

MOHAMAD KHAWAJA

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EDUCATION**PhD Electrical Engineering** 1/2011 – 8/2015

University of South Florida

- Advisers: Dr. Elias Stefanakos and Dr. Yogi Goswami – Clean Energy Research Center
- Dissertation: “Synthesis and Fabrication of Graphene/Conducting Polymer/Metal Oxide Nanocomposite Materials for Supercapacitor Applications”

M.S. and B.S. Electrical Engineering 8/2006 – 12/2010

University of South Florida

- 5-year dual degree program
- B.S. Cum Laude

EMPLOYMENT EXPERIENCE**Assistant Professor**

German Jordanian University

2/2016 – present

- Faculty in the Energy Engineering Department
- Coordinate Electrical Circuits courses, labs, and graduation projects.
- Courses taught: Energy Storage, Electronics, Electrical Circuits, and Electrical Circuits Lab.

Teaching Assistant

University of South Florida

8/2009 – 8/2015

- Developed and conducted full lectures to classes of 60 undergraduates.
- Created and evaluated lesson plans, homework, projects, quizzes, and exams.
- Taught circuit simulation software.

College of Engineering Tutor

University of South Florida

5/2008 – 12/2010

- Tutored individuals and groups of students in Calculus I, II, III, Physics I, II, Electrical Systems I, II.

RESEARCH EXPERIENCE**Binary Metallic Catalysts for the Oxidation of Methanol in Fuel Cells**

German Jordanian University

9/2016 – present

- Prepare catalysts with different materials and different concentrations.
- Evaluate the performance of the synthesized catalysts towards the oxidation of methanol.

Electrochemical Energy Storage Research Assistant

University of South Florida

1/2011 – 8/2015

- Conducted advanced materials and electrochemical storage research.
- Maintained lab equipment and ensured complete functionality.
- Performed various experiments in multiple interdisciplinary laboratories.
- Synthesized organic and inorganic electrode materials.
- Fabricated supercapacitor devices.
- Used different characterization tools to evaluate the integrity and performance of the fabricated supercapacitors.

Enhancing the Specific Capacitance and Energy Density of Supercapacitor Electrodes

University of South Florida

2011 – 2015

- Synthesized electrode materials from their precursors using the sol-gel technique. Materials synthesized: RuO₂, MnO₂, PANI, POA, PPy. Composite materials: Graphene/RuO₂, Graphene/MnO₂, Graphene/PANI, MoS₂/PANI.

- Fabricated cells in different configurations using 2-electrode and 3-electrode setup in aqueous and non-aqueous electrolytes.
- Studied the precursors' molarity effects on the electrochemical performance.
- Varied supercapacitors' mass-loading for most optimal performance and recommended a set of guidelines for performance evaluation of devices.

Reducing the Supercapacitor Leakage Current

University of South Florida

2013 – 2015

- Used electrophoretic deposition of high dielectric material on electrodes in a non-aqueous dispersion medium to deposit barium strontium titanate as an inorganic blocking layer on graphene electrodes in order to evaluate its effect on reducing leakage current in supercapacitors.

PROJECTS

DESIRE – Development of higher Education teaching modules on the Socio-economic Impacts of the Renewable Energy implementation. Erasmus+ program: 561638-EPP-1-2015-1-JO-EPPKA2-CBHE-JP funded by the European commission for a duration of two years 2016 – 2018

- Develop course modules to teach the socio-economic impacts on implementing renewable energy.
- Disseminate the progress and materials to partners and stakeholders.

Supervisor of Masters Theses

Abdel Ghaffar Al Kelany

2017 – 2018

- Thesis: “Passive Cooling of PV Panels”

Supervisor of Graduation Projects at the German Jordanian University

2016 – 2017

- “Investigation of the Power Production from Intermittent Renewable Resources in Jordan”
- “Impact and Feasibility Study Regarding Photovoltaic Penetration in Jordan”
- “Review on Thermal Energy Storage systems for Concentrated Solar Power (CSP) applications”
- “Investigation of bypass-diode failure by IR-imaging”
- “Energy Service Companies Prospect”

IEEE Southeast Region Hardware Competition Finalist

2009 – 2010

- Built a robot capable of picking up recyclable beverage containers and sorting them appropriately.

COMPUTER SKILLS

Operating Systems:	Windows XP, 7, 8, 10, OS X, iOS, Linux
Computer Languages:	Matlab, Simulink, LabView
Computer Aided Drafting:	OrCAD, AutoCAD, Visio
Mathematical Analysis:	MathCAD
Office and Typesetting Tools:	Word, Excel, PowerPoint

LABORATORY AND INSTRUMENTATION SKILLS

Material Synthesis:	Metal Oxides, Metal Sulfides, Conducting Polymers, Nanocomposite Materials
Spectroscopy:	Cyclic Voltammetry, Electrochemical Impedance Spectroscopy Energy Dispersion Spectroscopy, X-Ray Diffraction, IR-UV Spectroscopy
Microscopy:	Scanning Electron Microscopy, Atomic Force Microscopy

LANGUAGES

English (Full Professional)
Arabic (Native)

AFFILIATIONS

Member of the Institute of Electrical and Electronics Engineers (IEEE).
Member of Phi Sigma Pi – Co-Ed Honors Fraternity.
Member of Theta Tau – Co-Ed Engineering Fraternity.

RELEVANT COURSES

Electrochemical Diagnostics Techniques
Solar Energy and Applications
Digital Signal Processing I, II
Nanotechnology
Principles of Engineering Management

Electro-optics
Design of Solar Power Plants
DSP/FPGA
Sustainable Energy
Management of Technological Change