

Dr. Muhammad Altaf Ur Rehman

Designation: Assistant Professor
Present Address: Department of Physics, GC University, Lahore.
Permanent Address: Chak No. 452 G/B District Faisalabad.
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Research Interest:

Theoretical Plasma Physics, Nonlinear Waves in Plasma, Space Plasma.

Educational Profile:

Certificate/ Degree	Session	% Marks	Division	Grade	Board/University
PhD (Physics)	2011-2014		1 st	A	GC University, Lahore.
M. Phil (Solid State Physics)	2000-2002	OPM 62.4%	1 st	B	University of the Punjab, Lahore.
M.Sc (Physics)	1996-1998	CGPA 3.13/4	1 st	B	University of Agriculture, Faisalabad.
B.Sc Phys, Math(A), Math(B)	1993-1995	60.8%	1 st	B	University of Punjab, Lahore.
F.Sc (Pre-Engineering)	1991-1993	57.8%	2nd	C	B.I.S.E Faisalabad.
Matriculation (science)	1989-1991	77.7%	1 st	A	B.I.S.E Faisalabad.

PhD thesis title:

“Investigation of Nonlinear Dispersive and Dissipative Structures in Dense plasmas”

Supervisor: Prof. Dr. Hassan Amir Shah. (S.I)

Publications: I have following research publications in International Journals

1. “Alfven Solitary waves in nonrelativistic, relativistic and ultra-relativistic degenerate quantum plasma”, Phys. Plasmas **22**, 10230 (2015).
M. A. Rehman, H. A. Shah, W. Masood, and M. N. S. Qureshi

2. "Obliquely propagating electromagnetic excitations in dissipative plasma with relativistically degenerate electrons" Phys. Plasmas **23**, 0623 (2017).
M. A. Rehman, H. A. Shah, W. Masood, and M. N. S. Qureshi
3. "Electromagnetic instabilities of low-beta alpha/proton beam in space plasma", Astrophys space Sci. 107, 365 (2020).
M. A. Rehman, S. M. Shaaban. P. H. Yoon, M. Lazar. S. Poedts
4. "Optimized Structural, electronic, optical and mechanical properties of **SrTiO_{3-x}H_x** for photovoltaic applications: a DFT insight". Molecular Physics e2410483(2024)
M. Zaman, **M. A. Rehman**, I. Zeba, Sana Zafar and S. S. A. Gillani.
5. "Impact of temperature anisotropy on longitudinal and transverse wave in magnetized partially degenerate electron plasma" Eur. Phys. J. D **44**, 79 (2025)
H. Anwar, G. Abbas, H. Fatima, H. Khalid, **M. A. Rehman** and Z. Iqbal
6. Enhanced optoelectronic properties of perovskite type **TiSrF₃** under the influence of pressure: A DFT perspective *Computational Condensed Matter*
44, e01075 (2025,)

Conferences and Workshops attended:

- Attended 11th **National Symposium on Frontiers in physics** in which well Known Scientists discussed their latest research work (GCU Lahore).
- Certificate of participation in **4th International Scientific Spring at NCP** jointly Organized by ICTP & NCP, Islamabad, Pakistan.
- Certificate of participation in **One Day International Workshop on Plasma Physics** jointly Organized by ICTP & NCP, Islamabad, Pakistan.
- Certificate of participation in the International Workshop on **Plasma Science** Organized by **COMSTECH** in Collaboration with **HEC** Islamabad, Pakistan.
- Attended 13th **National Symposium on Frontiers in physics** December 19-21, 2012 University of Peshawar.
- Certificate of participation in **1st ICTP-NCP International College on Plasma Physics**, 11-15 November 2013. Organized by ICTP, Trieste, Italy & NCP, Islamabad, Pakistan.
- Certificate of participation in **1st Refresher Course for Physics Teachers " Problem Solving and Concept Development"** August 01-20,2016 Organized by National Center for Physics & Higher Education commission, Islamabad, Pakistan.
- Attended 14th **National Symposium on Frontiers in physics** November 23-25, 2016 GC, University Lahore, Pakistan.
- Attended 15th **National Symposium on Frontiers in physics** January 29-31, 2018 GC, University Lahore, Pakistan.
- Attended **One day Symposium on Quantum and Nano-Optics** 12th April, 2018, Physics department, Lahore University of Management Sciences (LUMS), Lahore.
- Participated 16th **National Symposium on Frontiers in physics** January 29-31, 2019 GC, University Lahore, Pakistan.

Professional Experience:

Designation	Institution	Period
Assistant Professor	GC University Lahore.	11-2-2017 To Date
Lecturer in Physics	GC University Lahore.	02-07-2007 To 10-02-2017

M Phil Theses Supervised:

- Hamza Anwar (2021-2023)
Longitudinal wave in anisotropic un-magnetized electron plasma with arbitrary temperature degeneracy
- Fatima Akhtar (2021-2023)
Linear Accelerator Based Stereotactic Radiosurgery for multi-brain metastases
- Muhammad Zaman (2022-2024)
Exploring the influence of pressure induced semiconductor to metal transition and its impact on the physical properties of $TiSrF_3$

BS Theses Supervised:

- Muhammad Yasin (2014-2018)
A Brief Overview of Fluid Model In Plasma
- Abdul Majeed Tariq (2018-2022)
Linear Analysis of Obliquely Propagating Longitudinal Ion Acoustic Wave In Partially Spin Polarized Degenerate Magnetized Plasma
- Usman Hameed (2018-2022)
Linear Analysis of Obliquely Propagating Longitudinal Cyclotron Waves in Partially Spin Polarized Degenerate Magnetized Plasma
- Ahrar Ahmad (2017-2021)
Low frequency waves in spin polarized quantum Plasma
- Yousaf Shah (2019-2023)
Ion Acoustic Wave in Bi-Ion Quantum Plasma
- Muhammad Farhan (2019-2023)
Linear propagation of electron plasma wave in quantum plasma
- Muhammad Adnan Khan (2020-2024)
Linear drift ion acoustic waves in an inhomogeneous magnetized plasma
- Muhammad Nouman (2020-2024)
Linear Drift Ion Acoustic Wave In Electron-Positron And Ion Plasma

Course Teach at M Phil. Level:

- Statistical Physics

Courses Teach at BS Level:

- Mechanics
- Waves And Oscillation
- Electricity and Magnetism
- Modern Physics
- Heat And Thermodynamics
- Classical Mechanics

Computer Skills:

MS Office, Software Installation, Scientific WorkPlace, Mathematica.

Co-Curricular Activities:

- Departmental Controller of Examination
- Secretary Board of Studies
- Member of departmental QEC Committee
- Active member, Jones Physics Society, GCU Lahore.
- Member of Blood Donor Society, GCU Lahore.
- Browsing and searching internet,
- Playing Football.
- Books Reading