CURRICULUM VITAE

Prof. Ahmad M. A. Abu Alrub

July. 2025



PERSONAL

Place of Birth	Jordan
Date of Birth	November 13, 1968
Marital Status	Married
Nationality	Jordanian
Work Address	Department of Physics, College of Science, Al-Hussein Bin Talal University, Ma′an, Jordan. Phone: +962-3-2179000 Ext.:**6309**, E-mail: AhmadAlrub@ahu.edu.jo
Academic Rank (date)	Professor (2022)
Permanent Address	11118 Amman, Jordan. Cell Phone:+962-0796500368, E-mail: abuqais98@gmail.com

ACADEMIC QUALIFICATIONS

2005 - 2009	**Ph. D.** Theoretical condensed matter, University Science Malaysia, Malaysia.
1992 - 1995	**M. Sc.** Nuclear physics, The University of Jordan, Amman, Jordan
1987 - 1991	**B. Sc.** Physics, The University of Jordan, Amman, Jordan

SPECIALTY

General Specialization:	Theoretical condensed matter
Specialization:	Landau theory of ferroelectric and multiferroics

CAREER HISTORY

Feb 2022 - present	**Prof. Physics Dep. Al-Hussein Bin Talal University**
Sep 2018-Sep 2020	**Associate Prof /physics department/ Jouf university\Saudi Arabia**
Feb 2016 – Sep .2018	**Associate Prof. Physics dep. Alhussein Bin Talal University**
Sep 2009 – Feb.2016	**Assistant Professor**, Department of Physics**,** Faculty of Science, Al-Hussein Bin Talal University, Ma'an, Jordan
Sep 2008-Sep 2009	**Physics Tutor – Malaysia** University Science Malaysia (USM)
Sep 1996-Sep 2005	**Physics Teacher-**The Ministry of Education–Kingdom of Saudi Arabia
Sep 1992- Sep 1996	**Physics Teacher**. **The** Ministry of Education – Jordan
Sep 1991-Sep 1993	**Teaching Assistance in Lab** University of Jordan – Jordan

ADMINISTRATIVE EXPERIENCE

Positions

Des 2020- Oct 2022	**Deputy Dean of the College of Science**, Al-Hussein Bin Talal University, Ma'an, Jordan
Sep 2016 - Sep 2018	Deputy Dean of the Deanship of Scientific Research and Postgraduate Studies Al-Hussein Bin Talal University, Ma'an, Jordan
Sep 2012 - Sep 2013	Chairman of Physics Department, College of Science, Al-Hussein Bin Talal University, Ma'an, Jordan

Committees

Different committee in physics department and science college

HONORS, SCHOLARSHIPS, AWARDS AND GRANTS

1. Grand from Al-Hussein Bin Talal University for FE-AFE bilayer structure research under N0. 76-2022
2. University Science Malaysia Fellowship from 1-1-2008 to 31-12-2008.
3. SAGA grant, Academy of Sciences Malaysia (Grant No: 304/PFIZIK/653018/A118) from 1-9-2006 to 31-12-2007.

RESEARCH INTEREST

- Ferroelectrics
- Multiferroics
- Piezoelectricity

PUBLICATIONS

Peer-reviewed journal articles

1. Landau Theory Analysis of Dielectric Properties of BiFeO3 Ferroelectric Thin Films. Ahmad Alrub and Authors. Jordan Journal Physics. Vol. 19 No. 1 (2026) Scopus 4.

2. Quantum Entanglement in Nonlinear Coupler with Raman Process **,** Abdel-Baset MA Ibrahim, Mohd Syafiq Mohd Hanapi, **Ahmad Musleh Alrub**, Pankaj, ***Journal of Advanced Research in Applied Sciences and Engineering Technology***,2024.**Scopus Q3**

3. Energy storage and dielectric properties in PbZrO3/PbZrTiO3 antiferroelectric/ferroelectric bilayer bulk structure using Landau theory **Ahmad Musleh Alrub**, , Abd Al Jabar Anbar, Abdel-Baset M. A. Ibrahim ***AIP Advances*** **14, 065221 (2024) Scopus Q2.**

4. Quantum Dynamics of Contradirectional Nonlinear Coupler , PK Hanapi, M.S.M. , Ibrahim, A.-B.M.A. , Julius, R. , **Alrub, A.M.** , Choudhury Second Harmonic Generation: Pathways of Nonlinear Photonics, pp. 175–196,**2022. Scopus**

5. Quantum Properties of Light in Codirectional Coupler with Second Harmonic Generation, PK Hanapi, M.S.M. , Ibrahim, A.-B.M.A. , Julius, R. , **Alrub, A.M**. , Choudhury, Second Harmonic Generation: Pathways of Nonlinear Photonics,, pp. 151–174,**2022. Scopus**

6. Emad A. M. Farrag **Ahmad Musleh Alrub**, Adeeb G.Talafha Rateb M. K. Al-Rjoob . A Study on the mechanism of switching dynamic of ferroelectric bilayers by using Landau theory. Ferroelectrics. 577, 52–62 **(2021). Taylor and Francis (ISI Clarivate Analyitics, Scopus)**

7. **Ahmad Musleh Alrub,** Study of switching phenomenon of weak magnetoelectric coupling in proper multiferroics using Landau theory. **J. Appl. Phys. 126, 154102 (2019) Elsevier (ISI Clarivate Analyitics, Scopus Q1).**

8. **Ahmad Musleh Alrub,** Study the surface effect on BiMnO3 multiferroic thin film by using Landau theory**. Surface Science. 681 (2019) 70–75 Elsevier (ISI Clarivate Analyitics, Scopus Q1).**

9. Ahmad Musleh Alrub, Kok-Geng Lim Khian-Hooi Chew. Effect of magnetic and electric fields on electrical and magnetic properties of multiferroic $BiMnO_3$ films. Journal of Magnetism and Magnetic Materials . 458 (**2018**) 285–291. Elsevier (ISI Clarivate Analyitics, Scopus Q1).

10. **Ahmad Musleh Alrub,** Lye-Hock Ong, K.-H. Chew, J.M. Khoshman, Ghadeer N. Al Shabaan, Rawa'ah Abu Hilaleh: " phase transition of $BiMnO_3$ multiferroic thin film by Landau theory" **International Journal of Modern Physics B**. Vol. 30 (**2016 (ISI Clarivate Analyitics, Scopus Q3). Singapore**

11. Ghadeer N. Al Shabaan, Salem F. El-Nimri, **Ahmad Musleh Alrub**" Impact and Recommendations for AHU 2MW PV Plant" ***Innovative Systems Design and Engineering*** www.iiste.org ISSN 2222-1727 (Paper) ISSN 2222-2871 (Online)Vol.6, No.1, **2015 (USA).**

12. **Ahmad Musleh Alrub,** Lye-Hock Ong : " Switching properties of first-order ferroelectric thin films" **Eur. Phys. J. B** (**2015**) 88: 9 **(France). (ISI Clarivate Analyitics, Scopus Q2).**

13. L.-H. Ong, **A. M. Alrub** and K.-H. Chew: "EFFECT OF STRAIN ON BARIUM TITANATE EPITAXIAL FILMS" **Key Engineering Materials** Vol. 547 (**2013**) pp 139-144 **(Switzerland). (Scopus Q3).**

14. **Ahmad Musleh Alrub**, Lye-Hock Ong : " Thickness Dependence of Switching time and Coercive Field in Ferroelectric thin Films", **J. Appl. Phys. 109**, 084109 (**2011**) **(USA). (ISI Clarivate Analyitics, Scopus Q1).**

15. **Ahmad Musleh Alrub** : " The Effect of Electric Filed on Surface and Center of Ferroelectric Film-**Jordan Journal of physics**", **3**, Issue 1, **2010**, pp.31-40 **Jordan (ISI Clarivate Analyitics).**

16. **Ahmad Musleh** and Ong Lye Hock :" Temperature and Electric Field Influences on Polarization Reversal of Ferroelectric Thin Film", **AIP Conf. Proc.** -- July 7, **2009** -- Volume 1150, pp. 274-277 FRONTIERS IN PHYSICS: 3rd International Meeting; doi:10.1063/1.3192253 (**USA**).

17. **Ahmad M. Musleh,** Lye-Hock Ong, and D. R. Tilley: " Effects of Extrapolation Length δ on Switching Time and Coercive Field", **Journal of Applied Physics 105**, (**2009**), p. 061602 **(USA) (ISI Clarivate Analyitics, Scopus Q1).**

18. Lye-Hock Ong and **Ahmad Musleh :** "Tilley-Zeks Model in Switching Phenomena of Ferroelectric Films", **380**, Issue 1,(**2009**) pp.150-159 ***Ferroelectrics*** **(UK), (ISI Clarivate Analyitics, Scopus Q3).**

19. Lye-Hock Ong, **Ahmad Musleh** and Junaidah Osman:" Surface Effects on Switching in Ferroelectric Films", ***Jurnal Fizik Malaysia*** **29** (1&2) (**2008**), p. 11**(Malaysia).**

20. Lye-Hock Ong, **Ahmad Musleh** and Junaidah Osman:" Switching Behaviours of Ferroelectric Systems of Finite Size ***Ferroelectrics*****, 375**, Issue 1, (**2008**), pp. 115-121.**(UK)** ,**(ISI Clarivate Analyitics, Scopus Q3).**

21. Yoshihiro Ishibashi, Makoto Iwata and **Ahmad M.A. Musleh** : "Exact Expressions for Some Dielectric Properties of Ferroelectric Thin Films Based on the Tilley-Zeks Model". Journal of the Physical Society of Japan, 76 (10), (**2007**), p. 104702. (Japan). (**ISI Clarivate Analyitics, Scopus Q1**)

Books and book chapters

Patents

- N.A.

CONFERENCES AND PROCEEDINGS

1. **Ahmad Musleh Alrub** International Congress on Advanced Materials Sciences and Engineering-2024 (AMSE-2024). Time: held on July 23-26, **2024** Place: **Croatia**

2. **Ahmad Musleh Alrub**. ICE 2017 19th International Conference on Electroceramics **London** United Kingdom August, 20-21, 2017.

3. **Ahmad Musleh Alrub.** Conference of ICTAM-AMF10- **Delhi** University.-7-11 November-**2016**. Susceptibility and pyroelectric coefficients of $BiMnO_3$ Multiferroics.

4. **Ahmad Musleh Alrub**, Conference on Long-Range-Interacting Many Body Systems: from Atomic to Astrophysical Scales (25/07/**2016** - 29/07/2016)**. Abdus Salam International Centre for Theoretical Physics, Italy.**

5. **Ahmad Musleh Alrub,** Lye-Hock Ong, K.-H. Chew Surface effect on Multiferroic $BiMnO_3$ "Eighth International Petra School in Physics" . Amman **Jordan** (11-14 April, 2016)

6. **Ahmad Musleh Alrub,** Lye-Hock Ong" Switching Properties of First-Order Ferroelectric Thin Films" AMF-AMEC-2014 The Joint Conference of 9th Asian Meeting on Ferroelectrics & 9th Asian Meeting on Electroceramics Oct. 26-30, 2014, **Shanghai, China.**

7. **Ahmad Musleh Alrub,** Lye-Hock Ong" Landau Theory for Investigating Switching Properties of First- Order Ferroelectric Thin Film" Oral Presentation at the 8th Asian Meeting on Electroceramics 2012 (AMEC-8), held at Shangri-La 's Rasa Sayang Resort and Spa, **Penang, Malaysia** on 1-5 July,2012.

8. **Ahmad Musleh** Lye-Hock Ong :" Phase Transitions of Strained Barium Titanate Epitaxial Films has been accepted for an Poster presentation at IMF-ISAF-2009", which

will be held in Shaanxi Zhangbagou Guesthouse, in Xi'an, **China** during August 23 to 27, 2009.

9. **Ahmad Musleh** Lye-Hock Ong: "Temperature and Electric Field Influences on Polarization Reversal of Ferroelectric Thin Film",Third international Meeting Frontiers of Physics (IMFP), Awana Genting Highlands Resort, **Kuala Lumpur, Malaysia** on the 12-16th January 2009.

10. **Ahmad Musleh**, Lye-Hock Ong, and Junaidah Osman: " *Effects of Extrapolation Length delta on Switching Time and Coercive Field",* Proceedings of International Symposium on Integrated (ISIF 2008), Biopolis, **Singapore.**

11. **Ahmad Musleh**, Lye-Hock Ong, and Junaidah Osman: " *Effects of Compressive Stress on Ferroelectric Epitaxial Films*, Proceedings of National Physics Conference PERFIK (2007), **Kuala Lumpur**.

12. Lye-Hock Ong, **Ahmad Musleh**, and Junaidah Osman:" *Polarization Profiles of Bilayered Ferroelectric Films,* Proceedings of National Physics Conference PERFIK (2006), **Kuala Lumpur**.

13. **Ahmad Musleh**, Lye-Hock Ong, and Junaidah Osman: " *Electric Effects on Polarization Profiles of Ferroelectric Thin Film,* Proceedings of National Physics Conference PERFIK (2006), **Kuala Lumpur**.

TEACHING

Courses Taught graduate.

- ***Classical Mechanics***
- ***Electrodynamic***

Courses Taught-undergraduate

- *Solid state physics*
- *Statistical mechanics*
- *Physics of semiconductor*
- *Thermodynamics*
- *Classical mechanics I and II*
- *Electrodynamics I and II*

- *Mathematical physics I and II*
- *Quantum Mechanics I and II*
- *General physics II*
- *Wave and vibrations*
- *Modern physics*
- Advance lab
- Optical lab
- Mechanical, electrical and magnetic first year labs

Theses committee discussion

No.	Thesis Title	Degree		University	Year	Collage	Department
		M.Sc.	Ph.D.				
1	Effect of magnetized water on the Germination and Growth of Plant Seeds By Hadeel Mohammad Suleiman Alsarhan	**yes**		**Al al-Bayt University**	**18-12-2024**	**Science**	**Physics**
2	THE CONCENTRATION OF HEAVY METALS IN CLOVER IRRIGATED BY SEWAGE WATER By MANAR SOFYAN MOHAMMED AL TARAZI	**Yes**		**Al al-Bayt University**	**7-2024**	**Science**	**Physics**
3	Resistance of the triangular Kagome,square Kagome and checkerboard lattice By Majd Hamales	**Yes**		**Al-Hussein Bin Talal university**	**5-2023**	**Science**	**Physics**

4	Caffeine Detection with Doped Boron Nitride Nanotube	**yes**		**Al al-Bayt University**	**12-2020**	**Science**	**Physics**
5	Drug delivery/ Boron Nitride nanotube By Doha Omar Al-Sheikh	**yes**		**Al al-Bayt University**	**12-2020**	**Science**	**Physics**
6	Lagrangian Formulation of Yang-Higgs Field in Fractional D Dimensional space time By Toqa Suliman Hamad Qaisee	**yes**		**Muta University**	**20-4-2017**	**Science**	**Physics**

Theses supervision

No.	Thesis Title	Degree		University	Year	Collage	Departmen
		M.Sc.	Ph.D.				
1	STUDY THE PHASE TRANSITION OF (BiFeO3) THIN FILMS MULTIFERROIC BY USING LANDAU THEORY. By QAIS SALIH ALI AL-HORANI	**yes**		**Al-Hussein Bin Talal university**	**2021-2023**	**Science**	**physics**
2	STUDY THE PHASE TRANSITION AND ELECTRIC ENERGY STORAGE DENSITY OF PbZrO3/PbZr(1-x)Ti(x)O3 ANTIFERROELECTRIC/FERROELECTRIC BILAYAR BULK BY USING LANDAU THEORY. By Abd Al Jabar Amer Anbar	**yes**		**Al-Hussein Bin Talal university**	**2021-2023**	**Science**	**physics**
3	STUDY ON THE PHASE TRANSITION AND DIELECTRIC PROPERTIES OF BaTiO3/PbTiO3 FERROELECTRICS BILAYER USING LANDAU THEORY By	**yes**		**Al-Hussein Bin Talal university**	**2021-2023**	**Science**	**physics**

	Rawa'ah Ahmad Abu-Hilalah						

SKILLS

Languages

- Arabic (native)
- English (v. good)

Computer Programs

- Fortran Language
- Mathematica