



Amal Farhan Odeh Al-Maaitah **Curriculum Vitae**

Personal Data:

- Present position: Full Professor, Department of physics, Mu'tah University, Al-Karak, Jordan
- Date of Birth: 30/4/1978
- Marital status: Married, two daughters, one son.
- Email: amal_almaaita@mutah.edu.jo
- Address: Department of physics, Faculty of Science, Mu'tah University, PO Box 7, Zip code 61710, Al-Karak, Jordan.

Educational Background

2006-2011 PH. D. In Theoretical Condensed Matter Physics, University of Jordan, Jordan.

Dissertation Title: "Scattering Properties of Spin-Polarized Liquid ^3He ".

- Supervisor: Prof. Dr. Humam B. Ghassib.
- Co-supervisor: Dr. Bassam R. Joudeh.

2002-2004 M. Sc. degree in Physics, Mu'tah University, Jordan. (Distinction)

Thesis Title: "Some Physical Applications of the Fractional Calculus".
Supervisor: Prof. Dr. Iqab M. Rabei.

1996-2000 B.Sc. degree in Physics, Mu'tah University, Jordan.

General Secondary Certificate, 1996.

Research Interests:

Thermodynamic and scattering properties of quantum fluids, Low and ultralow temperature physics, Fractional derivatives, Fractional Euler-Lagrange equation, Lagrangian and Hamiltonian formulations, Hamilton-Jacobi Formulation.

Courses Taught

- General Physics I
- Physics I Laboratory
- General Physics II
- Physics II Laboratory
- Modern Physics I
- Modern Physics II
- Statistical Mechanics
- Intermediate Physics Laboratory
- Advanced Physics Laboratory
- Optics Laboratory
- Electronic Laboratory
- Mathematical Physics II
- Classical Mechanics I
- Classical Mechanics II
- Mathematical Physics (Graduate Course)
- Statistical Mechanics (Graduate Course)
- Quantum Physics

Students Supervision in Mu'tah University

Aseel M. Al-Tarawneh, On the WKB Method of Time-Dependent Constraints, M.Sc. Thesis (2014).

Ahmad Y. Al-Bakhit, Calculation of Binding Energy in Negative Ions, M.Sc. Thesis (2015).

Huda A. Abu Khamash, Density Functional Theory: Study of the Chlorine Adsorption on the Fe (110) Surface, M.Sc. Thesis (2017).

Mohammad A. Al-Btoush Hamiltonian-Jacobi Method of Mechanical Systems Based on the Doubling of Degrees of Freedom, M.Sc. Thesis (2018).

Amani A. Alzboun, Scattering and Thermodynamic Properties of Hydrogen Gas, M.Sc. Thesis (2019).

Rania S. Al-Qatawneh, A Microscopic Study of Nitrogen Gas using the Scattering Theory, M.Sc. Thesis (2022).

External Member of the Examination Committee

Ali B. S. Al-Othman, Studying of the Energy-Spectra of some Diatomic Molecules and Dimers of Alkali Metals using the Shifted $1/N$ Expansion Method. M.Sc. Thesis. Jordan: Al-Balqa Applied University (2022).

External Member of the Examination Committee in Mu'tah University

Saif Al-Dalaeen, Influence of Wavelength and Temperature Change on Optical Properties of Liquid and Liquid Mixtures: Empirical Formulas, M.Sc. Thesis (2013).

Abdel-Mu'iz M. Abuawas, Capacitance Calculation of Infinite Networks Using Lattice Green's Function " Perfect and Perturbed Triangular Lattices", M.Sc.Thesis (2014).

Anoud K. Al-Fugara, Hamilton-Jacobi Equation of Time Dependent Hamiltonians, M.Sc.Thesis (2018).

Ahmad A. Al Oran, Empirical Mixing Rule Fitting Models of Optical and Rheological Properties of Soybean Oil: Case of Repetitive Frying, M.Sc. Thesis (2019).

Amer A. Al Naimat, Modified Orbital Elements Of The Close Visual Binary Systems; HIP43766, and HIP81693, M.Sc.Thesis (2019).

Iham S. Aloran, Spectral and Thermophysical Characteristics of Aqueous Inverted Sugar Solutions: Experimental, Empirical and Semiempirical Analysis, M.Sc. Thesis (2019).

Amin A. Algarallah, A STUDY OF DEFINITIONS FOR FRACTIONAL DERIVATIVES AND INTEGRALS, M.Sc. Thesis (2019).

Academic Experience

- Physics and science teacher for the elementary grade in Alnamuthajeh school, Mu'tah University, Jordan. 2001– 2002.

- Physics and science teacher for the elementary and secondary grade in Ministry of Education, 2002-2008.

- Teaching Assistant in the Laboratory of the University of Jordan during work on a Doctoral thesis, 2009-2010.

- Teaching Assistant, Department of applied physics, Tafila Technical University, Tafila, Jordan, 2008- 2011.

-Lecturer, Department of physics, Mu'tah University, Al-Karak, Jordan, from September 2011-January 2013.

-Assistant Prof., Department of physics, Mu'tah University, Al-Karak, Jordan, 22/1/2013-11/6/2017.

-Head of the Department of Physics, Mu'tah University, September 2014- September 2015.

-Associate Prof., Department of physics, Mu'tah University, Al-Karak, Jordan, 12/6/2017-21/6/2022.

- Head of the Department of Physics, Mu'tah University, 2021-2023.

-Full Prof., Department of physics, Mu'tah University, Al-Karak, Jordan,22/6/2022- now.

Awards:

The award of Scientific Research Support Fund, 2012.

Published Articles:

A.F. Al-Maaitah, B. R. Joudeh, A. S. Sandouqa and H. B. Ghassib, Scattering Properties of Spin-Polarized Liquid ^3He , Journal of Low Temperature Physics, 164:5-22, 2011.

A. F. Al-Maaitah, Scattering Properties of Spin-Polarized Atomic Tritium, European Scientific Journal, 8(24), 170-185, 2012.

A. F. Al-Maaitah, Fractional Caputo Analysis of Discrete Systems, European Scientific Journal, 10(24), 277-285, 2014.

A. M. Al-Tarawneh, **A. F. Al-Maaitah**, K. I. Nawafleh, On the WKB Method of Time Dependent Constraints, Mu'tah Lil-Buhuth wad-Dirasat, 30(1),31-54 ,2015.

A. F. Al-Maaitah, M.Q. Suleiman, R. S. Hijjawi and K. I. Nawafleh, Fractional Hamiltonian Formulation (Riemann – Liouville Form), Mu'tah Lil-Buhuth wad-Dirasat, 31 (1) ,2016.

A. F. Al-Maaitah, M. A. Bani Yaseen, R. S. Hijjawi and K. I. Nawafleh, Reformulation the Yang-Mills Field by Fractional Calculus, Science International (Lahore), 28(4),3257-3263, 2016.

A. F. Al-Maaitah, Hamiltonian Formulation of Stueckelberg Field with Riemann – Liouville Fractional Derivatives, Science International (Lahore), 28(6),5025-5029,2016.

A. F. Al-Maaitah, A. S. Sandouqa, B. R. Joudeh, and H. B. Ghassib, Thermodynamic Properties of Spin-Polarized ^3He Gas in the Temperature-Range 1mK – 4K from the Quantum Second Virial Coefficient, International Journal of Modern Physics B, 31(28), 1750202-11, 2017.

A. F. Al-Maaitah, Thermodynamic Properties of Argon Gas in the Temperature-Rang 100-3000 K, Science International (Lahore), 31(3), 45- 449, 2019.

A. F. Al-Maaitah, A. S. Sandouqa, B. R. Joudeh, and O.T. Al-Obeidat, The Scattering and Thermodynamic Properties of Ultracold ^{20}Ne Vapor, Chinese Journal of Physics, 62,194-201, 2019.

Mohammad A. Al-Btoush **A. F. Al-Maaitah**, K. I. Nawafleh, Hamiltonian-Jacobi Treatment of Damped Harmonic Oscillator Based on Employing the Method of Dual Coordinates, Mu'tah Lil-Buhuth wad-Dirasat, Natural and Applied Sciences Series Vol. 35. No. 2, 2020.

A. F. Al-Maaitah, A Microscopic Study of Ne-Ne Interactions with Phenomenological Potentials Using Second Virial Coefficients, Science International (Lahore), 32(1), 1- 6, 2020.

A. A. Alzboun, A. F. Al-Maaitah, A. S. Sandouqa, The Scattering Properties of Gaseous Parahydrogen, Journal of Low Temperature Physics 203:74–83, 2021.

A. F. Al-Maaitah, Fractional Heisenberg Equations for Scalar Yukawa Interaction, Mu'tah Lil-Buhuth wad-Dirasat, Natural and Applied Sciences Series Vol. 36. No. 2, 2021.

A. F. Al-Maaitah, A. D. Al-Oqali, Equation of State of Krypton Gas in the Temperature Range 120-130 K, International Journal of Advanced and Applied Sciences, 9(8): 144-151, 2022.

Emad Az-Zo'bi, **Amal F. Al-Maaitah**, Mohammad A. Tashtoush, Mohamed S. Osman, New generalized cubic-quintic-septic NLSE and its optical solitons, Pramana- Journal of Physics, 96:184, 2022.

M.W. Aladailah, O.L. Tashlykov, I.A. Shirmanov, E.D. Strugov, M.I. Sayyed, Mohammad W. Marashdeh, M. Elsafi, **A.F. Al-Maaitah**, Radiation attenuation properties of novel glass system using experimental and Geant4 simulation, Radiation Physics and Chemistry, Volume 199, 110404, 2022.

Riaz Ur Rahman, **Amal F Al-Maaitah**, Maysoon Qousini, Emad Ahmad Az-Zo'bi, Sayed M. Eldin, Muhammad Abuzar, New soliton solutions and modulation instability analysis of fractional Huxley equation, Results in Physics,44, 106163, 2023.

B. R. Joudeh· A. S. Sandouqa· O. T. Al-Obeidat· **A. F. Al-Maaitah**· H. B. Ghassib, 4He Gas in the Temperature-Range 1 mK–5 K: Thermodynamic Properties from the Quantum Second Virial Coefficient, Journal of Low Temperature Physics, 213:28–41, 2023.

Djazia Nasri, Houaria Riane, Mohammed El Amine Monir, Ibtisam F. Al-Maaitah, **A. F. Al-Maaitah**, Amel Laref , Hadj Baltach and Abdelkarim Bendoukha Reguig, Half-metallicity feature within Ag-doped zinblende WGe alloys: DFT +*U* insights, Modern Physics Letters B, Vol. 37, No. 23 (2023).

Mohammed El Amine Monir ,Hadj Baltach, Ibtisam F. Al-Maaitah , **A.F. Al-Maaitah** and Amel Laref, First-principles study of structural, electronic and optoelectronic properties of Ag-doped Cu₂O alloys: TB-mBJ insights , Modern Physics Letters B, 2450036,2024.

Reviewer in Journals

European Scientific Journal

Languages:

Arabic: Mother Language

English: Excellent

Courses Attended

- International Computer Driving Licence (ICDL).
- Intel course.
- Preparation for (PBT) TOFEL.

References:

Prof. Humam B. Ghassib, Dept. of Physics, University of Jordan, Amman, Jordan, Tel. (+962777872122), e-mail: humamg@ju.edu.jo, hghassib@orange.jo.

Prof. Marwan Al-Mousa, Dept. of Physics, Mutah University, AlKarak, Jordan, Tel. (+962795659761), e-mail: mmousa@mutah.edu.jo, marwansmousa@yahoo.com.

Prof. Eqab M. Rabei, Dept. of Physics, Al al-Bayt University, Mafraq, Jordan, Tel. (+962779932558), e-mail: eqabrabei@gmail.com.