
9. Dioxomolybdenum (VI) Compounds of Macrocyclic Schiff base Ligands: Preparation, Characterization and Antibacterial activity; S. Katiyar, D. P. Rao, Narendra Kumar Verma, A.K. Gautam, A. Verma, C. P. Singh and Y. Gautam, **Oriental Journal of Chemistry**, 40 (1), 28-39, doi.org/10.13005/ojc/400104.
10. Effect of Grain Size on Structural and Dielectric Properties of Barium Titanate Piezoceramics Synthesized by High Energy Ball Mill; **Narendra Kumar Verma**, S.K.S. Patel, D. Kumar, C.B. Singh, and **A.K. Singh**; AIP Conf. Proc. **1953**, 050075-5, (2018), doi: 10.1063/1.5032730.
11. Crystallite Size and Strain Analysis of Nanocrystalline  $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$  Perovskite by Williamson-Hall Plot Method; D. Kumar, **Narendra Kumar Verma**, C.B. Singh and A.K. Singh; AIP Conf. Proc. **1942**, 050024-4, (2018),
12. Synthesis and Structural Characterizations on semiconducting  $0.05\text{Ba}(\text{Ca}_{1/3}\text{Sb}_{2/3})\text{O}_3-0.95\text{PbTiO}_3$  Perovskites, C.B. Singh, D. Kumar, Prashant, **Narendra Kumar Verma**, and A.K. Singh; AIP Conf. Proc. **1953**, 050041-4, (2018). doi.org/10.1063/1.5032696.
13. Evolution of Structural Characteristics of  $\text{Nd}_{0.7}\text{Ba}_{0.3}\text{MnO}_3$  Perovskite Manganite as a Function of Crystallite Size; D. Kumar, **Narendra Kumar Verma**, C.B. Singh and A.K. Singh; AIP Conf. Proc. **2009**, 020013-4, (2018), doi.org/10.1063/1.5052082.
14. Synthesis and Dielectric Characterization of  $\text{BaZrNb}_2\text{O}_8$  High Temperature Piezoelectric ceramics; **Narendra Kumar Verma**, G. Kamde, D. Kumar, C.B. Singh and A.K. Singh; AIP Conf. Proc. 2115, 030578, (2019), doi.org/10.1063/1.5113417.
15. Structural, Dielectric, Semiconducting and Optical Properties of High-Energy Ball Milled  $\text{YFeO}_3$  Nano-particles; C. B. Singh, D. Kumar, **Narendra Kumar Verma** and A. K. Singh; AIP Conf. Proc. 2115, 030619, (2019). doi.org/10.1063/1.5113458.
16. Estimation of Lattice Strain and Optical Properties of Scheelite-Type  $\text{AWO}_4$  (A = Ca, Sr, Ba) Nanocrystalline Materials Synthesized by Mechanical Activation; P. Jena, D. Kumar, **Narendra Kumar Verma** and A.K. Singh; AIP Conf. Proc. 2115, 030199, (2019). doi.org/10.1063/1.5113038.
17. Optimization of synthesis conditions for  $(1-x)\text{Bi}(\text{Mg}_{3/4}\text{W}_{1/4})\text{O}_3-x\text{PbTiO}_3$  Piezoceramics; **Narendra Kumar Verma** and A.K. Singh; AIP Conf. Proc. 2142, 030007, (2019). doi.org/10.1063/1.5122335.

## Conferences/Workshops/Symposiums/OIP:

1. **“15th National Symposium in Chemistry”** Jan 02-05, 2013 organized by Department of Chemistry, Faculty of Science, Banaras Hindu University, Varanasi, India.
2. **“7<sup>th</sup> RSC-CRSI Symposium in Chemistry”** Jan 01-05, 2013 organized by Department of Chemistry, Faculty of Science, Banaras Hindu University, Varanasi, India.
3. **“International Conference on Multifunctional Materials for Future Applications”** October 27-29, 2015 organized by Department of Chemistry, Indian Institute of Technology (BHU) Varanasi, India.
4. **“International Conference on Technologically Advanced Materials & Asian Meeting on Ferro-electricity”** November 07-10, 2016 organized by Department of Physics, University of Delhi, India.
5. **International Conference on Frontiers At the Chemistry- Allied Sciences Interface** July 22-23, 2017 organized by Department of Chemistry, University of Rajasthan, Jaipur, India.
6. **“2<sup>nd</sup> International Conference on Condensed Matter and Applied Physics”** November 24-25, 2017 organized by Govt. Engineering College, Bikaner, Rajasthan, India.
7. **“45<sup>th</sup> National Seminar on Crystallography”** July 09-12, 2017 organized by School of Materials science and Technology, IIT(BHU) Varanasi, India.
8. **“National Conference on Advanced Materials and Nanotechnology”** March 15-17, 2018 organized by Jaypee Institute of Information Technology, Noida, India.
9. **63<sup>rd</sup> DAE Solid State Physics Symposium”** December 18-22, 2018 organized by Bhabha Atomic Research Centre, Mumbai, India.
10. **GIAN: “Nano-Chemistry: From Pre-organized Molecular Architectures of Functional Materials.”** December 19-23 2016 organized by Department of Chemistry, IIT (BHU) Varanasi, India.
11. QIP Short term course on **“Geometrical and Mathematical Crystallography with Applications to Structural Studies”** February 14-19, 2017 organized by School of Materials science and Technology, IIT (BHU) Varanasi, India.
12. **Institute day celebration** during April 26-27, 2016 organized by IIT(BHU) Varanasi, India.
13. **Institute day celebration** during February 25-26, 2017 organized by IIT (BHU) Varanasi, India.
14. **27<sup>th</sup> District Level National Children’s Science Congress-2019** NCSTC/DST Organized by OmkareshwarSaraswatiVidyaNiketan Inter College Kanpur Nagar, India.

15. **“International Conference on Advances in Basics Sciences”** February 7-9, 2019  
Organized by GDC Memorial College, Bahal, District Bhiwani (Haryana), India.
16. **“National Seminar on Recent Advanced techniques in analytical Chemistry”**  
January 16-17, 2020 organized by Department of Chemistry , Dayanand Girls (PG)  
College Kanpur, India
17. **“47<sup>th</sup> National Seminar on Crystallography”** June 19-22, 2019 organized by  
Department of Atomic Energy, Bhabha Atomic Research Center (BARC), Mumbai,  
India.
18. **“National Seminar on Food Chemistry Processed Food & Toxicology”**, September  
25-26, 2019 organized by Department of Chemistry, DAV (PG) College Kanpur, India.
19. **National Conference on Science & Technology :Rural Development”** 3-4  
December 2019, organized by In Collaboration with CSJM University, DAV College  
& DGPG College, Kanpur Polymer Society of India.
20. **“National Seminar on Application of Elements of Periodic Table in Natural  
Sciences”** November 14-15, 2019 organized by Christ Church College Kanpur, India.
21. **“National Seminar on Waste Management: Role of Chemistry”** January 22-23,  
2020 organized by Department of Chemistry, DAV (PG) College Kanpur, India.
22. **„National Seminar on Ferroelectrics and Dielectrics”** December 17-19,  
2022 organized by Department of Physics School of Advanced Sciences VIT-AP  
University Beside AP Secretariat, Amaravati, Andhra Pradesh, India.