

CURRICULUM VITAE

Hasan Mousa Al-Khateeb, Ph.D.

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Education

B.A. in Science/Physics (1989), Yarmouk University, Irbid, JORDAN.

M.S. in Physics/Nuclear Physics (1991), The University of Jordan, Amman, JORDAN.

Thesis: "Measuring Depth profile of Nitrogen in Iron using (P, γ) Reaction".

Ph.D. in Physics/Atomic and Molecular Physics (2000), University of Nebraska-Lincoln, Lincoln, NE, USA.

Thesis: "Angular Momentum Partitioning and Hexacontatetrapoles in Impulsively-Excited Argon Ions".

Teaching and Research Appointments

- Graduate Teaching Assistant (1989-1991), Physics Department, University of Jordan, Amman, JORDAN.
- Laboratory Instructor (1991-1993), Department of Physical Sciences, Jordan University of Science and Technology, Irbid, JORDAN.
- Graduate Teaching Assistant (1993-1996), Department of Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE, USA.
- Graduate Research Assistant (1996-2000), Department of Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE, USA.

- Full time Instructor (11/2000-11/2001), Department of Physical Sciences, Jordan University of Science and Technology, Irbid, JORDAN.
- Visiting Professor (Summer 2001, 2002, and 2003), Department of Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE, USA.
- Visiting Professor/Part time (summer and fall 2004/4005), New York Institute of Technology, Middle East Branch- Amman, JORDAN.
- Associate Professor (06/2008-09/2009), Department of Physical Sciences, Jordan University of Science and Technology, Irbid, JORDAN.
- Associate Professor (10/2009-07/2014), Department of Basic Sciences, Collage of Medicine, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, KSA.
- Associate Professor (07/2014- 24/06/2017), Department of Physical Sciences, Jordan University of Science and Technology, Irbid, JORDAN.
- Chairman (05/09/ 2017- 04/09/ 2021), Department of Physical Sciences, Jordan University of Science and Technology, Irbid, JORDAN.
- Full Professor (24/06/2017- present), Department of Physical Sciences, Jordan University of Science and Technology, Irbid, JORDAN.
- Vice Dean (05/09/ 2023- Present), Faculty of Science and Arts, Jordan University of Science and Technology, Irbid, JORDAN

Research Interests

- 1) Polarized-electron atom collisions.
- 2) Superconductivity.
- 3) Radiation Measurements.
- 4) Fractional Calculus.
- 5) Preparing non-particles.

Specific Research Experience

In my M. A. degree at University of Jordan, we used Van de Graff accelerator to measure the depth profile of nitrogen in iron using the (P,γ) reaction. In this period of research, I gained extensive experience in electronics and vacuum systems.

In my Ph.D. research, I gained extensive experience in the following areas:

- 1) Dealing with ultra-high vacuum.
- 2) Producing photoemission polarized-electrons from GaAs crystal, and tuning the electron beam through many electrostatic lenses (i.e this part provided me the experience in electronics).
- 3) Measuring the polarization of the light (Stokes parameters) emitted from excited ions (i.e this part provided me the experience in optics).
- 4) Using the following software: Autosketch, Sigma Plot, Mathematica and Word.

Since I got my Ph.D. and worked as an assistant professor at the Department of Physical Sciences at Jordan University of Science & Technology, I used to spend the summer sessions at the University of Nebraska-Lincoln at the USA doing research projects with Prof. Timothy J. Gay.

Two weeks-experience in preparing an experiment to study the Circularly-Polarized $H\alpha$ Emission Produced by Photo-dissociation of H_2 with Circularly-Polarized Light, Advance Light Source (ALS), Berkley, CA, USA.

Due to the lack of financial support to build up an experimental atomic physics laboratory in Jordan, Prof. Nabil Y. Ayoub, I and some other colloquies from my department (Prof. F. Alzoubi, Prof. M. K. Hasan (Qaseer), Prof. A. A Rousan, and Dr. M. Alqadi) initiated research in different aspects of theoretical and experimental physics such as:

- 1) Calculation of the levitation force of magnets above the superconductors.
- 2) Applications of fractional calculus techniques in physics.
- 3) Measurements of radon in dwellings, water, and soil.
- 4) Preparing non-particles.

Previous Projects

1) Simplified Gallium Arsenide (GaAs) Polarized Electron Source.

In this project, we reported the operational and constructional details of a simplified GaAs polarized electron source. This source is capable of producing an electron photocurrent of $50\mu A$, which has a spin polarization of 28%.

2) Near-Threshold Measurement of Integrated Stokes Parameters for Kr Excited by Polarized Electrons.

In this project, we have made high-accuracy measurements of the integrated Stokes parameters for resonance fluorescence of the 2D_2 and 3D_3 of the states of Kr that produced by polarized electron-Kr collisions.

3) Angular Momentum Partitioning and Hexacontatetrapole Moments in Impulsively Excited Argon Ions.

In this project, we have studied polarized electron collisions with Ar in which the target is simultaneously ionized and excited to form $Ar^+(3p^4(^1D) 4p)$ states. We measured the integrated Stokes parameters of subsequent fluorescence by $^2F_{7/2}$, $^2F_{5/2}$, $^2D_{5/2}$, $^2P_{3/2}$ states along the electron polarization. By recoupling the electric quadrupole and hexadecapole of the 1D core with the electric quadrupole moment of the 4p outer electron, we calculate higher moments of the total ionic angular momentum including its Hexacontatetrapole (64-poles) moment.

4) Pressure Dependent Excitation Functions of Argon Ions by Electron-Argon Collisions.

We have studied simultaneous ionization and excitation of argon atoms by un-polarized electron impact. We measured the optical excitation functions of four decay lines of singly-ionized Ar (ArII) without detecting the scattered electrons. These optical excitation functions are taken at three different argon gas pressures (0.6, 2.4, and 21mTorr), and at electron energies in the range 5 to 180eV. A double peak behavior for doublet states has been observed in our optical excitation functions of ArII.

5) Building Gallium Arsenide (GaAs) Polarized Electron Source.

I planned to build up this source in Jordan. Due to the lack of financial support, it is able to continue in this project. I postponed this project until I get enough financial support or until the Synchrotron-Light for Experimental Science and Applications in the Middle East (SESAME) is opened, which can help in this regard.

6) Theoretical Superconductivity and Magnetic Levitation Force.

In this project, we calculate the levitation force of magnets above the superconductors as well as the applications of fractional calculus techniques in physics.

7) Measurements of radon concentration in dwellings, water, and soil.

In this project, we are planning to complete the map of radon in Jordan by measuring the radon concentrations in all districts of Jordan especially in dwellings. Furthermore, spread the knowledge about the radon and its risk among the people of the areas of study.

Teaching Experience

At Jordan University of Science and Technology, I taught the following courses:

- 1) Physics 101: a general physics course for Scientist and Engineers.
- 2) Physics 102: a general physics course for Scientist and Engineers.
- 3) Physics 103: a general physics course for medical students.
- 4) Physics Laboratory 105.
- 5) Physics Laboratory 106.
- 6) Physics Laboratory 107.
- 7) Physics Laboratory 253.
- 8) Physics Laboratory 283.
- 9) Physics 201: Introduction to Mathematical Physics
- 10) Physics 251: modern physics I.
- 11) Physics 252: modern physics II.
- 12) Physics 351: quantum mechanics I.
- 13) Physics 352: quantum mechanics II.
- 14) Physics 440: atomic physics.
- 15) Physics 751: quantum mechanics (Master program).
- 16) Physics 744: atomic physics (Master Program).

At the University of Nebraska-Lincoln, I taught the following courses during summer 2001, 2002, and 2003:

- 1) Physics 211: a general physics course for scientist and Engineers.
- 2) Physics 212: a general physics course for scientist and Engineers.

Experimentally, we also studied the pressure dependent excitation functions of argon ions by electron-argon collisions.

At New York Institute of Technology, I taught three courses in physics:

- 1) Physics 170: a general physics course for computer science students.
- 2) Physics 180: a general physics course for computer sciences students.
- 3) Physics 115: humanity and physical universe.

At King Saud Bin Abdulaziz University for Health Sciences, I am teaching three general courses in physics for health science majors.

Workshops in Teaching and Education

- 1) Measurement and Assessment, Jordan University of Science and Technology, Irbid, Jordan, 2001.
- 2) American Teaching Methods, New York Institute of Technology, Middle- East Branch, Amman, Jordan, 2005.
- 3) Modern University Instructional Methods, Jordan University of Science and Technology, Irbid, Jordan, 2007.
- 4) How to Conduct Professional Teaching, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, KSA, 2010.
- 5) International Conference: New Perspectives in Science Education, 3rd Edition, 2014, Florence, Italy.
- 6) Innovation Teaching in Higher education, Jordan University of Science and Technology, Irbid, Jordan, 2015.
- 7) E-learning Open Education Resources, Jordan University of Science and Technology, Irbid, Jordan, 2015.

Master Degree Committees

- 1) Committee member: "Optical and Piezoelectric Properties of ScN and its Related Alloys" by *H. F. Al-Ta'ani* (Jordan University of Science & Technology, 2004).
- 2) Co-advisor: "Magnetic levitation force acts on a magnetic dipole over a superconducting thin film" by *B. A. Shibli* (Jordan University of Science & Technology, 2005).
- 3) Committee member: "High T_c Superconductors Thick Films as a Magnetic Sensors", *I. Y. Jumha*, (Jordan University of Science & Technology, 2005).
- 4) Committee member: "Measurements of Radon Concentration in Soil and Indoors in Jarash City-Jordan", by *K. M. Al-Azzam* (Jordan University of Science & Technology, 2006).
- 5) Committee member: "The UV and Laser Aging for PMMA/BDK/Azo-dye Polymer Blend Cured by UV and Visible Light Beams", by *Ahmad H. Alomari* (Jordan University of Science & Technology, 2007).

- 6) Committee member: "Coincidence Summing Corrections for Marinelli-Beakers Geometry in HPGe Gamma Ray Spectrometry Using Peak to Total (P/T) Calibration", by M. M. Eideh (Yarmouk University, Irbid, Jordan, 2008).
- 7) Advisor: "Measurements of Radon Concentration in Soil and Indoors in the Villages of Ayn-Jana, Ishtafena, Samta and Amm Yanabe'-District of Ajloun", by A. A. Al-Qudah (Jordan University of science & Technology, 2009).
- 8) Committee member: "L Shell x-ray fluorescence cross sections for elements with atomic number greater than 40 and less than 92 at different excitation energies", by H. A. Tanash (Jordan University of Science & Technology, 2014).
- 9) Advisor: "Stability of colloidal silver nano-particle solutions prepared by chemical reduction", by M. A. Mohammed (Jordan University of Science & Technology, 2016).
- 10) Co-Advisor: "Measurements of radon gas concentration levels in soil in Amman city", by M. S. Al Bluwe (The University of Jordan, 2016).
- 11) Advisor: "Measurements of natural radiation and radon concentration in the schools of district of Ajloun", by R. M. Bani Fawaz (Jordan University of Science & Technology, 2017).
- 12) Co-Advisor: "M shell x- ray fluorescence cross sections for elements with atomic number greater than 70 and less than 90 at different excitation energies", by D. Y. Alomari (The University of Jordan, 2017).
- 13) Co-Advisor: "Effect of alkalinity of water on colloidal silver nanoparticles ", by E. S. Aljarrah (The University of Jordan, 2018).
- 14) Co-Advisor: "Calculation of levitation forces in permanent magnet-superconductor systems", by N. A. Shatnawi (The University of Jordan, 2020).
- 15) Advisor: "Measurements of L Shell X-ray fluorescence cross-sections and relative intensities for some elements at different excitation energies" by S. E. Elhumaid (Jordan University of Science & Technology, 2021).
- 16) Advisor: "Measurement of radionuclides and heavy metals in some Syrian imported vegetables" by I. M. Al-Hamad (Jordan University of Science & Technology, 2022).
- 17) Co-Advisor: "CONCENTRATION OF RADON AND PHYSICOCHEMICAL PARAMETERS IN HOT SPRINGS WATER, JORDAN ", by M. H. Al-Rousan (The University of Jordan, 2023).
- 18) Advisor: "MEASURING THE CONCENTRATION OF HEAVY METALS AND RADIONUCLIDES IN THE SOIL OF THE PETROLEUM REFINERY AND AL-

HUSSEIN THERMAL STATION” by *Majd Abd Al-Jaleel Al-Shboul* (Jordan University of Science & Technology, 2023).

- 19)** MEASUREMENTS OF NATURAL RADIATION AND RADON CONCENTRATION IN ESHIDIYA PHOSPHATE MINE by *Mohammad T. Al-Khatib* (Jordan University of Science & Technology, 2025).

20)

21)

**22) MEASUREMENTS OF NATURAL RADIATION AND RADON
CONCENTRATION IN ESHIDIYA PHOSPHATE MINE**

Publications

- 1) K. W. Trantham, **H. M. Al-Khateeb**, T. C. Bowen, B. G. Birdsey, H. Batelaan, T. J. Gay, Electron-Impact Excitation of Neon: An Atomic Alignment Flywheel, *12TH International Conference on the Physics of the Electronic and Atomic Collision*, Vienna, AUSTRIA, 1997.
- 2) B.G. Birdsey, **H.M. Al-Khateeb**, M.E. Johnston, T.C. Bown, T. J. Gay, V. Zeman, K. Bartschat, Near-threshold Measurement of the Integrated Stokes Parameters for Kr Excited by Polarized Electrons, *Phys. Rev. A* **60**, 1046 (1999).
- 3) **H. M. Al-Khateeb**, B.G. Birdsey, T.C. Bown, A.S. Green, M.E. Johnston, T. J. Gay, A Simplified GaAs Polarized Electron Source, *Rev. Sci. Instr.* **70**, 3883(1999).
- 4) **H. M. Al-Khateeb**, B.G. Birdsey, T. J. Gay, Angular Momentum Partitioning and Hexacontatetrapole Moments in Impulsively Excited Argon Ions, *Phys. Rev. Lett.* **85**, 4040 (2000).
- 5) B. G. Birdsey, **H. M. Al-Khateeb**, T. J. Gay, Determination of Hexadecapole Moments for the $3p^4$ (1D) Core of Argon II Excited in Polarized e^- -Ar Collisions, in *Correlations, Polarization, and Ionization in Atomic Systems*, (AIP Conference Proceedings, #604), D.H. Madison and M. Schulz editors. (AIP, New York, 2002).
- 6) **H. M. Al-Khateeb**, B.G. Birdsey, T. J. Gay, Angular Momentum Partitioning and the Subshell Multipole Moments in Impulsively Excited Argon Ions, *Phys. Rev. A* **71**, 032707 (2005).
- 7) F. Y. Alzoubi, **H. M. Al-Khateeb**, M. K. Alqadi, N. Y. Ayoub, Angular Dependence of Levitation Force on a Small Magnet above a Superconducting Cylinder in the Meissner State, *Supercond. Scie & Tech.* **18**, 1329 (2005).
- 8) F. Y. Alzoubi, **H. M. Al-Khateeb**, M. K. Alqadi, N. Y. Ayoub, Vibration in Magnetic/Superconductor Levitation System, *Chin. Phys. Lett.* **23**, 1643 (2006).
- 9) M. K. Alqadi, F. Y. Alzoubi, **H. M. Al-Khateeb**, N. Y. Ayoub, Levitation Force Between a Short Magnetic Bar and a Superconducting Cylinder in the Meissner State, *Mod. Phys. Lett. B* **20**, 1549 (2006).

- 10) A. A. Rousan, N.Y. Ayoub, F.Y. Alzoubi, **H. M. Al-Khateeb**, M. K. Alqadi, M. K. Hasan (Qaseer), B.A. Albiss, A Fractional LC-RC Circuits, *Fractional Calc. Appl. Analys.* **9**, 1 (2006).
- 11) **H. M. Al-Khateeb**, M. K. Alqadi, F. Y. Alzoubi, N. Y. Ayoub, Angular Dependence of Lateral and Levitation Forces in Asymmetric Small Magnet/Superconducting System, *Chin. Phys. Lett.* **24**, 2700 (2007).
- 12) **H. M. Al-Khateeb**, F. Y. Alzoubi, M. K. Alqadi, N. Y. Ayoub, Magnetic Levitation of a Small Magnetic Ring above Cylindrical Superconductor Sample in the Meissner State, *Turk. J. Phys.* **31**, 271 (2007).
- 13) F. Y. Alzoubi, M. K. Alqadi, **H. M. Al-Khateeb**, N. Y. Ayoub, The Interaction Force between a Permanent Magnet and a Superconducting Ring, *IEEE Trans. Appl. Supercond.* **17**, 3814 (2007).
- 14) M. K. Alqadi, **H. M. Al-Khateeb**, F. Y. Alzoubi, N. Y. Ayoub, Effects of Magnet Size and Geometry on Magnetic Levitation Force, *Chin. Phys. Lett.* **24**, 2664 (2007).
- 15) **H. M. Al-Khateeb**, M. K. Alqadi, F. Y. Alzoubi, N. Y. Ayoub, Levitation Force between a Small Magnet and Superconducting Sphere , *J. Supercond. Nov. Magn.* **21**, 93 (2008).
- 16) **H. M. Al-Khateeb**, B. A. Albiss, F. Y. Alzoubi, M. K. Alqadi, M. K. Hasan (Qaseer), N.Y. Ayoub, Levitation Force between Monolayer of Magnetic Particles and Superconducting Plane in Meissner State, *IEEE Trans. Appl. Supercond.* **18**, 14 (2008).
- 17) M. K. Alqadi, F. Y. Alzoubi, **H. M. Al-Khateeb**, N. Y. Ayoub, Calculation of Levitation Force between Small Superconducting Cylinder and Magnetic Ring in the Critical State , *J. Supercond. Nov. Magn.* **21**, 415 (2008).
- 18) M. K. Alqadi, F. Y. Alzoubi, **H. M. Al-Khateeb**, N. Y. Ayoub, Interaction between a Point Dipole and a High-Temperature Superconducting Sphere, *Physica B.* **404**, 1781 (2009).
- 19) F. Y. Alzoubi, M. K. Alqadi, **H. M. Al-Khateeb**, N. Y. Ayoub, Size effects on levitation force between a magnet and a superconducting thin film in the Meissner state, *J. Supercond. Nov. Mag.* **25**, 22 (2012).
- 20) M. K. Alqadi, F. Y. Alzoubi, **H. M. Al-Khateeb**, N. Y. Ayoub, Force Analysis of a Permanent Magnet and a Superconducting Hollow Cylinder, *J. Supercond. Nov. Mag.* **25**, 1469 (2012).
- 21) F. Y. Alzoubi, M. K. Alqadi, **H. M. Al-Khateeb**, S. M. Saadeh, N. Y. Ayoub, Solution to fractional un-damped forced oscillator, *Jordan J. Phys.* **5**, 129 (2012).

- 22) F. Y. Alzoubi, **H. M. Al-Khateeb**, M. K. Alqadi, S. M. Saadeh, N. Y. Ayoub, The force between a monolayer of magnetic particles and a superconductor in the mixed state, *Modern Phys. B* **17** 12509 (2012).
- 23) **H. M. Al-Khateeb**, A. A. Al-Qudah, F. Y. Alzoubi, M.K. Alqadi, K.M. Aljarrah, Radon concentration and radon effective dose rate in dwellings of some villages in the district of Ajloun, Jordan, *Appl. Radiat. Isotopes* **70**, 1579 (2012).
- 24) I. A. Aljarrah, O.D. Al-Khaleel, **H. M. Al-Khateeb**, K. M. Aljarrah, F. Y. Alzoubi, A new method for measuring tracks density in CR-39 detectors by compensating for overlapping tracks, *Radiat. Meas.* **47**, 537 (2012).
- 25) F.Y. Alzoubi K.M. Al-Azzam, M.K. Alqadi, **H.M. Al-Khateeb**, Z.Q. Ababneh, A.M. Ababneh, Radon concentration levels in the historical city of Jerash, Jordan, *Radiat. Meas.* **49**, 35 (2013).
- 26) M.K. Alqadi, F.Y. Alzoubi, **H. M. Al-Khateeb**, N. Y. Ayoub, Interaction Force Between a Magnetic Tip and a High Temperature Superconducting Cylinder, *J. Supercond. Nov. Mag.* **27**, 73 (2014).
- 27) **H.M. Al-Khateeb**, M. K. Alqadi, F. Y. Alzoubi, B. Albiss, M. K. Hasan (Qaseer), N. Y. Ayoub, Levitation and lateral forces between a point magnetic dipole and a superconducting sphere, *Chin. Phys. B* **25**, 58402 (2016).
- 28) **H.M. Al-Khateeb**, K.M. Aljarrah, F.Y. Alzoubi, M.K. Alqadi, A.A. Ahmad, The correlation between indoor and in soil radon concentrations in a desert climate, *Radiat. Phys. Chem.* **130**, 142 (2017).
- 29) **H.M. Al-Khateeb**, M. Nuseirat, K. Aljarrah, M-Ali. H. Al-Akhras, H. Bani-Salameh, Seasonal variation of indoor radon concentration in a desert climate, *Appl. Radiat. Isotopes* **130**, 49 (2017).
- 30) A.A. Ahmad, A.M. Alsaad, Q.M. Al-Bataineh, A.A. Bani-Salameh, **H.M. Al-Khateeb** and M.A. Al-Naafa, Optical and Structural Characterization of Dip Synthesized Al-B Co-doped ZnO Seeded Platforms for ZnO Nanostructures, *Jordan J. Physics* **10**, 33 (2017).
- 31) **H.M. Al-Khateeb**, F.Y. Alzoubi, M.K. Alqadi, M. A. Mohammed, Stability of colloidal silver nanoparticle solutions prepared by chemical reduction, *Acta. Phys. Polon. A* **134**, 217 (2018)
- 32) H.N. Bani-Salameh, K.A. Alkofahi, **H.M. Al-Khateeb**, S.H. Alharbi, Investigating the knowledge of vector concepts of First Year Medical Students, *Health Professions Education* **6**, 428 (2020).

- 33) F.Y. Alzoubi, J. Al-zou'by, S. Theban, M.K. Alqadi, **H.M. Al-Khateeb**, Etab S. AlSharo, Size, stability, and aggregation of citrates-coated silver nanoparticles: contribution of background electrolytes, *Nanotechnology of Environmental Engineering* **6**, 1 (2021).
- 34) F.Y. Alzoubi, J. Al-zou'by, I. Aljarrah, K. Al-Zboon, **H.M. Al-Khateeb**, M.K. Alqadi, Qais M. Al Bataineh, Etab. S. AlSharo, Physicochemical characteristics of silver nanoparticles: influence of carbonate alkaline, *Nanotechn. Environm. Eng.* **6**, 1(2021).
- 35) M.K. Alqadi, A.B. Migdadi, F.Y. Alzoubi, **H.M. Al-Khateeb**, A.A. Almasri, Influence of (Ag-Cu) co-doping on the optical, structural, electrical, and morphological properties of ZnO thin films, *J. Sol-Gel Scie. Tech.* **103**, 1 (2022).
- 36) A.B. Migdadi, M.K. Alqadi, F.Y. Alzoubi, **H.M. Al-Khateeb**, and W.T. Bani-Hani, Photocatalytic activity of prepared ZnO/CuO nanocomposites and kinetic degradation study of methylene blue, *J. Mater. Science: Materials in Electronics* **33**, 26744 (2022).
- 37) A.B. Migdadi, Q.M. Al-Bataineh, A.A. Ahmad, H.M. Al-Khateeb, A. Telfah, Titanium dioxide/reduced graphene oxide nanocomposites as effective photocatalytic for hazardous 4-nitrophenol, *J. Alloys and Compounds* **971**, 172794 (2022).
- 38) A.B. Migdadi, F.Y. Alzoubi, **H.M. Al-Khateeb**, M.K. Alqadi, Structural and optoelectronic characterization of synthesized undoped CZTS and Cd-doped CZTS thin films, *IJPAP* **60**, 138 (2022).
- 39) F.Y. Alzoubi, H.N. Al Jabaly, O.A.A. Noqta, **H.M. Al-Khateeb**, M.K. Alqadi, M. Bououdina, Citric acid coated iron oxide nanoparticles as contrast agent for magnetic resonance imaging, *Research square*, (2022).
- 40) A.B. Migdadi, M.K. Alqadi, F.Y. Alzoubi, **H.M. Al-Khateeb**, Investigation of structural, morphological, and optoelectronic properties of ZnO thin films with Sn–Ni as co-doping, *Appl. Physics A* **128**, 748 (2022).
- 41) F.Y. Alzoubi, O. Abu. Noqta, T. Al Zoubi, **H.M. Al-Khateeb**, M.K. Alqadi, A Novel One-Pot Synthesis of PVP-Coated Iron Oxide Nanoparticles as Biocompatible Contrast Agents for Enhanced T₂-Weighted MRI, *J. Comp. Scien.* **7**, 131(2023).
- 42) M. Alqadi, M. Al-Rousan, **H. Al-Khateeb** and F. Alzoubi, Concentration of radon and physicochemical parameters in hot spring water, Jordan, *Intern. J. Environ. Anal. Chem.*, Accepted 29 April, 2024.
- 43) F. Alzoubi, M. Al-Gharram, T. AlZoubi, O. Abu Noqta, G. Makhadmeh, **H. Al-Khateeb**, M. Al-Qadi, Advanced Electrochemical Synthesis and Characterization of Al₂O₃

Nanoparticles Embedded in Polyaniline Matrix for Optoelectronic Applications, *Ceramics International*, Accepted for publications, Available on-line July, 2024.

- 44) A.B. Migdadi, Q.M. Al-Bataineh, A.A. Ahmad, **H.M. Al-Khateeb**, A. Telfah, Titanium dioxide/reduced graphene oxide nanocomposites as effective photocatalytic for hazardous 4-nitrophenol, *J. Alloys and Compounds* **971**, 172794 (2024).
- 45) F. Alzoubi, W. BaniHani, R. BaniHani, **H. M. Al-Khateeb**, M. Al-Qadi, Q. Al Bataineh, Synthesis and Characterization of Silver Nanoparticles (Ag), Magnetite Nanoparticles (Fe₃O₄), and Magnetite/Silver Core-Shell (Fe₃O₄/Ag) Nanoparticles, and Their Application against Drug-Resistant Bacteria, *J. of Cluster Scie.* **35**, 2979 (2024).
- 46) F. Alzoubi, W. BaniHani, A. A. Ahmad, M. Al-Qadi, **H. M. Al-Khateeb**, Q. Al Bataineh, Electric Field-Driven Nanoparticles Effect on the Percolation Behavior and Supercapacitance of PEO/AgNPs Nanocomposite Films, *J. of Appl. Polymer Scie.* **17**, 1423 (2025).
- 47) M. K. Alqadi, **H. M. Al-Khateeb**, F. Y. Alzoubi, A. B. Migdadi, Synthesis and characterization of polymer nanocomposite films based on PEO/AgNPs-PVP: structural, thermal, optical, and electrical properties, *J. of Inorg. and Organometallic Polymers and Materials*, **35**, 1281(2025).
- 48) M. Alqadi, M. Telfah, A. Ibrahim, G. Alamat, **H. M. Al-Khateeb**, F. Alzoubi, L-shell x-ray fluorescence relative intensities for elements with $64 \leq Z \leq 83$ at 21 keV and 25 keV by synchrotron radiation, *J. of Quan. Spectro. and Radiat. Trans.* **338**, 109398 (2025).
- 49) F. Alzoubi, M. Al-Gharrah, T. AlZoubi, **H. M. Al-Khateeb**, M. Al-Qadi, O. Abu Noqta, G. Makhadmeh, O. Mouhtady, M. Al-Hmoud, J. Mandumpal, Tailoring CuO/Polyaniline Nanocomposites for Optoelectronic Applications: Synthesis, Characterization, and Performance Analysis, *Polymers* **17**, 1423 (2025).
- 50) F. Alzoubi, W. BaniHani, A.A. Ahmad, M. Al-Qadi, **H. M. Al-Khateeb**, Electric Field-Driven Nanoparticles Effect on the Percolation Behavior and Supercapacitance of PEO/AgNPs Nanocomposite Films, *J. Appl. Polymer Scie*, **142** (44) 2025, e57706.
- 51) **H.M Al-Khateeb**, F.Y Alzoubi, M.K Alqadi, T.S Abdallah, A.B Migdadi, Polyvinyl Alcohol/Chitosan-Doped Silver Ion Nanocomposites for Stable and Long Term Hydrogen Generation, *J. Appl. Polymer Scie.* **143** (20), 2026 e70681
- 52) M.K Alqadi, M.S.A Ennab, **H.M. Al-Khateeb**, F.Y. Alzoubi, Synthesis and characterization of ZnO nanoparticles doped with Mg and Ni for the electro-assisted degradation of hazardous 4-nitrophenol, *Molecular Catalysis* **599**, 2026 116039

Publications out of the collaboration with Prof. M-Ali H. Al-Akhras (Bio-Medical Physics Laboratory) at Jordan University of Science and Technology

- 1) A. Jaradat, M-Ali H. Al-Akhras, G. Makhadmeh, K. Al-Jarrah, A. K. Al-Omari, Z. Ababneh, **H. M. Al-Khateeb**, B. Al-Biss, M. Al-Shorman, Artificial Semi-Rigid Tissue Sensitized with Natural Pigments: Effect of Photon Radiations. *J. Pharm. Bioall. Sci.* **3**,266 (2011).
- 2) M-Ali H. Al-Akhras, Khaled Aljarrah, **Hasan Al-Khateeb**, Adnan Jaradat, Abdelkarim Al-omari, Amjad Al-Nasser, Majed M. Masadeh, Amr Amin, Alaaeldin Hamza, Karima Mohammed, Mohammad Al Olama, Sayel Daoud, Introducing Cichorium Pumilum as a Potential Therapeutical Agent Against Drug-Induced Benign Breast Tumor in Rats, *Electromagnetic Biolo. Med.* **11**, 1(2012).
- 3) M-Ali H. Al-Akhras, K. Aljarrah, A. Al-Omari, **H. M. Al-Khateeb**, B. A. Albiss, K. Azez, G. Makhadmeh. Influence of Extremely Low Energy Radiation on Artificial Tissue: Effects on Image quality and superficial dose, *Spectroscopy: An international Journal* **22**, 419 (2008).

Presentations, Conferences and Workshops

- 1) DAMOP Meeting (1998), Sana Fe, NM, USA, “High Precision Attempt to Observe Mott Scattering Optically”.
- 2) Wildcorn Atomic Physics Conference (1999), University of Nebraska, Lincoln, NE, USA, “Excitation of Ar⁺ by Electron-Argon Collisions”.
- 3) APS Centennial Meeting (1999), Atlanta, GA, USA, “Two Peaks in the Excitation Functions of Singlet States of ArII”.
- 4) Wildcorn Atomic Physics Conference (1999), Kansas State University, Manhattan, KS, USA, “Measuring Hexadecuple Moments for ¹D core for Ar⁺ using Polarized Electron-Argon Collisions”.

- 5) DAMOP Meeting (2000), Shores, CT, USA. (This talk was presented by Professor T. J. Gay), “Angular momentum partitioning and hexacontatetrapole moment in impulsively-excited argon ions”.
- 6) International Conference on Photonic, Electronic, and Atomic Collisions (ICPEAC Meeting) (2001), Santa Fe, NM, USA, “Angular momentum partitioning in ionizing collisions between Polarized electrons and Argon” (This talk was presented by Professor T. J. Gay). *The topic of this talk was selected as one of the "Hot Topics" i.e at this meeting there are more than 700 contributed abstracts, and only 14 were selected for this honor.*
- 7) Scientific Day (2001), Jordan University of Science and Technology, Irbid, JORDAN, “Building GaAs Polarized Electron Source”.
- 8) Scientific Day (2002), Jordan University of Science and Technology, Irbid, JORDAN, “Angular Momentum Partitioning and Hexacontatetrapoles in Excited Argon Ions”.
- 9) 1st SESAME Users Meeting: JSPS Asian Science Seminar: Synchrotron Radiation Science (2002), Al-Balqa’ Applied University, Al-Salt, JORDAN.
- 10) DAMOP Meeting (2003), Boulder, CO, USA, “Pressure-Dependent Excitation Functions for Argon Ions Produced by Electron-Argon Collisions”
- 11) DAMOP Meeting (2004), Tucson, AZ, USA, “Circularly-Polarized H α Emission Produced by Photo-dissociation of H₂ with Circularly-Polarized Light”.
- 12) Scientific Day (2005), Jordan University of Science and Technology, Irbid, JORDAN, “Excitation Functions for Argon Ions Produced by Electron-Argon Collisions and its pressure dependence”.
- 13) Scientific Day (2006), Jordan University of Science and Technology, Irbid, JORDAN, “Angular Dependence of Levitation Force on a Small Magnet above a Superconducting Cylinder in the Meissner State”.
- 14) 4th SESAME Users Meeting, (2006), Dead Sea, JORDAN.
- 15) Sixth Symposium on use of Nuclear Techniques in Environmental studies (2006), Yarmouk University, Irbid, JORDAN.
- 16) Scientific Day (2007), Jordan University of Science and Technology, Irbid, JORDAN, “Lateral and Levitation Forces between Small Magnet and Superconductor Sample in the Meissner State”.
- 17) 5th SESAME Users Meeting, (2007), Alexandria, EGYPT.
- 18) Seventh Symposium on use of Nuclear Techniques in Environmental Studies, (2007), Yarmouk University, Irbid, JORDAN.

- 19)** 6th SESAME Users Meeting, (2008), JORDAN.
- 20)** 2010 International Radon Symposium, American Association of Radon Scientists and Technologies, Columbus, OH, USA, 2010.
- 21)** 2011 International Radon Symposium, American Association of Radon Scientists and Technologies, Orlando, FL, USA “Measurement of Radon Concentration Indoors in the Villages of Ayn-Jana, Ishtafena, Samta and Umm-Yanabe’ in District of Ajloun, Jordan”.
- 22)** 2012 International Radon Symposium, American Association of Radon Scientists and Technologies, Las Vegas, NV, USA.
- 23)** 2013 International Radon Symposium, American Association of Radon Scientists and Technologies, Columbus, Springfield, IL, USA, “Winter and Summer Indoor Radon Concentration at King Abdulaziz Medical City/ Riyadh, Saudi Arabia”.
- 24)** International conference: New Perspectives in Science Education, 3rd Edition, 2014, Florence, Italy.
- 25)** 2015 International Radon Symposium, American Association of Radon Scientists and Technologies, Minneapolis, MS, USA, “Determination of Indoor and In-Soil Radon Concentrations in Eastern Desert of Jordan (AlMafrq District)”.
- 26)** 7th International Advances in Applied Physics and Materials Science (APMAS 2017), Oludeniz, Turkey, “Stability of colloidal silver nano-particle solutions prepared by chemical reduction”.
- 27)** 8th International Advances in Applied Physics and Materials Science (APMAS 2018), Oludeniz, Turkey, “Measurement of Natural Radiation and Radon Concentration in the Schools of District of Ajloun, Jordan”.
- 28)** International Conference on Research in Education and Science (ICRES 2019), Cesme/Turkey, April 28 -May 1, 2019, “Measurements of Natural Radioactivity in Al-Radhwaneh Factory for Marble and Granite/Al-Hassan Industrial Estate, Al-Ramtha, JORDAN”.
- 29)** International Conference on Technology, Engineering and Science (IConTES 2019), Antalya/Turkey, October, 26 - 29, 2019, “Radon Measurements of Groundwater in Northern Region of Jordan”.
- 30)** 7th International Conference on Superconductivity and Magnetism (ICSM 2021), Milas-Bodrum, TURKEY, October, 22-28, 2021, “Vibrational Dynamics of a Small Magnet Levitating over a Superconducting Sphere”.
- 31)** 12th International Advances in Applied Physics and Materials Science (APMAS 2022), Oludeniz, Turkey, “Measuring the concentration of heavy metals in some Syrian imported vegetables, Jordan”.

Awards and Scholarships

- 1) Jordanian government scholarship/Jordan University of Science and Technology (1993) to get PhD degree in experimental atomic physics from University of Nebraska-Lincoln, Lincoln, NE, USA.
- 2) My PhD thesis was presented in a “Hot Topic Session” at the International Conference on Photonic, Electric, and Atomic Collisions (ICPEAC), 2002, Santa Fe, NM, USA.

Memberships and Extracurricular Activities:

- 1) Member of the American Physics society (1998-2006).
- 2) Laboratory Instructor for Saturday Science (A Science Education Program for High School Students), 1998, University of Nebraska-Lincoln, Lincoln, NE, USA.
- 3) Member of Jordanian Research Society (2002-present).
- 4) Member of the Jordanian Committee for “Synchrotron-Light for Experimental Science and Application in the Middle East (SESAME)”, 2005-2009, 2017-present.
- 5) Member of Organizing Committee for “Seventh Symposium on use of Nuclear Techniques in Environmental Studies”, (2007), Yarmouk University, Irbid, JORDAN.
- 6) Contributor for “Faculty for Factory” for Measuring Natural Radioactivity due to Radon in Al-Radhwaneh Factory for Marble and Granite, Al-Hassan Industrial Estate, Al-Ramtha 21467, Irbid, JORDAN, at the year 2008.