

CURRICULUM VITAE



Dr. Nishkala K. R.

M.Sc, PhD

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Interested Field: Magnetism, Multiferroics, Magnetoelectrics, Iron oxide materials, Dielectrics, and Ferroelctrics

Professional Summary:

I'm an enthusiastic physicist with a strong research background in structural, chemical, magnetic, dielectric, ferroelectric, and magnetoelectric properties of the material. Proficient in advanced data analysis techniques and programming (C++, Arduino). Skilled in working with collaborations, presenting research findings at conferences, and writing research articles. Passionate about contributing cutting-edge and innovative experiments in Physics and serving humankind. Further interested in teaching physics to young minds.

Educational Details:

Course	School/College	Year of Joining and Passing	% of Marks
PhD (Physics)	Manipal Institute of Technology, Manipal	27/06/2019 – 06/09/2025	completed
M.Sc. (Physics)	Mangalore University, Mangalore	2015(Aug)-2017(May)	79.16
B.Sc. (PCM)	S D M College Ujire	2011(June)-2014(May)	84

PhD Title: Investigation of Structural, Magnetic, Dielectric and Multiferroic Properties of Rare Earth Doped M-type Barium hexaferrites

Skills and Expertise:

- **Material Synthesis: Solid-state synthesis, Ball-milling, Hydrothermal synthesis**
- **Data Analysis: (a) Surface analysis Techniques:** X-ray Photoelectron Spectroscopy(XPS), FESEM, Raman Spectroscopy. **(b) Other material characterization and spectroscopic techniques:** X-ray diffraction(including refinement), Mossbauer spectroscopy, Dielectric/Impedance spectroscopy, Ferroelectric P-E loop measurements, Magnetic and Magnetoelectric (ME) property measurements.
- **Hands-on skills:** Electrical measurements(I-V and Hall effect), Dielectric spectroscopy
- **Programming skills:** C++ and Ardino

- **Software and Computational skills:** Origin Pro, FullProf Suite, MossA, EISSA, XPS Peakfit 4.1
- **Languages Known:** Kannada, English, Hindi, Sanskrit, and Tulu.

Research and Professional Experience:

- **'Assistant Professor'** (02/09/2024-present), *Poorna Prajna College(Autonomous), Udupi, India*
 - Worked as Co-ordinator of Poornaprajna Amature Astronomer's Club(PAAC)
 - Guided/Co-guided 3 students for their B.Sc. research project along with teaching duties.
- **'Research Scholar'** (*T.M.A. Pai fellow*), Dept. of Physics, Manipal Institute of Technology, Manipal Academy of Higher Education(Jan 2019-Aug 2024)
 - **Worked on structural, magnetic, electrical/dielectric, ferroelectric, microwave absorption, and multiferroic properties of M-type hexaferrite.**
 - **contributed to analysis and editing of Raman spectroscopy of Bi³⁺ doped LSMO manganites.**
 - **Mentored and trained two students for their Master's project.**
- **Guest faculty**, Mangalore University, Mangalore(Oct-Dec 2018),
 - **Taught 'Quantum Mechanics' to M.Sc. Physics**
- **Technical Internships: LEOS- ISRO, Bangalore (June-July 2016)**
 - **studied "CPT (Coherent Population Trapping) based Atomic Clock" under the guidance of Dr.Prashanth C Upadya.**

Fellowships/Scholarships:

- T.M.A. Pai fellowship(PhD) – Manipal Academy of Higher Education, Manipal.
- C.V. Raman Scholarship (B.Sc) – state govt.
- National Talent Search Scholarship (High School)- State govt.

Key Publications:

1. **Nishkala, K. R., et.al.**(2024). Effect of sintering temperature on the structural, morphological, optical, and electrical properties of Ba_{1-x}La_xFe₁₂O₁₉. *Applied Physics A*, 130(8), 1-15.
2. **Nishkala, K. R., et.al** (2023). Investigations on structural, Mossbauer, dielectric, and ferroelectric properties of La-doped barium hexaferrite. *Physica B: Condensed Matter*, 664, 414954.
3. **Nishkala, K. R., et. al**(2023). Effect of La substitution on the structural and chemical properties of Barium hexaferrite via Mossbauer spectroscopy. *Hyperfine Interactions*, 244(1), 7.
4. **Co-authored:** Souza, A. D., Hussain, S., Rayaprol, S., **KR, N.**, Mishra, V., & Daivajna, M. D. (2025). Influence of Bi³⁺ substitution on spin-phonon coupling in La_{0.7}Sr_{0.3}MnO₃ Manganites: A Raman spectroscopy study. *Materials Research Bulletin*, 186, 113338.

Conference proceedings:

1. **Nishkala, K. R., Rao, R. R., Mutalik, S., Murari, M. S., & Daivajna, M. D.** (2022). Effect of milling duration on structural properties of polycrystalline bulk barium hexaferrite. *Materials Today: Proceedings*, 58, 631-637.
2. Subramanyam, G., **Rao, N. K., & Daivajna, M. D.** (2024). La³⁺-Induced band-gap modifications in barium hexaferrite: an investigation of the structural, optical, and dielectric properties. *Engineering Proceedings*, 55(1), 94.

Key Conferences/ workshops:

1. **Best Poster:** on *"Investigations On The Structural, Magnetic, and Dielectric Properties of Pr Substituted Barium Hexaferrites"* at the 11th National Conference on 'Condensed Matter Physics and Application 2023.

2. **Oral:** *“Effect of La substitution on the structural and chemical properties of Barium hexaferrite via Mossbauer spectroscopy”* in XVII Latin American Conference on the Applications of the Mössbauer Effect (LACAME) (06 – 11th November 2022) at UFES, Vitoria, Brazil.
3. **Presented on** *“Investigations on structural and Dielectric properties of La-doped Barium hexaferrite”* at 66th ‘DAE Solid State Physics Symposium 2022’(DAE SSPS 2022) at BITS, Mesra, Ranchi.
4. **Workshop** on *“Rietveld Refinement Method”* (September 22-24, 2020) by UGC-DAE Consortium for Scientific Research Mumbai center in association with Indore center.

I hereby declare that all the information I have presented is accurate to the best of my knowledge. I would be glad to provide you with any further details if required.

Place: Udupi

Date: 18/09/2025

With regards

(Nishkala K. R)

Reference:

Dr.Mamatha D. Daivajna, Associate Professor
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