1. Full Name: **Dr. Virendra Singh**

2. Designation: **Assistant Professor**

3. Department: Physics

4. Contact Information (email, phone number):

virendrasingh.bpp@gbpuat.ac.in , 9568812378

5. Office Location: Department of Physics, College of Basic Sciences & Humanities (CBSH)

6. Academic Background and Qualifications: Ph.D Physics

7. Areas of Expertise: Experimental Physics

8. Research Interests:

Supercapacitors for Energy Storage, Nanomaterials, Nano-Composite for Water Treatment, Tellurite Glass, XRF Spectroscopy

9. Professional Achievements and Awards:

i. Qualified Radiological safety officer certified by BARC, Govt. of India
ii. Topper of MOOC course, Organized by IISc Bangalore
iii. UGC-CSIR NET Qualified

10. **PUBLICATIONS**:

- Neeraj Singh, **Virendra Singh**, Neeraj Bish, Puneet Negi, Archana Dhyani, Rajat Kumar Sharma, B. S. Tewari, "*A Comprehensive Review on Supercapacitors: Basics to Recent Advancements",* Journal of Energy Storage, 125 (2025): 116498 [NAAS Rating: 14.9]
- M. S. Rautela, **Virendra Singh**, and Neeraj Singh. "*Investigating the effect of gamma irradiation on structural and optical properties of (55-x) TeO2-20ZnO-25B2O3-xEr2O3 radiation shielding glass: influence of Er3+ ions*" Radiation Physics and Chemistry 224 (2024): 112071. [NAAS Rating: 8.8]
- **Virendra Singh**, Chaitanya Chauhan, Neeraj Singh, Arvind Kumar, Diwakar Padalia, and Shri Ram. "*Effect of the Concentration of PVP Capping Agent on Silver Nanowires Synthesized via CuCl2· 2H2O Mediated Polyol Route*." Physics of Metals and Metallography (2024): 1-9. [NAAS Rating: 7.1]
- Basant Kumar Yadav, **Virendra Singh**, Rajat Gangwar, and Neeraj Bisht. "*Study of optical, structural and radiation shielding properties of (55− x) TeO2–20ZnO–25B2O3–x Er2O3 glass matrix."* International Journal of Materials Research 115, no. 4 (2024): 291-302. . [NAAS Rating: 6.7]

- Anuj Saraswat, Shri Ram, Rajeew Kumar, Veer Singh, **Virendra Singh**, Aakash Salar, and Shubham Anil Durgude. *"Synthesis and Characterization of Chitosan Encapsulated Zinc Oxide Nanoparticles and its Application in Maize under Zinc Deficit Soil."* International Journal of Plant & Soil Science 36 (2024): 393-401. [NAAS Rating: 5.07]
- Dash, A.K., Tripathy, S., Naveenkumar, A., Bhoi, T.K., Kumari, A., Latare, A.M., Nandipamu, T.M.K., **Virendra Singh**, Raza, M.B., Saraswat, A. and Bhadha, J., 2024. Biochar for pollutants bioremediation from soil and water ecosystem. In *Biochar Production for Green Economy* (pp. 433-452). Academic Press.
- **Virendra Singh**, Nidhi Pant, Rajat Kumar Sharma, Diwakar Padalia, Pankaj Singh Rawat, Rabina Goswami, Praveen Singh, Akhilesh Kumar, Prabhakar Bhandari, Alam Tabish, and et al. 2023. *"Adsorption Studies of Pb(II) and Cd(II) Heavy Metal Ions from Aqueous Solutions Using a Magnetic Biochar Composite Material"* Separations 10, no. 7: 389. [NAAS Rating: 8.5]

- Bisht, N., Kumar, H., Singh, V., Chauhan, S. (2022). Effect of Geometrical Parameters on Branched Cracks: A Finite Element Method-Based Computational Approach. In: Verma, A., Mavinkere Rangappa, S., Ogata, S., Siengchin, S. (eds) Forcefields for Atomistic-Scale Simulations: Materials and Applications. Lecture Notes in Applied and Computational Mechanics, vol 99. Springer, Singapore. https://doi.org/10.1007/978-981-19-3092-8_17

- Durgude, Shubham A., Shri Ram, Rajeew Kumar, Shiv Vendra Singh, **Virendra Singh**, Anil G. Durgude, Biswajit Pramanick, Sagar Maitra, Ahmed Gaber, and Akbar Hossain. "Synthesis of Mesoporous Silica and graphene-based FeO and ZnO nanocomposites for nutritional biofortification and sustained the productivity of rice (Oryza sativa L.)." *Journal of Nanomaterials* 2022 (2022). [NAAS Rating: 5.0]

- Anamika, **Virendra Singh** and Basant K Yadav, "*Adsorption study of Heavy Metals from Aqueous Solutions using Magnetite Nanoparticles*" Journal of Physics: Conference Series, IOP Publishing 1504 (2020) 012011 [Peer Reviwed, Scopus CiteScore: 1.2]

- Harshita Gangwar, **Virendra Singh**, B. S. Tewari, Himanshu Gupta, L.P.Purohit, *"Study of zinc doped tellurite glasses using XRD, UV-Vis and FTIR"* Materials Today: Proceedings, 17, 329–337, 2019. [Scopus Cite Score: 1.8]

- **Virendra Singh,** G.C. Joshi, Dinesh C. Bisht, "*EDXRF Analysis of Soil in the Vicinity of Industrial Areas and Heavy Metal Pollution Assessment"* Journal of Applied Spectroscopy, vol. 84 (2), 2017. [NAAS Rating: 6.8]

- **Virendra Singh,** Diwakar Padalia, Kamal Devlal, "*Determination of Cu, Zn, Mn & Fe Metals in Soil Employing the EDXRF & FAAS Techniques and Comparative Study*

of Results" Journal of Nuclear Physics, Material Sciences, Radiation and Applications, vol. 2, pp 1-9, 2017. [Peer Reviwed]

- Chanyal, B. C., S. K. Chanyal, **Virendra Singh**, and A. S. Rawat. *"Proca-Maxwell Equations for Dyons with Quaternion."* Applied Mathematics 4, no. 1 (2016): 9-15.

- **Virendra Singh**, H.M. Agrawal*, "Characterization of the solubility of Aluminum in soil by x-ray diffraction"* Analytical Letters, vol. 48, pp. 503-512, 2015. [NAAS Rating: 7.1]

- **V. Singh** and H.M. Agrawal "Analytical Spectroscopy for Environmental Assessment", LAMBERT Academic Publishing, 2013, ISBN: 978-3-8473-2233-7.

- **Virendra Singh**, H.M. Agrawal*, "Qualitative soil mineral analysis by EDXRF, XRD and AAS probes"* Radiation Physics and Chemistry 81, 2012, pp 1796-1803. [NAAS Rating: 8.8]

- **Virendra Singh**, H.M. Agrawal, *"Edxrf Analysis Of Soil Samples To Study The Role Of Trace Elements In Optimizing The Yield"*, Int. J. Modern Engineering Res., 2 (2012) 1454-1458. [Peer Reviewed]

- **Virendra Singh**, H.M. Agrawal, G.C. Joshi, **M. Sudarshan** and A.K. Sinha, "*Elemental profile of agricultural soil by the EDXRF technique and use of the Principal Component Analysis (PCA) method to interpret the complex data",* Applied Radiation and Isotopes, 69 (2011) 969–974. [NAAS Score: 7.8]

11. **CONFERENCES [PAPER PRESENTATION/ ABSTRACT]**

- Neeraj Singh, **Virendra Singh, '***Development and Performance of Solid Plastic Waste-Derived Reduced Graphene Oxide and Polypyrrole (WrGO/PPy) Nanocomposite Electrode for Supercapacitors'* International Conference on Futuristic Aspects in Science & Engineering, The ICFAI University Jaipur, 06-07 Feb, 2025.

- Neeraj Singh, **Virendra Singh,** Uma Devi Sharma, '*Fabrication of waste-derived reduced graphene oxide/polypyrrole (WrGO/PPy) composite material electrodes for supercapacitor applications',* 3rd International conference on Electrochemical Science and Technology, CSIR-NPL New Delhi, 18-20 September 2024

- **Virendra Singh**, '*Nano Zero Valent Iron-Biochar (nZVI-BC) Nanocomposite adsorbent material for Methylene Blue Dye removal from aqueous solutions',* International conference on Advanvcement in Functional Materials, Prof Rajendra Singh Physical Sciences for Study and research, Jaunpur, 8-10 Feb 2024.

- Rabina Goswami, **Virendra Singh**, '*Tellurite glass for high energy radiation shielding and effect of erbium on shielding properties'* 16th Biennial DAE-BRNS symposium on Nuclear and Radiochemistry, BARC Mumbai, 1-5 May, 2023

- M.S. Rautela, **Virendra Singh**, N. Bisht, D. Kumar, C. Chuahan, D. Padalia, '*Structural Characterization of Erbium doped Zinc Boro-Tellurite Glass for High Energy Radiation Shielding Material and Evaluation of Shielding parameters using WinXCOM Program'* 23rd National Symposium on Radiation Physics, University of Mysore, 19-21 Jan, 2023

- Basant K Yadav, Harshita Gangwar and **Virendra Singh**, '*Study of zinc tellurite glass system using UV-Vis spectroscopy*', 9th conference of Indian Science Congress on 'Future India: Science And Technology', Pantnagar, October 2018.

- **Virendra Singh,** 'EDXRF study of wheat grain samples in investigating the relation between nutrients status in soil and grains', National conference on 'Progressive Science & Engineering', Chamoli, October, 2016

- **Virendra Singh**, "Atomic Absorption Spectroscopy Analysis of Water Samples and Interpretation of Obtained Dataset y PCA Approach" 10th Uttrakhand State Science & Technology Congress, 2016.

- Kulbhushan, S. K. Singhal, G.C. Joshi, **Virendra Singh**, Madan Singh, Dinesh Yadav and M. Sharma, '*Effect of varying magnetic field and time exposure on the germination of seeds of wheat'* National workshop on **Green Chemistry Practices in Teaching, Research & Industry**, pp. 99-104, March 30, 2016.

- S. K. Singhal and **V. Singh, "**Extraction of p-wave gamma ray strength functions by using Bilpuchformalism", National Conference On Advances in Material Science for Energy Applications (AMSEA), UPES dehradun, Oct 2014.

- **Virendra Singh**, H.M. Agrawal "*Edxrf in multidisciplinary research and equation fitting using ridge regression model*" 8th Uttrakhand State Science & Technology Congress, 2013.

- **V. Singh,** "PRINCIPAL COMPONENT ANALYSIS (PCA): A MULTIVARIATE METHOD OF ANALYZING THE COMPLEX DATASET", national seminar on Pesticides, Food Safety and Environment" ", G.B.Pant University of Agriculture & Technology, Pantnagar, November 2011.

12. **RESEARCH PROJECT:**

- **ONGOING (as P.I.)**
  - **Development of Silver Nanowires/Polypyrrole (AgNWs/Ppy) Composite Electrode for Fabrication of Supercapacitor of High Energy Density,** funded by **Uttrakhand Council for Science & Technology (UCOST)**
- **SUBMITTED: 03 Research Proposal** (02 to ANRF and 01 to DST)

13. **TEACHING EXPERIENCE AND COURSES TAUGHT:** 10 years

UNDERGRADUATE	POSTGRADUATE
1. Electromagnetic Fields and waves 2. Analog & Digital Electronics 3. Control Systems, 4. Modern Physics 5. Engineering Physics I & II [Physics I & Physics II] 6. Engineering Physics 7. Semiconductor Physics 8. Wave optics and introduction to Quantum Mechanics 9. Oscillations, waves and optics	1. Electronics 2. Linear and Digital IC II 3. Electromagnetism 4. Physics for Agrometerologists 5. Experimental Physics 6. Agrometerological Instrumentation 7. Statistical Physics

13. **STUDENTS GUIDED:**

- **P.G. Student [13]** as **Advisor** (Degree Awarded-11, Pursuing -02)
- **Ph.D. Students [06]** (Degree Awarded-03, Pursuing- 03)
    - **Advisor** of 01 student
    - **Member, Advisory Committee** of 05 students

14. **ADMINISTRATIVE RESPONSIBILITIES/ STUDENT AFFAIR:**

- **Incharge, Biophysics Unit**
- **Incharge, Maintenance & Repair, C.B.S.H.**
- **Ex- In charge, R.I.T.L. Unit , CBSH**
- **Member, P.G. Society, GBPUAT**
- **Ex-Warden, Shastri Bhawan Hostel**
- **Member, Extension Program Committee and General Maintenance Committee, CBSH**

15. **INVITED TALK/RESOURCS PERSON/ CONFERENCE COMMITTEE**

- **Invited Speaker** in 'Lecture Series on 'Basic Electronics for Physicists' ETERNAL University, Himachal Pradesh, 2024
- **Resource Person**, ICAR SC-SP Programme, 01 Jan -15 March 2021 (Online mode)
- **Resource Person**, Physics workshop, Uttarakhand Open University, August 2020, July 2020, 2014.
- **Invited Speaker**, National conference on 'Status of Upcoming Trends in Biodiversity Conservation', January 06, 2019, Chaman Lal Mahavidhyalaya, Roorkee
- **Chair-person**, Poster Session, National Conference on Advancement in Polymer Materials, 25-26 April, 2023, Department of Chemistry, GBPUAT
- **Co-Organizer**, 7^{th} international conference on Innovative Approaches in Basic and Applied Sciences for Societal Development, 24-24 March, 2023, GBPUAT
- **Co-Chairperson** in scientific session, 7^{th} international conference on Innovative Approaches in Basic and Applied Sciences for Societal Development, 24-24 March, 2023, GBPUAT

16. Any additional information you would like to include in your profile.

- **EDITORIAL BOARD MEMBER of** *International Journal of Research and Discovery (IJRD)*
- **LIFE MEMBER** of **'Indian Association of Nuclear Chemists and Allied Scientists' (IANCAS) [LM No.-1699]**
- **REVIEWER**
  - ✓ **Journal of Soil Science and Plant Nutrition**
  - ✓ **Journal of Radiation Research and Applied Sciences**
  - ✓ **International Journal of Environmental Analytical Chemistry**
  - ✓ **African Journal of Biotechnology**
  - ✓ **Applied Radiation and Isotopes**

- **Google Scholar Link**

  https://scholar.google.com/citations?user=19JW1ZIAAAAJ&hl=en

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