

Ayman Sweiti, PhD

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EDUCATION

Ph.D in Physics, Florida Atlantic University, Boca Raton, Florida, *2003*
M.SC. in Physics, University of Jordan, Amman, Jordan, *1992*
B.SC. in Physics, University of Jordan, Amman, Jordan, *1990*

APPOINTMENTS AND TEACHING EXPERIENCE

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| Assistant Professor of Physics, Department of Physics, Palestine Polytechnic University, Hebron, West Bank | <i>2011-present</i> |
| Physics Department Chair, Department of Physics, Palestine Polytechnic University, Hebron, West Bank | <i>2009-2011</i> |
| Assistant Professor of Physics, Department of Physics, Palestine Polytechnic University, Hebron, West Bank | <i>2008-2009</i> |
| Assistant Professor of Physics, Department of Physics, Florida Atlantic University, Boca Raton, Florida, USA | <i>2006-2008</i> |
| Adjunct Instructor, Department of Physics, Florida Atlantic University, Boca Raton, Florida, USA | <i>2003-2006</i> |
| Adjunct Instructor, Science Department, Palm Beach Community College, Boca Raton, Florida, USA | <i>1999-2006</i> |
| Teaching Assistant, Department of Physics, Florida Atlantic University, Boca Raton, Florida, USA | <i>1999-2003</i> |

RESEARCH EXPERIENCE

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| Quantum Communications, Florida Atlantic University, Boca Raton, Florida, USA Transfer of secure information through space via laser beams with orbital angular momentum that involve production, propagation, and sorting the orbital angular momentum states. Computer generated holography and its applications in manipulating light beams, wavefront control and optical signal processing. | <i>2006-2008</i> |
| Photoluminescence and Raman Spectroscopy, Florida Atlantic University, Boca Raton, Florida, USA Probing the electronic structure of semiconductors, Bandgap determination, impurity levels, defect detection, and recombination mechanisms. | <i>2003-2007</i> |
| X-Ray Fluorescence, University of Jordan, Amman, Jordan Quantitative analysis involves determining the amount of each atom present in the specimen from the intensity of measured characteristic x-ray lines. Quality control on environment to monitor the toxic pollutants in air, water, soil, food. | <i>1990-1992</i> |

TECHNICAL EXPERIENCE

LabVIEW Programming: Data acquisition, signal processing, temperature and motion control

systems. Configuration of a motion control system; motion trajectories; feed back control loops. Data acquisition and signal conditioning that involve analog I/O; digital I/O; analog triggering and signal processing. Installation and configuration of the hardware interface and using labVIEW software to build a specific application.

TRAINING COURSES

Project design,

January 31, 2011 to February 4, 2011

International Atomic Energy Agency (IAEA). Vienna, Austria

How to use the Logical Framework Approach (LFA) to design, monitor and evaluating international development projects supported by the International Atomic Energy Agency

Fellowship in radiation shielding and commissioning,

June 1, 2013 to August 30, 2013

Wellington Regional Cancer Center and Florida Atlantic University, Florida, USA

Scientific visit in the field of applied atomic and nuclear spectroscopy, *January 14, 2013 to January 28, 2013*

International Atomic Energy Agency (IAEA). Vienna, Austria

major elements of the training programme: My scientific visit to the IAEA Laboratories at Seibersdorf was aimed to the spectroscopy Labs. The training focused on atomic and nuclear spectroscopic techniques and their various applications. Topics include total reflection x-ray fluorescence spectrometry, energy dispersive x-ray fluorescence spectrometry, gamma ray spectrometry, beta ray spectrometry, alfa ray spectrometry, and mass spectroscopy (ICP-MS).

SKILLS

Computer skills in Matlab, Origin Lab, L^AT_EX, MS Word, Excel, Access, PowerPoint, and Webpage design.

Educational technology applications, web-based course delivery, and distance learning instruction such as Blackboard and WebCT

PROFESSIONAL AFFILIATIONS

American Physical Society

United Faculty of Florida

National Education Association-USA

PUBLICATIONS AND PREPRINTS

A. Sweiti, F. Medina, L. Martinez, and A. Lopez-Revera, Photoluminescence spectroscopy and effective concentration determination of Cd_xZn_{1-x}Se, journal of semiconductors science and technology, 23, 035019, 2008

M. T. Gruneisen, W. A. Miller, R. C. Dymale, and A. Sweiti, "Holographic generation of complex fields with spatial light modulators: Application to quantum key distribution," Applied Optics, Vol. 47, Issue 4, pp. A32-A42, 2008

PATENTS

Ayman Sweiti and Warner Miller, A Digital Sorter of Photon Beams That Carry Orbital Angular Momentum, application pending.

AWARDS

Drs. Ayman Sweiti, Warner Miller, Mark Gruneisen, Mr. Raymond Dymale awarded the United States Air Force Research Laboratory Team Research Paper of the Year 2007. January 30th, 2007.

COURSES TAUGHT AND DEVELOPED

Quantum Mechanics, Classical Mechanics, Statistical Mechanics, Applied Spectroscopy, Thermodynamics, Solid State Physics, Modern Physics, Optics, Electromagnetism, Electrodynamics, Physics for Life Sciences (Physics for Pre Medical Students), General Physics Courses Series.

TALKS GIVEN AT INTERNATIONAL CONFERENCES

Characteristics of the Near Field Diffraction of Laguerre-Gaussian Modes Using Computer Generated Holograms

Quantum Communication with a Twist: QKD via Photon Orbital Angular Momentum (OAM). APS meeting. Denver, Colorado, March 8, 2007.

INVITED SEMINARS AND WORKSHOPS

Photoluminescence spectroscopy of $\text{Cd}_x\text{Zn}_{1-x}\text{Se}$. Florida Atlantic University, Boca Raton, Florida, January 23, 2004.

Project design workshop at the international atomic energy agency (IAEA), Vienna, Austria, 31 January - 4 February 2011.