




PERSONAL INFORMATION	Nayab	
		Village and P.O Gujrat , Tehsil and District Mardan, 23350 , KPK , Pakistan
		+92-3169769535
		alinayab330@gmail.com
Gender Female Date of birth 10/04/1996 Nationality Pakistan		
RESEARCH AREAS	<ul style="list-style-type: none"> Quantum Mechanics Astro nuclear Physics Fluid Mechanics 	
RESEARCH EXPERIENCE		
Research Project	As Undergraduate Student (JAN 2015– DEC 2018) COMSATS University Islamabad (Pakistan) Electronic Structure (LCAO Model) Electronic Structure of Graphene, Carbon nanotubes, Silicon Carbide (SiC) and SiC Tubes	
	As MS Student (AUG 2019– JUN 2021) Ghulam Ishaq Khan Institute (GIKI) Validity of Brink-Axel Hypothesis in High Temperature and Density Environments	
Research Project	As PhD Student (AUG 2021– Continue) Ghulam Ishaq Khan Institute (GIKI) Investigation of Gravitational Water Vortex Flow Field	
BS Thesis Title	Electronic Structure of Carbon Nanotubes	
MS Thesis Title	Validity of Brink-Axel Hypothesis in High Temperature and Density Environments	
Journal Publication	Nabi, J. U., Nayab, M. , & Johnson, C. W. (2022). How effective is the Brink–Axel hypothesis for astrophysical weak rates?. <i>Journal of Physics G: Nuclear and Particle Physics</i> , 49(6), 065201.	
Achievements	<ul style="list-style-type: none"> BS Gold Medallist, COMSATS University Islamabad. GA 1 Scholar, MS Program, GIKI. GA 4 Scholar, PhD Program, GIKI. 	
Equipment experience	Teaching the undergraduate students <ul style="list-style-type: none"> Ballistic pendulum for demonstrating momentum and energy conservation Tap timer and projectile launcher for illustrating kinematics and dynamics Force table for studying translational equilibrium Air track system for measuring average velocity Variable g pendulum for exploring gravitational acceleration 	

- Electricity and magnetism equipment, such as:
 - Breadboard for circuit design and prototyping
 - Cathode ray oscilloscope for visualizing waveforms
 - Multi-meter for measuring electrical quantities
 - Colour coding of resistors for circuit analysis
 - Helmholtz solenoid for demonstrating magnetic field principles and many more.

Used for my research work

- Used specialized equipment to investigate fluid dynamics and vortex behaviour, including:
- Equipment for generating free and forced vortices
- Particle image velocimetry (PIV) for measuring fluid velocities
- Hydraulic bench and digital flowmeter for studying fluid flow
- Cylindrical and conical basins for examining vortex dynamics
- Orifices of different diameters for investigating flow rate and pressure
- High-speed camera for capturing and analysing fluid motion

EDUCATION

Fall 2021– Continue	PhD Engineering Sciences (Applied Physics) Ghulam Ishaq Khan Institute (GIKI) Specialization in Fluid Mechanics	GPA 3.7/4.00
Fall 2019– Spring 2021	MS Engineering Sciences (Applied Physics) Ghulam Ishaq Khan Institute (GIKI) Specialization in Astro Nuclear Physics	GPA 3.71/4.00
Spring 2015– Fall2018	BS Physics COMSATS University Islamabad (Pakistan) Specialization in Condensed Matter Physics	GPA 3.57/4.00

TEACHING & OTHER EXPERIENCE

Fall 2025- continue	Visiting Lecturer (Women University Swabi)
Fall 2021– Fall 2024	Undergraduate Teaching Experience Ghulam Ishaq Khan Institute (GIKI), Topi, Swabi My teaching experience includes the following undergraduate courses: <ul style="list-style-type: none"> • Mechanics (PH101) - 1 year • Fluid Mechanics - 1 year • Applied Physics Lab (PH101) - 1 year
FALL 2019– SPRING 2021	Teacher Assistant Ghulam Ishaq Khan Institute (GIKI), Topi, Swabi Responsibilities: <ul style="list-style-type: none"> • Leading Physics tutorial sessions for undergraduate students • Assessing and providing constructive feedback on student work • Managing the lecture room and study spaces to foster a productive learning environment

Computer skills

MATLAB, COMSOL, LATEX, Origin, GeoGebra, Endnote, Mathematica, Microsoft office, SPSS, C++, Fortran, Regression Learner.

-

Languages

Urdu, English