

Dr Dhananjay Kumar Gaur

Assistant Professor

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Work Experience

- **Assistant Professor** in the Department of Physics, Kashi Naresh Government Post Graduate College, Gyanpur, Bhadohi
December 2021 – March 2025
- **Assistant Professor** in the Department of Physics, Dr. Harisingh Gour University, Sagar, M.P.
From April 2025 - Till Now

Education

- **PhD**, Banaras Hindu University, Varanasi, India in Soft Condensed Matter Physics.
December 2023
Thesis title: *Influence of dispersion of nanoscale materials on the dielectric, optical and spectroscopic properties of nematic liquid crystals.*
- **M.Sc. (Under M.Sc–PhD dual degree programme)**, Indian Institute of Technology, Kanpur in 2014.
December 2014
- **B.Sc. (Hons.) Mathematics**, Banaras Hindu University, Varanasi, India
June 2011

Awards and Achievements

- Qualified Junior Research Fellowship from Council of Scientific and Industrial Research (CSIR)
December 2014 and June 2015
- Qualified Joint Admission Test for M.Sc. in Indian Institute of Technology (IITs)
JAM 2010 and JAM 2011

Area of Research Interest:

Computer Simulations:

- MD / DPD Simulations for the kinetics of phase transitions in ordered systems.

Experimental works

- Structure and properties of polymer dispersed liquid crystals.
- Properties of liquid crystals in confined geometry.
- Influence of nanoparticles, dyes and quantum dots on the dielectric, electro-optical, spectroscopic and other properties of ferroelectric, antiferroelectric, Nematic, bent-core liquid crystals

Publications

- Shubham Mishra, Dhananjay Kumar Gaur, S. Singh, Twist-Bend Nematic Phase: Role of Third-Order Legendre Polynomial Term in Chiral Interaction Potential, Published in Brazilian journal of physics, 5 (2020) 518-524.
- D K Gaur, A Rastogi, H Trivedi, A Parmar, R Manohar and S Singh. Investigation of dielectric and optical properties of pure and diamond nanoparticles dispersed nematic liquid crystal PCH5, *Liq. Cryst.* 48 (2020) 1257–1267.
- D K Gaur, F P Pandey, A Rastogi, A Parmar, R Manohar and S Singh. Investigation of dielectric, optical and zeta potential properties of pure and Zinc Ferrite Nanoparticles dispersed nematic liquid crystal PCH5, *Applied Physics A*, 128 (2022).
- D K Gaur, K Agrahari, BP Singh, Md B Alam, A Parmar, R Manohar, S Singh. Optical properties and zeta potential of polyvinyl pyrrolidone capped gold nanoparticles dispersed nematic liquid crystal mixture E7, *Optical Materials*, 145 (2023)
- S Tripathi, S Agarwal, S Tiwari, D K Gaur; A Srivastava. Highly enhanced fluorescence parameters in a dye-doped liquid crystalline compound, 51 (2024)
- D K Gaur, K Agrahari, Md B Alam, A Parmar, S Singh, Impact of Dispersion of carbon quantum dots (CQDs) of low concentrations into Nematic Liquid Crystal

Mixture E7 on the Optical Properties and Zeta Potential of Dispersed Systems.
Manuscript under preparation.

Conference

- International conference on “Recent Advances in Condensed Matter Physics and Complex Systems” held in Savitribai Phule Pune University from 30 October to 1 November, 2017.
- Bangalore School on Statistical Physics – IX, from 27 June – 13 July, 2018, ICTS Bangalore.
- 24th National Conference on Liquid Crystals, from October 11-13, 2017, IISER Mohali.
- International conference on “Advances in Biological System and Materials Science in Nano World” held in IIT (BHU) from 19-23 February, 2017.
- 13th International conference on Fiber Optics and Photonics, held in IIT Kanpur from Dec 5 – 8 (2016).
- International conference on “Nano science and Nano technology (ICNN) – 2017, held in Babasaheb Bhimrao Ambedkar University from September 22 - 24, 2017
- 27th National conference on liquid crystals held on Amity Institute of Applied science, Amity University Uttar Pradesh, Noida.