



Faculty Details Proforma For College Web-site



Title	Dr	First Name	Nisha	Last Name	Bala	Photograph
Designation	Assistant Professor					
Address	Department of Physics, Daulat Ram College, 4, Patel Marg, Maurice Nagar, New Delhi, Delhi- 110007					
Phone No. Office						
Residence						
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Email - ID	nishabala@dr.du.ac.in , nishabala17@gmail.com					
Web Page						
Educational Qualification						
Degree	Institution				Year	
B.Sc.	University of Jammu				2007	
M.Sc. (Physics)	University of Jammu				2009	
B.Ed.	University of Jammu				2010	
M.Ed.	University of Jammu				2012	
Ph.D. (Physics)	University of Delhi				2023	
Career Profile						
Working as Assistant Professor in Department of Physics, on permanent basis at Daulat Ram College, University of Delhi, Delhi since 04 th October, 2022						
Administrative Assignments						
• Member, Admission Committee (Grievance Committee), Daulat Ram College, October 2022-2023. • SEC College Coordinator (NEP) First Year, Daulat Ram College, since October 2022- June 2024. • SEC College Coordinator (NEP) Second Year, Daulat Ram College, June 2024 - June 2026. • Member, Admission Core Committee, Daulat Ram College, October 2023-2024, 2024-2025. • In-charge, Physics Association, Daulat Ram College, June 2023-2024. • Social Media Handler, Physics Department, Daulat Ram College, June 2023-2024. • TPC member 2024-2025 • Disaster Management Cell (Member), 2023-2024 and 2024-2025						
Areas of Interest / Specialization						

Synthesis, fabrication and characterization of semiconductor nanoparticles, thin films, bandgap engineering, Optical spectroscopy (UV-Visible spectroscopy, Raman spectroscopy), Electrical and magnetic (Vibrating Sample Magnetometer) properties, Cyclic Voltammetry, and Impedance spectroscopy. Solid State Physics, Electricity and Magnetism, Wave and Optics, Electronics, Digital Systems and Applications, Mathematical Physics.

Subjects Taught
- Mathematical Physics-II, Semester III, 2022 - Mathematical Physics-II, Semester II, 2023-2024, 2024-2025 - Waves & Oscillations, Semester I, 2022-2023, 2023-2024, 2024-2025 - Communication System (DSE), Semester VI, 2023 - Analog Electronics (DSC), Semester IV, 2023-2024, 2024-2025 - Programming using Python (SEC) 2022-2023, 2023-2024, 2024-2025 - Analytics/Computing with Python (SEC) 2022-2023, 2023-2024 - Science and Society (VAC) 2022-2023, 2023-2024, 2024-2025 - Basic IT Tools (SEC) 2025
Research Guidance:
Not applicable
Publications Profile
Nisha Bala, H. K. Singh, Shikha Verma, and Shyama Rath, Magnetic-order induced effects in nanocrystalline NiO probed by Raman spectroscopy. Physical Review B 102, 024423 (2020). https://doi.org/10.1103/PhysRevB.102.024423 (Impact factor = 4.036) ISSN No. = 24699969 Nisha Bala, Gaurav Gupta, Arijit Mitra, Shyama Rath, Annealing effects on the microstructure, stoichiometry, and ferromagnetic/ antiferromagnetic fraction in NiO nanoparticles. Materials Science and Engineering B 274 (2021) 115459. https://doi.org/10.1016/j.mseb.2021.115459. (Impact factor = 4.051) ISSN No. = 0921-5107. - Gaurav Gupta, Nisha Bala, Shyama Rath, Electrochemical performance of ZnMgO photoanodes prepared by a green synthesis route. MRS Communications 13, 1196-1202, (2023) https://doi.org/10.1557/s43579-023-00422-6 (Impact factor = 1.8) ISSN No. = 2159-6867.
Conference Proceedings publication
Nisha Bala, Shyama Rath, Effect of oxygen annealing on the growth and magnetic behaviour of sol-gel synthesized NiO nanoparticles. Materials Today: Proceedings 28 (2020) 353-355. https://doi.org/10.1016/j.matpr.2020.02.605. Nisha Bala, Shyama Rath, Effect of thermal annealing on the structural and optical properties of nickel oxide nanoparticles. AIP Conference Proceedings 2220, 020080 (2020). https://doi.org/10.1063/5.0001194. Nisha Bala, Shyama Rath, Optical spectroscopic investigation of sol-gel synthesized nickel oxide nanoparticles. AIP Conference Proceedings 2265, 030077 (2020). https://doi.org/10.1063/5.0017102.
Conference Organization / Presentation (in the last Five years)
- Oral presentation: International Conference on Advanced Materials and Nanotechnology (AMN-2020) on 20-22nd February 2020, Department of Physics and Materials Science and Engineering. Jaypee Institute of Information Technology, Noida. "Effect of oxygen annealing on the growth and magnetic behaviour of sol-gel synthesized NiO nanoparticles". - Virtual National Webinar Series on Experimental & Computational Tools for Materials Research (ECTMR 2020) on 01- 08th June 2020, Discipline of Natural Sciences, PDPM Indian Institute of Information and Technology, Design and

Manufacturing, Jabalpur and Department of Physics, Central University of Rajasthan. - Virtual Workshop on Latex, Gandhi Institute of Technology and Management (GITAM) on 5-9th July 2021, Department of Mathematics School of Science, GITAM, Bengaluru, India. - Poster presentation: Virtual Conference: # IOPP poster conference Twitter Poster Conference on 15-16th July 2020. “Size-dependent vibrational and magnetic excitations of NiO nanoparticles probed by Raman spectroscopy.” - Poster presentation: International Conference on Materials for the Millennium – (MATCON 2021) on 15-19th March 2021, Department of Applied Chemistry at the Cochin University of Science and Technology. “Size and Stoichiometry Effects on the Bandgap and Magnetic Properties of NiO Nanoparticles. - Poster Presentation: Virtual Conference: International Conference on Nanotechnology: Opportunities & Challenges, on 28-30th November, 2022. Department of Applied Sciences & Humanities, Faculty of Engineering & Technology, Jamia Millia Islamia, New Delhi, India. Annealing Effects on the Microstructure, Stoichiometry, and Ferromagnetic/Antiferromagnetic Fraction in NiO Nanoparticles. (Best Poster Presentation Award). - Oral Presentation: 3rd International Conference on Advanced Functional Materials & Devices for Sustainable Development (AFMD-2025) at ARSD College, University of Delhi. Effect of annealing under different atmospheres on the structural, growth, and magnetic properties of NiO nanoparticles, (Hybrid Mode). - Oral Presentation: International Conference on Emerging Frontiers in Sustainable, Functional, and Advanced Materials (IC-SFAM 2026) at Shivaji College, University of Delhi, on 9th April to 10th April 2026. Annealing effects under different atmospheres on the structural, growth, and magnetic properties of NiO nanoparticles” (Offline Mode).
Research Projects (Major Grants/Research Collaboration)
Not applicable
Awards and Distinctions
Not applicable
Association with Professional Bodies
Not applicable
Other Activities
Full Time Research Experience - Junior Research Fellow (JRF), University of Delhi, 09 September 2016 to 12 December 2018. - Senior Research Fellow (SRF), University of Delhi, 13 December 2018 to 08 September 2021. Details of refresher/orientation course/research methodology/workshop/syllabus up-gradation/ teaching – learning-evaluation/technology programmes/Faculty Development Programme: - Participated in National Webinar “Simple Experiment - Big learning” as a part of National Webinar series "Omnipresent Physics: An Experiential Approach" under the aegis of The National Academy of Sciences, India (NASI) - Delhi Chapter, Science-Society Program organised by Department of Physics, Kalindi College on 19th October, 2022. - Attended Faculty Induction Programme organized by Guru Angad Dev Teaching Learning Centre, New Delhi. A Centre of Ministry of Education under (PMMMNMTT) from 25th Feb, 2023 to 27th March, 2023. - Organized One Week National Faculty Development Program (FDP) on Basic Skills in Experimental Physics in Collaboration with Daulat Ram College (Department of Physics) and Guru Angad Dev Teaching Learning Centre, New Delhi. A Centre of Ministry of Education under (PMMMNMTT) from 17th July, 2023 to 23rd July, 2023. - Participated as a Resource person in the In-House Skill Development Program on Enhancing Learning Through ICT Tools, has organized by the Department of Physics, Daulat Ram College, University of Delhi on 23rd and 24th August 2023. - Participated in One-Day National Webinar entitled “Is Air Pollution Responsible For Increasing Rate of Lung Cancer” organized by UGC-Malaviya Mission Teacher Training Centre (UGC-MMTTC/ GAD-MMTTC), SGTB Khalsa College, University of Delhi in collaboration with Indian Cancer Society, Delhi held on 02 March 2024. - Attended Two-day workshop on “Establishment of Modalities for Skill Enhancement

Courses” Organized by Skill Enhancement Courses Committee, University of Delhi, Conference Centre, University of Delhi-110007, on 4th to 5th March 2024.

- Participated as a Resource person in the In-House Skill Development Program on Enhancing Learning Through ICT Tools, has organized by the Department of Physics, Daulat Ram College, University of Delhi on 13th and 14th September 2024.
- Working as a Coordinator on Two Days Workshop (Under the Aegis of IQAC) Learning Physics & Electronics Through Simulations & Demonstrations has organized by the Department of Physics, Daulat Ram College, University of Delhi on 16th and 17th November 2024.
- Participated as a Resource person in the SDP on “Designing an Arduino-Powered Motion Detection System” Physics Department, Daulat Ram College, University of Delhi, on 15th Jan to 23rd Jan 2025.
- Attended one week FDP on Density Functional Theory Modelling of Nanoparticles and Advanced Materials (DFT-Advanced), organised by the Centre for Advanced Computational Research, New Delhi, India on 2nd June to 11th June 2025 via (Online mode), register under Ministry of SME, Govt. of India for Research and Experimental Development on Natural Sciences & Engineering.
- Two-week Refresher Course on Research Methodology “Embarking on NEP: Research Methodology for Scientific Excellence” UGC-MMTTC Malaviya Mission Teacher Training Centre, SGTB Khalsa, College and Daulat Ram College, DU on 24th June to 7th July 2025 in Hybrid mode.