



Ahmad Mohammad Kayed Alsaad



ADDRESS

Jordan University of
Science & Technology,
22110, Irbid, Jordan



CONTACT

+962791314650
+962 (0) 27095123
alsaad11@just.edu.jo



PERSONAL INFO

Jordanian
1st April. 1967
Married



EDUCATION

Ph.D. in Physics, Experimental and Theoretical Condensed Matter Physics. (1998-2002)

University of Arkansas, USA.

Thesis Title: "Optical, electronic, and piezoelectric properties of nitride semiconductors".

Notes: Joint scholarship from Jordan University of science and technology and University of Arkansas, USA.

M.Sc. in Physics. (1996-1998)

University of Arkansas, USA.

Thesis Title: "I performed a project on microwave electronics".

Notes: Joint scholarship from Jordan University of science and technology and University of Arkansas, USA.

M.Sc. in Physics. (1989-1991)

Rajasthan University, India

B.Sc. in Physics. (1986-1989)

Rajasthan University, India



Work and Teaching Experience

Visiting Professor, Physics Department (Jul. 2018-Aug. 2018)

University of Nebraska, Omaha, USA

Professor, Physics Department (Apr. 2017-Present)

Jordan University of Science and Technology, Jordan

Visiting Professor, Physics Department (Jun. 2016-Aug. 2016)

University of Nebraska, Omaha, USA

Associate Professor, Physics Department (Sabbatical) (Sep. 2013-Sep. 2014)

University of Nebraska, Omaha, USA

Associate Professor, Physics Department (Feb. 2013-Apr. 2017)

Jordan University of Science and Technology, Jordan

Visiting Professor, Physics Department (Jun. 2008-Sep. 2008)

Brandenburg Technical University, Germany

Visiting Professor, Physics Department (Jun. 2005-Sep. 2005)

Brandenburg Technical University, Germany

Visiting Professor, Max Planck Institute
University of Stuttgart, Germany, Funded by DAAD

(Jun. 2004-Aug. 2004)

Assistant Professor, Physics Department
Jordan University of science and technology, Jordan

(Apr. 2003-Feb. 2013)

Full Time lecturer, Physics Department
Jordan University of science and technology, Jordan

(Mar. 2002-Apr. 2003)

Research and Teaching Assistant, Physics Department
University of Arkansas, Fayetteville, Arkansas 72701, USA

(1996-2002)

Research and Teaching Assistant, Physics Department
Jordan university of science and technology, Jordan

(1991-1996)

Research Interests

My research interest generally concentrates on the areas of experimental and theoretical condensed matter physics. I have a particular interest in the study of III-V semiconductors in general and Nitride semiconductor binaries and alloys in particular. I have been actively involved in developing computational techniques to study optical, electronic and piezoelectric properties of ternaries and quaternaries Nitride semiconductor alloys. In addition, I have a research interest and activities in the field of application of various scientific techniques in the study of various types of semiconductor materials such as Ga (As,N), (Ga,In)(As,N), (Sc, Ga)N alloys, (Sc,In)N alloys and (Ga,In)N alloys. I am particularly interested in analyzing the structural, optical, electronic and piezoelectric properties of various semiconductors binary compounds and alloys. Various types of scientific techniques such as Molecular Beam Epitaxy and Scanning Tunneling Microscopy (STM) have been utilized. In addition, state-of-the-art- first principles and pseudopotential techniques have been used to perform calculations on the optical, electronic and piezoelectric properties of various Nitride binary compounds and alloys. The results obtained from these experimental and theoretical studies have been used to obtain deeper understanding of these materials from a fundamental point of view. More precisely, these results lead to a new physics of nitride semiconductor materials. Furthermore, the technological applications of these materials could considerably enhance with further experimental and theoretical studies. I am currently interested in working on fabrication and characterization of Nitride quantum dots and Diluted Magnetic Semiconductors (DMS). During my sabbatical year at university of Nebraska at Lincoln and Omaha/USA, I worked on the magnetic and optical properties of FePt and CoPt nanoparticles. Furthermore, I led the research in the field of organic molecular ferroelectric crystals. In particular, we studied the structural, electronic, optical and mechanical properties of Diisopropylammonium Bromide. Currently, I am spending the summer research at university of Nebraska working on structural, optical, mechanical, Lattice dynamical and piezoelectric properties of organic molecular ferroelectric crystals. As the reputation of organic crystals as inflexible has softened in recent years, we are investigating their applications in light-emitting components in flexible displays or organic field-effect transistors. In addition, I have an interest in theoretical nuclear physics. Particularly, the high precision measurements of the proton elastic electromagnetic form factors and their ratio at different Q^2 values in collaboration with researchers at Khalifa University of Science, Technology and Research (KUSTAR)/UAE and Argonne National Laboratory (ANL)/USA.

Experimentally, I focus on the fabrication and characterization of ZnO based thin films and the related nanomaterials which are currently an interesting field of study. We study the composition and surface morphology of the films grown at different temperatures by means of X-ray diffraction (XRD), X-ray photoelectron spectroscopy (XPS), atomic force microscope (AFM) and scanning electron microscope (SEM). Recently, I work on the fabrication and characterization of polymer thin films for optical and data storage applications.

Key Skills

- Windows and Linux operating systems.
- Density Functional Theory Codes.
- The Vienna Ab initio Simulation Package (VASP).
- Other programs like: Origin, AutoCAD, View lab, Mathematica, Grapher.

Languages

Arabic	Mother Language
English	Excellent



1. "Quantum mechanical effects in (Ga, In) (As, N) alloys", **A. Al-Yacoub (Alsaad)** and L. Bellaiche, Physical Review **B 62**, 10847 (2000).
2. "Piezoelectricity of ordered (Ga_{0.5}In_{0.5}) N alloys", **A. Al-Yacoub (Alsaad)** and L. Bellaiche, Applied Physics Letters **79**, 2166 (2001).
3. "Successes and Predictions of A Pseudopotential Approach in Anion-Mixed Nitrides," L. Bellaiche, **A. Al-Yacoub (Alsaad)**, N.A. Modine and E.D. Jones, in Semiconductor Materials for Optoelectronic Applications, editors: E.D. Jones, M.O. Manasreh, K.D. Choquette, D. Friedman, and D.K. Johnstone, Mater. Res. Soc. Proc., **692** (Materials Research Society Pittsburgh, PA, 2002) pp. 9-20.
4. "Piezoelectric Coefficients of Complex Semiconductor Alloys from First-Principles: The Case of Ga_{1-x}In_xN", **A. Al-Yacoub (Alsaad)**, L. Bellaiche and S. -H. Wei, Physical Review Letters **89**, 057601 (2002).
5. "Optical and piezoelectric anomalies of ordered (Sc, Ga) N and (Sc, In) N ternaries", **A. Alsaad** and A. Ahmad Eur. Phys. J. B **65**, 65-77 (2008).
6. "A First-Principles-derived Method for Computing the Piezoelectric Coefficients of Complex semiconductor Sc_{1-x}Ga_xN Alloys", **A. Alsaad**, A. Ahmad, H. Alta'ani and R. Alshyab, Physica B: Condensed Matter, Volume 403, Issues 23–24, 15 December 2008, Pages 4174–4181.
7. "Adhesive B-doped DLC films on biomedical alloys used for bone Fixation", A. Ahmad, **A. Alsaad**, Bull. Mater. Sci., Vol. 30, No. 4, August 2007, pp. 301–308.
8. "Structural phase transitions and piezoelectric anomalies in ordered Sc_{0.5}Ga_{0.5}N alloys", **A. Alsaad**, A. Ahmad, Bull. Mater. Sci., Vol. 30, No. 4, August 2007, pp. 407–413.
9. "Properties of GaN/ScN and InN/ScN superlattices from first principle", V. Ranjan, S. Bin-Omran, David Sichuga, Robert Sean Nichols, L. Bellaiche, and **Ahmad Alsaad**, Phys. Rev. B **72**, 085315 – Published 4 August 2005.
10. "Piezoelectricity of ordered (Sc_xGa_{1-x}N) alloys from first principles", **A. Alsaad** A. Ahmad, The European Physical Journal B - Condensed Matter and Complex Systems November 2006, Volume 54, Issue 2, pp 151-156.
11. "Isostructural phase transitions in GaN/ScN and InN/ScN superlattice", V. Ranjan, S. Bin-Omran, L. Bellaiche, and **Ahmad Alsaad**, Phys. Rev. B **71**, 195302 – Published 3 May 2005.
12. "Properties of GaN/ScN and InN/ScN superlattices from first principles", V. Ranjan, S. Bin-Omran, David Sichuga, Robert Sean Nichols, L. Bellaiche, and **Ahmad Alsaad**, Phys. Rev. B **72**, 085315 – Published 4 August 2005.
13. "Performance evolution of easy-exponential back off algorithm in a mobile ad hoc network (MANET)", January 2009 Conference: 3rd Mosharaka International Conference on Communications, Signals and Coding, MIC-CSC Project: Media Access Control in MANETs Saher Manaseer, Muneer Bani Yassein, Al Sha'Bani R, **Ahmad Alsaad**.
14. "Reexamination of phenomenological two-photon exchange corrections to the proton form factors and e±p scattering", I. Qattan, **A. Alsaad**, and J. Arrington, Phys. Rev. C **84**, 054317 – Published 21 November 2011.
15. "Structural, electronic and magnetic properties of Fe, Co, Mn-doped GaN and ZnO diluted magnetic semiconductors", **A. Alsaad**, Physica B: Condensed Matter, Volume 440, 1 May 2014, Pages 1–9.
16. "Optical properties of ZnO related to the dc sputtering power", A. Ahmad, **A. Alsaad**, The European Physical Journal B - Condensed Matter and Complex Systems, July 2006, Volume 52, Issue 1, pp 41-46, First online: 06 July 2006.
17. "Optimisation and characterisation of various extraction conditions of phenolic compounds and antioxidant activity in olive seeds, Muhammad H. Alu'datt, Inteaz Alli, Khalil Ereifej, Mohammad N. Alhamad, **Ahmad Alsaad** and Taha Rababeh, Natural Product Research: Formerly Natural Product Letters, Volume 25, Issue 9, 2011.
18. "Ellipsometric characterization of PbI₂ thin film on glass", **A. Ahmad**, S. Saq'an, B. Lahlouh, M. Hassan, A. Alsaad, H. El-Nasser, Physica B: Condensed Matter, Volume 404, Issue 1, 15 January 2009, Pages 1–6.
19. "Empirical parametrization of the two-photon-exchange effect contributions to the electron-proton elastic scattering cross section I. A. Qattan and **A. Alsaad**, Phys. Rev. C **83**, 054307 – Published 12 May 2011.
20. "Empirical parametrization of the two-photon-exchange effect contributions to the electron-proton elastic scattering cross section I. A. Qattan and **A. Alsaad**, Erratum, Phys. Rev. C **84**, 029905 (2011).

21. "Structural and magnetic properties of MnN and ScN binaries and their ScN:Mn diluted magnetic semiconductors and $Mn_xSc_{1-x}N$ alloys", **A. Alsaad**, M. Bani-Yassein, I.A. Qattan, A. Ahmad, S.R. Malkawi, *Physica B: Condensed Matter*, Volume 405, Issue 5, 1 March 2010, Pages 1408–1414.
22. "Magnetic and structural properties of Cr-based diluted magnetic semiconductors and alloys", **A. Alsaad**, *Physica B: Condensed Matter*, **Volume 405**, Issue 3, 1 February 2010, Pages 951–954.
23. "Ferroelectric properties of $BaZrO_3/PbZrO_3$ and $SrZrO_3/PbZrO_3$ superlattices: An ab-initio study", Nabil Al- Aqtash, **Ahmad Alsaad** and Renat Sabirianov, *J. Appl. Phys.* **116**, 074112 (2014).
24. "Generalized stacking fault in FePt nanoparticles and effects of extended defects on magnetocrystalline anisotropy energy", **Alsaad, et al.**, *Journal of Magnetism and Magnetic Materials*, vol. **374**, pp. 525-529, 2015.
25. "Magnetic properties of (Ga,Mn)N ternaries and structural, electronic, and magnetic properties of cation-mixed (Ga,Mn)(As,N) and (In,Mn)(As,N) quaternaries", **A. Alsaad**, I.A. Qattan, A.A. Shukri, *Physica B: Condensed Matter*, **Volume 407**, Issue 13, 1 July 2012, Pages 2650–2658.
26. "Structural and electronic properties of Diisopropylammonium bromide molecular ferroelectric crystal", **A. Alsaad**, I A Qattan, A A Ahmad, N Al-Aqtash and R F Sabirianov' Published under licence by IOP Publishing Ltd., *IOP Conference Series: Materials Science and Engineering*, **Volume 92**, (2015) 011002.
27. "Comparative study of magnetic properties of dilute Fe doped with transition magnetic ions and GaN, InN doped with rare-earth magnetic ions", **A. Alsaad** , I.A. Qattan, *Physica B: Condensed Matter*, **Volume 432**, 1 January 2014, Pages 77–83.
28. "Structural, electronic and magnetic properties of Fe, Co, Mn-doped GaN and ZnO diluted magnetic semiconductors", **A.Alsaad**, *Physica B* **440** (2014) 1–9.
29. "Flavor decomposition of the nucleon electromagnetic form factors at low Q^2 ", I. A. Qattan, J. Arrington, and **A. Alsaad**, *PHYSICAL REVIEW C* **91**, 065203 (2015).
30. "The effect of substrate temperature on structural and optical properties of D.C.sputtered ZnO thin films, A. A .Ahmad, **A. M. Alsaad**, B.A.Albiss, M-AliAl-Akhras, H.M.El-Nasser, I. A. Qattan, *Physica B*, **470-471**(2015), 21–32.
31. "Optical and structural properties of sputter deposited ZnO thin films in relevance to post-annealing and substrate temperatures", A. A. Ahmad , **A. M. Alsaad**, B.A.Albiss, M-AliAl-Akhras, H.M.El-Nasser, I.A.Qatta, *Thin Solid Films* **606** (2016) 133–142.
32. "Optical and Structural Characterization of dip synthesized Al-B co-doped ZnO Seeded Platforms for ZnO Nanostructures", A.A. Ahmad, **A.M. Alsaad**, Q.M. Al-Bataineh, A.A. Bani-Salameh, H.M. Al-Khateeb, M.A. Al- Naafa, **Accepted at Jordan Journal of Physics (JJP), (2017).**
33. "Effect of bromine deficiency on the lattice dynamics and dielectric properties of alpha-phase diisopropylammonium bromide molecular crystals", Ahmad Alsaad , Chris M. Marin , Nabil Al-Aqtash , Hsien-Wen Chao, Tsun-Hsu Chang , Chin Li Cheung , **A. Ahmad** , I.A. Qattan , Renat F. Sabirianov, *Journal of Physics and Chemistry of Solids* **113** (2018) 82–85.
34. "Optical and structural investigations of dip-synthesized boron-doped ZnO-seeded platforms for ZnO nanostructures", Ahmad A. Ahmad, **Ahmad Alsaad**, Q. M. Al-Bataineh, M. A. Al-Naafa, June 2018 *Applied Physics A* **124**(6).
35. "Crystallographic, vibrational modes and optical properties data of α -DIPAB crystal", **Ahmad Alsaad**, Chris M. Marin , Nabil Al-Aqtash , Hsien-Wen Chao, Tsun-Hsu Chang, Chin Li Cheung , A. Ahmad , I.A. Qattan, Renat F. Sabirianov, *Data in Brief* **16** (2018) 667–684.
36. "Modeling of Lithium Niobate ($LiNbO_3$) and Aluminum Nitride (AlN) Nanowires Using Comsol Multiphysics Software: The Case of Pressure Sensor", A.A. Ahmad, **A. Alsaad**, Q.M. Al-Bataineh , M.A. Al-Naafa, *The 2nd International Conference on Advanced Materials (ICAM-2017) IOP Publishing IOP Conf. Series: Materials Science and Engineering* **305** (2018) 012007.
37. "Determination of Magneto-crystalline Anisotropy Energy (MAE) Of ordered L10 CoPt and FePt nanoparticles", **A. Alsaad**, A.A. Ahmad, A.A. Shukri and O.A. Bani-Younes, *The 2nd International Conference on Advanced Materials (ICAM-2017) IOP Publishing IOP Conf. Series: Materials Science and Engineering* **305** (2018) 012017.
38. "Ab-initio calculation of Born effective charges, elastic, piezoelectric and dielectric tensors of Diisopropylammonium bromide molecular ferroelectric Crystal" **Ahmad Alsaad**, Nabil Al-Aqtash, A. A. Ahmad and Renat F. Sabirianov, In process to be submitted to *Journal of Physical Chemistry C*.
39. "Effect of bromine deficiency on elastic moduli and piezoelectric coefficients of alpha-phase diisopropyl ammonium bromide molecular crystals", **Ahmad Alsaad**, Nabil Al-Aqtash and Renat F. Sabirianov. *European Journal of Physics B*, **93**, 5 (2020).

40. "Structural, Electronic and Magnetic Properties of MxPt1-X , ($\text{M} = \text{Co, Ni And V}$) Binary Alloys", A.M. Alsaad, A. A. Ahmad, and Hamzah A. Qattous. *Heliyon*, Vol 5, Iss. 9 2019.
41. "STRUCTURAL, ELECTRONIC AND MAGNETIC PROPERTIES OF MxPt1-x , ($\text{M} = \text{Mn, Cr AND Fe}$) BINARY ALLOY", Alsaad, A. A. Ahmad, and Tareq s. Obeidat. *Heliyon*, Vol 5, Iss. 9 2019.
42. "First-principles calculation of physical tensors of α -Diisopropylammonium Bromide (α -DIPAB) molecular ferroelectric crystal" **A. M. Alsaad**, N. Al-Aqtash, R. F. Sabirianov, A. Ahmad, Qais M. Al-Bataineh, I. A. Qattan, Zaid Albataineh, *Frontiers in Physics*, 7, 2019, p.203.
43. "Synthesis and Characterization of Transparent PMMA-PS/ZnO Nanocomposite Films for UV-Shielding Applications", **A. M. Alsaad**, Qais M. Al-Bataineh, A. A. Ahmad, Inshad Jum'h, Nabil Alaqtash, A. A. Bani-Salameh, *Polymer Bulletin*, March 2020.
44. "Measurement and Ab-initio Investigation of Structural, Electronic, Optical and Mechanical Properties of Sputtered Aluminum Nitrides Thin Films", **A. M. Alsaad**, Qais M. Al-Bataineh, I. A. Qattan, A. A. Ahmad, A. Ababneh, Zaid Albataineh, Ihsan A. Aljarrah, Ahmad Telfah, *Frontiers in Physics*, May 2020, Volume 8, Article 115.
45. "Structural, Optoelectrical, Linear and Nonlinear Optical Characterizations of Dip Synthesized Undoped ZnO and Group III Elements (B, Al, Ga and In)-doped ZnO Thin Films", **A. M. Alsaad**, A. A. Ahmad, Qais M. Al-Bataineh, Zaid Albataineh, I. A. Qattan, *Crystals* 2020, 10(4), 252.
46. "Optical Band Gap Studies and Refractive Index Dispersion Parameters of Undoped ZnO and Boron-doped ZnO Thin Films: A Novel Derived Mathematical Model from the Experimental Transmission Spectra", **A. M. Alsaad**, Qais M. Al-Bataineh, A. A. Ahmad, Zaid Albataineh, Ahmad Telfah, *Optik*, June 2020, Volume 211.
47. "Synthesis, Crystallography, Microstructure, Crystal defects and Optical Properties of (Fe-Ni) co-doped ZnO Thin Films prepared by sol-gel technique", **A. M. Alsaad**, A. A. Ahmad, Qais M. Al-Bataineh, A. A. Bani-Salameh, Hadeel A. Ibdah, Issam A. Qattan, Zaid Albataineh, Ahmad Telfah, *Materials* 2020, 13(7), 1737.
48. "Fabrication and Characterization of Hydrophobic ZnO Nano-Structure Based on Antireflective Coatings $\text{ZnO/TiO}_2/\text{SiO}_2$ Films by Sol-Gel Process", A.A. Ahmad, Qais M. Al-Bataineh, **A.M. Alsaad**, T. O. Samara, Kholoud A. Al-izy, *Physica B: Physics of Condensed Matter*, May 2020.
49. "Kinematics of Photoisomerization Processes of PMMA-BDK-MR Polymer Composite Thin Films", Qais M. Al-Bataineh, A. A. Ahmad, **A. M. Alsaad**, I. A. Qattan, Areen A. Bani-Salameh, Ahmad D. Telfah. *Polymers* 2020, 12(6), 1275.
50. "A Novel Optical Model of the Experimental Transmission Spectra of Nanocomposite PVC-PS Hybrid Thin Films Doped with Silica Nanoparticles", Qais M. Al-Bataineh, A. A. Ahmad, **A. M. Alsaad**, Ahmad Telfah, *Heliyon* 2020 6(6), e04177.
51. "Optical Properties and Photo-isomerization Processes of PMMA-BDK-MR Nanocomposite Thin Films doped by Silica Nanoparticles", **A. M. Alsaad**, Qais M. Al-Bataineh, M. Telfah, A. A. Ahmad, Zaid Albataineh, Ahmad Telfah, *Polymer Bulletin* (2020).
52. "Modelling of a Square-shape ZnO, ZnS and AlN Membrane for MEMS Capacitive Pressure-Sensor Applications", Ahmad Dagamseh, Q. M. Al-Bataineh, Zaid Albataineh, Nermeen S. Daoud, **Ahmad Alsaad** and Ahmad Omari, *International Journal for Simulation and Multidisciplinary Design Optimization (IJSMDO)*, 2020, 11(14).
53. "Suppression of hard two-photon-exchange contributions to $\text{Re}+e^-$ elastic scattering cross-section ratios: A phenomenological approach", I. A. Qattan, Shashikant P. Patole, and **A. Alsaad**, *Phys. Rev. C* 101, 055202.
54. "Electronic structure, magnetic and optic properties of spinel compound NiFe_2O_4 ", K Bouferrache, Z Charifi, H Baaziz, **A M Alsaad** and Ahmad Telfah, *Semiconductor Science and Technology*, 2020 IOP Publishing Ltd.
55. "Spectroscopic Characterization of Optical and Thermal Properties of (PMMA-PVA) Hybrid Thin Films Doped with SiO_2 Nanoparticles", **A. M. Alsaad**, A. A. Ahmad, Abdul Raouf Al Dairy, Ayah S. Al-anbar, Qais M. Al-Bataineh, *Results in Physics* 2020 (19).
56. "Theoretical and Experimental Overview of Structural, Dielectric, Crystallographic, Electronic, Optical and Physical Tensors of α -DIPAB and Iodine-doped α -DIPAB Molecular Ferroelectric Crystals", **A. M. Alsaad**, I. A. Qattan, A. A. Ahmad, **Qais M. Al-Bataineh**, Hala I. Al-Abed, Zaid Albataineh, Ahmad Telfah, R. F. Sabirianov, *Journal of Electronic Materials*, 2020.
57. "Synthesis, Crystallography, Microstructure, Crystal Defects, Optical and Optoelectronic Properties of ZnO:CeO_2 Mixed Oxide Thin Films", Qais M. Al-Bataineh, Mahmoud Telfah, Ahmad A. Ahmad, **Ahmad M. Alsaad**, Issam A. Qattan, Hakim Baaziz, Zoulikha Charifi and Ahmad Telfah, *Photonics* 2020, 7, 112.
58. "New Insight on Photoisomerization Kinetics of Photo-Switchable Thin Films Based on Azobenzene/Graphene Hybrid Additives in Polyethylene Oxide" Qais M. Al-Bataineh, A. A. Ahmad, **A. M. Alsaad** and Ahmad Telfah, *Polymers* 2020, 12, 2954.
59. "Optical Characterizations Of PMMA/Metal Oxide Nanoparticles Thin Films: Band gap Engineering Using A Novel Derived Model" Qais M. Al-Bataineh, Ahmad. A. Ahmad, **A. M. Alsaad**, Ahmad D. Telfah, *Heliyon*, Volume 7, Issue 1, January 2021, e05952.
60. "Synthesis and Characterization of Polymeric (PMMA-PVA) Hybrid Thin Films Doped with TiO_2 Nanoparticles Using Dip-coating Technique" **A. M. Alsaad**, Abdul Raouf Al Dairy, A. A. Ahmad, I. A. Qattan, Shatha A. Al Fawares and Qais M. Al-Bataineh, *Crystals* 2021, 11(2), 99.

61. "Synthesis and characterization of as-grown doped polymerized (PMMA-PVA)/ZnO NPs hybrid thin films" **A. M. Alsaad**, Abdul Raouf Al Dairy, A. A. Ahmad, Ayah S. Al-anbar and Qais M. Al-Bataineh, *Polymer Bulletin* (2021).
62. "Effect of Iodine Filler on Photoisomerization Kinetics of Photo-Switchable Thin Films Based on PEO-BDK-MR", Qais M. Al-Bataineh, A. A. Ahmad, **A. M. Alsaad**, I. A. Qattan, Ihsan A. Aljarrah and Ahmad D. Telfah, , *Polymers* 2021, 13(5), 841.
63. **A. M. Alsaad**, Qais M. Al-Bataineh, Areen A. Bani-Salameh, A. A. Ahmad, B. A. Albiss, Ahmad Telfah, R. F. Sabirianov, *Synthesis and Structural, Crystallographic, Electronic, Chemical and Optical characterizations of Alpha-Diisopropylammonium Bromide (α -DIPAB) Thin Films*, Optik. Volume 241, September 2021, 167014.
64. **A. M. Alsaad**, A. A. Ahmad, I. A. Qattan, A-R. El-Ali, Shatha A. Al Fawares and Qais M. Al-Bataineh, *Synthesis of Optically Tunable and Thermally Stable PMMA-PVA/CuO NPs Hybrid Nanocomposite Thin Films*, *Polymers* 2021, 13, 1715.
65. **A. M. Alsaad**, Qais M. Al-Bataineh, M. Telfah, A. A. Ahmad, Zaid Albataineh, Ahmad Telfah, *Optical properties and photo-isomerization processes of PMMA-BDK-MR nanocomposite thin films doped by silica nanoparticles*, *Polymer Bulletin* (2021) 78:3425–3441.
66. Ahmad Telfah, Saber Sâad Essaoud, Hakim Baaziz, Zoulikha Charifi, **Ahmad Mohammad Alsaad**, Mais Jamil A. Ahmad, Roland Hergenröder, Renat Sabirianov, *Density Functional Theory Investigation of Physical Properties of KCrZ (Z = S, Se, Te) Half-Heusler Alloys*, *Phys. Status Solidi B* 2021, 2100039.
67. Ahmad Telfah, Djemaa Guendouz, Zoulikha Charifi, Hakim Baaziz, **Ahmad Mohammad Alsaad**, Roland Hergenröder, Renat Sabirianov, *Theoretical investigations of alkaline earth hydrides XH_2 (X Ca, Sr, and Ba) for hydrogen storage applications*, *Int J Energy Res.* 2021;1–17.
68. Borhan Aldeen Albiss, Hadeel S. Abdullah and **Ahmad Mohammad Alsaad**, *Structural and Electrical Properties of Glucose Biosensors Based on ZnO and ZnO-CuO Nanostructures*, DOI: 10.2174/1573413717666210301111000.
69. I. A. Qattan, **Ahmad Alsaad**, Ahmad A. Ahmad, *New extraction of the R_{e+e-} elastic scattering cross-section ratio based on a simplified phenomenological hard two-photon-exchange correction approach*, *May 2021*, *Physical Review C* 103(5).
70. I. A. Qattan, **Ahmad Alsaad**, Ahmad A. Ahmad, *Extraction of elastic scattering cross-section ratio R_{e+e-} from ep elastic scattering experimental data*, *April 2021*, *Physical Review C* 103(4):45202.
71. Areen A. Bani-Salameh, A. A. Ahmad, **A. M. Alsaad**, I. A. Qattan, and Ihsan A. Aljarrah, *Synthesis, Optical, Chemical and Thermal Characterizations of PMMA-PS/CeO₂ Nanoparticles Thin Film*, *Polymers* 2021, 13(7), 1158.



Conference Papers & Presentations

1. Invited presentation at the 2001 International Narrow Band-gap Nitride Semiconductors workshop; Singapore, October 7-11, 2001; "Optical and Electronic Properties of [Ga,In][As,N] Alloys", **presented by Ahmad Al-Yacoub (Alsaad)**.
2. Invited presentation at the 2000 polarization effects on semiconductors Workshop; Glacier National Park, Montana, USA, August 27-31 2000; "Anomalous optical properties in complex semiconductor alloys" **presented by Ahmad Al-Yacoub (Alsaad)**.
3. Contributed talk at the 2000 March Meeting of the American Physical Society; Minneapolis (MN), March 24 2000; "Electronic and Optical anomalies in lattice-matched (Ga,In)(As,N) alloys", presented by Ahmad Al-Yacoub (Alsaad).
4. Contributed talk at the 2001 March Meeting of the American Physical Society; Seattle (WA), March 12-16 2001; "Piezoelectric coefficients of (Ga,In)N alloys", Presented by Ahmad Al-Yacoub (Alsaad)
5. I presented a talk at American Physical March meeting 18-24 2002; Held in Indianapolis/Indiana/USA. "Piezoelectric coefficients of semiconductor alloys: The case of Ga_{1-x}In_xN Alloys" Presented by Ahmad Al-Yacoub (Alsaad)
6. "Quantum Mechanical Effects in anion-mixed ordered Nitride Semiconductors", The Scientific Day (2002), Jordan University of Science and Technology, Irbid, JORDAN.
7. "Spin-injection semiconductors and III-V Nitride Semiconductors and their applications", The Scientific Day (2005), Jordan University of Science and Technology, Irbid, JORDAN.
8. I presented a talk at American Physical March meeting 2004; Held in Huston, Texas/USA. "Successes and Predictions of A Pseudopotential Approach in All Anion-Mixed Nitride alloys and Heterostructures" Presented by Ahmad Al-Yacoub (Alsaad).
9. I presented a talk at American Physical March meeting 2005; Held in Montreal, Canada. "Piezoelectric coefficients of ScN and its Alloys and Heterostructures" Presented by Ahmad Al-Yacoub (Alsaad).
10. I presented two talks at American Physical March meeting 21-25, 2006; Held in Los Angeles/California/USA. "Negative Refractive Index Materials" "Optical Properties of InGa_N quantum dots" Presented by Ahmad Alsaad.
11. I presented a talk at American Physical March meeting 2008; March 10 – 14, 2008 Held in New Orleans/Louisiana. "Structural and Isostructural phase transitions induced by Compressive, tensile strains and hydrostatic pressure in ordered ScGa_N and ScIn_N systems" Presented by Ahmad Alsaad.
12. I presented a talk at American Physical March meeting 2009, Monday–Friday, March 16–20, 2009 held in Pittsburgh, Pennsylvania entitled "Magnetic, structural and optical properties of Mn-based and Cr- based diluted magnetic semiconductors and alloys".

13. I presented a talk at American Physical March meeting 2010, Monday–Friday, March 15–19, 2010; Portland, Oregon entitled “Relative stability, electronic, optical, magnetic, piezoelectric properties (Cr, Sc) N and (Mn, Sc) N alloys and CrN/ScN superlattices”.
14. I presented a talk at American Physical March meeting 2011, Monday–Friday, March 21–25, 2011; Dallas, Texas entitled “Effect of disorder on the Curie temperature of GaMnN and InMnN diluted magnetic semiconductors”.
15. I presented a talk at American Physical March meeting 2012, Monday–Friday, February 27–March 2 2012; Boston, Massachusetts entitled “Structural, electronic, and magnetic properties of cation mixed (Ga,Mn)(As,N) and (In,Mn)(As,N) quaternaries and (Ga,Mn)N, and (In,Mn)N ternaries”.
16. I presented a talk at American Physical March meeting 2013, Monday–Friday, March 18–22, 2013; Baltimore, Maryland entitled “The optical, electronic and magnetic properties of Fe based binaries and diluted alloys”.
17. I presented two talks at American Physical March meeting 2014, Monday–Friday, March 3–7, 2014; Denver, Colorado. entitled “Generalized stacking fault energetics in FePt nanoparticles and effects of extended defects on magnetocrystalline anisotropy” and “calculations of the elastic, piezoelectric and dielectric tensors of Diisopropylammonium bromide molecular ferroelectric Crystal”.
18. I presented two talks at American Physical March meeting March 2–6, 2015.; Held in San Antonio, Texas, USA. Entitled “Optical and Electronic Properties of Diisopropylammonium Bromide molecular ferroelectric crystal (DIPAB)”.
19. I presented a talk at American Physical March meeting, March 14–18, 2016.; Held in Baltimore, Maryland, USA entitled “Atomic structure prediction of Zr-Co and Hf-Co nano clusters using the evolutionary algorithm”.
20. I presented a poster at American Physical March meeting 2017 Monday–Friday, March 13–17, 2017; New Orleans, Louisiana entitled “Effect of Bromine Deficiency on the Lattice Dynamics and Dielectric Properties of Alpha-Phase Diisopropyl Ammonium Bromide Molecular Crystals.”
21. I presented a talk at APS March meeting, Monday–Friday, March 5–9, 2018; Los Angeles, California, entitled “Modeling of Square ZnO Nano-membrane with Two Types of Cavities: Vacuum Cavity and Graphene Cavity Using Comsol Multiphysics Software: The Case Study MEMS Capacitive Pressure Sensor”.
22. I presented a talk at APS March Meeting 2019 Monday–Friday, March 4–8, 2019; Boston, Massachusetts, USA entitled “Ab initio calculations of structural, optical and magnetic properties of ordered MxPt1-x, (M= Co, Ni, Fe and Mn) binary alloys”.



Invited Reviewer for International Journals

- 1- American Chemical Society (ACS) Omega.
- 2- Journal of Taibah University for Science by Elsevier.
- 3- International Journal of Food Properties.
- 4- Journal of Basic and Applied Research International.
- 5- Physical science International Journal.
- 6- Physical Review & Research International.
- 7- Applied Physics A.
- 8- Physica B.
- 9- Computational Condensed Matter (Elsevier).
- 10- Journal of Physics and Chemistry of Solids.
- 11- Journal of Crystal Growth.
- 12- Journal of Magnetism and Magnetic Materials.
- 13- Journal of Applied Surface Science.



University & National Committees

Membership of professional organizations

- 1- Member at Jordanian Physical Society since 2015.
- 2- Member at American Physical Society since 2000.

Honours and Awards:

- Investigator in Chemical Understanding of Complex Semiconductor Alloys, Petroleum Research Fund (09/01/99-12/31/01).

- Electronic and Optical Properties of (Ga,In)(As,N) alloys, ORAU Ralph Powe Junior Faculty Enhancement Award (05/31/99-05/30/00).
- Investigator in the research project funded by National Science Foundation, Grant # DMR-0080054.
- World Laboratory (ICSC) Scholarship awarded (01/01/01-12/31/01), World Laboratory.
- Investigator in a project entitled 'Using Nanostructure investigating techniques for studying proxies of Climate Change and Ocean Acidification (OA) in Corals in the Gulf of Aqaba', Funded by Scientific Research Support Fund - ministry of higher education-Jordan.
- Visiting professor to the University of Naples/Italy to prepare a joint proposal supported by European Commission to establish a center for nano science and technology and the visit was supported by individual mobility grant (IMG)/Tempus, Supported by European Commission-2004.
- Project on the Diisopropylammonium Bromide Molecular Crystals, Supported by Nebraska EPSCoR program and National Science Foundation under Award ECCS: 1542182, and the Nebraska Research Initiative.

Teaching

Courses Taught

- | | |
|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ➤ General Physics I | ➤ Quantum Mechanics I For master students |
| ➤ General Physics II | ➤ Semiconductor Physics For master students |
| ➤ Quantum Mechanics I | ➤ Classical Mechanics For Master students |
| ➤ Quantum Mechanics II | ➤ College Physics at University of Arkansas/USA University of Arkansas/USA Drill Sessions at University of Arkansas/USA Material properties and Temperature Lab |
| ➤ Classical Physics I | ➤ Physics for Medical Students |
| ➤ Classical Physics II | ➤ Modern Physics I |
| ➤ Geometric Optics | ➤ Material Properties and Temperature |
| ➤ Optics | ➤ General Physics Lab |
| ➤ Optics Lab | |
| ➤ Geometrical Optics at the faculty of applied medical sciences | |

Teaching Goals and Philosophy

- To encourage the students to love science and scientific research.
- To enhance the scientific relationship between me and my students.
- To transfer my scientific experience and knowledge to my students.
- To help the scientific and research institutions in my country and the world to build generations of students who are eager to explore deep in science and new ideas that will help improve the quality of our life.
- To convey my teaching values, beliefs, and goals to a broader audience.
- To provide a set of criteria and/or standards to judge the quality of my teaching.
- To provide evidence of my teaching effectiveness and its effect on my students.

Graduate Students Supervision & Research Projects

Graduate Students Supervision:

- Piezoelectric Properties of $\text{Ga}_{0.25}\text{Sc}_{0.75}\text{N}$ and $\text{Ga}_{0.75}\text{Sc}_{0.25}\text{N}$ ALLOYS 2005/04.
- Electronic, Magnetic and Optical Properties of the (Ga,Mn)(As,N) and (In,Mn)(As, N) Quaternaries 2011/05.
- Optical and structural characterization of Sol-Gel B-ZnO and ZnO thin films used as seeded platform for nanostructured ZnO 2016/01.
- Comparative study of structural, optical and magnetic properties of L10 ordered FePt and CoPt nanoparticles 2016/05.
- Structural, optical and magnetic properties of MxPt_{1-x} , (M= Co ,Ni and V) binary alloys.
- Structural, optical and magnetic properties of MxPt_{1-x} , (M= Mn, Cr and Fe) binary alloys.
-

Funded Scientific Research

- Crystallization of Ferroelectric Supramolecular Crystals Using Topologically Functionalized Negative Chemical Template. **BAS/1/13/2019** funded by Scientific Research and Innovation Support Fund (SRISF), Ministry of Higher Education and Scientific Research, Jordan.
- Structural, optical, electrical, piezoelectric, and magnetic properties of ZnO-based and Fe:ScN, Fe:GaN, and Fe:MnN diluted magnetic semiconductors and their alloys 03/06/2011 funded by the deanship of the scientific research at Jordan university of science and technology-Jordan. A cluster has been bought and recently a license to use.
- Investigator in a project entitled 'Using Nanostructure investigating techniques for studying proxies of Climate Change and Ocean Acidification (OA) in Corals in the Gulf of Aqaba'. It is a three-year project that will start as soon as the final acceptance from Scientific Research Support Fund -ministry of higher education-Jordan is received.
- Structural, optical and magnetic properties of M_xPt_{1-x} , (M= Co, Ni, Mn, Cr, Fe, and V) binary alloys. This project has been funded by the deanship of scientific research at Jordan university of science and technology in July, 2018.



References

Prof. Dr. Laurent Bellaiche,

Distinguished Professor

J. William Fulbright College of Arts & Sciences

(PHYS)-Physics

University of Arkansas, Fayetteville, Arkansas 72701

Phone: 479-575-6425

Email: laurent@uark.edu

Prof. Dr. Renat Sabirianov

Professor Department Chair

University of Nebraska at Omaha, Department of Physics

Phone: 402.554.3720

Email: rsabirianov@unomaha.edu

Prof. Dr. Su-Huai Wei

Institute Research Fellow

National Renewable Energy Laboratory

15013 Denver West Parkway

Golden, CO 80401

Phone: (303) 384-6666

Email: suhuai.wei@nrel.gov