

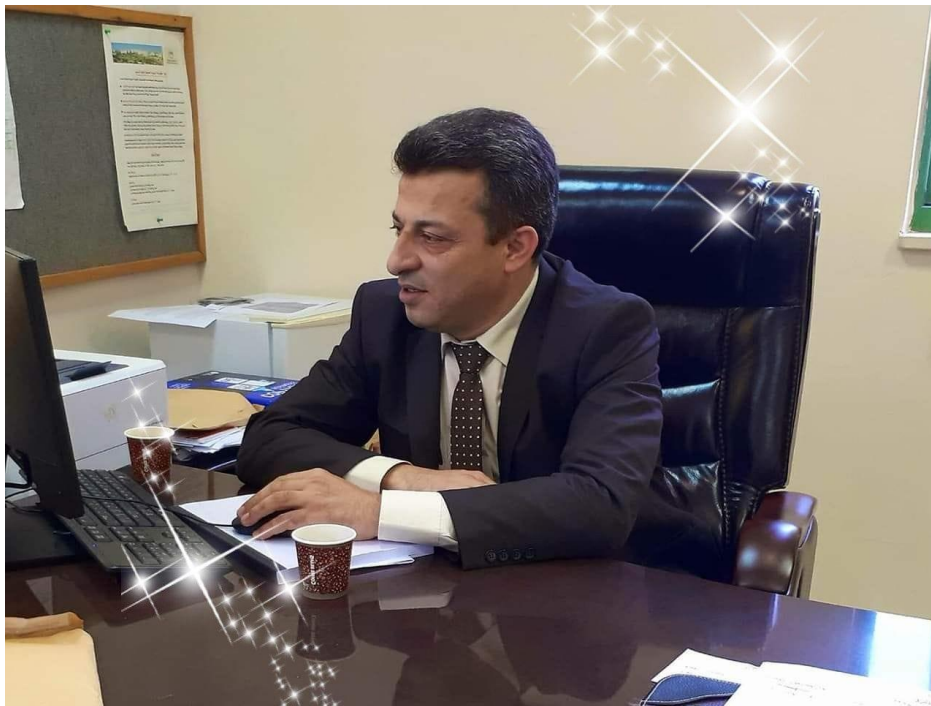
C.V

HOME ADDRESS

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Palestine
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Dr. MUAYAD ABU SAA,
Associate Professor in Solid State Physics.

PERSONAL INFORMATION

Marital status: Married
NATIONALITY: Palestinian
DATE OF BIRTH: 17/01/1970
PLACE OF BIRTH: Nablus - West Bank – Palestine

EDUCATION

2009-2015

Brussels/Belgium

Vrije Universiteit Brussel

PhD in Physics/Laser Physics

PhD thesis: Simultaneous two-state operation in Quantum Dot Lasers

1993-1995

Famagusta/ North Cyprus

Eastern Mediterranean University

M.Sc. of physics / Solid State Physics (CGPA 3.96)

Master thesis: Two Interacting Electrons in a Parabolic Quantum Dot in the Presence of Magnetic Field

1988- 1992

Yarmouk University

Irbid - Jordan

B.Sc. of Physics

PROFESSIONAL EXPERIENCE

1993-1995

Eastern Mediterranean University

Famagusta - North Cyprus

Teacher & lab Coordinator as a full-time assistant

Duties: Tutorial of General Physics courses and Lab coordination of the first-year physics labs.

1996 - 2009

Al-Quds Open University

Tulkarm Directorate -P.N. A

Part-time lecturer of physics, methods of teaching sciences, and math courses

1995 - 2003

Ministry of Education

Tulkarm Directorate - P.N.A

1- Teacher of Physics, Chemistry, General Sciences & Mathematics
– All school levels.

2- Trainer of Physics teachers.

2003-2006

Arab American University/Jenin

Full-time instructor of physics

2006-1/4/2009

Arab American University/Jenin

Full-time lecturer of physics

1/4/2009- 1/1/2011

VUB/ Belgium

PhD student

1/2/2011-15/5/2015

**Arab American University/Jenin
Full-time lecturer of physics**

17/9/2015- 1/5/2021

**Arab American University/Jenin
Full-time Assistant Professor of Physics**

1/5/2021- Present

**Arab American University/Jenin
Full-time Associate Professor of Physics**

COURSES TAUGHT: GRADUATE

1. **Advanced Statistical Mechanics (I), Master.**
2. **Advanced Statistical Mechanics (II), PhD.**
3. **Advanced Classical Mechanics (I), Mater.**
4. **Laser Design and Technology, Master.**
5. **Laser Dynamics, Master.**
6. **PhD Research Seminar, PhD.**

COURSES TAUGHT: UNDER GRADUATE

- 1- **General Physics I(Mechanics)**
- 2- **General Physics II (Electricity & Magnetism)**
- 3- **General Physics Lab I(Mechanics)**
- 4- **General Physics Lab II (Electricity & Magnetism)**
- 5- **Classical Mechanics I**
- 6- **Classical Mechanics II**
- 7- **Solid State Physics**
- 8- **Statistical Mechanics**
- 9- **Mathematical Phys I**
- 10- **Mathematical Phys II**
- 11- **Thermodynamics**
- 12- **Optics and Lasers**
- 13- **Laser Design and Technology**
- 14- **Astronomy**
- 15- **Modern Physics.**
- 16- **Physics for Medical Students**
- 17- **Physics Lab for Medical Students**
- 18- **Physics for IT (information technology)**
- 19- **Physics Lab for IT**
- 20- **Vector Analysis**
- 21- **Methods of teaching sciences**
- 22- **General math courses**
- 23- **Introduction to Mathematical Physics and Software Packages**
- 24- **Fundamentals of Research Methods**

RESEARCH INTERESTS

- 1- Laser dynamics
- 2- Quantum Dot Lasers modeling.
- 3- Two-state operation in Quantum Dot Lasers.
- 4- Optoelectronic devices.
- 5- Thin films.
- 6- Spintronics.
- 7- Fractional Calculus.

PUBLICATIONS

1. " The Energy Spectra of Two Interacting Electrons In a Parabolic Quantum Dot In The Presence of a Magnetic Field; Interpolation Approach ". [Physica Scripta](#). Vol. 54 / 309 -311, **1996**.
2. "Interacting Electrons in Quantum Dot in The Presence of a Magnetic Field". [Phys.Stat. Sol. \(b\)](#) 203 / 357, **1997**.
3. "The energy spectra of GaAs / AL_x Ga_{1-x} As Quantum Dots" [Tr.J.of Physics](#) 885-894, 22, **1998**.
4. " Intradot time scales strongly affect the relaxation dynamics in quantum dot laser" Co-authored by E.A.Viktorov, T.Erneux, J.Danckaert. [Phys.Rev . A](#). 87. 063827, **2013**.
5. "Dropout dynamics in pulsed quantum dot lasers due to mode jumping" Co-authored by Grigori S. Sokolovskii *et al.* [App. Phys. Lett.](#) 106, 261103, **2015**.
6. "Lasing due to the excited state in quantum dot lasers ", Co-authored by J. Danckaert, and E. A. Viktorov, [Journal of Physics. Conference Series](#) DOI: 10.1088/1742-6596/869/1/012008, **2017**.
7. "Dynamical and Thermal Properties of 850 nm Vertical Cavity Surface Emitting Laser (VCSEL)", [Journal of the Arab American University](#). December, **2017**.
8. "Dielectric and Optoelectronic Properties of InSe/CdS/CdSe heterojunctions", [Journal of Electronic Materials](#). August, **2018**.
9. "Post annealing effects on the structural and optical properties of MoO₃ sandwiched with indium slabs", [Materials Research Express](#). October, **2019**.
10. "Structural, optical and dielectric performance of Molybdenum Trioxide thin films sandwiched with Indium sheets", [Digest Journal of Nanomaterials and Biostructures](#). December, **2020**.
11. "Role of Au nanosheets in enhancing the performance of Yb/ZnS/CdS/Au tunneling photosensors", [Chalcogenide Letters](#). November, **2020**.
12. "Monotonicity Analysis of Fractional Proportional Differences", [Discrete Dynamics in Nature and Society](#), **2020**.
13. "Trends in the hyperfine interactions of magnetic adatoms on thin insulating layers", [npj/ Computational Materials](#). June, **2021**.

14. “Effects of Rashba spin–orbit interaction and topological defect on the magnetic properties of an electron confined in a 2D quantum dot”, [Journal of Taibah University for Science](#). January, 2022.
15. “Interplay of magnetic states and hyperfine fields of iron dimers on MgO(001)”, [Journal of Physics Condensed Matter](#). July, 2022.
16. “Emergence of zero-field non-synthetic single and interchained antiferromagnetic skyrmions in thin films”, [Nature Communications](#). November, 2022.
17. “A spin model for intrinsic antiferromagnetic skyrmions on a triangular lattice ”, [Front. Phys.](#) May, 2023.
18. “Intrinsic Néel Antiferromagnetic Multimeronic Spin Textures in Ultrathin Films ”, [Journal of Physical Chemistry Letters](#). September, 2023.
19. “Current-driven dynamics of antiferromagnetic skyrmions: from skyrmion Hall effects to hybrid inter-skyrmion scattering”, [npj Spintronics](#). August, 2024.

CONFERENCES

1. “Stability properties of a dual-wavelength operation in quantum dot lasers “ Co-authored by E.A.Viktorov, T.Erneux, J.Danckaert. [Laser Optics-2012 Conference](#), (St.Petersburg, Russia; June 25-29, 2012).
2. “ Two-state operation in quantum dot lasers "Co-authored by E.A.Viktorov, T.Erneux, J.Danckaert. [Third Palestinian Conference on Modern Trends in Mathematics and Physics](#), (Palestine Polytechnic University, Hebron/Palestine; July 16-18, 2012).
3. “ Impact of gain factor on simultaneous two-state operation in quantum dot lasers ” Co-authored by E.A.Viktorov, T.Erneux, J.Danckaert. [2012 Annual Symposium of the IEEE Photonics Society Benelux Chapter](#), (Mons, Belgium; June 29-30, 2012).
4. " Nonlinear pulse shaping in pulsed quantum dot lasers" Co-authored by Grigorii S. Sokolovskii *et al.* 21st Int. Symp. [Nanostructures: Physics and Technology” Saint Petersburg, Russia](#), June 24–28, 2013.
5. “The effect of slow passage in the pulse-pumped quantum dot laser” Co-authored by Grigorii S. Sokolovskii *et al.* [SPIE Photonics Europe, Brussels](#), 14-17/April/2014).
6. “The effect of slow passage in the pulse-pumped quantum dot laser” " co-authored by Grigorii S. Sokolovskii *et al.* Accepted for oral presentation at the [Fourth Palestinian Conference on Modern Trends in Mathematics and Physics](#) (Al Quds University, Palestine), August 11-13, (2014).
7. “Two state QD laser turn on: slow passage effects” Co-authored by Grigorii S. Sokolovskii *et al.* [2015 European Conference on Lasers and Electro-Optics - European Quantum Electronics Conference](#), (Munich, Germany), June 2015.

8. "Analysis of the Current-Voltage Characteristics of the Yb/TlInSe₂/C interfaces ", Co-authored by Reham M. Kmeil, Hazem K. Khanfar, and A.F. Qasrawi accepted for oral presentation on the [Fifth Palestinian Conference on Modern Trends in Mathematics and Physics](#) (AAUJ, Palestine), July 31-August 2, (2016).
9. "Stability properties of optically injected single-mode quantum dash laser" " co-authored by Waed Eghbari, and Iyad Swan, accepted for oral presentation at the [Fifth Palestinian Conference on Modern Trends in Mathematics and Physics](#) (AAUJ, Palestine), July 31-August 2, (2016).
10. "Exploring Demarcation Levels in Laser excited photodiode arrays ", Co-authored by Sufyan R. S. Shehada, Hazem K. Khanfar, and A.F. Qasrawi, accepted for oral presentation at the [Fifth Palestinian Conference on Modern Trends in Mathematics and Physics](#) (AAUJ, Palestine), July 31-August 2, (2016).
- 11., "Temperature effects on the physical parameters of Yb/MgO/C MSM devices", Co-authored by Sundos K. M. Kabaha, Hazem K. Khanfar. Accepted for poster presentation at the [Second Palestinian International Conference on Material Science and Nanotechnology](#)(An-Najah National University, Palestine), March 23-24, (2016).
12. "Au/InSe interface designed as resonators for optical communications", Co-authored by Alaa A. Ikmail, and Hazem K. Khanfar. Accepted for poster presentation at the [Second Palestinian International Conference on Material Science and Nanotechnology](#) (An-Najah National University, Palestine), March 23-24, (2016).
13. "Dynamical and thermal properties of 850 nm VCSEL", accepted for oral presentation at the [Fifth Palestinian Conference on Modern Trends in Mathematics and Physics](#) (AAUJ, Palestine), Jul 31-August 2, (2016).
14. "Fabrication and Characterization of Wide Band Photo-conductor Array ", Conference Paper · April 2017 ", Co-authored by Sufyan R. S. Shehada, Hazem K. Khanfar, and A.F. Qasrawi, accepted for oral presentation on the [The Second Palestinian International Graduate Conference on Natural, Medical and Health Sciences and Humanities \(SPIGCNMHSH 2017\)](#), (An-Najah National University, Nablus-Palestine), April, (2017).
15. "Lasing due to the excited state in quantum dot lasers" Conference Paper ", Co-authored by Jan Danckaert, and E. A. Viktorov, accepted for oral presentation on [Frontiers in Theoretical and Applied Physics](#) , (American University of Sharjah, UAE), February, (2017).
16. Hyperfine fields of magnetic adatoms on MgO/Ag(001), Co-authored by Shehada, S., dos Santos Dias, M., Guimarães, F. S. M & Lounis, S. ([Frühjahrstagung der Deutschen Physikalischen Gesellschaft](#), Germany, Apr. 2019).
17. Interplay of magnetic states and hyperfine fields of iron dimers on MgO(001), Co-authored by Shehada, S., dos Santos Dias M & Lounis, S. [Frühjahrstagung der Deutschen Physikalischen Gesellschaft der Sektion Kondensierte Materie](#) (SKM21, Germany, Sept. 2021).
18. Hyperfine fields of magnetic adatoms on ultrathin insulating films Co-authored by Shehada, S., dos Santos Dias, M., Guimarães, F. S. M & Lounis, S. [3rd International Conference on Hyperfine Interactions and their Applications](#) (HYPERFINE-2021, Brasov-Romania, Sept. 2021).

19. Hyperfine fields of magnetic adatoms on ultrathin insulating Co-authored by Shehada, S., dos Santos Dias, M., Guimarães, F. S. M & Lounis, S. ([Frühjahrstagung der Deutschen Physikalischen Gesellschaft](#), Germany, Mar. 2021).

20. Interplay of magnetic states and hyperfine fields of iron dimers on MgO(001) Co-authored by Shehada, S., dos Santos Dias, M & Lounis, S. ([PSI-K Conference](#), Lausanne-Switzerland, Aug. 2022).

21. Interplay of magnetic states and hyperfine fields of iron dimers on MgO(001) Co-authored by Shehada, S., dos Santos Dias, M & Lounis, S. [The 24th International Colloquium on Magnetic Films and Surfaces](#) (ICMFS-2022, Okinawa-Japan, July 2022).

22. Interplay of magnetic states and hyperfine fields of iron dimers on MgO(001) Co-authored by Shehada, S., dos Santos Dias, M & Lounis, S. [The Joint European Magnetic Symposia](#) (JEMS-2022, Warsaw-Poland, July 2022).

23. Interplay of magnetic states and hyperfine fields of iron dimers on MgO(001) Co-authored by Shehada, S., dos Santos Dias, M & Lounis, S. [Palestinian Conference on Modern Trends in Mathematics and Physics VII](#) (Birzeit University-Palestine, Aug 2022).

24. Interplay of magnetic states and hyperfine fields of iron dimers on MgO(001) Co-authored by Shehada, S., dos Santos Dias, M & Lounis, S. [Frühjahrstagung der Deutschen Physikalischen Gesellschaft](#) (DPG Spring Meeting, Germany, Sept 2022).

BOOKS:

Lab manual: (Physics lab for medical students)
Co-authored by Muayad Abu Saa and Anan Hussein.
AAUJ. Jenin/Palestine

PROFESSIONAL MEMBERSHIPS:

1. Chair of the Palestinian Physical Society.
2. Palestine Academy for Science and Technology.
3. Member of the advisory committee of the Palestinian German Science Bridge.

COMMITTEES:

- 1) Faculty of Science council, member (2006-2007) & (2008-2009).
Chair (2016-2019)
- 2) University schedule committee (2004-2006).
- 3) Quality Assurance Committee, member (2004-2005).
- 4) University Council, member (2007-2008). (2012-2013). (2016-2021).
- 5) Deans Council, member (2017-2024).
- 6) Study Plans Committee, member (2016-2018). Chair (2019-2024).
- 7) New Programs Committee, member (2020-present).
- 8) Admission Policy Committee, Chair (2019-2024).
- 9) Scholarship and Training Committee, member (2019-2024).

ADMINISTRATIVE EXPERIENCE:

1. Physics Department Coordinator (2006-2007) & (2008-2009).
2. Head of Physics Department (2016-2019).
3. Coordinator of Master Program in Physics (2016-2019).
4. Dean of Faculty of Sciences (2017-2019)
5. Vice president for academic affairs (2019-2024)

PRESENT POSITION:

Associate Professor of Physics – AAUP- Palestine.

MASTER THESES:

I have supervised the following Master theses:

1. Sufyan Shehada "Fabrication and Characterization of Wide Band Photoconductor Array". AAUP- 2017.
2. Haifaa Kamil "Design and Characterization of Indium sandwiched Molybdenum Trioxide thin films". AAUP- 2018.
3. Masa Daraghme "Enhancement of electrical performance of MoO₃ films via Indium nano sandwiching ". AAUP- 2018.
4. Batool Asaad " Effect of Au layer on the performance of ZnS/CdS heterojunctions ". AAUP- 2019.
5. Nouf Ibrahim " The effect of Rashba spin-orbit interaction and magnetic field on the thermos-magnetic properties of an electron confined on a 2D semiconductor quantum dot “. AAUP- 2019.
6. Dima Abubaker " Development of A Material Model For Stress Calculations In Lithium-ion Batteries “. AAUP- 2022.
7. Haneen Jaradat " Relaxation Dynamics of QDLs Subjected to External Effect (Optical Feedback) “. AAUP- 2024.

PhD THESES:

1. Sufyan Shehada " Ab-initio investigation of the interplay between the hyperfine interaction and complex magnetism at the nanoscale". AAUP- 2023.

LANGUAGES

Arabic: Mother tong
English: Reading & Writing (Excellent)

HOBBIES:

Reading, Travelling, and Athletics.

REFEREES:

- 1- Prof.Dr. Jan Danckaert (VUB) jandan@vub.ac.be
- 2- Dr. Adli Saleh(AAUP) asaleh@aaup.edu
- 3- Prof. Dr. Waleed Deeb (AAUP) waleed.deeb@aaup.edu
- 4- Prof. Dr. Ali Zedan (AAUP) Ali.Zedan@aaup.edu
- 5- Prof. Dr. Marwan Awartani (Ministry of Education)
marwan.awartani@gmail.com
- 6- Prof. Dr. Ghaleb Natour (Julich Institute-Germany)
g.natour@fz-juelich.de