

Hashim Farooq

PhD (Physics)

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Nationality: Pakistan



Research Interests

Theoretical High Energy-Density Plasmas, Inertial Confinement Fusion (ICF) Plasmas, Space Plasma, Vlasov-Kinetic Model, Relativistic & Ultrarelativistic Plasmas

Experimental Laser plasma interaction, Production of classical plasmas, Laser-Induced-Breakdown-Spectroscopy (LIBS), Nd-YAG pulsed laser, Low Intensity Continues Lasers (Semiconductor Tunable Diode Lasers) for Atomic Absorption Spectroscopy.

Scholastic Record

Degree	Research Thesis	Completion
Ph.D. Physics Government College University, Lahore (Pakistan)	Collective Modes of Ultrarelativistic Plasmas with Arbitrary Degeneracy	November 2019
M.Phil Physics University of Agriculture Faisalabad (Pakistan)	Synthesis and nanostructural Characterization of mixed ferrites based on transition metals	December, 2009
M.Sc Physics Government College University, Faisalabad (Pakistan)	Design and Development of PLC for load automation controlling through PC	April, 2007

Work Experience

- **Assistant Professor** (August 2024 to date)
Department of Physics, Baba Guru Nanak University (BGNU), Nankana Sahib, Punjab, Pakistan.
- **Lecturer** (January 2023 to August 2024)
Department of Physics, Government Islamia Graduate College, Faisalabad, Punjab, Pakistan.
- **Lecturer** (August 2012 to May 2018 & January 2021 to January 2023)
Department of Physics, Government Graduate TI College, Chiniot, Punjab, Pakistan.
- **Lecturer** (May 2018 to September 2019)
Department of Physics, Government Graduate College of Science, Faisalabad, Punjab, Pakistan
- **Research Fellow** (February 2010 to July 2012)
HEC funded Research Project (Government of Pakistan)

Subjects taught at undergraduate / postgraduate Level

1. Classical Mechanics
2. Equilibrium Statistical Mechanics (I & II)
3. Heat & Thermodynamics
4. Methods of Mathematical Physics-I
5. Relativity & Cosmology
6. Plasma Physics
7. Space & Astrophysics
8. Laser Physics
9. Computational Physics
10. Nuclear Physics (I & II)
11. Solid State Physics (I & II)
12. Classical Electrodynamics (I & II)
13. Materials Science
14. Digital Electronics & Logic Design

The updated list of publications can be seen at the following links:

- <https://scholar.google.com/citations?user=zVrrFXgAAAAJ&hl=en&oi=ao>
- <https://www.researchgate.net/profile/Hashim-Farooq>
- <https://orcid.org/0000-0003-3625-120X>

RESEARCH ARTICLES:

Q-Indexed Articles

Sr #	Article	Quartile
1	Sarfraz, M., Farooq, H. , Abbas, G., Noureen, S., Iqbal, Z., & Rasheed, A. (2018). Dispersion characteristics of anisotropic unmagnetized ultra-relativistic transverse plasma wave with arbitrary electron degeneracy. <i>Physics of Plasmas</i> , 25(3).	Q1
2	Jamil, Y., Saeed, H., Raza Ahmad, M., Ahmad Khan, S., Farooq, H. , Shahid, M., & Amin, N. (2013). Measurement of ablative laser propulsion parameters for aluminum, Co–Ni ferrite and polyurethane polymer. <i>Applied Physics A</i> , 110(1), 207-210.	Q1
3	Shahzad, K., Iqbal, Y., Farooq, H. , Mushtaq, S., Kiran, L., & Neri, G. (2026). Magnetoelectric nanocomposite CoFe ₂ O ₄ /BaTiO ₃ for selective detection of NH ₃ and H ₂ S at room temperature. <i>Physica B: Condensed Matter</i> , 723, 418111.	Q2
4	Noureen, S., Abbas, G., & Farooq, H. (2017). On the high frequency perpendicular propagating waves in ultra-relativistic fully degenerate electron plasma. <i>Physics of Plasmas</i> , 24(9).	Q2
5	Farooq, H. , Ahmad, M. R., Jamil, Y., Hafeez, A., & Anwar, M. (2013). Structural, dielectric and magnetic properties of superparamagnetic zinc ferrite nanoparticles synthesized through coprecipitation technique. <i>Kovove Mater</i> , 51, 305-310.	Q2
6	Shahzad, M. A., Sarfraz, M., Mahmood, S., Bilal, M., & Farooq, H. (2023). On dispersion and damping rates of dust-acoustic waves in hybrid non-thermal Vasyliunas–Cairns distributed plasmas. <i>Journal of Astrophysics and Astronomy</i> , 44(2), 72.	Q3
7	Sarfraz, M., Abbas, G., Farooq, H. , & Zeba, I. (2021). Impact of non-thermal electrons on spatial damping: a kinetic model for the parallel propagating modes. <i>Zeitschrift für Naturforschung A</i> , 76(8), 661-669.	Q3
8	Farooq, H. , Sarfraz, M., Iqbal, Z., Abbas, G., & Shah, H. A. (2017). Parallel propagating modes and anomalous spatial damping in the ultra-relativistic electron plasma with arbitrary degeneracy. <i>Chinese Physics B</i> , 26(11), 110301.	Q3

HEC RECOGNIZED ARTICLES:

Sr #	Article	HEC Category
1	Farooq, H. , Ahmad, M. R., Jamil, Y., Hafeez, A., Mahmood, Z., & Mahmood, T. (2012). Structural and dielectric properties of manganese ferrite nanoparticles. <i>Journal of Basic & Applied Sciences</i> , 8(2), 597-601.	Y
2	Farooq, H. , Jamil, Y., Ahmad, M. R., Khan, M. A. A., Mahmood, T., Mahmood, Z., & Khan, S. A. (2012). Lead pollution measurement along national highway and motorway in Punjab, Pakistan. <i>Journal of Basic & Applied Sciences</i> , 8(2), 463-467.	Y
3	Hussain, T., Akhtar, F., Inam-ul-Haq, I. T., & Farooq, H. (2014). Usability of aqueous solutions of commercial reactive dye for gamma dosimetry. <i>Academic Research International</i> , 5(1), 32-36.	Y
4	Hussain, T., Farooq, H. , & Ahmad, M. R. (2014). Evaluation of the traffic noise pollution at some busiest sites of Faisalabad City, Pakistan. <i>Academic Research International</i> , 5(2), 23.	Y

Conference Proceedings as Co-author

1. Pakistan Physical Society Conference on Contemporary Physics, 15-17 Nov., 2011 at University of Gujrat, Pakistan. Laser Induced Breakdown Spectroscopy of Marine sediments. Rabia Hassan, Nasir Amin, Yasir Jamil, **Hashim Farooq**, Muhammad Khawar Abbas and Shakeel Ahmad Khan.
2. International Chemistry Conference (2012) at University of Peshawar, Pakistan organized by Chemical Society of Pakistan. Qualitative and Quantitative analysis of Cement and Mortar using Laser Induced Breakdown Spectroscopy. Yasir Jamil, **Hashim Farooq**, Muhammad Raza Ahmad, Nasir Amin, Muhammad Akmal, Munawar Iqbal and Zia ul Haq.

Oral presentation (Physical) in Conference

1. International Scientific Spring, March-2011 held at NCP-Islamabad, Pakistan. Quantitative elemental analysis of Cu-Ag alloy using laser induced breakdown spectroscopy. Hashim Farooq, Yasir Jamil, Nasir Amin, Raquia Tabassum, Nek Muhammad.
2. 12th National symposium on Frontiers in Physics Conference, February-2011 held at G.C.U Lahore Pakistan. Determination of elemental composition and relative abundance of marbles using Laser Induced breakdown spectroscopy. Hashim Farooq, Nasir Amin, Yasir Jamil, M. Raza Ahmad, Effat Yasin, Nek Muhammad and Shakeel Ahmad Khan.
3. Pakistan Physical Society Conference on Contemporary Physics, 15-17 Nov., 2011 at University of Gujrat, Pakistan. Identification of Toxic elements in paints using Laser Induced Breakdown Spectroscopy. Hashim Farooq, Nasir Amin, Yasir Jamil, Kamran Hafeez, Muhammad Khawar Abbas and Muhammad Raza Ahmad.

Live Streaming Lectures / Presentations at different Platforms

Subject	Online link
Statistical Physics (5 lectures)	https://www.youtube.com/watch?v=rDR5qZH85-A&list=PLroSMoAE3Nx4gZPGSdMVOmRXFL21qZbz
Heat & Thermodynamics (4 lectures)	https://www.youtube.com/watch?v=o2ys0jxP6HA&list=PLroSMoAE3Nx4gZPGSdMVOmRXFL21qZbz
Classical Mechanics (4 lectures)	https://www.youtube.com/watch?v=D7bM3Mz5ZIU&list=PLroSMoAE3Nx4gZPGSdMVOmRXFL21qZbz
Methods of Mathematical Physics (4 lectures)	https://www.youtube.com/watch?v=LAIo86KPZGU

As Organizer (Conferences /Symposiums /Trainings /Workshops)

- i. As Focal Person & Chief Organizer “Seminar on Wireless Power Transmission” 12th January 2026 held at BGNU.
- ii. As organizer “Two Days Symposium on Sustainable Energy 17-18 April 2025 held at BGNU”
- iii. As organizer “Science Projects Exhibition” 24-25 October 2024 held at BGNU
- iv. As organizer “International Seminar on Nanotechnology for Environmental Sustainability and Biomedical Applications” 20th December 2024 held at BGNU
- v. As organizer 1st National Conference on Mathematics (Quality Education for Sustainability) 15-16 May 2025 held at BGNU
- vi. As organizer STEM Faculty Training (Cascading of HEC & British Council) 10th Sept 2025 held at BGNU
- vii. As organizer 1st International Conference on Applied Science and Technology (ICAST) 24-25 October 2024 held at BGNU.
- viii. As organizer 2nd International Conference on Applied Science and Technology (ICAST) 2024 held at BGNU.

As a Member of Committees in the Baba Guru Nanak University, Punjab, Pakistan

- i. Member, Academic Council of the University (BGNU) for three years (2025-2028)
- ii. Member, Prospectus Committee of the University (BGNU), 2025
- iii. Secretary, Board of Studies (BOS), Department of Physics, BGNU
- iv. Member, Departmental Equivalence Committee, Department of Physics, BGNU.
- v. Member, Self-Assessment Report (SAR) as per PREE standards for BS Physics program, QEC, BGNU
- vi. Coordinator & Advisor of a student's society "Character Building Society", BGNU for 2024-2026.
- vii. Time Table incharge and Course allocation Coordinator, Department of Physics, BGNU.
- viii. Secretary, Departmental Committee for the constitution of Physics Society, Department of Physics, BGNU.
- ix. Advisor, Physics Society, Department of Physics, BGNU.

Formal Trainings / Workshops / Certificates

Training / Workshop	Name and Place of Institution
Use of Generative AI in Higher Education, 14-15 May, 2025	Punjab Higher Education Commission (PHEC) held at King Edward Medical University Lahore
Applied Biomedical AI, 11-27 Aug, 2025	Jointly organized by OIC-COMSTECH & Ningbo University China
3 rd International Conference on advances in Theoretical and Applied Physics, 24-26 Feb, 2021	Jointly organized by King Saud University Saudi-Arabia and GC Women University Faisalabad, Pakistan
10th International Scientific School, 2018	The Abdus Salam International Center for Theoretical Physics (AS-ICTP) at National Center for Physics (NCP) Islamabad Pakistan
Workshop on Particle in Cell Simulation, 2017	Department of Physics, GC University Lahore, Pakistan
First Refresher Course for Physics Teachers (Problem Solving & Concept Development), Module-II, 2017	National Center for Physics (NCP), Islamabad, Pakistan
First Refresher Course for Physics Teachers (Problem Solving & Concept Development), Module-I, 2016	National Center for Physics (NCP), Islamabad, Pakistan
2 nd workshop on Plasma Physics, 2016	National Center for Physics (NCP), Islamabad, Pakistan
41 st International Nathiagali Summer College (INSC) on Physics and Contemporary Needs, 2016	Pakistan Atomic Energy Commission (PAEC) & National Center for Physics (NCP), Islamabad, Pakistan
38 th International Nathiagali Summer College (INSC) on Physics and Contemporary Needs, 2013	Pakistan Atomic Energy Commission (PAEC) & National Center for Physics (NCP), Islamabad, Pakistan
Technology workshop on Atomic Physics and Nanofabrication, 2012	National Institute of Lasers & Optronics (NILOP) Islamabad, Pakistan
International workshop on Laser-Matter Interaction, 2012	OIC Standing Committee on Scientific & Technological Cooperation (COMSTECH), Islamabad, Pakistan
Vacuum Technology, 2011	Department of Physics University of Agriculture, Faisalabad, Pakistan

Honorary services in Journals/Conferences

1. Honorary Reviewer for following various publishers;
 - a. AIP Publishers
 - b. Elsevier Publishers
 - c. Springer Nature Publishers
 - d. Sage Publishers
 - e. T&F Publishers, any many more.
2. Associate Editor (STEM Section): *Journal of Social Sciences Advancement* (<https://www.scienceimpactpub.com/journals/index.php/jssa/about>)

Memberships of Professional Bodies

1. Life Member (# 250) of “Pakistan Physical Society (PPS)”, Government College University Lahore, Punjab, Pakistan.
2. Life Member (# 1381) Khwarzimi Science Society, Lahore, Punjab, Pakistan.
3. Three (03) years member of “American Geophysical Union (AGU)”, USA.

Technical Skills

Programming Languages: Python, C, C++

Data Analysis Tools: Mathematica 9.0, Scientific Work Place, SPSS, MATLAB

Languages

English (Excellent), Urdu (Native)

References

Prof. Dr. Yasir Jamil (M.Phil Supervisor)

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