Name: Dr. Ibrahim Naji Ghabar

Email: Ighabar@zu.edu.jo

Major Specialization: Physics\Nuclear Physics

Academic Rank:	**Associate Professor**

Professional Objective(s):

1) Establish a specialized research program focused on developing nuclear optical potentials using the Single-Folding Model and Density-Dependent M3Y (DDM3Y) effective nucleon–nucleon interactions. The program will emphasize investigating elastic scattering involving stable and unstable nuclei, to improve the theoretical understanding and modeling of nuclear interactions.
2) Develop an integrated scientific simulation platform for the nuclear optical model, incorporating calculations of real and imaginary optical potentials, spin–orbit coupling effects, numerical solutions of the Schrödinger equation, and differential scattering cross sections. The platform will also include parameter optimization and fitting procedures to reproduce experimental scattering data. This initiative can be developed into a sustainable research project supporting postgraduate studies, scientific publications, and collaborative research.
3) Lead the strategic transformation of the Faculty of Science into an advanced, research-oriented academic institution by integrating computational physics, artificial intelligence, and modern numerical techniques into academic programs. This goal also involves establishing multidisciplinary research groups, promoting high-quality publications in internationally recognized scientific journals, strengthening international academic partnerships, and fostering an innovative research environment that enhances the Faculty's academic reputation and scientific contributions.

Personal Information:	
Extension No.:	1500
Mobile No.:	0799811156
Address:	Amman\Tabarbur
Nationality:	Jordanian
Marital Status:	Married

Membership:	
1)	
2)	
3)	
4)	

Qualifications:	
1)	PhD\Theoretical Nuclear Physics 2014
2)	M.Sc \ Polymer Physics 1996
3)	B.Sc \Physics

Teaching Experiences:			
1)	Dean of Faculty of Science	15/10/2026	------
2)	Dean Of Graduate Studies\Zarqa University	15/9/2024	15/10/2026

3)	Dean of Faculty of Science	2/2/2024	15/9/2024
4)	Vice Dean of Faculty of Science	24/9/2023	2024/2/2
5)	Head of Physics Department\Zarqa University	2023/9/24	2022/9/24
6)	Associate professor at Zarqa University.	2017	Now
7)	Assistant professor at German Jordanian University to teach Physics II .	2015	2015
8)	Teacher in a high school at private schools .	2017	2005
9)	Teacher in a high school, Ministry of Education-Jordan.	1993	2005

Publications:

No.	Title	Journal	Year
1)	Velocity-dependent optical potential for neutron elastic scattering from 1 *p*-shell nuclei.	PHYSICAL REVIEW C **91**, 064308 (2015).	2015, Volume C 91 064308
2)	Nucleon-nucleus velocity-dependent optical model: revisited	Journal of Physics G: Nuclear and Particle Physics	2022 Volume 49, Number 1
3)	Velocity dependent potential for alpha 40Ca-elastic scattering	Results in Physics	2023 Volume 47, 106335
4)	Using Laplace Residual Power Series Method in Solving Coupled Fractional Neutron Diffusion Equations with Delayed Neutrons System	fractal and fractional	2023 Volume 7, 219
5)	Preparation and optoelectronic performance of 2,7,12,17-tetra-tert-butyl-5,10,15,20-tetraaza-21H,23H-porphine-CuS films for photovoltaic applications	Dyes and Pigments	2023 Volume 218, 111452
6)	A solution for the neutron diffusion equation in the spherical and hemispherical reactors using the residual power series	Frontiers in physics	2023,
7)	Density and energy dependent semi-microscopic optical potential of nucleon–nucleus elastic scattering	Results in Physics	2024(60)
8)	The Optical Model Absorption Term in the Frame of Fractional Derivatives	Atoms	2024(12,37)

9)	Investigation of structural, electronics, and optical characteristics of cubic $SrZr_{1-x}Ru_xO_3$ perovskites: first-principles study	The European Physical Journal Plus	(2025) 140:510
10)	A Semi-Analytical Technique for Solving the Time-Fractional Kaup-Kupershmidt Equation	Progr. Fract. Differ. Appl.	Appl. 11, No. 03, 507-520 (2025)

Books:

No.	Title	Publisher	Year
1)	G12 Physics Student and Work book	National Center for Curriculum Development	2022

Conferences:

No.	Title Mark (-) for attendance only	Organizing Institution	Year
1)	Fractional Derivative of the Spin-Orbit Term in The Optical Potential for Nucleon -(_ ^12)C Elastic Scatt	**The 9th International Arab Conference on Mathematics and Computation\ZarqaUniversity**	**2024**

Supervision of Graduate Studies:

No.	Title Theses or Dissertations	University	Year
1)	A SEMI-MICROSCOPIC OPTICAL POTENTIAL ANALYSIS OF PROTON ELASTIC SCATTERING FROM HALO AND RICH NEUTRON He, C, AND O ISOTOPES	Zarqa University	2026
2)			
3)			

Community Service Activities:			
No.	Activity	Venue of the activity	Year
1)			
2)			
3)			