Dr. Sandeep Kumar

Associate Professor,
Department of Physics,
Bhaskaracharya College of Applied Sciences
(University of Delhi)

PROFILE

A dedicated Physics teacher with over 16 years of experience as an Associate Professor at University of Delhi. Possessing excellent Teaching, Research & Mentorship skills along with constructive & effective teaching methods that promote stimulating learning environment.

CAREER

2011 – Present: Associate Professor, Department of Physics, Bhaskaracharya College of Applied Sciences (University of Delhi)

2009 – 2011: Assistant Professor (Ad-hoc), Department of Physics, Atma Ram Sanatan Dharma College (University of Delhi)

INTERESTS

Teaching: Solid State Physics, Electricity & Magnetism, Electromagnetic Theory, Nanomaterials

Research: Microwave Absorbing Materials, Magnetic and Dielectric Properties of Ferrite Nanocomposites

EDUCATION

Doctor of Philosophy (Ph.D.) 2014 - 2020	Microwave Absorption Studies of Novel U-type Hexaferrites in 2–18 GHz Frequency Range	Department of Physics, I.I.T. Delhi, Delhi	–
Master of Technology (M.Tech.) 2007 - 2009	Solid State Electronic Materials	Department of Physics, I.I.T. Roorkee, Roorkee	8.43 (CGPA)
Master of Science (M.Sc.) 2004 - 2006	Physics	C.C.S. University Campus, Meerut	74.33%
Bachelor of Science (B.Sc.) 2001 - 2004	Physics, Chemistry, Mathematics	Meerut College, Meerut	64.06%
Senior secondary (XII) 1999 - 2001	Physics, Chemistry, Mathematics	U.P. Board	68.60%
Secondary (X) 1997 - 1999	Science, Mathematics	U.P. Board	60.83%

RESEARCH PUBLICATIONS

Year	Title	Journal
2025	Characterization of Nanocrystalline ZnS Thin Film on p-Si by Chemical Bath Deposition Method (Book Chapter)	Recent Advances in Functional Materials and Devices, Springer
2025	Effect of Cu doping on ZnO/ZnS composite thin film for visible light photodetection	J Mater Sci: Mater Electron
2025	Optoelectronic and Structural Properties of Chalcogenide WS_2/MoS_2 Composite Thin Films (Book Chapter)	Recent Advances in Functional Materials, Volume-1, Springer
2023	Microwave absorbing properties of the core-shell structured $LaFeO_3$-NiO nanocomposites	Journal of Magnetism & Magnetic Materials
2023	Characterization of Nanocrystalline ZnS Thin Film on p-Si by Chemical Bath Deposition Method (Book Chapter)	Recent Advances in Functional Materials and Devices, Springer
2023	Structural and Optical Properties of Chalcogenide WS_2 Thin Film (Book Chapter)	Recent Advances in Functional Materials and Devices, Springer
2021	Influence of varying particle sizes on microwave absorbing properties of U-type hexaferrites and development of broadband microwave absorber	AIP Advances
2020	Tailoring of complex permittivity, permeability, and microwave-absorbing properties of $CoFe_2O_4$/NG/PMMA nanocomposites through swift heavy ions irradiation	Ceramics International
2019	Magnetic & microwave absorption properties of Zn^{2+}-Ti^{4+} substituted U-type hexaferrites	Physica B: Condensed Matter
2019	Cost effective Fe/NG/PMMA nanocomposites for high-performance microwave absorbing applications	Materials Research Express
2019	Complex permittivity, permeability, magnetic and microwave absorbing properties of Ni^{2+} substituted mechanically milled U-type hexaferrites	Journal of Alloys and Compounds
2019	Swift heavy-ions irradiated nano magnetite/exfoliated nanographite / polymethyl methacrylate nanocomposites with excellent microwave absorption performance	Materials Letters
2018	Complex permittivity, permeability, magnetic and microwave absorbing properties of Bi^{3+} substituted U-type hexaferrite	Journal of Magnetism & Magnetic Materials
2017	Cost efficient PMMA/NG nanocomposites for EM interference shielding applications	Materials Research Express
2016	Microwave absorption studies of Cr-doped Co–U type hexaferrites over 2–18 GHz frequency range	Journal of Magnetism & Magnetic Materials

PRESENTATION IN CONFERENCES

- **Sandeep Kumar** et al. "Magnetic and Microwave Absorbing properties of Core shell NiO CFO Nanocomposites" 'FCSF 2025' ICFAI University, Tripura, India.
- **Sandeep Kumar** et al. "Magnetic and Microwave Absorption Studies of Bismuth-Cobalt Ferrites Core-Shell Nanocomposites", 2nd Int. Conf. on "Advanced Functional Materials & Devices" (AFMD-2023), Delhi, India.
- **Sandeep Kumar** et al. "Development of Broadband Microwave Absorber Using U-type Hexaferrites of Varying Particle Sizes" 'Advances in Physics-2019' at I.I.T. Delhi, India.
- **Sandeep Kumar,** et al. "Effect of particle size variation on dual-layer broadband U-type hexaferrite microwave absorber", E-MRS 2018 Spring Meeting, Strasbourg, France.
- **Sandeep Kumar** et al. "Microwave absorbing properties of Bi^{3+}-Zn^{2+} substituted double-layer U-type hexaferrites" 'Advances in Physics-2018' at I.I.T. Delhi, India.
- **Sandeep Kumar**, et al. "Dual-layer broadband microwave absorber based on U-type hexaferrites", Int. Symp. on Integrated Functionalities (ISIF-2017), Delhi, India.
- **Sandeep Kumar** et al. "Complex Permittivity, Permeability, Magnetic and Microwave Absorbing Properties of Bi3+ Substituted U-type Hexaferrites", 'Advances in Physics-2017' at I.I.T. Delhi, India.
- **Sandeep Kumar** et al. "Microwave absorbing properties of Bi substituted U-type hexaferrites" Int. Conf. on Magnetic Materials and Applications (ICMAGMA)-2017, Hyderabad, India.
- **Sandeep Kumar**, et al. "Microwave absorption studies of Cr-doped Co-U type hexaferrites over 2-18 GHz frequency range", Int. Conf. on Magnetic Materials & Applications (ICMAGMA)-2015, Vellore, India.
- **Sandeep Kumar** et al. "Microwave absorbing properties of Cr substituted U-type hexaferrites", Nat. Conf. on Solid State Chemistry and Allied Areas (ISCAS-2015), Delhi, India.

RESEARCH GUIDANCE

- Supervised two UG dissertations of B.Sc.(H) Physics VI Semester students (2020-2023 Batch).

TRAINING & WORKSHOPS

- Attended one-week online FDP on "ICT Enabled Teaching Learning" organized by T.L.C., Ramanujan College (University of Delhi) during September 07-13, 2020.
- Attended two-weeks online FDP on "ICT Based New Paradigms of E-Teaching and E-Learning: Digital Pedagogy" organized by Teaching Learning Centre, Ramanujan College (University of Delhi) during September 15-30, 2020.
- Attended one-week online FDP on "Advanced Pedagogical Techniques" organized by Teaching Learning Centre, Ramanujan College (University of Delhi) during October 29 – November 05, 2020.
- Attended two-weeks online Interdisciplinary Refresher Course on "Blended Learning & Flipped Classroom" organized by Teaching Learning Centre, Ramanujan College (University of Delhi) during March 08-22, 2021.
- Attended two-weeks online Refresher Course in "NATURAL SCIENCES" organized by Teaching Learning Centre, Ramanujan College (University of Delhi) and Rajdhani College (University of Delhi) during September 20 - October 04, 2021.

RESPONSIBILITIES BEYOND ACADEMICS

- Teacher-In-Charge (TIC) of Physics Department (2022-Present)
- Physics Department NAAC Coordinator (2022-2023)
- Member of Internal Quality Assurance Cell (IQAC) of the College (2019-2022)
- Convener of Proctor and Discipline Committee (2023-Present)
- Convener of Building Maintenance of the College (2021-2023)
- Convener of Time-Table Committee of the College (2019-2021)
- Deputy Superintended of Examination of the college for Academic Session 2020-21

PERSONAL DETAILS

Date of Birth: 15-04-1985
Gender: Male
Category: OBC

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REFERENCES

1.) Prof. Ratnamala Chatterjee,
Professor Emeritus,
Department of Physics, I.I.T. Delhi,
New Delhi – 110016

2.) Prof. G. D. Varma,
Professor,
Department of Physics, I.I.T. Roorkee,
Roorkee (Uttarakhand) - 247667