# **Curriculum Vita**

## PERSONAL INFORMATION:

#### Name: Ahmad Ibrahim Abdelrahman Ayesh

Mail address: P. O. Box 2713, Department of Mathematics, Statistics and Physics, Qatar University, Doha, Qatar.

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EDUCATION AND QUALIFICATIONS:

- PhD in Physics Nanotechnology (2004 2007) Thesis title: "Device fabrication using Bi nanoclusters" Physics and Astronomy department, University of Canterbury, Christchurch - New Zealand
- MSc in Physics Solid State (1992 1994)
  - **Thesis title:** "Photoluminescence spectrum of CdTe thin film treated with CdCl<sub>2</sub>" *Physics department, University of Jordan, Amman Jordan*
- BSc in Physics (1988 1992)

Physics department, Yarmouk University, Irbid – Jordan

## WORK EXPERIENCE:

- Consultant of Vice President for Student Affairs (1<sup>st</sup> June 2021 to present): Qatar University, Doha, Qatar.
- Director of the Center for Sustainable Development (14<sup>th</sup> November 2019 to 31<sup>st</sup> May 2021): College of Arts and Science, Qatar University, Doha, Qatar.
- 3) **Professor of Physics (25<sup>th</sup> March 2019 to present):** Department of Mathematics, Statistics and Physics, Qatar University, Doha, Qatar.
- 4) **Graduate Faculty with Supervisory Status (6**<sup>th</sup> **September 2015 to present)**: Department of Material Science and Technology, Qatar University, Doha, Qatar.
- 5) Associate Professor of Physics (31<sup>st</sup> Aug. 2014 to 24<sup>th</sup> Mar. 2019): Department of Mathematics, Statistics and Physics, Qatar University, Doha, Qatar.
- 6) Associate Professor (1<sup>st</sup> Sep. 2013 to 31<sup>st</sup> Aug. 2014): Department of Physics, United Arab Emirates University, Al Ain, United Arab Emirates.
- Assistant Professor (18<sup>th</sup> Aug. 2008 31<sup>st</sup> Aug. 2013): Department of Physics, United Arab Emirates University, Al Ain, United Arab Emirates.
- 8) Visiting Teaching Consultant (Feb. Jun. 2008): Physics Department, Sultan Qaboos University, Muscat, Oman.
- 9) Senior Tutor & Senior Lab Demonstrator (Mar. 2004 Feb. 2008): Physics and Astronomy Department-University of Canterbury, Christchurch, New Zealand.
- 10) *Laboratory Specialist (1995 2004):* Physics Department, United Arab Emirates University, Al-Ain, United Arab Emirates.
- 11) Physics Teacher (1994 1995): Scientific Islamic College, Amman, Jordan.
- 12) Teaching Assistant (1992 1994): Physics Department, University of Jordan, Amman, Jordan.

## **RESEARCH OVERVIEW:**

In the last years of my academic career, I was successful to secure many competitive project grants, as well as the supervision of many graduate students. My publication record includes many recognized papers in international journals and conferences, in addition to many papers under consideration for publication. My main research interests are:

- 1) Development of organic devices using environmental friendly resources for applications that promote sustainable development such as: solar cells, gas sensors, memory devices, and others
- 2) Fabrication of nano-scale materials: nanoclusters, nanoparticles, and nanowires.
- 3) Studying the properties of nanomaterials, and developing ways of building nano-electronic devices from these nanomaterials such gas sensors and solar cells.
- 4) Development and in vitro assessment of bone-like calcium phosphate coatings on biocompatible alloys.



### **RECENT PUBLICATIONS:**

- Ahmad Al-Sarraj, Belal Salah, Ahmad I. Ayesh, Khaled M. Saoud, Abdul Azzi El Mel, Atiq ur Rehman, Amine Bermak, Yousef Haik, "Fabrication of Ag2O/WO3 Based Sensors for Detection of Hydrogen Sulfide", Sensors and Actuators: A. Physical, SNA-D-21-01553 (2021).
- 2. Ahmad I. Ayesh, "DFT investigation of H2S and SO2 adsorption on Zn modified MoSe2", Superlattices and Microstructures, SM-D-21-00655 (2021).
- 3. Ahmad I. Ayesh, "H2S and SO2 adsorption on Cu doped MoSe2: DFT investigation", Physics Letters A 422, 127798 (2021).
- 4. **Ahmad I. Ayesh**, Belal Salah, Rama Nawwas, Asmaa S. Almarri, Aisha N. Al-Thani; Alanoud M. Al-Ahbabi, and Noof A. Al Haidous, "Investigation of x-ray response for flexible nanocomposite membranes of metal oxides and PVA", Journal of Applied Polymer Science, https://doi.org/10.1002/app.51850 (2021).
- 5. Asma Wasfi, Falah Awwad, Naser Qamhieh, Rabah Iratni, and **Ahmad I. Ayesh**, "Real-time nucleic acid detection via field-effect transistor sensors based on graphite oxide decorated with trimetallic nanocluster of gold, silver, and platinum", New Journal of Physics 23, 103041 (2021).
- 6. Ahmad I. Ayesh and Belal Salah, "Production of selective gas sensors based on nanoparticles of PdO / Fe<sub>3</sub>O<sub>4</sub>", Applied Physics A 127, 843 (2021).
- 7. Shifa M.R. Shaikh, Mohammad K. Hassan, Mustafa S. Nasser, Sami Sayadi, **Ahmad I. Ayesh**, and Vivek Vasagar, "A Comprehensive Review on Harvesting of Microalgae Using Polyacrylamide-Based Flocculants: Potentials and Challenges", Separation and Purification Technology 277, 119508 (2021).
- 8. Roya Majidi & Ahmad I. Ayesh, "Engineering the electronic properties of siligraphene sheets by organic molecules: a density functional theory investigation", Molecular Physics, TMPH-2021-0335 (2021).
- 9. Gopal Niraula, Denilson Toneto, Elma Joshy, Jose A. H. Coaquira, **Ahmad I. Ayesh**, Flavio Garcia, Diego Muraca, Juliano C. Denardin, Gerardo F. Goya, and Surender K. Sharma, "Energy Evolution, Stabilization, and Mechanotransducer Properties of Fe3O4 Vortex Nanorings and Nanodisks", Phys. Rev. Applied 16, 024002 (2021).
- 10. Asma Wasfi, Falah Awwad, and **Ahmad I. Ayesh**, "Detection of DNA Bases via Field Effect Transistor of Graphene Nanoribbon with a Nanopore: Semi-empirical Modeling", IEEE Transactions on NanoBioscience, TNB-00160-2020 (2021).
- 11. Ehab Salih and **Ahmad I. Ayesh**, "Sensitive SO<sub>2</sub> gas sensor utilizing Pt-doped graphene nanoribbon: First principles investigation", Materials Chemistry and Physics 267, 124695 (2021).
- 12. Ehab Salih and **Ahmad I. Ayesh**, "Co-doped zigzag graphene nanoribbon based gas sensor for sensitive detection of H2S: DFT study", Superlattices and Microstructures 155, 106900 (2021).
- 13. Ahmad I. Ayesh, "Effect of CuO<sub>x</sub> additive site to graphene nanoribbon on its adsorption for hydrogen sulfide", Results in Physics 24, 104199 (2021).
- 14. Belal Salah and **Ahmad I. Ayesh**, "Fabrication of H<sub>2</sub>S sensitive gas sensors formed of SnO<sub>2</sub>-Fe<sub>2</sub>O<sub>3</sub> composite nanoparticles", Materials Chemistry and Physics 266, 124597 (2021).
- 15. Mariem Chamakh and **Ahmad I. Ayesh**, "Production and investigation of flexible nanofibers of sPEEK/PVP loaded with RuO<sub>2</sub> nanoparticles", Materials & Design 27, 109678 (2021).
- 16. Ehab Salih and Ahmad I. Ayesh, "First principle Study of transition metals codoped MoS2 as a gas sensor for the detection of NO and NO2 gases", Physica E: Low-dimensional Systems and Nanostructures 131, 114736 (2021).
- 17. Gopal Niraula, Jose A. H. Coaquira, Giorgio Zoppellaro, Bianca M. G. Villar, Flavio Garcia, Andris F. Bakuzis, João P. F. Longo, Mosar C.Rodrigues, Diego Muraca, Ahmad I. Ayesh, Francisco Sávio M. Sinfrônio, Alan S. de Menezes, Gerardo F. Goya, and Surender K. Sharma, "Engineering Shape Anisotropy of Fe3O4-γ-Fe2O3 Hollow Nanoparticles for Magnetic Hyperthermia", ACS Applied Nano Materials, 2021-003118 (2021).
- 18. Gopal Niraula, Jose A. H. Coaquira, Fermin H. Aragon, Andris F. Bakuzis, Bianca M. G. Villar, Flavio Garcia, Diego Muraca, Giorgio Zoppellaro, Ahmad I. Ayesh, and Surender K. Sharma, "Stoichiometry and Orientation- and Shape-Mediated Switching Field Enhancement of the Heating Properties of Fe3O4 Circular Nanodiscs", Physical Review Applied 15, 014056 (2021).