



## Ayman M. Al-Sawalha

Professor of Theoretical Physics

Jordan

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### Personal Data

- Birth Date: July 23<sup>th</sup>, 1965
- Nationality: Jordanian
- Marital Status: Married

### Objective

Joining a reputable University as a Professor of Theoretical Physics position, Faculty of Science, Physics department, where I can use my knowledge and skills in your University. So that I am in a position to maximize my potential as a productive and active individual who delivers high quality performance at all times to achieve the goal of the University.

### Work Experience

- **Prof. Faculty of Science, Physics Dept. at Jerash University.**  
**Jordan (2018 - Present)**
- **Dean, Faculty of Science, Jerash University.**  
**Jordan (2013 - 2018)**
- **Associate Professor, Physics Dept. King Faisal University.**  
**KSA (2002 - 2013)**
- **Assistant Professor, Faculty of Agriculture and Science, Jerash University.**  
**Jordan (1997 - 2002)**

#### **Functional Tasks :**

- **Follow up on the implementation of the established curriculum accurately according to the time plan.**
- **Teaching, evaluation and research.**
- **Supervising university theses, student research and reports. Supervising the tests.**
- **Follow up on the academic situation and providing support to students.**

## Membership

- Member of the Indian Science Congress.
- Member of the IEEE.
- Member of the Saudi Physics Society.

## Education

- **Ph.D. Physics (Theoretical Physics) from Rajasthan University - India (1993 - 1996).**
- **M.Sc. Physics (Electronics, Comprehensive Exam) from Aligarh Muslim University - India (1991 - 1993)**
- **B.Sc. Physics from Mosel University - Iraq (1983 - 1987)**

## Conferences

- International Conference on Science, Technology, Engineering and Management (ACADEMICSERVA) - Istanbul, Turkey (2018).
- International Conference on Education - Dubai, UAE (2014) .
- Asia Pacific Microwave Conference (APMC 96) - New Delhi, India (1996).
- National Communication Conference - Bombay, India (1996).
- Workshop on Experimental Physics for undergraduate level at Rajasthan University - India (1996).

## Record of Courses Taught University Level:

- **M.Sc. Level**
  - Phys.506 Electrodynamics
  - Phys.503 Mathematical Physics
  - Phys.501 Classical Mechanics
- **B.Sc. Level :**
  - Quantum Mechanics(1)
  - Classical Mechanics I
  - Classical Mechanics II
  - Electromagnetic Theory I
  - Electromagnetic Theory II
  - Mathematical Physics I,II
  - Vector analysis
  - Analytical Mechanics
  - Modern Physics
  - Thermodynamics
  - Vibration and Waves
  - General Physics Lab. (Electricity and Magnetism)
  - General Physics Lab. (Mechanics)
  - General Physics II
  - General Physics I
  - General Physics for Premedical Students

## Administration and Committee service:

- Dean, Faculty of Agriculture and Faculty of Science at Jerash University - Jordan (2015 - 2108).
- Dean, Faculty of Science at Jerash University - Jordan (2013 - 2108).
- Member of the Primary Disciplinary Board at Jerash University (2017)
- Chairman of the Community Service Committee at Jerash University (2016)
- Chairman of the Study Plans Committee at the University of Jerash (2015-2016)
- Member of promotion Committee at Jerash University (2015-2017).
- Member of the founding committee of the College of Pharmacy at Jerash University (2015).
- Member of committee of studying plane at Jerash University (2014 -2017).
- Dean Faculty of Science at Jerash University - Jordan (2013 - 2015).
- Member of committee of studying plane at King Faisal University (2008-2012).
- Member of committee of M.Sc. student's examination at King Faisal University (2008 - 2010).
- Member of the College of Science Council at Jerash University (2001 -2002).
- Supervisor of B.Sc. Student at Jerash University (1999 - 2002).
- Chairman of the Scientific Committee at Jerash University (1999 -2002).

## Funded Projects

- Enhancement of Electrical Conductivity by Al Doped ZnO Ceramic at King Faisal University. (KSA), No. (90069).2009.
- Effect of Cd Substitution in CoFe<sub>2</sub>O<sub>4</sub> Ferrite at King Faisal University.(KSA), No. (90073).2008.
- Order Parameter Dimensionality Study in Copper Oxide Superconductors at King Faisal University. (KSA), No.(8070),2007
- Electrical Conductivity Study in Copper Oxide Superconductors at King Faisal University, (KSA), No.(7033),2007
- On the Two Band Model in Pure and Doped BSCCO Superconductors at King Faisal University. (KSA), No. (6021), 2007.
- Dielectric Parameters of Polyvinyl Chloride (PVC) in Powder Form at Microwave Frequency at King Faisal University, (KSA), No. (6022), 2006.

## Research Interests

- Interaction of electromagnetic waves with plasma medium (ionosphere) and their applications to microstrip antenna and horn antenna (Satellite Antennas).
- Microwave properties of materials in the powder and solid form.
- Radiation Properties of Microstrip Antenna Array printed on ferrite.
- Plasma Physics, Electromagnetic Theory Applications.

## Research and Publications

- 1 Engineering Technologies Microstrip Patch Antenna Radiation, Variation of Quality Factors and Bandwidth of a Conically Depressed.  
A. Al-Sawalha, T Al Smadi  
Journal of Advanced Sciences and Engineering Technologies 1 (1), 7 - 10 - (2018)
- 2 Purity Temperature Dependent for Coupled Harmonic Oscillators  
A Merdaci, A. Jalal, AA Sawalha, A. Bahaoui  
arXiv preprint arXiv:1804.05595 - (2018)

- 3 **Effect of Ionized Plasma Medium on the Radiation of a Rectangular Microstrip Antenna on Ferrite Substrate.**  
A. Al Sawalha  
World Academy of Science, Engineering and Technology, International Journal (2016)
- 4 **Anti-synchronization of fractional order chaotic and hyperchaotic systems with fully unknown parameters using modified adaptive control.**  
M.M Al-Sawalha, A. Al-Sawalha  
Open Physics 14 (1), 304-313 - (2016)
- 5 **Structural Characterization of Deformed Boron Nitride Nanotubes**  
J. Talla, A. Sawalha, H Sabbah  
Journal of Computational and Theoretical Nanoscience 11 (8), 1838-1843 - (2014)
- 6 **On the Two Band Model in Pure and Doped BSCCO Superconductors**  
A. Al Sawalha  
Journal of Natural Sciences 2 (1), 61-76 - (2014)
- 7 **Effect of Ionized Plasma Medium on Radiation Properties of Rectangular Microstrip Antenna Printed on Ferrite Substrate**  
A. Al Sawalha  
New York Science Journal 7 - (2014)
- 8 **Microwave propagation in warm, collisional magneto ionic media.**  
MS Bawa'aneh, AM Al-Khateeb, A. Al Sawalha  
IEEE Transactions on Plasma Science 41 (9), 2496-2500 - (2013)
- 9 **Enhanced microwave absorption in warm plasma: Modified Appleton-Hartree equation.**  
MS Bawa'aneh, AM Al-Khateeb, A. Al Sawalha  
Plasma Science (ICOPS), 2013 Abstracts IEEE International Conference on, 1-1 - (2013).
- 10 **Microwave propagation in a magnetized inhomogeneous plasma slab using the Appleton–Hartree magneto ionic theory.**  
MS Bawa'aneh, AM Al-Khateeb, A. Al Sawalha  
Canadian Journal of Physics 90 (3), 241-247 - (2012)
- 11 **Effect of warm ionized plasma medium on radiation properties of four elements microstrip antenna array printed on ferrite substrate.**  
A. Al Sawalha, IA Mubarak  
Brazilian Journal of Physics 40 (1), 22-25 - (2010)
- 12 **Chaos anti-synchronization of two non-identical chaotic systems with known or fully unknown parameters.**  
A. Al-Sawalha  
Chaos, Solitons & Fractals 42 (3), 1926-1932 - (2009)
- 13 **Enhancement of electrical conductivity by Al-doped ZnO ceramic varistors.**  
A Sedky, A. Al-Sawalha, AM Yassin  
Physical B: Condensed Matter 404 (20), 3519-3524 - (2009)
- 14 **Effect of Warm Ionized Plasma Medium on Radiation Properties of Mismatched Microstrip Termination.**  
A. Al-Sawalha

Journal of Electromagnetic Analysis and Applications 1 (03), 181 - (2009)

- 15 **The Influence of Cu and Mg Dopant on the Microwave Properties of PVC.**  
A. Al sawalha, AA Almulhem, A Sedky  
Ferroelectrics 386 (1), 118 - (2009)
- 16 **Electrical conductivity study in pure and doped ZnO ceramic system.**  
A. Al Sawalha, M Abu-Abdeen, A. Sedky  
Physical B: Condensed Matter 404 (8-11), 1316-1320 - (2009)
- 17 **Impact of Bi<sub>2</sub>O<sub>3</sub> addition on the normal state properties of Bi<sub>3</sub>. 4Pb0. 3Sr<sub>2</sub>Ca<sub>1.3</sub>- x RExCu<sub>2</sub>O<sub>y</sub> ceramics**  
A. Aljaafari, A. Sedky, A. Al-Sawalha  
Journal of Physics and Chemistry of Solids 69 (11), 2919-2923 - (2008)
- 18 **Enhancement of electrical conductivity of ZnO ceramic varistor by Al doping.**  
A. Sedky, A. Al-Sawalha, AM Yassin  
Egypt. J. Solids 31 (2), 205-215 - (2008)
- 19 **On the correlation between order parameter, superconducting volume fraction and critical current density in R: 123 superconductors.**  
A. Sedky, MI Yousef, SM Khalil, A. Al Sawalha  
Solid state communications 139 (3), 126-131 - (2006)
- 20 **On Radiation from a Conically Depressed Microstrip Antenna in Plasma”.**  
A. Al Sawalha  
Indian J. of Physics 71 (5), 597-606 - (1997)
- 21 **Study of Matched Microstrip Termination in Warm Ionized Plasma Medium.**  
A. Al Sawalha  
Indian J. of Physics 71 (2), 173-181 - (1997)
- 22 **Effect of electro acoustic waves on radiation properties of microstrip matched. Coaxial termination**  
A. M Sawalha, D. Bhatnagar, JM Gandhi  
Journal of plasma physics 56 (1), 25-34 - (1996)

## BOOKS

- 1 **Classical Mechanics, (published at King Faisal University, KSA) – (2009).**
- 2 **Electromagnetic, (published at King Faisal University, KSA) – (2010).**
- 3 **Chapter in a Book: Thermoelectric Power (Nova Science Publishers 2012, New York, USA).**

## Other Activities

- Reviewer in APPLIED PHYSICS LETTERS, Published by the American Institute of Physics,  
Argonne National Laboratory, Building 203, Room R-127, Argonne, IL 60439-4843, USA.
- Supervisor of two M.Sc. students.

## Skills

- **Ability to integrate technology into teaching.**
- **Ability to set goals and develop strong and distinctive educational plans.**
- **Respecting appointments and attendance on time.**
- **Can work under pressure while maintaining high level of energy adaptation.**
- **Excellent Command of Computer.**

## Languages

- **Arabic (mother language): Reading, writing and speaking.**
- **English :( Very Good) Reading, writing and speaking.**

## References

Upon requested