

Ibrahim F. Al-Hamarneh

ابراهيم فهد الحمارنه

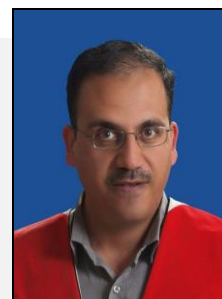
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I. PERSONAL INFORMATION

<i>Current Position</i>	Associate Professor of Physics Al Imam Mohammad Ibn Saud Islamic University, Riyadh, KSA On leave from: Al-Balqa Applied University, Jordan
<i>Place & Date of Birth</i>	Madaba – Jordan. November 02, 1971
<i>Nationality</i>	Jordanian
<i>Marital Status</i>	Married, with four children
<i>Phone</i>	Cellular: 00966 552361316 00962 777489677



II. EDUCATION & QUALIFICATIONS

Degree/Qualification	Institute	Year of Graduation	GPA
1. Ph.D. in Physics	University of Jordan	2001	3.50 out of 4
<i>Dissertation: "Measurement of Fission Product Activities in the Jordanian Environment"</i>			
<i>Part of the experimental work was carried out at the laboratories of the International Atomic Energy Agency (IAEA), Seibersdorf laboratories, Vienna, Austria.</i>			
2. M. Sc. in Physics	University of Jordan	1996	3.74 out of 4
<i>Thesis: "A Study of the Effect of Annealing and Substrate Temperature on Electrical and Structural Properties of Selenium Thin Films"</i>			
3. B. Sc. in Physics	University of Jordan	1993	Very good
4. General Secondary Education Certificate		1989	Very good
5. Languages: Arabic & English			

III. POSITIONS HELD

Position	Institute	Period
1. Associate Professor of Physics	Faculty of Science, Department of Physics, Al Imam Mohammed Ibn Saud Islamic University, Riyadh, KSA	2013 - Present
2. Associate Professor of Physics	Faculty of Science, Department of Physics, Al-Balqa Applied University (BAU), Salt, Jordan	2009 - 2013
3. Adjunct Associate Professor	School of Electrical Engineering & Computer Science, Washington State University (WSU), Pullman, WA, USA	2010 – 2011
4. Sabbatical Leave	From BAU to WSU	2010 – 2011
5. Acting Dean	Prince Abdullah Bin Ghazi Faculty of Science & IT., BAU, Salt, Jordan	2009 – 2010
6. Chairman	Department of Applied Science, Prince Abdullah Bin Ghazi Faculty of Science & IT., BAU, Salt, Jordan	2008 – 2010
7. Assistant Professor of Physics	Department of Applied Science, Prince Abdullah Bin Ghazi Faculty of Science & IT., BAU, Salt, Jordan	2003 – 2009
8. Part-time lecturer of Physics	Department of Physics, University of Jordan, Amman-Jordan	2007 – 2008
9. Adjunct Assistant Professor	School of Electrical Engineering & Computer Science, WSU, Pullman, WA, USA	2006
10. Assistant Dean for Students Affairs	Prince Abdullah Bin Ghazi Faculty of Science and IT, BAU, Salt, Jordan	2002 – 2006
11. Acting Chairman	Department of Applied Science, Prince Abdullah Bin Ghazi Faculty of Science & IT., BAU, Salt, Jordan	2001 – 2002
12. Lecturer of Physics	Department of Applied Science, Prince Abdullah Bin Ghazi Faculty of Science & IT., BAU, Salt, Jordan	2001 – 2003
13. Researcher and Supervisor	Radiation Measurements Lab, BAU, Salt, Jordan	1998 – 2001
14. Physics Lecturer	Philadelphia university, Amman, Jordan	1996 – 1998
15. Physics Teacher secondary Stage	Ministry of Education, Madaba, Jordan	1994 – 1996
16. Teaching Assistant	Department of Physics, University of Jordan, Amman-Jordan	1993 – 1996

IV. TEACHING EXPERIENCE

Education Level	Courses Taught
Graduate (Master)	<ul style="list-style-type: none"> - Classical Electrodynamics - Advanced Classical Mechanics - Advanced Mathematical Physics
Undergraduate (Bachelor)	<ul style="list-style-type: none"> - Nuclear Physics - Classical Mechanics - Radiation Physics 1 - Radiation Physics 2 - Modern Physics - Mathematical Physics 1 - Mathematical Physics 2 - Electricity & Magnetism - Electronics - General Physics Courses & Labs.
High School	<ul style="list-style-type: none"> - Physics, Chemistry, Biology & General Sciences

V. RESEARCH EXPERIENCE

Research Field	1. Radiation Physics
Interests	<p><i>Alpha-, beta-, & gamma-spectrometry. Environmental radioactivity measurements. Radiation protection & dosimetry. Radiation hazard assessment. Radiochemical separation & measurement of actinides, uranium, plutonium, thorium & lead isotopes. In-situ gamma spectrometry. Radio-ecological studies. Radon diffusion experiments.</i></p>
Activities	<ul style="list-style-type: none"> - Technical Assessor: Jordan Institute of Standards & Metrology, 2009, 2010. - Establishing a specialized B.Sc. program in Physics, BAU, 2009. - Establishing a specialized M.Sc. program in Physics, BAU, 2006. - Establishing a well-equipped radiation measurements laboratory at BAU, 2000. - Conducting environmental radioactivity measurements. - Publishing scientific articles in various fields of nuclear radiation physics. - Optimizing radio-analytical techniques and other researches. - Member of the Dissi Water Consultive Committee, Jordan, 2006 - 2007. - Participating in national & international meetings, conferences and workshops. - Supervision/co-supervision & participation in the judgment of M.Sc. theses: <ul style="list-style-type: none"> i. "The calibration of <i>in-situ</i> gamma-ray spectrometers: A comparative study of different approaches". A Qararah. BAU, 2009 - 2010.

- ii. "A study of natural radioactivity in drinking water in Amman, Jordan". S Al-Amir. 2008 - 2009.
- iii. "Measurements of uranium uptake by agricultural crops at Khan Al-Zabeeb area". S Al-Kharouf. BAU, 2005 - 2006.
- iv. "A study of radon gas concentration levels and effective calculations in dwellings at Al-Salt region". M Ya'qoub. BAU, 2004 - 2005.
- v. "Solving reactor neutron diffusion equations for different geometries using the Homotopy Perturbation method". K Khasawneh. BAU, 2009.
- vi. "Non-destructive inspections of low and medium atomic number matrices using Tomographic technique". S Sarhan. BAU, 2009.
- vii. "Monte Carlo simulation of the response of gamma spectrometers". M Al Bqoor. BAU, 2006.
- viii. "Gamma-ray measurements of ^{238}U in Jordanian soil samples". M Al-Akrabawi. University of Jordan, 2005.

Research Field	2. Materials Science
Interests	Preparation techniques of thin films by vacuum evaporation, dip coating, plasma polymerization & sputtering. Characterization, impedance & spectroscopic analyses. Study of structural, electrical, optical, thermal and spectroscopic properties. Study of the effect of annealing, illumination, aging and gamma irradiation on the physical properties of synthesized films and materials. Fabrication of plasma-assisted materials. Characterization using surface-sensitive analyses techniques such as AFM, XPS, FT-IR, contact angle. Atmospheric-pressure corona discharge plasma processing
Activities	<ul style="list-style-type: none"> - Establishing a well-equipped materials science laboratory, BAU, 2005. - Establishing a specialized M. Sc. program in materials science, BAU, 2004. - Conducting a scientific research work and publishing scientific articles in various fields of materials science and surface physics. - Participating in national & international meetings, conferences & workshops. - Supervision/co-supervision & participation in the judgment of M. Sc. Theses: <ul style="list-style-type: none"> i. Opto-Electric behavior of $(\text{Se}_{90}\text{Te}_4\text{Sn}_6)$ and $(\text{Se}_{90}\text{Te}_2\text{Sn}_8)$ chalcogenide glasses. H Alaween. BAU, 2008 - 2009. ii. Electrical and optical properties of $(\text{Se}_{90}\text{Te}_8\text{Sn}_2)$ and $(\text{Se}_{90}\text{Te}_6\text{Sn}_4)$ semiconducting glasses. M Kloub. BAU, 2008 - 2009. iii. Electro-optical properties of PET polymer. H. Kassab, BAU, 2005.

VI. PUBLICATIONS

VI.1. Peer Reviewed Journals' Articles

1. N. Alkhomashi, **Ibrahim F Al-Hamarneh**, F. Almasoud, 2015. *Determination of natural radioactivity in irrigation water of drilled wells in northwestern Saudi Arabia*. Submitted to **Chemosphere**.
2. M.W. Marashdeh, **Ibrahim F Al-Hamarneh**, E.M. Abdel Munem, A.A. Tajuddin, A. Ariffin, S. Al-Omari, 2015. *Determining the mass attenuation coefficient, effective atomic number, and electron density of raw wood and binderless particleboards of *Rhizophora* spp. by using Monte Carlo simulation*. **Results in Physics** 5, 228-234.
3. S Al-Omari, N Algezawi, M Al-Noaimi, A Aqili, **Ibrahim F Al-Hamarneh**, M Marashdeh, 2014. *Observation on Symmetry Properties of Sodium Zinc(II)-2,9,16,23-phthalocyanine Tetracarboxylate in Water: NaOH Solution*. **Journal of Fluorescence** 24(3), 835-839.
4. **Ibrahim F Al-Hamarneh**, P Pedrow, N Abu-lail, A Sakhan, 2013. *Synthesis and characterization of di(ethylene glycol) vinyl ether films deposited by atmospheric pressure corona discharge plasma*. **Surface and Coatings Technology** 234, 33-41.
5. **Ibrahim F Al-Hamarneh**, P Pedrow, N Abu-lail, A Sakhan, 2012. *Hydrophilic property of 316L stainless steel after treatment by atmospheric pressure corona streamer plasma using surface-sensitive analyses*. **Applied Surface Science** 259, 424-432.
6. S Al-Amir, **Ibrahim F Al-Hamarneh**, T Al-Abed, M Awadallah, 2012. *Natural radioactivity in tap water and associated age-dependent dose and lifetime risk assessment in Amman, Jordan*. **Applied Radiation and Isotopes** 70(4), 692-698.
7. M Ya'qoub, **Ibrahim F Al-Hamarneh**, M Al-Kofahi, 2009. *Indoor radon concentrations and effective dose estimation in dwellings of As-Salt region in Jordan*. **Jordan Journal of Physics** 2(3), 189-196.
8. **Ibrahim F Al-Hamarneh**, M Awadallah, 2009. *Soil radioactivity and associated radiation hazards assessment in the northwestern highlands of Jordan*. **Radiation Measurements** 44, 102-110.

9. **Ibrahim F Al-Hamarneh**, B Bulos, M Abdul-Gader Jafar, 2009. *Effect of isothermal annealing and visible-light illumination on the AC-impedance behavior of undoped selenium thin films*. **Journal of Non-Crystalline Solids** 355, 305-310.
10. S Al-Kharouf, **Ibrahim F Al-Hamarneh**, M Dababneh, 2008. *Natural radioactivity, dose assessment, and uranium uptake by agricultural crops at Khan Al-Zabeeb, Jordan*. **Journal of Environmental Radioactivity** 99, 1192-1199.
11. M Imran, **Ibrahim F Al-Hamarneh**, M Awadallah, M Al-Ewaisi, 2008. *Physical ageing in $Se_{94}Sn_6$ glass induced by gamma irradiation*. **Physica B** 403, 2639-2642.
12. **Ibrahim F Al-Hamarneh**, P Pedrow, S Goheen, M Hartenstine, 2007. *Impedance spectroscopy study of composite thin films of hydrated polyethylene glycol*. **IEEE Transactions on Plasma Science**, part2: 35(5), 1518-1526.
13. **Ibrahim F Al-Hamarneh**, 2006. *Radiometric investigation of uranium isotopic ratio in Jordan environment*. **Dirasat** 33, 49-59.
14. **Ibrahim F Al-Hamarneh**, 2005. *Natural radioactivity determination and resultant dose estimation in surface soils in Jordan*. **Dirasat** 32, 258-267.
15. **Ibrahim F Al-Hamarneh**, A Wriekat, K Toukan, 2003. *Radioactivity concentrations of ^{40}K , ^{134}Cs , ^{137}Cs , ^{90}Sr , ^{241}Am , ^{238}Pu and $^{239+240}Pu$ radionuclides in Jordanian soil samples*. **Journal of Environmental Radioactivity** 67, 53-67.

VI.2. Articles Under Processing

1. Bacterial adhesion assessment of surface-modified 316L stainless steel by polyethylene glycol dip-coating following atmospheric pressure corona discharge plasma activation, 2013.
2. Electrical characterization of corona discharge discharged by multi needle-to-grounded screen configuration at atmospheric pressure Ar-O₂, 2013.
3. Calculations of the power dissipated in atmospheric pressure multi needle-to-grounded screen reactor of corona streamer plasma, 2013.

VI.3. Conference Proceedings, Abstracts and Posters

1. **Ibrahim F Al-Hamarneh**, P Pedrow. *Surface energy modification for biomedical material by corona streamer plasma processing to mitigate bacterial adhesion*. 64th annual Gaseous electronics Conference, 15-18 November, 2011. Salt Lake City, Utah, USA.
2. P Pedrow, E Wemlinger, **Ibrahim F Al-hamarneh**. *Atmospheric Pressure Cold Plasma Processing of Bioactive Packaging Applied Directly to Fresh Fruits and Vegetables*. NATO Advanced Research Workshop. Plasma for bio-decontamination, medicine and food security. Slovakia, March 12-15, 2011.
3. MM Abdul-Gader Jafar, MA Hassan, **Ibrahim F Al-Hamarneh**, M Matuchova. *AC-Impedance of an Undoped Lead Iodide Single Crystal Prepared from Polycrystalline Ingot Synthesized with 10% Excess of Iodine*. Advanced Applications of Electrical Engineering. Proceedings of the 8th International Conference on Applications of Electrical Engineering (AEE '09). Proceedings of the 8th International Conference on Applied Electromagnetics, Wireless and Optical Communications (ELECTRO '09). Huston, USA, April 30-May 2, 2009. Published by WSEAS Press, www.wseas.org, ISSN: 1790-5117, ISBN: 978-960-474-072-7. Houston-USA. April 30-May 2, 2009.
4. S Al-Amir, **Ibrahim F Al-Hamarneh**, T Al-Abed. *Natural radioactivity measurements in drinking water in Amman, Jordan*. The 2nd International Symposium on Nuclear Energy (ISNE-09), Amman-Jordan, Oct. 2009.
5. Ahmad Al-Qararah, Saed Dababneh, **Ibrahim F Al-Hamarneh**. *The calibration of In-Situ gamma-ray spectrometers: A comparative study of different approaches*. The second international symposium on nuclear energy ISNE-09, Amman, Jordan, October 26-28, 2009.
6. **Ibrahim F Al-Hamarneh**, T Al-Abed. *Radon Measurements in Dwellings of Amman, Zarqa and Irbid using CR-39 Detectors and E-PERM Measuring Techniques*. The International Conference on Materials in Jordan. Amman-Jordan, Mar. 2009.
7. P Pedrow, **Ibrahim F Al-Hamarneh**, S Goheen. *Plasma-assisted grafting polyethylene glycol (PEG) molecules to solid substrates*. 2007 IEEE Pulsed Power and Plasma Science Conference (34th Annual ICOPS 2007). Albuquerque, New Mexico, USA, Jun. 2007.

8. S Al-Kharouf, **Ibrahim F Al-Hamarneh**, M Dababneh. *Measurement of uranium uptake by agricultural crops at Khan Al-Zabeeb, Jordan*. 52nd Annual Meeting of the Health Physics Society (American Conference of Radiological Safety). 21st Biennial Campus Radiation Safety Officers Meeting. Portland Double Tree/Oregon Convention Center, Portland Oregon, USA, Jul. 2007.

VI.4. Books

1. Physics Book for Grade 12: Main Author and Scientific Editor, Ministry of Education Amman-Jordan, 2007.
2. Physics Teacher Book for Grade 12: Main Author and Scientific Editor, Ministry of Education, Amman-Jordan, 2007.
3. Physics Book for Grade 11: Main Author and Scientific Editor, Ministry of Education Amman-Jordan, 2006.
4. Physics Teacher Book for Grade 11: Main Author and Scientific Editor, Ministry of Education, Amman-Jordan, 2006.
5. Physics Book for Grade 10: Main Author and Scientific Editor, Ministry of Education Amman-Jordan, 2005.

VI.5. Peer - review activities

1. Journal reviewer for "*Environmental Earth Sciences*".
2. Journal reviewer for "*Jordan Journal of Physics*".
3. Journal reviewer for "*Applied Radiation and Isotopes*".
4. Journal reviewer for "*Journal of Environmental Radioactivity*".
5. Journal reviewer for "*Annals of Nuclear Energy*".
6. Journal reviewer for "*Chemosphere*".
7. Editorial board of "*Environment and Pollution*".

VI.6. Reports, Proposals & Talks

- 1. Workshop Talk:** Quality Assurance for Scientific Research. Workshop on Quality Assurance for the analytical labs of nuclear techniques. Arab Atomic Energy Agency (AAEA) in cooperation with the Jordan Atomic Energy Commission (JAEC), Jordan, 2012.
- 2. Seminar Talk:** Corona streamer discharge processing to reduce bacterial adhesion on surfaces of biomedical implants. George Washington University, Washington DC, USA, January 24, 2011.
- 3. Proposal:** Composite film fabricated on biomedical material with corona streamer plasma processing to mitigate bacterial adhesion. The seventh Framework Program (FP7), European Commission CORDIS, 2011.
- 4. Proposal:** Fabrication and characterization of polymer film coating on stainless steel nails used in repair of broken bones. The Jordanian Fulbright Scholar Program, 2010.
- 5. Proposal:** Scientific Research Fund, Ministry of Higher Education and Scientific Research, 2008.
- 6. Interim & Final Reports:** Enhancement and Development of Material Science Education and Technology. The Higher Council for Science & technology, Jordan, 2007.
- 7. Proposal:** Center of Excellence in Nuclear Science and Technology in Jordan. Mohammed Bin Rashid Al Maktoum Foundation, 2007.
- 8. Project:** Enhancement and Development of Material Science Education Program. World Bank (Loan No - 4539 JO), total sum \$ 625000, 2006.
- 9. Talk:** Experimental Study of Plasma-grafted Polyethylene Glycol (PEG) as an Anti-Biofouling Coating for Titanium Implants. School of EECS, WSU, Pullman, WA, USA, Jul. 2006.
- 10. Report:** Measurements of Radionuclide Activities in Environmental Samples Collected at the Site of the Synchrotron-Light for Experimental Science and Applications in the Middle East (SESAME). Jordan Atomic Energy Agency, 2005.

VII. Projects, GRANTS, AWARDS & TRAINING COURSES

- **Research Project** entitled "Study of the radiation interaction data of polyethylene glycol", funded by a grant from KACST, Riyadh, KSA, 2015.
- **Research Project** entitled "Experimental investigation of γ -ray attenuation in construction and building materials in Riyadh city using HPGe spectrometry", funded by Al-Imam Mohammad Ibn Saud Univ., Riyadh, KSA, 2015.
- **Fulbright Scholarship**, 2010-2011.
- **Adjunct Associate Professor**, School of EECS, WSU, Pullman, WA, USA: Funded by the Jordanian Fulbright scholar Program, (Sept 2010 - Jun 2011).
- Accreditation and Technical Assessment Techniques, Amman, Aug 2009.
- Accreditation Unit's 2009 - Refresher Training Session, Amman, Aug 2009.
- **Adjunct Assistant Professor**, School of EECS, WSU, Pullman, WA, USA: Funded by the World Bank, (Jun - Sept 2006).
- **Individual training course** on Remediation and Environmental Protection. The Institute of Nuclear Techniques, Budapest University of Technology and Economics, Budapest - Hungary, 2004.
- **Training course** on Radiochemistry, Alpha, beta-particle and Gamma-ray Spectrometry and Radiation Detection: Sampling and Measuring, IAEA, Vienna, 2001.
- **Ph. D. scholarship**, 1999-2001.
- **Training course:** Radiation Protection, the Royal Engineering Corps School in cooperation with Jordanian Nuclear Energy Agency and BAU, Amman, 2000.
- **Training course:** Radiation Procedures and Methods, the Atomic Energy Commission of Syria in cooperation with the Arab Atomic Energy Agency, Damascus - Syria, 2000.
- **Training course:** Operating the Research Reactors, the Nuclear Research Reactor in Libya in cooperation with the Arab Atomic Energy Agency, Tripoli-Libya, 1999.
- **Teaching Assistantship**, the University of Jordan, 1993-1996.
- **Teaching Certificate for Secondary Stage**, Ministry of Education, Jordan, 1994.
- **Teaching Scholarship:** Ministry of Education - Jordan, 1989.