

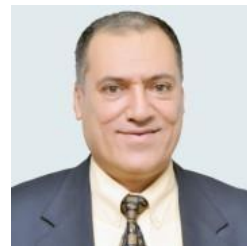
Curriculum Vitae

M-Ali H. AL-Omari (Al-Akhras), Ph. D.

أ.د. "محمد علي" حسن محمد العمري

(Professor of Bio-Medical Physics)

Vice President of the Jordanian Physics Society



PERSONAL DATA:

Marital Status : Married

Nationality : Jordanian

Permanent Address : Jordan University of Science & Technology (JUST)

Faculty of Science & Arts

Department of Physics

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Research Gate: [https://www.researchgate.net/profile/M-Ali_AL-](https://www.researchgate.net/profile/M-Ali_AL-Akhras)

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LinkedIn: [https://jo.linkedin.com/in/m-ali-al-](https://jo.linkedin.com/in/m-ali-al-akhras)
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EDUCATION

December, 1995: Ph.D. in Physics

Illinois Institute of Technology (IIT), Chicago, IL, USA

EMPLOYMENT

Administrative experience			
Job Title	Organization/Company Name	From	To
Vice Dean Faculty of Science & Arts	Jordan University of Science and Technology	9/2017	9/2023
Chairman of Physics Department	Jordan University of Science and Technology	9/2015	9/2017
Vice Dean Faculty of Science & Arts	Jordan University of Science and Technology	9/2009	9/2013
Chairman of Physics Department	Jordan University of Science and Technology	9/2000	9/2002
Assistance Dean Faculty of Science & Arts	Jordan University of Science and Technology	9/1999	9/2000
Member of the University Council	Jordan University of Science and Technology	9/1998	9/1999
Academic experience			
Job Title	Organization/Company Name	From	To
Professor of Bio-Medical Physics	Jordan University of Science & Technology	7/2008	Present
Associate Professor	Jordan University of Science & Technology	9/2007	7/2008
Associate Professor	University of UAE	9/2003	9/2007
Visiting Research Professor	Argonne National Laboratory, and Visiting Research Associate / Winske Laser Center, Ravenswood Hospital, Chicago, IL	7/1999	10/1999

Visiting Research Professor	Argonne National Laboratory, and Visiting Research Associate / Winske Laser Center, Ravenswood Hospital, Chicago, IL	7/1999	10/1999
Visiting Research Professor	Department of Physics, Illinois Institute of Technology, and Visiting Research Associate/Winske Laser Center, Ravenswood Hospital, Chicago, IL	6/1998	9/1998
Assistant Professor	Department of Applied Physical Sciences / Jordan University of Science & Technology, Jordan	1/1996	7/2000
Part-time Instructor,	Part-time Instructor, Department of Science & Math's / Columbia College, Chicago, IL	8/1995	1/1996
Full-time Teaching Assistant	Department of Physics/Illinois Institute of Technology, Chicago, IL	1993	1995
Part-time Teaching Assistant	Department of Physics/Illinois Institute of Technology, Chicago, IL	7/1993	7/1994
Part-time Research Assistant	Winske Laser Center, Ravenswood / Hospital, Chicago, IL	7/1993	7/1994
Part-time Teaching Assistant	Teaching Assistant, Department of Physics/Illinois Institute of Technology, Chicago, IL	1992	1993

RESEARCH EXPERIENCE

- Nanomedicine
- Natural pigments sensitize with hard, soft and semi-rigid Tissues
- Photomedicine and Photohemolysis
- Designed an Automated Instrument for Photohemolysis Fractional Measurements.
- Computational Physics and Monticarlo Simulation.
- Expert System on Diagnosis the Ear Diseases
- Designed Frequency-Period Counter
- Familiarity with Lock-in Amplifiers, Spectrophotometer, Densitometer, Spectrum Analysis and automated data acquisition systems

RESEARCH AREAS OF INTEREST

Nanotechnology, Nanomedicine, Photobiology, EMF radiation biology, Molecular mechanisms in photomedicine.

COMPUTER & SOFTWARE PROFICIENCY

Programming; Basic, FORTRAN, ...etc.

Monticarlo Simulation, Mathematica, Mathcad, K-Graph E-learning,

Blackboard, Wimba for online teaching **AWARDS**

- Full-time Scholarship/Jordan University of Science and Technology □ Distinction certificate in the Ph. D Qualifying Examination. Feb, 1995.
- First place award in the Second Annual Scientific Day of the faculty of Science and Arts for the research paper entitled "Effect of Low Frequency Magnetic Fields on fertility of Adult Male and Female Rats" May, 1999.
- Third place award in the Second Physics Day of the faculty of Science for the research paper entitled "New Photosensitizer extracted from herb" University of UAE, May, 9, 2005
- Second place award in the First International Euro-India Conference on Holistic Medicine. Research paper entitled "Influence of Extremely Low Energy Radiation on Artificial Tissue: Effects on Image quality and superficial dose" August 21-23, 2008. Kottayam, Kerala, India.
- Given a plaque at the 1st International Conference in Modern Advances in the Field of Biotechnology and Genetic Engineering 5 – 8 October 2013 Amman, Jordan, for organizing the conference and workshops.
- Given a plaque at the 1st International Conference on Current Nanotechnology and Its Application (ICCNA2018) for chairing, organizing, and getting fund for full support of the participants. 10 – 12th April 2018, JUST, Jordan.
- Given a plaque at the 2nd Nanotechnology Workshop NW2-2018. December 23rd and 24th 2018 Erbil-Iraq (**Keynote Speaker**)
- Given a plaque at the American Association of Physicists in Medicine (AAPM) / International Scientific Exchange Program (ISEP)Workshop. (AAPM)/ (ISEP)Workshop 21st to 24th April 2019 at the Kempinski Hotel, Amman, Jordan. (Organizer and Speaker)
- Given a plaque at Fourth International Symposium On Dielectric Materials And Applications (ISyDMA'2019), ISyDMA'2019. April, 2019 Amman-Jordan.
(Organizing committee and Chair for the Pri-Conference School)
- Given a plaque at the annual meeting of Jordanian Physics Association. (Distinguished scientific and research contributions. Princess Sumaya University for Technology.
- Given a plaque at the 1st International Conference for Science and Pharmacy (MSPC1), 26-28/10/2022-Mutah University (Keynote Speaker)

ORGANIZATION

- Member in the American Physical Society (1 Year)
- Photodynamics News (since 1999-present)

- Member in the European Society for Photobiology (2 years)
- Jordanian Academicians Society
- Jordanian Association for Physicists in Medicine
- Jordanian Physics Society (Vice President)

EDITORIAL & ADVISORY BOARDS:

1. Editorial Board in “Jordan Journal of Physics (JJP)
2. Editorial Board in "*International Journal of Electromagnetics and Applications*"
<http://www.sapub.org/journal/journalcontactus.aspx?journalid=1080>
3. Editorial Board in "*Journal of Pharmacy and Bioallied Sciences*" <http://jpbsonline.org/>
4. Advisory Editor in "*International journal of pharma and bio sciences*". www.ijpbs.net.
5. Editorial Board in "*International Journal of Life Science and Pharma Reviews (IJLPR)*"
<http://ijlpr.com/editorial-board.html>
6. Editorial Board in “*ISRN Biophysics*” <http://www.isrn.com/journals/biophysics/>
7. Editorial Board in "*Journal of Molecular Pharmaceutics & Organic Process Research*"
<http://www.esciencecentral.org/journals/molecularpharmaceutics-organic-processresearch.php>
8. International Advisory Board in “*Saudi Journal of Biological Sciences*”
<http://www.journals.elsevier.com/saudi-journal-of-biologicalsciences/editorialboard/>.
9. Guest editor, For ICAM2017 with IOP-Conference series: *Journal of Materials Science and Engineering (2017/2018)*
10. Guest editor, For ICCNA 2018 with Jordan Journal of Physics (JJP)
11. Guest editor, For ISyDMA2019 with JJP-Jordan Journal of Physics.
12. Guest editor, For ICAM2023 with IOP-Conference series: *Journal of Materials Science and Engineering (2023)*

REVIEWING & EVALUATION:

Journals: Reviewing several articles for the following Journals:

1. Medical Science Monitor.
2. Reproductive Toxicology.
3. Theriogenology.

4. University of Sharjah Journal of Pure & Applied Sciences.
5. International Journal of Scientific Research (Conference proceeding).
6. Cell Biology International/UK.
7. Jordanian Journal of Applied Sciences/ University of Applied Sciences.
8. Jordan University Journal (Al derasat).
9. JOURNAL OF ECOLOGY AND THE NATURAL ENVIRONMENT.
10. Jordan Journal of Applied Sciences.
11. Journal of Research in Medical Sciences.
12. Bioelectromagnetics.
13. Arab Gulf Journal of Scientific Research.
14. Jordan Journal of Physics (JJP)
15. Jordan Journal of Biological Sciences (JJBS)
16. Diamond & Related Materials.
17. Journal of Biological Physics
18. World Journal of Surgical Oncology
19. Journal of Results in Physics
20. Several articles for conference proceedings (Local and International).
21. Saudi Pharmaceutical Journal
22. IOP Conf. Ser.: Mater. Sci. Eng
23. Acta Physic Polanica

Electronic-Books: Evaluating application for OMICS Group eBooks

Proposals: Evaluating applications for:

- 1- WordBank / Medical Physics program
 - 2- Sultan Qaboos University
 - 3- Higher Council for Science and Technology
 - 4- Scientific Research Council/ Ministry of Higher Education. State of Palestine
- Positions:**
- Evaluating faculty applications for:
- 1- Radiation Physics position for UAEU-(4020208)
 - 2- Physics of Medical Imaging position for UAEU -(4020210)
 - 3- Several applications for Faculty of Science and Arts positions for JUST
- Promotion:**
- 1- Multiple applications for the Faculty of Science and Arts at JUST.
 - 2- Palestine Polytechnic University/Hebron, Palestine
 - 3- Al-Quds University
 - 4- University of Babylon
 - 5- Al-Imam Muhammad Ibn Saud Islamic University
 - 6- University of Kirkuk

PUBLICATIONS

1. **M-Ali H. Al -Akhras** and L. I. Grossweiner. Sensitization of Photohemolysis by hypericin and Photofrin : *Journal of Photochemistry and Photobiology B: Biology*. 34 (1996) pp 169-175.
2. A. Shariah, **M-Ali H. Al-Akhras** and I. Al-Omari. Optimizing of tilt angle of solar collectors: *International Journal of Renewable Energ.* 26 (2002) pp 587-598
3. Saadoun, **M-Ali H. Al-Akhras** and J. Abu-Ashour. Bacterial Degradation of Hydrocarbons as Evidenced by Respirometric Analysis. *Microbios* 100 (1999) pp 19-25
4. **M-Ali H. Al-Akhras**, A. Elbetieha, M. Hasan, I. Al-Omari, H. Darmani and B. Albiss. Effect of Extremely Low-Frequency Magnetic Field on Fertility of Adult Male and Female Rats. *Bioelectromagnetics* 22, (2001) pp 340-344
5. N. Dimakies, **M-Ali H. Al-Akhras** and G. Bunker. Rapid Single and Multiple Scattering EXAFS Debye-Waller factor Calculations on Active Sites of Metalloproteins. *J. Synchrotronic Radiation*. 6 (1999) pp. 266-267
6. M. Bilgin, **M-Ali H. Al-Akhras**, M. Khalili, H. Hemmati and L. Grossweiner. Photosensitization of Red Blood Cell Hemolysis by Lutetium Texaphyrin (Lu-Tex): *Photochemistry and Photobiology* 72, (2000) pp 121-127.
7. B. Albiss, M. Hasan, **M-A. Al-Akhras**, I.A. Al-Omari, A. Shariah, J. Shobaki, K. Azez, and H. Ozkan. Dissipative Behavior and γ -Irradiation of Silver-Sheathed $\text{Bi}_{1.8}\text{Pb}_{0.4}\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_x$ Tape. *Physica C*. 331, (2000) pp 297-301
8. Hasan, J. Shobaki, I. A. Al-Omari, B. A. Albiss, **M-Ali H. Al-Akhras**, K. Azez, A. El-Qisari and J. S. Kouvel. The Rotational magnetic process and effects of γ -irradiation on vortex flux pinning in Ti-2223 at low temperatures. *Supercond. Sci. Technol.* 12, (1999) pp. 606-609
9. M. K. Hasan, **M-Ali Al-Akhras**, B. A. Albiss, I. A. Al-Omari, K. A. Azez and J. Shobaki. Effects of Gamma Irradiation on the Transport Critical Current Density of $\text{Ti}_2\text{Ba}_2\text{Ca}_2\text{Cu}_3\text{O}_{10}$ Tapes. *Supercond. Sci. Technol.* 12, (1999) pp. 1106-1107.
10. Shobaki, I. Omari, M. Hasan, K. Azez, **M-Ali H. Al-Akhras**, B.A. Albiss, H. Hamdeh, S. Mahmood. "Mössbauer and Structural Studies of $\text{Fe}_{0.7-x}\text{V}_x\text{Al}_{0.3}$ Alloys". *Journal of MMM*. 213 (12), 2000 pp. 51-55 ISSN: 0304-8853
11. **M-Ali Al-Akhras**, I. Omari, M.K. Hasan, A.B. Albiss. Rotational Magnetic Measurements of Vortex Flux pinning in Nb at 4.2 k. *Solid State Communications*. 118 (8), 2001 pp. 387-389
12. A. Al-Omari, **M-Ali Al-Akhras**, M. K. Hasan, J. Shobaki, and K. A. Azez. Magnetic and Structural Properties of $\text{GdFe}_{2-x}\text{Ti}_x$ Alloys. *Journal of Alloys and Compounds*. 319, (2001) pp. 3436
13. Elbetieha, **M-Ali H. Al-Akhras** and H. Darmani. Long-term Exposure of Male & Female Mice to 50 Hz Magnetic Field: Effects on Fertility. *Bioelectromagnetics*. 23, (2002) pp. 168-172.
14. **M-Ali H. Al-Akhras** H. Darmani and A. Elbetieha. Influence of 50Hz Magnetic Field on Sex Hormones and Other Fertility Parameters of Adult Male Rats. *Bioelectromagnetics*. 27, (2006) pp. 127-131.

15. **M-Ali H. Al-Akhras** Effect of Additives and Photosensitive Drugs on Osmotic Fragility. *Int. J. Sci. Res.* 16 (2006), pp.363-369.
16. **M-Ali H. Al-Akhras**. A New Application of Gompertz Function in Photohemolysis: The Effect of Temperature on Red Blood Cell Hemolysis Photosensitized by Protoporphyrin IX. *Medical & Biological Eng & Computing.* 44 (2006) pp 703-710
17. Albiss and **M-Ali Al-Akhras**. Sensitivity of YBa₂Cu₃O₇ thick films to gamma rays. *Cryst. Res. Techno.* 41 (2006) pp 1203-1209.
18. M. Obaidat, B. A. Albiss, F. Hamed, and **M. A. Al-Akhras** (2007) Effects of γ Irradiation in YBa₂Cu₃O₇ Thick Films and Tl₂Ba₂Ca₂Cu₃O₁₀ Tapes. *IJPAP* 3, NO 2, 173-181.
19. **M-Ali H. Al-Akhras**, Amr Amin, Karima Mohammed, Fedae Al-Haddad, Allaaeldin Hamza. In vitro studies on the effect of phototoxicity of a new photosensitizer extracted from flowers and aerial parts of *Cichorium Pumilum*. *Am. J. Pharm. Toxicol.* 2 (2007) pp 39-45.
20. **M-Ali H. Al-Akhras**, Amr Amin, Karima Mohammed, Fedae Al-Haddad, Allaaeldin Hamza. Sensitization of photohemolysis by a new extraction from flowers and aerial parts of *Cichorium Pumilum* Jacq: Effect of Inulin and Hydrogen Peroxide. *Am. J. Pharm. Toxicol.* 2 (2007) pp 7579.
21. **M-Ali H. Al-Akhras**. Influence of 50 Hz Magnetic Field on sex hormones and Other Fertilityrelated Parameters of Adult Female Rats. *Electromagnetic Biology and Medicine* 27 (2008) pp 155-163
22. **M-Ali H. Al-Akhras**, Aljarrah, K, Al-omari, A., 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 (2008) pp 419-428.
23. A. Jaradat, **M-Ali Al-Akhras**^{1,*}, Ghaseb Makhadmeh, Khaled Al-Jarrah, Abdel Kareem Al-omari, Zaid Ababneh, Hassan Al-Khateeb, Borhan Al-biss, Mohammed Al-shorman. Artificial SemiRigid Tissue Sensitized with Natural Pigments: Effect of Photon Radiations. *J Pharm Bioall Sci* 2011; 3:266-76.
24. **M-Ali H. Al-Akhras**^{1*}, 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 Photodynamic Therapy Against Drug-Induced Benign Breast Tumor in Rats: *Electromagnetic Biology and Medicine* 2012 31(4): 299–309.
25. A. Amin, M. Lotfy, D. Mahmoud-Ghoneim, Ernest Adeghate, **M-Ali Al-Akhras**, Maryam AlSaadi, Salam Al-Rahmoun, Rasheed Hameed. Pancreas-protective effects of chlorella in STZinduced diabetic animal model: Insights into the mechanism. *Journal of Diabetes Mellitus* 2011; 3: 36-45.
26. Aljarrah, N. Mhaidat, **M-Ali H Al-Akhras**, A. N Aldaher, B. A Albiss, Khaled Aledealat, and Fawzi M Alsheyab. Magnetic nanoparticles sensitize MCF-7 breast cancer cells to doxorubicin-induced apoptosis. *World Journal of Surgical Oncology* 2012, 10:62

27. **M-Ali H. Al-Akhras**^{1,*}, Subhi Al saqan, Zeinab Ghadie. Optical Properties s of Polystyrene (PS)/Ferroelectric Barium Stannate Titanate Ba (Ti_{0.9}Sn_{0.1}) O₃ Ceramic (BST) Composite. AIP Conference Proceedings **1569**, 23-26 (2013); doi: 10.1063/1.4849221
28. **M-Ali H. Al-Akhras**, Aljarrah K, Makhadmeh GN, Shorman A (2013) Introducing the Effect of Chinese Chlorella as a Photosensitizing Drug at Different Temperatures. *J Mol Pharm Org Process Res* 1: e109. doi:10.4172/jmpopr.1000e109.
29. **M-Ali H. Al-Akhras**, Subhi Al saqan, Zeinab Ghadie. Structural Properties s of Polystyrene (PS)/Ferroelectric Barium Stannate Titanate Ba (Ti_{0.9}Sn_{0.1}) O₃ Ceramic (BST) Composite with Concentrations 1-15% wt. ***The Springer Proceedings in Energy***. 2nd International Congress on Energy Efficiency and Energy Related Materials (ENEFM2014) Springer Proceedings in Energy 2015, pp 335-339. DOI 10.1007/978-3319-169019_41
30. Masadeh, G. Karasneh, **M-Ali Al-Akhras**, B. A Albiss, Khaled M. Aljarah, Sayer I Al-azzam, Karem H. Alzoubi Cerium Oxide and Iron Oxide Nanoparticles Abolish the Antibacterial Activity of Ciprofloxacin against Gram Positive and Gram Negative Biofilm Bacteria. *Cytotechnology* 67 (3), 2014, pp. 427-435..
31. F. Alzoubi, **AL-Akhras M-Ali**, Al-Omari HA, Aljarrah K (2014) Evaluating the Photosensitivity of the Chinese Chlorella on Red Blood Cells. *J Mol Pharm Org Process Res* 2: 114. doi: 10.4172/2329-9053.1000114.
32. R. Oweis, B. Albiss, M. AL-Widyan, and **M-ALI AL-Akhras**. Hybrid Zinc Oxide Nanorods/Carbon Nanotubes Composite for Nitrogen Dioxide Gas Sensing. *Journal of Electronic Materials*: 43 (9) 2014, pp 3222-3228.
33. A. Ahmad, A. Alsaad, B. Albiss, **M-Ali Al- Akhras**, H. M. El-Nasser and I. A. Keaton. The effect of substrate temperature on structural and optical properties of D.C. sputtered ZnO thin films. *Physica B, Condensed Matter*, **470-471**, 21-32 (2015).
34. **M.-Ali H. Al-Akhras** and Duaa J. Al-Khalili. The Influence of Iron Oxide Nanoparticles (Fe₃O₄) on the Red Blood Cells Photohemolysis Sensitized with Photofrin: Temperature effect. *Jordan Journal of Biological Sciences*: **8 (1)**, 2015, pp. 55-59.
35. Albiss, **M-Ali AL-Akhras** and I. Obaidat. Ultraviolet photodetector based on ZnO nanorods grown on a flexible PDMS substrate. *Intern. J. Environ. Anal. Chem.* **95** (4), 2015, pp. 339-348
36. R. Alkhatib, **M-Ali AL-Akhras**, and Duaa J. Al-Khalili. Solar Irradiation on *Lawsonia inermis* sensitized with Red Blood Cells: Effect on osmotic fragility. ***The Springer Proceedings in Energy***. 2nd International Congress on Energy Efficiency and Energy Related Materials (ENEFM2014) Springer Proceedings in Energy 2015, pp 91-96. DOI 10.1007/978-3-319-169019_41
37. **M-Ali AL-Akhras**, Aljarrh K, B. Albiss, Abba Alhaji Bala. Continuous and Delayed Photohemolysis Sensitized with Methylene blue and Magnetite Nanoparticles (Fe₃O₄). *Materials Science and Engineering* **92** (2015) 012003 doi:10.1088/1757899X/92/1/012003

38. Al-Fandi, R. Oweis, B. A. Albiss T. AlZoubi, **M-Ali Al-Akhras**, H. Qutaish, H. Khwailah, S. AlHattami, and E. Al-Shawwa. A prototype Ultraviolet Light Detector based on ZnO Nanoparticles/Graphene Oxide Nanocomposite Using Low Temperature Hydrothermal Method. *Materials Science and Engineering* 92 (2015) 012009 doi:10.1088/1757-899X/92/1/012009
39. Aldahoun, **M-Ali Al-Akhras**, M.S. Jaafar, M. Bououdina. Enhanced anti-cancer and antimicrobial activities of curcumin nanoparticles. *Artificial Cells, Nanomedicine, and Biotechnology*, **45**, (2017) pp. 98-107
40. **M-Ali Al-Akhras**, Borhan A. Albiss, Moath S. Alqudah, Taleb S. Odeh. Environmental Pollution of Cell-Phone Towers: Detection and Analysis Using Geographic Information System. *Jordan Journal of Earth and Environmental Sciences*. **7** 2 (2016) pp.77-85
41. Ahmad, A; Alsaad, A; Albiss, B; **M-Ali Al-Akhras**; El-Nasser, H; Qattan, I. Optical and structural properties of sputter deposited ZnO thin films in relevance to post annealing and substrate temperatures. *Thin Solid Films*, *Thin Solid Films* 606 (2016), 133-142.
42. A. Bala, **M-Ali H. AL-Akhras**, M. L. Adam and S. S. Abdullahi. effect of light delivery condition and temperature to photohemolysis using mb-mediated photodynamic therapy. *Bayero Journal of Physics and Mathematical Sciences*. 7(1): (2016) 124 – 129
43. **M-Ali H. Al-Akhras**, Subhi Al-Saqan, Zeinab Ghadie. AC Electrical Properties s of Polystyrene (PS)/Ferroelectric Barium Stannate Titanate Ba (Ti_{0.9}Sn_{0.1}) O₃ Ceramic (BST) Composite with Concentrations 1-15% wt. *Acta Physic Polonica* 130 (1) (2016) pp. 447-449. DOI: 10.12693/APhysPolA.130.447.
44. Aldahoun, M. Jaafar, M., **Al-Akhras, M-Ali**, Bououdina, M. Enhanced nanocurcumin toxicity against (PC3) tumor and microbial by using Magnetic field in vitro. *Artificial Cells, Nanomedicine, and Biotechnology* **2017** 45 (4), 843-853.
45. **M-Ali H. Al-Akhras**, Khaled Aljarrah, Borhan Albiss, Duaa Al-Khalili¹. The Influence of Iron Oxide Nanoparticles (Fe₃O₄) on the Red Blood Cells Photohemolysis Sensitized with Photosensitizers; Photofrin and Rose Bengal. *Photodiagnosis and Photodynamic Therapy*. (2017), **18**: 111–118 <https://doi.org/10.1016/j.pdpdt.2017.02.008>
46. H. Al-Khateeb, M Nuseirat, K Aljarrah, **M-Ali AL-Akhras**, H Bani-Salameh. Seasonal variation of indoor radon concentration in a desert climate. *Applied Radiation and Isotopes journal*. (2017), **130**: 49-53.
47. Azam Niroomand-Rad, Slavik Tabakov, Ibrahim Duhaini, Rabi Mahdavi, Behrouz Rasuli, Nabaa
- Naji, Muthana Al-Ghazi, Areen Albashir, **M-Ali H. Al-Akhras**, Meshar Al-Nuaimi, Zakiya Salem Al-Rahbi, Ismail Abuawwad, Tarek Al-Kaissi, Huda AlNaemi, Abdollah Al-Haj, Belal Moftah, Osama Anjak, Hatice Bilge, Jamila Al Suwaidi, Alfani Al Ameri, Entesar Dalah, Abdo Al-Oubati. Status of medical physics education, training, and research programs in middle east. *Medical Physics International Journal*, vol.5, No.2, **2017**
48. H. Darmani, K. Tawalbeh, A. Al-Hiyasat, **M-Ali Al-Akhras**. Comparison of the photosensitivity of biofilms of different general of cariogenic bacteria in tooth slices. *Polish Journal of Microbiology*, Vol. 67. No, 4, **2018**, 455-461.
49. **M-Ali H. Al-Akhras**, Mohammad M. ALshorman, K. Aljarrah, Majed M. Masadeh, Zaid

Ababneh. Modeling the effect of Rose Bengal on growth and decay patterns of *Pseudomonas aeruginosa*, *Escherichia coli* and *Staphylococcus aureus*. IOP Conf. Series: Materials Science and Engineering 305 (1) (2018) 012004 doi:10.1088/1757899X/305/1/012004

50. **M-Ali Al-Akhras**, B. Albiss, R. Al-Khatib, Mohammad-Khair Qaseer, Manar A. AlGhbari, Qassem Mohaidat. Effect of alternating magnetic field on the growth of different strains of bacteria in the presence of iron oxide nanoparticles. *Acta Physica Bolanica*, Vol. 134. No. 1., 2018, pp.133134.
51. Ghaseb N. Makhadmeh, Azlan Abdul Aziz, Khairunisak Abdul Razak, **M-Ali H. AlAkhras**. Effect of Photon Radiations in Semi-Rigid Artificial Tissue Sensitized by Silica Nanoparticles Encapsulated Protoporphyrin IX. 2018 IOP Conf. Ser.: Mater. Sci. Eng. 305 (1) 012014 <https://doi.org/10.1088/1757-899X/305/1/012014>
52. M. Mousa, **M-Ali H. AL-Akhras**, S. Daradkah. Field. Emission from Carbon Nano-Fiber Pyrograf III PR-1 Embedded in Glass. *Jordan Journal of Physics*, Vol. 11 No. 1, 2018, pp. 17-25.
53. **M-Ali H. Al-Akhras***, Mohammad-Khair Qaseer, B. A. Albiss, Umar S. Gezawa. Effect of laser beam on temperature distribution on artificial cylindrical shaped hard tissue bones. 2018 IOP Conf. Ser.: Mater. Sci. Eng. 305 012013 <https://doi.org/10.1088/1757-899X/305/1/012013>
54. **M-Ali H. Al-Akhras***, Mohammad-Khair Qaseer, B. A. Albiss, M. Anwar Alebrhim, Umar S. Gezawa. Investigation of composition and structure of spongy and hard bone tissue using FTIR spectroscopy, XRD and SEM. 2018 IOP Conf. Ser.: Mater. Sci. Eng. 305 012010 <https://doi.org/10.1088/1757-899X/305/1/012010>.
55. I. Jum'h, A. Abdelhay, A. Telfah, **M-Ali Al-Akhras**, A. Al-Kazwini, S. Rosiwal. Veratric acid removal from water by electrochemical oxidation on BDD anode. 2018 IOP Conf. Ser.: Mater. Sci. Eng. 305(1), 012021 <https://doi.org/10.1088/1757899X/305/1/012021>.
56. M. Mousa, **M-Ali Al-Akhras**, S. Daradkeh. Study of the Emission Characteristics of Single-Walled CNT and Carbon Nano-Fiber Pyrograf III. 2018 IOP Conf. Ser.: Mater. Sci. Eng. 305 (1) 012009 <https://doi.org/10.1088/1757-899X/305/1/012009>
57. Nayek, **M-Ali AL-Akhras**, Ihab M Obaidat. Tuning of the optical band-gap of rare earth doped BiFeO₃ submicron particles for solar cell pplications. 2018 5th International Conference on Renewable Energy: Generation and Applications (ICREGA), Al Ain, 2018, pp. 147-149. doi:10.1109/ICREGA.2018.8337582.
58. T. Al Zoubi, B. Albiss, **M-Ali AL-Akhras**, Hamzeh Qutaish, Enad Alabed, and Sheik Nazrul. NiOnanofillers embedded in graphite/PVA-polymer matrix for efficient electromagnetic radiation shielding. AIP Conference Proceedings 2083, 020002 (2019); <https://doi.org/10.1063/1.5094305> 59. V. Narayanaswamy, I. M. Obaidat, S. Latiyan, S. Jain, C. Nayek, Sumana Goankar, **MALI ALAkhras**, and Imaddin A. Al-Omari: "Role of Interface Quality in Iron Oxide Core/Shell Nanoparticles on Heating Efficiency and Transverse Relaxivity". *Mater. Express* 9, (2019) pp. 328–336

60. Chiranjib Nayek, **M-Ali AL-Akhras**, Venkatesha Narayanaswamy, Abbas Khaleel, Imaddin A. AlOmari, Andrivo Rusydi, and Ihab M. Obaidat. Role of shell thickness and applied field on the magnetic anisotropy and temperature dependence of coercivity in Fe₃O₄/Fe₂O₃ core/shell nanoparticles. *Mater. Express* 9, (2019) pp. 123–132
61. Aljarrah, **M-Ali AL-Akhras**, D. J. Al-Khalili, Z. Ababneh. The feasibility of using Saffron to reduce the photosensitivity reaction of selected photosensitizers using Red Blood Cells and StaphylococcusAureus Bacteria as targets. *Photodiagnosis and Photodynamic Therapy*. 29,(2020), <https://doi.org/10.1016/j.pdpdt.2019.101590>
62. V. Narayanaswamy, S. Alaabed, **M-Ali AL-Akhras**, I. Obaidat. Molecular simulation of adsorption of methylene blue and rhodamine B on graphene and graphene oxide for water purification. *Materials Today: Proceedings* 28 (2020) 1078–1083
63. A. Alsaad, A. Al Kadhim, Renat Sabirianov, A. Omari, I. Qattan, Nabil Al Aqtash, **MALI ALAkhras**. Effect of bromine deficiency on large elastic moduli of alpha-phase diisopropyl ammonium bromide (α -DIPAB) molecular crystals. *Eur. Phys. J. B* 93, 5 (2020). <https://doi.org/10.1140/epjb/e2019-100258-y>
64. AL-Quraan, **M-Ali H. AL-Akhras** & Dua'a Z. Talafha. The influence of laser beam and high light intensity on lentil (*Lens culinaris*) and wheat (*Triticum aestivum*) seedlings growth and metabolism, *Plant Biosystems - An International Journal Dealing with all Aspects of Plant Biology*, 2020, DOI: [10.1080/11263504.2020.1837280](https://doi.org/10.1080/11263504.2020.1837280)
65. A. Ahmad, A. Alsaad, Q. Al-Bataineh, **M-Ali H. AL-Akhras**, Z. Albataineh, Kholoud Alizzy, Nermeen Daoud. Synthesis and characterization of ZnO NPs-doped PMMA-BDK-MR polymer-coated thin films with UV curing for optical data storage applications. *Polym. Bull.* 78, 1189–1211 (2021).
66. **M-Ali H. AL-Akhras**, SE Alzoubi, AA Ahmad, R Ababneh, A Telfah. Studies of composite films of polyethylene oxide doped with potassium hexachloroplatinate". *Journal of Applied Polymer Science*, vol. 138, p. 49757, 2021.
67. **M-Ali AL-Akhras**, Shorooq E. Alzoubi, Ahmad A. Ahmad, Riad Ababneh, Ahmad Telfah. Studies of composite films of polyethylene oxide doped with potassium hexachloroplatinate. *Journal of Applied Polymer Science*. Volume 138, Issue 5 49757. (2021). <https://doi.org/10.1002/app.49757>
68. V. Narayanaswamy, S. Alaabed, B. Issa, **M-Ali AL-Akhras** and Ihab M. Obaidat. Molecular simulation of curcumin loading on graphene and graphene oxide for drug delivery applications. *Current Chemistry Letters* 10 (2021) 161–168
69. A. Telfah, **M-Ali AL-Akhras**, Kholoud A. Al-Izzy, A. Ahmad, Riad Ababneh, Mais Jamil A. Ahmad, *Carlos J. Tavares and Roland Hergenröder*. Dielectric Relaxation, XPS and Structural studies of Polyethylene Oxide/Iodine Complex Composite Films, *Polymer Bulletin*, pp. 1-20, 2021.
70. N. AL-Quraan, **M-Ali H. AL-Akhras**, Ala'a A. Ayoub. Effect of ash carbon nanofibers on GABA shunt pathway in 2 germinating seeds of tomato (*Lycopersicon esculentum* Mill., c.v. 3 Rohaba.) under salt stress. *Turkish Journal of Botany* 45(2):124-139, 2021.

71. **M-Ali AL Akhras**, Musab Shakhathreh, Hela Chamroukhi, A. Telfah, Carlos J. Tavares. Optical, Electrical and Morphological Properties of (PANI/CSA-PEO/AgNps-AgNO₃) Nanocomposites thin films. *J. Physica B*. Volume 634, 1 June **2022**, 413636
72. G. Makhadmeh, A. Abuelsamen, **M-Ali H. Al-Akhras**, Azlan AbdulAzizcd. Silica Nanoparticles Encapsulated Cichorium Pumilum as a Promising Photosensitizer for Osteosarcoma Photodynamic Therapy: In-vitro study. *Photodiagnosis and Photodynamic Therapy*. Volume 38, June **2022**, 102801
73. **M-Ali AL-Akhras**, Basmah Odat, Venkatesha Narayanaswamy, Marwan S. Mousa, Bashar Issa, Mutawakil Obeidat, Imad A. Al-Omari, Ihab Obaidat. Molecular Simulations of 6-Gingerol Loading on Graphene and Graphene Oxide for Drug Delivery Applications. *Biointerface Research in Applied Chemistry* **2022**, 13(3):13, DOI:10.33263/BRIAC133.258
74. Ahmad Alsaad, Ihsan Aljarrah, Ahmad Ahmad, Qais M. Al-Bataineh, Adnan Shariah, **M Ali AlAkhras**, Ahmad D Telfah. The structural, optical, thermal, and electrical properties of synthesized PEO/GO thin films. *Appl. Phys. A* 128, 676 (**2022**). <https://doi.org/10.1007/s00339-022-05829-x>
75. Aljarrah, A. Bani-Salameh, A. Ahmad, Q. Al-Bataineh, Ahmad M. Alsaad, **M-Ali H. AL-Akhras**, Ahmad Telfah. Effect of UV-illumination on refractive index of PMMA/ metal oxide nanocomposite films. *Polym. Bull.* Volume 80, pages 7533–7543, (**2023**). <https://doi.org/10.1007/s00289-022-04409-6>
76. Samer Ayasrah, Mutawakil Obeidat, Qutaibeh Katatbeh, Abdalrahman Aljarrah, **Mohammed-Ali Al-Akhras**. Practicing creative thinking and its relation to academic achievement. *Creativity studies*, Vol 16 No 1 (**2023**). <https://doi.org/10.3846/cs.2023.14661>
77. **M-Ali AL-Akhras**, M. Telfah, M.N. Shakhathreh, A. Telfah, M. S. Mousa, V. Narayanaswamy, Ihab M. Obaidat. Optical and Chemical Investigations of PEO Thin Films Incorporated with Curcumin Nanoparticle: Effect of Film Thickness. *Biointerface Research in Applied Chemistry*. Volume 13, Issue 2, **2023**, 143. <https://doi.org/10.33263/BRIAC132.143>
78. **M-ALi H. Al-Akhras**, B. Odat, V Narayanaswamy, MS Mousa, B Issa, I. M Obeidat. Molecular Simulations of 6-Gingerol Loading on Graphene and Graphene Oxide for Drug Delivery Applications. *Biointerface Research in Applied Chemistry* 13 (3), **2023**, 258
79. Riad Ababneh, Maha Smadi, Nour El Houda Bensiradj, **M-Ali Al-Akhras**, Yusuf AlHiari, Inshad Jum'h, Rana Abu-Dahab, Qais M Al Bataineh, Ahmad Telfah. UV–Vis, FTIR and DFT Studies of the Fluoroquinolone [Pyrido Pyrolo Quinoxaline (PPQ)] Tethered to Gold Nanoparticles as a Novel Anticancer. *Journal of Inorganic and Organometallic Polymers and Materials*, 1-11, **2023**. <https://doi.org/10.1007/s10904023-02596-x>
80. Mahmoud Telfah, **M-Ali Al-Akhras**, Ahmad Telfah, Inshad Jum'h, Riad Ababneh, Yasser Bustanji, Yusuf Al-Hiari, Roland Hergenröder. 19F-and 1H-NMR investigations of ofloxacin fluoroquinolone tethered with silver nanoparticles as synergistic antibiotic combinations. *Journal of Molecular Structure*, 136024, (1292) **2023**.

81. Aljarrah, **M-Ali H. Al-Akhras***, G. N. Makhadmeh, T. AlZoubi, A. Abuelsamen, S. H. Zyoud, M. A. Mhareb, A. A. Aziz, O. Abu Noqta. A Novel Approach for Enhanced Osteosarcoma Photodynamic Therapy Using Encapsulated Methylene Blue in Silica Nanoparticles. *J. Compos. Sci.* **2023**, 7, 137. <https://doi.org/10.3390/jcs7040137>
82. A. Alebrahim, **M-Ali H. Al-Akhras**, Ahmad S. Al-Hiyasat, Ali S. Ba Rajjash, M. S. Mousa, Abdulla Al Darayseh. Microstructural Changes of Bone after Soft Tissue Removal: ATR-FTIR and XRD Spectroscopies ATR-FTIR and XRD Spectroscopies. *Journal of Spectroscopy*, **2023**, 6599002, 8 pages, 2023. <https://doi.org/10.1155/2023/6599002>
83. Aljarrah, **M-Ali H. Al-Akhras**, Ghaseb N. Makhadmeh, Tariq AlZoubi, Majed M. Masadeh, M. H. A. Mhareb, Samer H. Zyoud, Osama Abu Noqta. Advancing Photodynamic Therapy Efficiency on MCF-7 Breast Cancer Cells through Silica Nanoparticles-Safranin Encapsulation: In-Vitro Evaluation. *J. Compos. Sci.* **2023**, 7, 274. <https://doi.org/10.3390/jcs7070274>
84. Ahmad Telfah, Nour Abu Shari'ah , Riad Ababneh, Ahmad Bahti, **M-Ali Al-Akhras**, Yusuf AlHiari, Inshad Jum'h, Rana Abu-Dahab, Mahmoud Telfah, Qais M. Al Bataineh, Roland Hergedoder. ¹ H-NMR analysis of fluoroquinolone (pyridopyrrole quinoxaline, PPQ) conjugated to gold nanoparticles for synergistic anticancer drug design. *Journal of Molecular Structure* 1292 (2023) 136081, <https://doi.org/10.1016/j.molstruc.2023.136081>
85. Madanat, Mazen; Ramadan, Yousef; **Al-Akhras, M-Ali**; Alrwashdeh, Saad S.; Mousa, Marwan S. Reversion of Natural Ageing Clusters in 6063 Al-Mg-Si Alloy *J. of Materi. Eng. and Perform* (2023). <https://doi.org/10.1007/s11665-023-08732-5>
86. A. Telfah, **M-Ali AL-Akhras**, Haya AlShheamat, Marwan S. Mousa, Inshad Jum'h, Abdel Qader Albawab, Elen Tolstik, Johann Dierks, Roland Hergenröder. Dissociation Kinetics and Antimicrobial Activity of Ofloxacin Antibiotic in Artificial Tears via 1HNMR, Raman, and UV-Vis Spectroscopic Analysis. *Journal of Ocular Pharmacology and Therapeutics*. **2024** Jan-Feb;40(1):78-88. Epub 2024 Jan 22. DOI: [10.1089/jop.2023.0019](https://doi.org/10.1089/jop.2023.0019)
87. **M-Ali H. Al-Akhras**, Nisreen A. Al-Quraan, Zinab A. Abu-Aloush, Marwan S. Mousa, Tariq AlZoubi, Ghaseb N. Makhadmeh, Orhan Donmez, Khaled Al jarrah. Impact of magnetized water on seed germination and seedling growth of wheat and barley. *Results in Engineering. Volume 22*, June **2024**, 101991
88. **Al-Akhras, M-Ali**; et. al., A Comparative Analysis of Field Electron Emission from Carbon Black Embedded within Insulated Copper Hollowed Wires and Glass Tubes. *Karbala International Journal of Modern Science*. Vol. 10 : Iss. 2 , Article 3. **2024**. Available at: <https://doi.org/10.33640/2405-609X.3346>
89. Aljarrah, **M-Ali H. Al-Akhras**, Ghaseb N. Makhadmeh, Tariq AlZoubi, Abdulsalam Abuelsamen, Samer H. Zyoud, Ahmad M. AL-Diabat, Osama Abu Noqta, Azlan Abdulaziz, Orhan Donmez. Boosting the In-Vitro Effectiveness of Photodynamic Therapy on MCF-7 Breast Cancer Cells with Encapsulated Malachite Green by Silica Nanoparticles. *Results in Materials*. Volume 22, June **2024**, 100582
DOI: <https://doi.org/10.1016/j.rinma.2024.100582>
90. Marwan S. Mousa, Ildiko Tulbure, Moneeb T. M. Shatnawi, Saleh H. Fawaer, Alexandr Knápek, Martin Trunec, Vlasta Sedlakova, **M-Ali H. Al-Akhras**, Mo'tasem Alabth, Mohmmad M.

- Allaham, Ammar Al Soud, Samer I. Daradkeh, Kipkurui Ronoh, Wala' M. Al-Qaisi, Dinara Sobola. Comparative Analysis of the Effect of Polystyrene Coating on the Field Emission Characteristic of Tungsten and Carbon Fibre Emitters. *Jordan Journal of Physics*. Volume 17, Number 2, **2024**. pp. 187-196. Doi: <https://doi.org/10.47011/17.2.6>
91. Allaham, S. I. Daradkeh, H. A. Al-Braikat, R. Dallaev, D. Burda, Zuzana Košélová, **M-Ali H. Al-Akhras**, A. (Assa'd) Jaber, Marwan S. Mousa, Dinara Sobola, Vladimír Kolařík, Alexandr Knápek. Comprehensive analysis of charge carriers dynamics through the honeycomb structure of graphite thin films and polymer graphite with applications in cold field emission and scanning tunneling microscopy. *Surfaces and Interfaces* 53 (**2024**) 105102. <https://doi.org/10.1016/j.surfin.2024.105102>
 92. Zaid K. Fuqara, Marwan S. Mousa, Ahmad Jaber, **M.-Ali H. Al-Akhras**, Hatem A. Al Braikat, Qassim A. Al-Hroub. Experimental investigation of field electron emission from uncoated and coated graphite fiber tips. *Journal of Electrical Engineering*, Vol. 75, No. 6, **2024**, pp. 449-457
 93. Ammar Alsoud, Marwan S. Mousa, Adel M. Abuamr, Saleh H. Fawaeer, Kipkurui Ronoh, Ali F. AlQaisi, Karel Liedermann, Alexandr Knápek, **M-Ali H. Al-Akhras**, Dinara Sobola, Field Electron Emission from a Tungsten Cathode Coated with Silica, *Jordan Journal of Physics*: Vol. 17 No. 2 (**2024**)
 94. Hatem A. Al-Braikat, Samer I. Daradkeh, **M-Ali H. Al-Akhras**, and Marwan S. Mousa. Field Emission Characteristics of Carbon Black Particles and Various Types of Carbon Nanotubes Using Glass Tubes. *Jordan Journal of Physics*. Volume 17, Number 2, **2024**. pp. 187196
 95. Alla Jaafreh, A. Jaber, **M-Ali H. Al-Akhras**, Marwan S. Mousa, Field Electron Emission from Molybdenum Tips: Preparation and Characterization, *Jordan Journal of Physics*: Vol. 18 No. 1 (**2025**) pp. 33-40
 96. M-Ali H. Al-Akhras^{1,*}, M. A. Alebrahim, M. S. Mousa, Ali S. Ba Rajjash. Ancient and Modern Bone Diagnosis: Towards a Better Understanding of Chemical and Structural Feature Alterations. To be Submitted
 97. M-Ali H. Al-Akhras, Majed M. Masadeh, K. Aljarrah, Mohammad M. ALshorman. A comparative study to evaluate the photoinactivation of Gram-Positive and Gram-Negative bacteria strains by Rose Bengal. To be Submitted.
 98. M-Ali H. Al-Akhras, Majed M. Masadeh, K. Aljarrah, Mohammad M. ALshorman. Effect of irradiation and antibiotics on bacterial growth sensitized with Rose Bengal. To be submitted.
 99. Al-Akhras, K. Aledealat, K. Heuseen, B. Albiss, A. Ahmad, R. Oweis, M. Al-Fandi, Marwan Mousa, F. Alkhtatbeh. Enhancing UV sensitivity of Cu doped ZnO by using simple and low cost electrochemical deposition techniques. To be Submitted.
 100. Alzoubi, M-Ali AL-Akhras, M Alqadi, H Ababneh. Photo-Induced Aggregation of Colloidal Metal Nanoparticles. To be Submitted.
 98. M-Ali Al-Akhras, M. Masadeh, Aljarrah, K, Alshorman, M. Effect of irradiation and antibiotics on bacterial growth sensitized with Rose Bengal. To be submitted.

99. S. I. Daradkeh, Marwan S. Mousa, H. A. Al-Braikat, A. M. Al-Qudah, M-Ali H. Al-Akhras Field Emission Differences Between Carbon Black Particles and Several Types of Carbon Nanotubes, Both Embedded in Glass Tubes. To be Submitted
100. M-Ali AL-Akhras, *et. al.* Experimental and Theoretical Bacterial Growth Curves: A Comparative Study. To be submitted.

BOOKS

- 1- **Science Book (Grade 5):** For all Jordanian Schools, 2020. **M-Ali AL-Omari** (Cordinator), Mutawakil M. Obeidat, Abdel Latif A. Ibdah, Ayat Magrabee.
- 2- **Man and Science:** (2006). El-Keblawy, A., **M-Ali AL-Akhras**, K. Abbas, A. Murad and S. Al-Darmaky, Textbook for General Education Students, 2nd edition, UAE University Press, Al-Ain, UAE. P 275, In Arabic.
- 3- **Man and Science:** (2005). Mehdat, G. A. El-Keblawy, M. Hasson, **M-Ali ALAkhras** and K. Abbas, Textbook for General Education Students, 1st edition, UAE University Press, Al-Ain, UAE. P 269, In Arabic.

Chapter in a Book

- 4- **M-Ali H. Al-Akhras**, Subhi Al saqan, Zeinab Ghadie. Structural Properties s of Polystyrene (PS)/Ferroelectric Barium Stannate Titanate Ba (Ti_{0.9}Sn_{0.1}) O₃ Ceramic (BST) Composite with Concentrations 1-15% wt. *The Springer Proceedings in Energy*
- 5- R. Alkhatib, **M-Ali AL-Akhras**, and Duaa J. Al-Khalili. Solar Irradiation on *Lawsonia inermis* sensitized with Red Blood Cells: Effect on osmotic fragility. *The Springer Proceedings in Energy*

CONFERENCES & WORKSHOPS

1. 1st Annual Meeting of the American Society for Photobiology, Chicago, IL, USA, June 26 - 30, 1993.
2. First Workshop on the Applications of Computers for Physics Teaching, Yarmouk University, Irbid, Jordan April 8 - 10, 1996.
3. Training course about using the Isotope technology on surface water, Ministry of Energy and Mineral Resources, Amman, Jordan December 21 - 31, 1996.
4. Workshop on Technology of Education and Evaluation, JUST, Jordan, September 6 - 10, 1997.
5. The First Annual Scientific Day of the Faculty of Science & Arts, JUST, Jordan, May 18, 1998 (**Organizing member**).
6. Medical Physics Instrumentation for Diagnosis and Therapy: A workshop, Wisconsin University, USA, 8 - 10 June 1998. <http://www.medphysics.wisc.edu/workshop98/schedule.html> (**Oral presentation**)

7. Biophysics & Synchrotron Radiation, Argonnene National Lab, Ill, USA, 4 - 8 August 1998. **(Poster)**
8. The Tenth International Conference on X-ray Absorption Fine Structure XAFS X IIT, Ill, USA, 10 - 14 August 1998.
<http://bioinformatics.weizmann.ac.il/iucr-top/journals/jsr/tocs/1999/jsr0603.html>
9. General Employee Radiological Training/ Argonnene National Laboratory, USA, August 3,1998
10. Third Symposium on Magnetics/ Center for Theoretical and Applied Physical Sciences, Yarmouk University Irbid, Jordan, 2 - 4 November 1998.
11. The 16th Workshop of Planning and Evaluation, JUST Jordan, February 1 - 3, 1999.
12. 2nd Internet Conference on Photochemistry and Photosensitization of red blood cell photohemolysis by lutetium texaphyrin. 5. **(Poster)**. Mehmet D. Bilgin, M-Ali Al-Akhras, Mahmoud Khalili, Hila Hemmati, and Leonard I. Grossweiner.
13. <http://www.photobiology.com/photobiology99/index2.htm>
14. The 1st Workshop of Medical and Radiation Physics, Applied Science University, Jordan Amman, March 3 - 4, 1999 **(Oral presentation)**
15. 18th International Conference on X-ray & Inner Shell Process. Chicago, IL, 23-27 Aug.,1999.
<http://www.phy.anl.gov/X99/posters.html> **(Poster /C33)**
16. The First Conference on Medical Physics and its Applications, Jordan Zarka Private University April 24 – 26, 2000. **(Organizing member & Oral presentation)**
17. The First Conference/Third Science Day Faculty of Science & Arts. JUST Jordan, May 23, 2000 **(Organizing member & Oral presentation)**
18. Seventh Petra School of Physics, University of Jordan, 17 - 22 September 2000.
19. Fourth Symposium on Magnetics/ Center for Theoretical and Applied Physical Sciences, Yarmouk University Irbid, Jordan, 6 - 8 November 2000.
20. Training Course on Laser Diagnostics of Composition Processes/ National Institute of Laser Enhanced Sciences (NILES), Cairo, Egypt, 18-22 November 2000
21. The First Conference/Third Science Day Faculty of Science & Arts. JUST Jordan, May 23, 2001**(Organizing member & Oral presentation)**
22. NATO ASI on Environmental UV Radiation: Impact on Ecosystems and Human Health and Predictive Models. Pisa, Italy, 18-28 June 2001
23. Second Symposium on Use of Nuclear Techniques in Environmental Studies. Yarmouk University. Irbid-Jordan 23 – 25 /9/2002
24. 2nd International workshop on Biological Effects of Electromagnetic Fields”. National Center for Scientific research “DEMOKRITOS”. **(Poster)** October 07 – 11 2002 Rhodes/Greece
25. JSPS Seminar on Synchrotron Radiation Science. Oct. 19-28, 2002/Al-Balqa Applied University/Jordan.
26. International Congress of Spectroscopy. Cadi Ayyad University/Morocco. April 23 – 25, 2003
<http://www.ucam.ac.ma/cis2003> **(Scientific committee member & Oral presentation)**
27. The first workshop in medical physics at UAE. Dubai/Intercontinental Hotel March 31st, 2004 **(Organizing member)**

28. 3rd SESAME meeting, Antalya, Turkey, October 12-13, 2004
29. 5th UAE Diagnostic imaging conference. Abu Dhabi April 18 – 21, 2004
30. The fifth annual UAE University research conference, Al Ain Rotana Hotel April 25-27, 2004
31. The First UAE International Conference on Biological and Medical Physics, Al Ain Rotana Hotel, March 27 – 30, 2005 **(Local Organizing Committee & Oral presentation)**
32. The UN/ESA/NASA Workshop on the International Heliophysical Year IHY 2007 Abu-Dhabi and Al Ain, UAE 20 – 23 November, 2005
33. The sixth annual UAE University research conference, Al Ain Rotana Hotel April 24-26, 2005 **(Oral presentation)**
34. The Second Physics Day of the Faculty of Science. "New Photosensitizer extracted from herb" University of UAE, May, 9, 2005. **(Oral presentation & Poster)**
35. UN/ESA/NASA/UAE Workshop on the International Heliophysical Year IHY 2007: MATLAB Workshop Al Ain, 21-22 November, 2005
36. Oncology Research Day, Faculty of Medicine and Health Sciences (FMHS), UAE University Oncology Research Group, Wednesday, 30 November 2005 – Rotana Hotel, Al Ain UAE
37. *The 9th International Conference on Solar Energy and Applied Photochemistry [SOLAR '06] and the 6th International Workshop on Environmental Photochemistry, [ENPHO '06]* 22-27 January 2006, Cairo, Egypt. **(Oral presentation & Poster)**
38. The Third Physics Day of the Faculty of Science. "University of UAE, April, 10, 2006. **(Oral presentation & Poster)**
39. The Fourth Physics Day of the Faculty of Science. "New Photosensitizer extracted from herb" University of UAE, March, 27, 2007. **(Oral presentation & Poster)**
40. The seventh annual UAE University research conference, Al Ain Rotana Hotel April 23-25, 2007 **(Oral presentation)**
41. The Fifth Biology Day of the Faculty of Science. "University of UAE, May, 15, 2007. **(Poster)**
42. First International Euro-India Conference on Holistic Medicine. August 21-23, 2008. Kottayam, Kerala, India. **(Oral presentation, Poster & chair session)**
43. The Eleventh Scientific Day of the Faculty of Science & Arts, JUST, Jordan, May 13-12, 2010 **(Organizing member)**.
44. The 1st Funded Research Conference at JUST, Irbid, Jordan 24th April 2012 **(Oral presentation)**.
45. Undergraduate International Studies and Foreign Language Program, In collaboration with Joliet Junior College and College of Lake County-USA. 23, 24, March 2013 **(Organizer)**
46. 3rd International Advances in Applied Physics & Materials Science Congress 24 – 28 April 2013 Antalya / Turkey **(Poster)**
47. 1st International Conference in Modern Advances in the Field of Biotechnology and Genetic Engineering 5 – 8 October 2013 Amman, Jordan **(Conference Chair)**. In addition, I taught one workshop **"Experimental Data Fitting and Mathematical Modeling"**
48. **International Conference / Humboldt Kolleg Building International Networks for Enhancement of Research in Jordan** April 3 – 5, 2014 Amman, Jordan **(Conference National Committee)**.

49. The Twelfth Scientific Day of the Faculty of Science & Arts, JUST, Jordan, April 21, 2014 **(Organizing member)**.
50. 2nd International Congress on Energy Efficiency and Energy Related Materials (ENEFM2014) from 16 to 19 October 2014 in Oludeniz, Fethiye- Mugla, Turkey **(Poster)**.
51. Young Syrian Refugees in Jordan's Educational Systems Challenges and Policies. Riwaq Hall, Intercontinental Hotel, Amman, April 16, 2015.
52. International Conference on Advance Materials (ICAM2015), April 27-29, 2015 Irbid Jordan. **(Organizer)**.
53. NanoMedicine Revolution Conference, August 8, 2015 JUST / Jordan (Talk: Application of Nanomaterials in Photodynamic Therapy (PDT))
54. First JoSTA Conference "Employing Science & Technology and Innovation for Economic Development' **The Higher Council for Science and Technology**, August 12-13, 2015 **(Participant)**.
55. 2nd International Conference on Computational and Experimental Science and Engineering (iccesen-2015). *14-19 October 2015, ANTALYA-TURKEY*
56. First Jordanian - Tunisian Scientific Forum. Irbid, Jordan, March, 2016 29-31 **(Organizing committee)**
57. Eighth International PETRA School of Physics “Physics of low-dimensional systems: Theory and Applications” Amman, Jordan, April 2016 11-14 **(Organizing committee)**
58. Building Successful Partnerships between Academia and Industry: The Pharmaceutical Sector. Amman, Jordan, April 13, 2016
59. Spring Workshop 2016: Nanotechnology in Heavy Metals Removal & Water Treatment and the Scientific Nanotechnology Day. Irbid, Jordan, April, 26 - 28 / 2016
60. International Conference of Chemistry and Biosciences ICCB 2017. 5 - 6 April, 2017, Mafraq, Jordan,
61. 7th International Advances in Applied Physics and Materials Science Congress & Exhibition (APMAS). April 22-26, 2017 in Oludeniz, Fethiye / Mugla-TURKEY.
62. Int Conf / Humboldt Kolleg "Jordanian Life Sciences for Sustainable Development" on Thurs. April 27th - Sat 29th, 2017, Amman, Jordan **(Organizing committee)**
63. 2nd International Conference on Advance Materials (ICAM2017), June 10 - 13, 2017 Irbid, Jordan. **(Organizer)**.
64. The 1st International Conference on Geospatial Information Management, September 12 – 14, 2017 Amman-Jordan
65. The 8th International Conference on Engineering, Project, and Production Management (EPPM2017), September 19 – 22, 2017 Amman-Jordan
66. 5th International Conference on Renewable Energy Generation and Applications. United Arab Emirates University, 26th -28th Feb 2018 Al Ain, UAE.

67. 1st International Conference on Current Nanotechnology and its Application (ICCNA-2018), April 10 - 12, 2018 Irbid, Jordan. (**Conference Chair**) Supported by **Scientific Research Support Fund (SRSF)/ Ministry of Higher Education and Scientific Research**.
68. The ICFDA'18 International Conference on Fractional Differentiation and its Applications. July 16-18, 2018 Amman-Jordan. (**Participant & Organizing committee**)
69. International Scientific Exchange Programs (ISEP) course/workshop. April 21- 24, 2019 in Amman (**Speaker & Organizing committee**).
70. 9th International Petra School of Physics “Nano Physics: Fundamentals and Applications” Amman, Jordan, October 2018, 9 - 12 (**Organizing committee**)
71. International Congress on Optics & Lasers in Medicine” which will be held on October 09 - 12, 2018 in the stunning Convention Centre of Limak Limra Hotel & Resort in Antalya, Turkey (**Invited Speaker**)
72. Nanotechnology Workshop NW2-2018. December 23rd and 24th 2018 Erbil-Iraq (**Keynote Speaker**)
73. Fourth International Symposium On Dielectric Materials And Applications (ISyDMA'2019), ISyDMA'2019. 2nd to 4th April, 2019 Amman-Jordan. (**Organizing committee and Chair for the Pri-Conference School 30th March to April 1st 2019 Irbid Jordan**)
74. American Association of Physicists in Medicine (AAPM)/International Scientific Exchange Program (ISEP)Workshop. (AAPM)/ (ISEP)Workshop 21st to 24th April 2019 at Kempinski Hotel, Amman, Jordan. (**Organizer and Speaker**)
75. International Symposium on Dyes and Pigments. 8-11 September 2019, Seville, Spain (**Invited Speaker**)
76. Cairo Science Forum: Science Diplomacy and Recent Developments in Biology. November 1921, 2019 National Research Centre, Cairo, Egypt (**Invited Speaker**)
77. Fifth International Symposium On Dielectric Materials and Applications (ISyDMA'2020), 15th to 17th April, 2020 Ibn Tofail University, Kenitra, Morocco Sultan Moulay Slimane University, Beni Mellal, Morocco University of Miami, Florida, USA Ibn Zohr University, Agadir, Morocco. (**Scientific Committee**)
78. 78. Sixth International Symposium on Dielectric Materials and Applications 13-14 Sep. 2021 / Calais / France. Parallel event: International Spring School on Advanced Materials for Energy (ISyDMA'6).Saint-Omer, 15- 16 Sep. 2021. Calais / France (**International Scientific Committee**). <https://isydma6.univ-littoral.fr/speakers/>
79. Capacity Development Workshop for E-Learning Development (Level 1) " held from 30/03/2022 to 31/03/2022 Director of the Academic Development and Quality Assurance Center_JUST_Jordan.
80. International conference of “How to Change the World via Science”, June 2022, 119, German Jordanian University (GJU), Madaba-Jordan
81. Erasmus+ staff mobility for teaching and training, July 2022, 11-19, Physics Department University of Minho, Braga, Portugal.

82. The 1st International Conference for Science and Pharmacy (MSPC1), October 26-28, 2022 Mutah University, Jordan (**Keynote Speaker**)
83. International Workshop on Advanced Material 2023 in Ras Al Khaimah, UAE, from the 19th-21st of February 2023.
84. 3rd International Conference on Advance Materials (ICAM2023), May 22 - 24, 2023 Irbid, Jordan. (**Organizer**).
85. The 2nd International Conference for Science and Pharmacy (MSPC2), October 25-27, 2023 Mutah University
86. 11th INTERNATIONAL CONFERENCE ON COMPUTATIONAL AND EXPERIMENTAL SCIENCE AND ENGINEERING (ICCESEN-2024) 25-28 October 2024, ANTALYA-TURKEY
87. 4th International Conference on Advance Materials (ICAM2025), May 21 - 23, 2025 Irbid, Jordan. (**Co-Chair and Organizer**).
- 88.

COMMITTEE MEMBER

Department Level:

- Department Promotion Committee.
- Academic Affairs Committee.
- Student Affairs Committee.
- Chaired Higher Education Committee.
- Chaired Tender Committee Labs, Equipment, and Budget.
- Academic development and quality assurance committee. • Quality Assurance, Accreditation, and Strategic Plans.

College Level:

- Chaired several committees for Faculty hiring and promotion.
- Academic Affairs Committee.
- Student Affairs Committee.
- Research and Graduate Studies Committee.
- Chaired Tender Committee Labs, Equipment, and Budget
- Chaired faculty scientific Committee
- Chaired Central Lab Committee for Faculty of Science and Arts

University Level:

- Academic Development & Quality Assurance Center (ADQAC).
- Member of the **University Council** for the year 97/98
- Member in **Academic Development & Quality Assurance Center (ADQAC) JUST.**
- Student Disciplinary Committee

- Faculty Disciplinary Committee
- I chaired the organizing committee and obtained a Sponsorship of 15000JD from SRF.
- President of Committee for damages evaluation of chemistry department fire, Nov., 2020
- Student Discipline Committee

External and Outside Sectors Level:

- Member in Graduate Studies Council/Jarash University.
- Member and/or coordinator in several committees/UAE University during 2003-2006, Member in Jordanian Academicians Society
- Member in **Scientific Research Support Fund (SRSF)/ Ministry of Higher Education and Scientific Research**, 15th August, 2012- May 2014
- Member in **Medical Physics Journal**/ Al-Zarqa Private University.
- Member in **Medical Physics Curriculum** for the Private Universities in Jordan.
- Committee Chairman for Geology Ph. D Program and M. Sc in Medical Physics at Jordan University/**Higher Education Accreditation Commission**
- Conductivity measurements of sulfonated polyimide proton exchange membranes with different sulfonation degrees. (Hasan Ahmad Eideh, The Jordan University, May, 2017).
- Haif Almutairi (Supervised by Dr. Mohammed-Ali Hassan Al-Omari & Dr. Haq) Treating skin cancer by photodynamic therapy. Laurentian University, **Canada**
- Abdelrhman Alsekairy (Supervised by Dr. Mohammed-Ali Hassan Al-Omari & Dr. Haq) Overview of photodynamic therapy. Laurentian University, **Canada**
- Field Emission from Carbon Nanotubes and its Potential Application as an Electron Source. (Emad Saleem Bani Ali/ Master Student/ Mu'tah University, Jan 2018).
- Delegate member / The First Scientific Jordanian Tunisian Forum (SJTF'1) 29 – 31 March, Irbid 2016.
- Delegate member for establishing Material Science PhD program in collaboration with Technical University of Chemnitz / Germany 12 – 16 October, Irbid 2016.
- Delegate member for establishing Material Science PhD program in collaboration with Technical University of Chemnitz / Chemnitz 22 – 26 November, **German** 2016.
- Administrative committee member of the Jordanian Physics Society.
- Member of the Advisory Board for Nanotechnology at Cihan University–Erbil, Kurdistan Region, Iraq.
- Coordinator for Science Book (Grade 5) to Jordanian Schools
- Committee Member for Setting university proficiency exam questions for (medical and biophysics). Accreditation and Quality Assurance Commission for Higher Education Institutions. 2022
- Chairman of the Basic Sciences Sector Committee. **Ministry of Higher Education and Scientific Research (Aug. 2024 – Present**

FUNDED RESEARCH

International Fund:

1. **Establishment of a Biotechnology Center (Princess Haya Biotechnology Center). From Word Bank 1999 (Co-Investigator)**
2. Effect of Photosensitive Drugs Produced by United Arab Emirates Manufacturers on Osmotic Fragility from *UAE University (01-02-2-11/04) (PI)*
3. A novel approach of Photodynamic therapy extracted from local herb: Effect on cancer and some other organ parameters *in vivo*. from *UAE University (08-02-2-11/06) (PI)*

Local Fund:

4. The Drug and Chemicals Sensitive to Light from *ACDIMA (54/98) (PI)*
5. **Effect of Phototoxic Grass and Plants on Human, animals and Bees in Jordan. From Higher Council for Science and Technology. (62/2000) (PI)**
6. A promising hybrid anticancer drug based on a stimulated physicochemical conjugation of a novel anticancer with gold nanoparticle. **SRSF: Grant Number MPH/1/42/2017. Grant Amount 51740 JOD**

University Fund:

7. Photosensitization of Red Blood Cell. *JUST (52/96) (PI)*
8. Long-term exposure to EMF. *JUST (18/97) (PI)*
9. Rotational Flux pinning in High TC superconductors. from *JUST (95/99) (Co-Investigator)*
10. Preparation and Characterization of High Temperature Superconductors (HTSCs) from *JUST (28/2000). (Co-Investigator)*
11. A comparative study of the outcome of photodynamic therapy on viability of different cariogenic bacteria. JUST (May /2004) for **Master Student (Co-Investigator)**
12. Effect of Additives and Photosensitive Drugs on Osmotic Fragility (2004/for sabbatical leave) **(PI)**
13. Artificial semi-rigid tissue sensitized with natural pigments: Effect of photon radiations. JUST (80/2008) for **Master Student (PI)**
14. AC Electrical and optical properties s of Polystyrene(PS)/Ferroelectric Barium Stannate Titanate (BST) Ceramic Composite with concentrations 0.01-0.15% wt. JUST (112/2009) for **Master Student (Co-Advisor)**
15. Effect of irradiation and antibiotics on bacterial growth. JUST (113/2009) for **Master Student (PI)**
16. Effects of extremely low frequency electromagnetic field and electric current on the uptake of Bleomycin by mammary gland tumor cells induced with oral administration of 7,12-Dimethylbenz(a) anthracene (DMBA) in Wiser Rats. JUST (95/2011) for **Master Student (CoAdvisor)**

17. Cell-Phone Towers EMF Radiation Detection and Analysis using Geographic Information System (GIS) in North Jordan. JUST (07/2012) for **Master Student (PI)**
18. Continuous and Delayed Photohemolysis Sensitized with Photofrin and Magnetite Nanoparticles (Fe_3O_4). JUST (1/2013) for **Master Student (PI)**
19. Band structure and optical absorption calculations of Cadmium Telluride semiconductor based alloys and superlattice. JUST (2/2013) for **Master Student (Co-Investigator)**
20. Influence of nanoparticles on bacterial planktonic and biofilm cells in the presence of magnetic field. *JUST* (32/2013). (**Co-Investigator**)
21. Continuous and Delayed Photohemolysis Sensitized with Photofrin and Iron Oxide Nanoparticles (Fe_3O_4): Effect of different irradiation temperatures. JUST (113/2013) (**PI**)
22. Mapping of Inlab Wi-Fi Devices Radiation Pollution. *JUST* (89/2013). for **Master Student (Co-Investigator)**
23. Continuous and Delayed Photohemolysis Sensitized with Methylene blue and Magnetite Nanoparticles (Fe_3O_4). JUST (185/2013) for **Master Student (PI)**
24. Influence of low energy radiation on hard tissues: A comparative study. JUST (173/2013) for **Master Student (PI)**
25. Polymer/nanodiamond/Carbon Nanotubes for solar energy applications. *JUST* (86/2014) (**Co-Investigator**)
26. Graphite/Polymer Nanocomposite with Metal-Oxides Nanofillers for Electromagnetic Interference Shielding Applications. *JUST* (118/2014). for **Master Student (Co-Investigator)**
27. Effects of Magnetic fields on plant growth of lentil and wheat seeds. JUST (**Co-Investigator**)
28. Cerium Oxide and Iron Oxide Nanoparticles Abolish the Antibacterial Activity of Ciprofloxacin against Gram Positive and Gram Negative Biofilm Bacteria. (**Co-Investigator**)
29. Polymer/nanodiamond/Carbon Nanotubes for solar energy applications. deanship of scientific research JUST (**Co-Investigator**)
30. Effects of AC Magnetic fields on different bacterial strains in the presence of Iron Oxide nanoparticles JUST (248/2014) for **RA/Master Student (PI)**
31. Effect of iron oxide nano-particles on the systemic movement of RNA viruses on tobacco plant. Submitted to **Scientific Research Support Fund (Co-Investigator)**
32. A comparative study of the effect of Curcumin on cell-lines, Bacteria and Red blood cell in the presence of AC magnetic field. (Ph. D Student Moath Ahmad AlDahoan, In collaboration JUST with Universiti Sains Malaysia). (**Field Supervisor**)
33. Electrochemical Deposition of Cu-Doped ZnO Nanostructures for Sensing Application. JUST (72/2015) for **Master Student (PI)**.
34. Experimental and theoretical bacterial growth curves: A comparative study. JUST (75/2015) for **Master Student (PI)**.
35. The influence of laser beams and light intensities on cultivated lentil (*Lens culinaris* Medik) and wheat (*Triticum aestivum* L.) growth and metabolism, deanship of scientific research JUST,

- Master Student. (G#: 88/2016, Master student: Doua Talafeh/Biology Department **(CoInvestigator)**)
36. Fabrication of Dye Sensitized Solar Cells based on TiO₂/Graphene Nanocomposites, deanship of scientific research JUST, Master Student (Rawan Bani Amer/Physics Department **(CoInvestigator)**).
 37. Optical and structural characterization of sol-gel Ga-ZnO and ZnO thin films used as seeded platform for nanostructures ZnO. Deanship of scientific research JUST, Master Student (Furat F. Ali Ramadan /Physics Department **(Co-Investigator)**).
 38. Tethering the silver nanoparticles (AgNPs) with Besifloxacin antibiotics forming AgNPsBesifloxacin as a novel wider spectral range of antimicrobial. For **RA/** Mahmoud Telfah **(PI)** (G.#: 38-2017)
 39. ¹⁹F and ¹H NMR studies to investigate the kinetics and the mechanism of the dissociation, ionization and the acidity of the fluorine based antibiotics (Besifloxacin) in body fluids and biological membranes. For Haya Mohammad Hasan Alshheamat **(PI)** (G.#: 227-2017).
 40. Optical, electrical and morphological properties of polyaniline(pani)poly(ethyene oxide)(peo)/agnps-agn03 nanocomposites thin films coated on quartz/silicon surfaces activated with oxygen plasma. For Musab Shakhterh **(PI)** (G.#: 271-2017)
 41. Identification and characterization of natural drugs sensitive to light to be used as a chemical substitute in Photodynamic Therapy. (2018/for sabbatical leave/Postponed) **(PI)**
 42. ¹H NMR and UV-Vis Investigations of Hybridization Gold Nanoparticles (AuNPs) with Curcumin Forming AuNPs-Curcumin as a Novel Anticancer and Antibacterial Agent.
(PI) (G.#: 418-2018)
 43. Dielectric and Structural properties of the Complex of Poly (ethylene Oxide)/Iodine Composite Bulk-Like Thin Films. (PI) For Master Student: Kholoud Elezzy (G.#: 420/2019)
 44. Dielectric Studies of the Poly(ethylene Oxide)/Potassium Hexachloroplatinate Complex Composite Bulk-Like Thin Films. (PI) For Master Student Shorooq Alzoubi (G.#: 429/2019)
 45. Ancient and Modern Bone Diagnosis: Towards a Better Understanding of Chemical and Structural Feature Alterations. (PI) For Master Student Ali Baragash (G.#: 594/2020)
 46. The effect of magnetized water and Fe₃O₄ nanoparticles on seed germination and seedling growth of wheat(*Triticum durum* L.)and barley(*Hordeum vulgare* L. (PI) For Master Student Zainab Abualoush (G.#: 424/2021)
 47. Molecular Simulation for 6-gingerol loading in Graphene and Graphene Oxide for Drug Delivery Applications. (PI) For Master Student Basma Udat (G.#: 587/2021)
 48. Optical, Electrical and Morphological Properties of Polyaniline (PANI)-Poly(ethylene oxide)(PEO)/AgNPs-AgNO₃ Nanocomposites Thin Films Coated on Quartz/Silicon Surfaces Activated with Oxygen Plasma. (PI) Individual proposal (G.#: 368/2018)
 49. Efficacy of Encapsulation of Inulin as a Photosensitizer by Silica Nanoparticles for Photodynamic Therapy. (PI) Individual proposal (G.#: 52/2022)

50. Development of Electrodeposition Approach For Anti-chemical Leaching Of II-VI Quantum Dots Thin Film. (PI G# 531/2022, In collaboration JUST with Dr. Nor Aliya Hamizi/Universiti Malaya, Malaysia)

Supervision of Graduate Students:

Ph. D Students:

- 1- A comparative study of the effect of Curcumin on cell-lines, Bacteria and Red blood cell in the presents of AC magnetic field. (Ph. D Student: Moath Ahmad AlDahoan, In collaboration JUST with Universiti Sains Malaysia). **(Field Supervisor)**
- 2- 6-Gingerol aided with magnetic field targeting cancer cell line of colon and prostate and pathogenic bacteria. (Ph. D Student: Hussein Mahmoud Jaber Khasawneh, In collaboration JUST with Dr. MOUHAYDINE TLEMCANI, Dr CÉLIA M. ANTUNES, UEVORA University, PORTUGAL. **(Co-advisor)**

Master Students:

- 3- Artificial Semi-Rigid Tissue Sensitized with Natural Pigments: Effect of Photon Radiations. (Ghaseb N. Makhadmeh, June 2010)
- 4- Effect of Irradiation and Antibiotics on Bacterial Growth. (Mohammad Mosa Alshorman, August 2010).
- 5- AC Electrical and Optical Properties s of Polystyrene (PS)/Ferroelectric Barium Stannate Titanate Ba (Ti_{0.9}Sn_{0.1}) O₃ Ceramic (BST) Composite with Concentrations 1-15% wt. (Zeinab Ghadieh, November, 2010)
- 6- Cell-Phone Towers EMF Radiation Detection and Analysis Using Geographic Information System (GIS) in north Jordan. (Moath Sameer Hassan Alqudah, December, 2012)
- 7- Continuous and Delayed Photohemolysis Sensitized with Photofrin and Magnetite Nanoparticles (Fe₃O₄). (Duaa Jebrien Al-Khalili, January, 2013)
- 8- Mapping of Inlab Wi-Fi Devices Radiation Pollution (Abdullah Omar al- Tal, January, 2014)
- 9- Continuous and Delayed Photohemolysis Sensitized with Methylene blue and Magnetite Nanoparticles (Fe₃O₄). (Abba Alhaji Bala, July, 2014)
- 10- Effects of extremely low frequency electromagnetic field and electric current on the uptake of Bleomycin by mammary gland tumor cells induced with oral administration of 7,12-Dimethylbenz(a) anthracene (DMBA) in Wiser Rats. (Dalal Abdel Rahman Mansi, May, 2013)
11. Graphite/Polymer Nanocomposite with Metal-Oxides Nanofillers for Electromagnetic Interference Shielding Applications. (Hamzeh Qasem Qutaish, August, 2014)
12. Influence of low energy radiation on hard tissues: A comparative study. (Umar Sulaiman Gezawa) Expelled from university
13. Effects of AC Magnetic fields on different of bacterial strain in presence of Iron Oxide nanoparticles JUST (Manar Alghabri, August, 2015)

14. Electrochemical Deposition of Cu-Doped ZnO Nanostructures for Sensing Application. JUST (Fayez Yehay Alkhtatbeh, June, 2015)
15. Experimental and theoretical bacterial growth curves: A comparative study. JUST (Ibrahim Salah Kenany, August, 2015)
16. The influence of laser beams and light intensities on cultivated lentil (*Lens culinaris* Medik) and wheat (*Triticum aestivum* L.) growth and metabolism. (Doua Talafeh/Biology Department)
17. Fabrication of Dye Sensitized Solar Cells based on TiO₂/Graphene Nanocomposites, (Rawan Bani Amer/Physics Department)
18. Optical and structural characterization of sol-gel Ga-ZnO and ZnO thin films used as seeded platform for nanostructures ZnO. Furat F. Ali Ramadan/Physics Department/ just).
19. Field electron emission from single walled carbon nanotips: characterization and analysis. Master Student (Samer Issa Daradkah /Physics Department- Mu'tah University), Al-Karak, Jordan.
20. Tethering the silver nanoparticles (AgNPs) with Besifloxacin antibiotics forming AgNPsBesifloxacin as a novel wider spectral range of antimicrobial. (Mahmoud Telfaih with RA G.#: 38-2017)
21. Optical, electrical and morphological properties of polyaniline (pani)-poly (ethylene oxide)(peo)/agnps-agno₃ nanocomposites thin films coated on quartz/silicon surfaces activated with oxygen plasma (Mus'ab Nebih Shakhathreh G.#:271-2018)
22. ¹⁹F and ¹H NMR studies to investigate the kinetics and the mechanism of the dissociation, ionization and the acidity of the fluorine based antibiotics (Besifloxacin) in body fluids and biological membranes. Haya Mohammad Hasan Alshheamat, G.#: 2272017)
23. Field Emission Differences Between Carbon Black Particles and Several Types of Carbon Nanotubes, Both Embedded in Glass Tubes. (Hatem A. Al-Braikat/Physics Department- Mu'tah University), Al-Karak, Jordan.
24. Effect of Ash Carbon nanofibers on GABA shunt pathway in germinating seeds of Tomato (*Lycopersicon esculentum* Mill., c.v. Rohaba.) under salt stress. (Ala Ahmad Ayoub/Biology Department).
25. Dielectric Studies of the Poly(ethylene Oxide)/Potassium Hexachloroplatinate Complex Composite Bulk-Like Thin Films. (Shorooq Alzoubi)
26. Dielectric and Structural properties of the Complex Poly(ethylene Oxide)/Iodine Composite Bulk-Like Thin Films (Kholoud Alizzy)
27. Field Electron Emission from Tungsten Nanotips coated using LR Gold Epoxy resin: Characterization and Analysis. Shurouq Mae'n Sata' Awajan, Mut'ah University, 2021)
28. Enhanced field emission properties of composite metallic cathodes, with carbon black nanoparticles and paste carbon black nanoparticles with epoxy EPR-4. Ahmad Alghwanmeh, Mut'ah University, 2021)
29. Molecular simulations of 6-Gingerol loading on Graphene and Graphene Oxide for drug delivery applications (Basmah Naser Mohammad Odat)

30. The effect of magnetized water and Fe₃O₄ nanoparticles on seed germination and seedling growth of wheat (TRITICUM DURUM L.) and barley (HORDEUM VULGARE L. (Zainab Akram Abu-Aloush)
31. Ancient and Modern Bones Diagnosis by a Multiple Techniques (IR, XRD): Towards a Better Understanding of Chemical and Structural Features Alteration. (Ali Saleh Ahmed Ba Rajjash)
32. Field Electron Emission from Carbon Fiber and its Application to Electron Analysis and Characteristics Sources. (Co-PI, Mut'ah University, 2022)
33. Improve the performance of uncoated carbon fiber-tips by investigating the effects of Epoxy resin 478-coating of carbon fiber on their electronic emissivity. Ali Fathi AlQaisi, (Co-PI, Mut'ah University, August, 2023)
34. Characterization of graphite fiber nanotips with the influence of thin layer of dielectric coating on its properties. Zaid Khaled Al-Fuqara. (Co-PI, Mut'ah University, August, 2023)

Graduation Project for Bachelor Students:

- 1- **Haif Almutairi** (Supervised by Dr. Mohammed-Ali Hassan Al-Omari & Dr. Haq) Treating skin cancer by photodynamic therapy. **Laurentian University, Canada, Spring Semester 2018**
- 2- **Abdelrhman Alsekairy** (Supervised by Dr. Mohammed-Ali Hassan Al-Omari & Dr. Haq) Overview of photodynamic therapy. **Laurentian University, Canada, Spring Semester 2018**
- 3- **Muhanna Almatraf** (Supervised by Dr. Mohammed-Ali Hassan Al-Omari & Dr. Haq) Effects of Light and Antibiotics on Bacteria Sensitized with Dyes
- 4- Several Internal Graduations Projects.

Internal and External Thesis Examiner:

1. Band structure and optical absorption calculations of Cadmium Telluride semiconductor based alloys and superlattice. (Ali Alazazmeh. Master Student/JUST August, 2013)
2. Calculation of Dielectronic Recombination Cross-Section for Lithium Like Ni 20 +IonSystem Using Flexible Atomic Code (FAC). (Eman Hussain AlMustafa, June, 2013).
3. Evaluating the Photosensitivity of the Chinese Chlorella on Red Blood Cells (Hisham AlOmari. Master student/JUST December, 2013).
4. Advanced Tip Shape Analysis for Tungsten Microemitters. (Mazen Adel Madanat/ Master Student/ Mu'tah University, May 2014).
5. Photo-induced aggregation of colloid metal Nanoparticles. (Hanan Ismail Mustafa Ababneh, JUST, August, 2014)
6. Optical and structural characterization of Sol-Gel B-ZnO and ZnO thin films used as seeded platform for nanostructured ZnO (Qais Al-Bataineh, JUST, Jan, 2016)
7. Modeling of ZnO Nanowires as a Pressure Sensor Using COMSOL Multiphysics Software (Hafez Naimi, JUST, Jan, 2016)
8. Effect of insulating layer on the field electron emission performance of nano-apex metallic emitters. (Ala'a A. Al-Qudah/ Master Student/ Mu'tah University, May 2016).

9. Modeling of zno nanomembranes as capacitive pressure sensors using comsol multiphysics software ([Hifa Alturani, JUST, May, 2016).
10. Comparative study of structural, optical and magnetic properties of l10 –ordered (FePt AND CoPt) nanoparticles. (Omar A. Bani Younes, JUST, May, 2016).
11. Optical and structural characterization of Sol-Gel B-ZnO and ZnO thin films used as seeded platform for nanostructured ZnO. (Qais Mohamad Turki Al-Batainehm JUST, May, 2016).
12. Stability of colloidal silver nanoparticle solutions prepared by chemical reduction. (Maqbulah Bosaiif JUST, August, 2016).
13. Synthesis and characterization of polymethyl methacrylate/polyvinyl chloride /benzyl dimethyl ketal/azo dye (Methyl Red) polymeric based blend thin films (Areej T. Abuismail/Physics Department/ JUST/August, 2016).
14. Obtical and structural characterization of Sol-Gel In-ZnO and ZnO thin films used as seeded platform for nanostructured ZnO. (Bayan Al-Ananbeh JUST, January, 2017).
15. Optical and structural characterization of sol-gel Ga-ZnO and ZnO thin films used as seeded platform for nanostructures ZnO. (Furat Ramadan JUST, January, 2017).
16. The influence of laser beams and light intensities on cultivated lentil (*Lens culinaris* Medik) and wheat (*Triticum aestivum* L.) growth and metabolism. (Doua Talafeh, JUST, May, 2017).
17. Conductivity measurements of sulfonated polyimide proton exchange membranes with different sulfonation degrees. (Hasan Ahmad Eideh, The Jordan University, May, 2017).
18. Field Emission from Carbon Nanotubes and its Potential Application as an Electron Source. (Emad Saleem Bani Ali/ Master Student/ Mu'tah University, Jan 2018).
19. Field Emission from Single Walled Carbon Nanotubes: Characterization and Analysis. (Samer Issa Daradkeh/ Master Student/ Mu'tah University, April 2018).
20. Structural and Optical properties of synthesized GaN-NPs-doped PANI-PEO thin films via spin coating and casting processes. (Areen Bani Salameh, JUST, August, 2018)
21. Synthesis and characterization of PolyMethyleMethAcrylate (PMMA) /PolyStreen (PS)/BenzylDimethylKetal (BDK)/Azo Dye (Methyl Red) (MR) polymeric based blend thin films. (Asma'a I. Theiabat, JUST, December, 2018)
22. Structural, Optical and Magnetic Properties of $MxPt_{1-x}$, (M= Mn, Cr and Fe) Binary Alloys. (Tareq Salah Obidat, JUST, December, 2018)
23. Improving the stability of perovskite sloar cell lifetime by designing ultraviolet light filter (Ghaleb Mohammed Aljaiuossi, Nanotechnology Science and Engineering) JUST, August, 2019.
24. Field electron emission from single walled carbon nanotips: characterization and analysis. Master Student (Samer Issa Daradkah /Physics Department- Mu'tah University), Al-Karak, Jordan. July 2019
25. Dielectric Studies of the Poly(ethylene Oxide)/Potassium Hexachloroplatinate Complex Composite Bulk-Like Thin Films. (Shorooq Alzoubi, JUST, August, 2019)
26. Dielectric and Structural properties of the Complex Poly(ethylene Oxide)/Iodine Composite Bulk-Like Thin Films (Kholoud Alizzy, JUST, August, 2019)

27. Structural, optical, thermal, electrical, ferroelectrical, piezoelectrical and lattice dynamical properties of Diisopropylammonium Bromide (DIPAB) (Hala I. ALabed, JUST, January, 2020)
28. Effect of Dielectric coating of Nano carbon fibers on their electronic emissivity. (Saleh Hekmat Fawaeer, Jordan University, May, 2020)
29. The Properties of Polyethylene-Tungsten Composite Material as a Source of Electron Emission. (Nizar Abdul-Majeed Abu Najm, Jordan University, August 2020)
30. UV-VIS and FTIR studies of the Fluorquinolone (Pyrido Pyrolo Quinoxaline (PPQ)) Tethered to gold nanoparticles as a novel anticancer agent (Maha Smadi, Yarmouk University, January, 2021)
31. Assessment of radiation dose distribution for the total skin electron beam therapy technique. (Dalal Khalaf Alshayb, Yarmouk University Irbid, Jordan, May 2021)
32. Scatter Radiation Removal by the Use of Anti-scatter Grid and Air Gap: Comparative study in Xray Mammography. (Ali Hajem Adeeb Aljarrah, Yarmouk University, Irbid, Jordan, May 2021)
33. Optical and Electrochromic Analysis of (Al -B) CO-doped V₂O₅ and Un-doped V₂O₅ thin films. (Nesreen Ababneh, JUST, Irbid, Jordan, January 2022)
34. Optical Properties and Photoisomerization Processes of Nanocomposite Thin films Based on PEO-BDK-MR doped by Cerium Oxide Nanoparticles. (Shifa AL-Momani, JUST, Irbid, Jordan, January 2022)
35. Enhanced field emission properties of composite metallic cathodes, with carbon black Nanoparticles and paste carbon black Nanoparticles with epoxy lite EPR-478. (Ahmad AL Ghwanmeh, Physics Department- Mu'tah University, Al-Karak, Jordan. May 2021)
36. Field Electron Emission from Tungsten Nanotips coated using LR Gold Epoxy resin: Characterization and Analysis. (Shurouq Mae'n Sata' Awajan, Physics Department- Mu'tah University, Al-Karak, Jordan. May 2021)
37. Photocatalytic Degradation of Acid Orange 7 employing Iron Nickel Oxide -Doped Titanium Dioxide Nanoparticles and Attenuated Intramolecular Bonding. (Rashed Nawwaf Rashed AbuAleqa, Chemical Engineering, JUST, August, 2021)
38. Modification of the molybdenum nano tips by coating with Resinpal 2301 Epoxy Resin. (Amer Zakaria Issa Ma'ni, Mu'tah University, Al-Karak, Jordan. January 2023)
39. Field electron emission from coated Molybdenum tips Characterization and analysis (Allaaldien Ahmad Aljaafreh, Mu'tah University, Al-Karak, Jordan. January 2023)
40. Nickel Titanium (NiTi) doped with transition metals (Cu, Ag, Au) for shaped memory alloys and biomedical applications. (Ahmad M. Alsamiri, /JUST February, 2023).
41. Salicylic acid dissociation dynamics in aqueous solution for pharmaceutical product development. (Sallam Shaker Aldiabat/Yarmouk University May 2023)
42. Enhanced surface wettability for Titanium dioxide Films doped by Magnesium, Nickel, and Tin for Solar Driven Catalytic Applications. (Lina Ahmad Alakhras/JUST June 2023)
43. Dosimetric analysis of organs at risk (OAR) during passively scattered proton therapy (PSPT) of non-small cancer lung cells (NSCLC) using Monte Carlo simulation. (Aseel Hasan Dhoun/Yarmouk University May 2023)

44. Advanced analysis of copper nano-tips as electrons emitters. (Adel Mohammad Khaleel Abuamr. Mutah University, Al-Karak, Jordan. September 2023)
45. Advanced analysis of copper nano-tips as electrons emitters. (Adel Mohammad Khaleel Abuamr. Mutah University, Al-Karak, Jordan. September 2023)
46. Study of the Characteristics of Air Channel Single Tip Field Emission Diodes. (Qassim Amjad Al-Hroub. Mutah University, Al-Karak, Jordan. December 2023)
47. Field Electron Emission from Copper Broad Area Electrodes and their Characteristics. (Aseel Amer. Mutah University, Al-Karak, Jordan. June 2024)
48. Studying the Characteristics for New Composite Films Composed from Polyethylene Oxide (PEO) Doped with BIS (Triphenylphosphine) Palladium Dichloride ($\text{PdCl}_2(\text{PPh}_3)_2$). (Ruba Naji Bani Hani, JUST, June 2024)
49. Structural, Chemical, Optical, and Optoelectronics Properties for Complex Composite Thin Films Based on Poly(ethylene Oxide) Incorporated with BIS (Triphenylphosphine) Cobalt Dichloride. (Aya Turki Suleiman Malkawi, JUST, June 2024)
50. Bicontinuous Titanium Dioxide/Cerium Dioxide Heterostructure Films For Electrocatalyst Applications. (Hisham Mohammad Ali Al-Shorman, JUST, Jan 2025)
51. Dispersion of modified Zinc Oxid nanostructure in polymer matrix. (Tasneem Raed Okleh Etoom, JUST, Jan 2025)

ACKNOWLEDGMENTS AND OTHER ACTIVITIES

- Ph. D Dissertations (Dr. M. Khalili, IIT, Chicago, USA)
- Ph. D Dissertations (Dr. Marwan Al-Fahad, IIT, Chicago, USA)
- Ph. D Dissertations (Dr. M. Bilgin, IIT, Chicago, USA)
- <http://www.neiu.edu/~pjdolan/program.html>
- http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6TH0-429XVJRK&_coverDate=11%2F30%2F2000&_alid=221566659&_rdoc=1&_fmt=&_orig=s_earch&_qd=1&_cdi=5268&_sort=d&_view=c&_acct=C000052666&_version=1&_urlVersion=0&_userid=1418742&md5=6d6ae19b539aebd0fb11658308cf8302 - Index

Copernicus Scientists:

- https://scientists.indexcopernicus.com/new_user_form.php
- Ph. D Dissertations (Dr. Ghaseb Makhadmeh)
- Several M.Sc. dissertations
- Several scientific articles
- Several scientific Journals

COURSES TAUGHT

- 1- MPHY-441 Physics of **Diagnostic Radiology**/UAEU
- 2- MPHY-452 Physics of **Radiotherapy**/UAEU

- 3- MPHY-490 Modeling of Physical Systems/UAEU
- 4- Env.6220 Independent Study in Env. 23690 (For Graduate Students) /UAEU
- 5- Phys-101 Mechanics
- 6- Phys-102 Electricity & Magnetism
- 7- Phys-102A General Physics (2) (For life Sciences majors)
- 8- Phys-103 Physics for **Biology & Medical Students**
- 9- Phys-104 **Medical Physics**
- 10- Phys-105 General Physics Lab
- 11- Phys- 105A General Physics Lab
- 12- Phys-106 General Physics Lab
- 13- Phys-106A General Physics Lab
- 14- Phys-201 Mathematical Physics
- 15- Phys-331 Electricity & Magnetism
- 16- Phys-341 Radiation Physics
- 17- **P. T212 Biomechanics (For Faculty of Applied Medical Sciences)**
- 18- Phys-492 Research and Seminar
- 19- Phys-490 Training Course
- 20- Phys-798 MS Comprehensive Examination
- 21- Phys-791 Seminar
- 22- **Phys-781 Medical Physics**
- 23- **Phys-493A Special Topics (*Applied Physics for Radiation Oncology*)**
- 24- **Phys-381 Bio Physics**
- 25- **Phys-495 Graduation Project** 26- **Phys- 791 Seminar**

REFERENCES:

Furnished upon request