



## CURRICULUM VITAE

**Eman Ahmad Muneer Abdelhafez**

*Alternative Energy Technology Department/ Faculty of  
Engineering and Technology*

*Al-Zaytoonah University of Jordan, Amman, Jordan*

*Phone: +962776230499*

*Fax: +96264291432*

*E-mail: [eman.abdelhafez@zuj.edu.jo](mailto:eman.abdelhafez@zuj.edu.jo)*

*Homepage: <http://www.zuj.edu.jo/portal/eman-abdelhafez/>*



### 1. Personal Data

Date of Birth: 11/10/1983  
Nationality: Jordanian

### 2. Education

- M.Sc. (Mechanical Engineering) 2009, University of Jordan, Amman, Jordan
- B.Sc. (Mechatronics Engineering) 2006, University of Jordan, Amman, Jordan

### 3. Employment

#### Academic Positions

- Lecturer at the Alternative Energy Technology Department, Al-Zaytoonah University of Jordan since October 2016.
- Lecturer at the Mechanical Engineering Department, Al-Zaytoonah University of Jordan since October 2011 until September 2016.
- Lecturer at the Electrical Engineering Department, Al-Zaytoonah University since October 2009 until September 2011.
- Working as Lab Supervisor, Mechanical Engineering Department at The University of Jordan from September 2008 to August 2009.
- Working as Teaching Assistant in Mechanical Engineering Department at the



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University of Jordan for "Thermal and Fluid Science", "Strength of Materials" and "Thermodynamic" courses from February 2007 to June 2009.

#### **Administrative Positions**

- Assistant Dean for Quality Assurance Affairs in Engineering and Technology Faculty, Al-Zaytoonah University of Jordan since October 2016 until September 2017.
- Quality Assurance Office Director in Engineering Faculty, Al-Zaytoonah University of Jordan since September 2011 until February 2016.
- Assistant Dean for Student Affairs in Engineering Faculty, Al-Zaytoonah University of Jordan since November 2010 until June 2012.

#### **4. Research Interests**

- Microelectromechanical Systems ( MEMS)
- Microfluid
- Engineering Application in Artificial Intelligent
- Energy

#### **5. Membership in Scientific Societies and Associations**

- Member in Jordan Engineer Association

#### **6. Honors and Awards**

- Certified Six Sigma Green Belt (CSSGB)" from the Jordan Academy for Quality Management in June 2014.
- Certified Quality Manager from Jordan Society for Quality in April 2013.

#### **9. Teaching Experience**

- *Undergraduate Courses*
  - Energy Economics and Management
  - Thermodynamics I
  - Strength of Materials
  - Technical Writing
  - Engineering Economy
  - Control Systems
  - Electronics I
  - Electronics II
  - Numerical Methods for Engineers
  - Introduction to Linear Systems
  - Probability and Statistics for Engineers
  - Engineering Mechanics



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- Engineering Workshops
- Programming in C++ Language
- Statics
- Engineering Drawing
- Dynamic and Vibration Laboratory
- Mechanical Vibration Laboratory
- Engineering Measurement Laboratory
- Thermodynamics Laboratory

### 10. Grants

Project Title	Sponsor	Funds
The Utilization of Water Produced Hydrogen for domestic heating purposes	Al-Zaytoonah University of Jordan	10,080 JD
Improvement of the PV performance by cooling using phase change material and by minimizing the deposited dust layer thickness along its surface	Al-Zaytoonah University of Jordan	100,680 JD
Solar Evacuated Tube Hybrid Heating System	Al-Zaytoonah University of Jordan	23,320 JD
Energy management for Hybrid Fuel-Cell/Battery system	Al-Zaytoonah University of Jordan	29,900 JD
Water disinfection using solar energy	Al-Zaytoonah University of Jordan	21,500 JD
Estimation of power produced by PV generator using Data Mining and Artificial Neural network (ANN): a case study	Al-Zaytoonah University of Jordan	7,000 JD
Project Title	Sponsor	Funds
Modernization of teaching methodologies in higher education: EU experience for Jordan and Palestinian territory	Erasmus Plus	990,590.00 €
Development of Environmental Engineering and injection of climate change concept for Undergraduated curriculum: EU experience for Jordan and Syria.	Erasmus Plus	999,512.00€

### 11. Membership of Committees



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- **University**
  - Member of executive committee for Quality Assurance / Academic, Al-Zaytoonah University of Jordan since April 2011 until February 2016.
  - Member of Quality Assurance Committee for ABET accreditation in the Department of Electrical Engineering, Al-Zaytoonah University of Jordan from 2009 to 2011.

## 12. Professional and Scientific Meetings

### *Scientific Meetings Organized*

- Member of the organization committee **Global Conference on Renewable and Energy Efficiency for Desert Regions (GCREEDER 2016)**.
- Member of the organization committee **Zaytoonah University International Engineering Conference on Design and Innovation in Sustainability 2014 (ZEC Sustainability 2014)**.
- Member of the organization committee **Global Conference on Renewable and Energy Efficiency for Desert Regions (GCREEDER 2013)**.
- Member of the organization committee **International conference on Renewable Energy and its Future in the Arab world 2013 (ICREFAW conference 2013)**.
- Member of the organization committee **The Third International Arab Conference on Quality Assurance in Higher Education (IACQA 2013)**.
- Member of the organization committee **Zaytoonah University International Engineering Conference on Design and Innovation in Infrastructure 2012 (ZEC infrastructure 2012)**.
- Member of the organization committee **Global Conference on Renewable and Energy Efficiency for Desert Regions (GCREEDER III)**.

### *Participation in Scientific meetings*

- **“Quality Management System Foundation Course ISO 9001:2015” training course**, organized by DVL.GL from 12<sup>th</sup>/4/2017 to 13<sup>th</sup>/4/2017
- **“Certified Assessor” training course** organized by King Abdullah II Center for Excellence from 3<sup>rd</sup> /10/2016 to 5<sup>th</sup> /10/2016.
- **“Introduction to Solar cell Systems part (2)” online course** organized by Edraak and TU Delft University from 18<sup>th</sup>/10/2015 to 5<sup>th</sup> /12/2015.
- **“Introduction to Solar cell Systems part (1)” online course** organized by Edraak and TU Delft University from 9<sup>th</sup>/8 /2015 to 20<sup>th</sup> /9/2015.
- **“QMS ISO 9001:2008 Consultant” training course** organized by the Jordan Academy for Quality Management from 5<sup>th</sup>/4/2015 to 23<sup>th</sup>/4/2015.
- **“Energy Cost Reduction Using Six Sigma, Kaizen, 5 S, Lean Manufacturing, and Behavioral Energy Change” online course** organized by the Association of Energy Engineers from 20<sup>th</sup> /11/2014 to 21<sup>st</sup> /11/2014.



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- **“Certified Six Sigma Green Belt (CSSGB)” training course** organized by the Jordan Academy for Quality Management from 1<sup>st</sup>/4/2014 to 10<sup>th</sup>/4/2014.
- **“Planning and implementation of study of self-assessment” Workshop** organized by Al-Zaytoonah University of Jordan from 20/1/2014 to 20/3/2014.
- **“Preparation of External Reviewers & Site Visit” Workshop** organized by the Association of Arab Universities and Al-Zaytoonah University of Jordan from 2<sup>nd</sup>/11/2013 to 4<sup>th</sup>/11/2013
- **“QMS Internal Audit (ISO 9001:2008)” training course** organized by the Jordan Academy for Quality Management from 2<sup>nd</sup>/9/2013 to 4<sup>th</sup>/9/2013.
- **“Self-evaluation for academic programs” Workshop** organized by the Association of Arab Universities from 15<sup>th</sup>/6/2013 to 16<sup>th</sup>/6/2013.
- **“Institutional Assessment Based on the European Model (EFQM)”** organized by the Association of Arab Universities, Strategic Center Organization Performance Improvement (SCOPI) and Petra University from 27<sup>th</sup>/4/2013 to 29<sup>th</sup>/4/2013.
- **“Using Baldrige Scoring System for Internal Quality Assurance” Workshop** organized by the Association of Arab Universities and Al-Zaytoonah University of Jordan at 4<sup>th</sup> / 4 /2013.
- **“Preparation of self-assessment document for Academic programs” Workshop** organized by the Association of Arab Universities and Al-Zaytoonah University of Jordan at 4<sup>th</sup> / 4 /2013.
- **“Quality Management and Excellence Diploma/ Certified Quality Manager”** organized by The University of Jordan and Jordan Society for Quality during the period from 15<sup>th</sup>/9/2012 -15<sup>th</sup>/1/2013 for 150hr.
- **“Project Management Training & Certification Program (PMP)” workshop** organized by Engineers Training Center / Jordan Engineers Association (JEA) during the period from 20<sup>th</sup>/3/2010 -21<sup>st</sup>/4/2010 for 52hr.
- **"Training of Trainers" workshop** organized by Queen Zein Al Sharaf Institute for Development/ Princess Basma Youth Resource Center from 23<sup>rd</sup>/11/2008 to 27<sup>th</sup>/11/ 2008.
- **"Interviewing and Television/ Documentary Production Workshop”** organized by Queen Zein Al Sharaf Institute for Development/ Princess Basma Youth Resource Center from 24<sup>th</sup>/ 2/2008 to 26<sup>th</sup>/2/2008.
- **"People, Politics and Films" international workshop** organized by at Queen Zein Al Sharaf Institute for Development/ Princess Basma Youth Resource Center from 31<sup>st</sup> /7/2007 to 6<sup>th</sup>/8/ 2007.
- **"Film Making" workshop** organized by Queen Zein Al Sharaf Institute for Development/ Princess Basma Youth Resource Center from 19<sup>th</sup> /6/2007 to 21<sup>st</sup> /6/2007.
- Technical training course on **PLC and Electro-Pneumatics (Wiring and Programming)** applications in the Technical Center for Industrial Services.



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- Programming course in **Assembly Language** for 30hr from Internet and Computer Club (ICC) in University of Jordan.
- Course in **Webpage Design by Using HTML** for 30hr from Internet and Computer Club (ICC) in University of Jordan.
- Course in **Computer Maintenance** for 20hr from Internet and Computer Club (ICC) in University of Jordan.

### 13. Publications

- M. A. Hamdan, Jehad Yamin and E. A. Abdelhafez. “**Passive cooling roof design under Jordanian climate**” Sustainable cities and Society, 2012, volume 5, pages 26–29.
- Y. Abdullat, M. Hamdan, E. Abdelhafez, A. Sakhrieh, “**Development of Neural Networks for Enhancement of thermal energy storage using phase change material**” International Journal of Thermal and Environmental Engineering (IJTEE), 2013, volume 5, issue 2 pages 167–173.
- M. A. Hamdan, R. A. Haj Khalil and E. A. Abdelhafez “**Comparison of Neural Network Models in the Estimation of the Performance of Solar Still under Jordanian Climate**” Journal of Clean Energy Technologies (JOCET), Vol. 1, No. 3, May 2013, pages 238-242.
- M. H. Salah, E. Abdelhafez, M. Abu Mallouh, and M. Hamdan” **Artificial neural network-based models for electrical actuated automotive cooling systems**” 9th International Symposium on Mechatronics and its Applications (ISMA 2013), April 9-11, 2013 Amman, Jordan.
- Lubna. B. Mohammed, Mohammad. A. Hamdan, Eman A. Abdelhafez, and Walid Shaheen. “**Hourly Solar Radiation Prediction Based on Nonlinear Autoregressive Exogenous (NARX) Neural Network**” Jordan Journal of Mechanical and Industrial Engineering, Vol. 7, Number 1, December 2013, Pages 11–18.
- Mohammad Hamdan, Lubna Badri and Eman Abdelhafez “**Modeling Triple Solar Still Production Using Jordan Weather Data and Artificial Neural Networks**” International Journal of Thermal and Environmental Engineering (IJTEE), 2014, volume 7, Number 2, pages 87-93.
- T. Tabazah, M. A. Hamdan, O. Abo Deyab and E. Abdelhafez “**Utilization of Water Produced Hydrogen for Domestic Heating Purposes**” International Journal of Thermal and Environmental Engineering (IJTEE), 2014, volume 7, Number 2, pages 95-99.
- M. Abu mallouh, B. Surgenor, E. Abdelhafez, M. Salah, M. Hamdan and M. Yousef, “**Development of Driving Cycle for Amman City with Performance Evaluation for ICE Vehicle**” ASME 2014 12th Biennial



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Conference on Engineering Systems Design and Analysis, Copenhagen, Denmark, June 25-27, 2014.

- M. Abu mallouh, B. Surgenor, M. Salah, E. Abdelhafez, A. Hamdan and M. Hamdan, **“Performance Comparison of Different Power Management Control Strategies for a Hybrid Fuel Cell/Battery Vehicle”** ASME 2014 12th Biennial Conference on Engineering Systems Design and Analysis, Copenhagen, Denmark, June 25-27, 2014.
- M. Abu Mallouh, E. Abdelhafez, M. Salah, M. Hamdan, and B. Surgenor, **“Model Development and Analysis of a Mid-Sized Hybrid Fuel Cell Vehicle with a Representative Driving Cycle”**, Journal of Power Sources ,2014, Volume 260, Pages 62–71.
- Bassam Al-Naami, Mohammad Abu Mallouh, Eman Abdelhafez **Performance Comparison of Adaptive Neural Networks and Adaptive Neuro-Fuzzy Inference System in Brain Cancer Classification”**, Jordan Journal of Mechanical and Industrial Engineering, Vol. 8, Number 5, October 2014, Pages 305 - 312.
- M. A. Hamdan, A.A. Badran, E. A. AbdelHafez and A. M. Hamdan” **Comparison of neural network models in the estimation of the performance of solar collectors”** Journal of Infrastructure Systems, Volume 22 Issue 4 - December 2016.
- E. A. Abdelhafez, M. A. Hamdan, M. Abu mallouh, L. M. Badri A. Aboushi, **“The Effect of Insulation layer to prevent water vapor condensation along the inside surface of a building wall using Neural Network”** Journal of Infrastructure Systems, Volume 22 Issue 4 - December 2016.
- M. A. Hamdan, E. A. Abdelhafez, A. M. Hamdan, and R. A. Haj Khalil **“Heat Transfer Analysis of a Flat-Plate Solar Air Collector by Using Artificial Neural Network”**, Journal of Infrastructure Systems, Volume 22 Issue 4 - December 2016.
- Eman A. Abdelhafez, Mohammad A. Hamdan, Ahmad R. Al Aboushi **“Simulation of Solar Thermal Hybrid Heating System Using Neural Artificial Network”**, International Journal of Solar Energy Research (JSER), Vol.1, No.2, 2016.
- M. Abu Mallouh, M. Salah, E. Abdelhafez, M. Hamdan and B. Surgenor, **“Modeling, Simulation and Performance Comparison of Conventional Vehicle against Three Configurations of Hybrid Vehicles”**, International Review on Modelling and Simulations, Vol 9, No 4, 2016.
- Abu-Ghoush, M., Samhour, M., Al-Holy, M., Albashir, A. and Abdelhafez, E., **“Formulation and Evaluation of Coating Content and Their Distribution on Chips Products by Automated Inspection Using Fuzzy–Based Image Processing”**, Journal of Food Process Engineering Volume 40, Issue 1, February 2017 ,e12302.



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- M. A. Hamdan, E. A. Abdelhafez, and O. Ghnaimat “**Prediction of Hourly Solar Radiation in Amman-Jordan by Using Artificial Neural Networks**” International Journal of Thermal and Environmental Engineering (IJTEE), 2017, volume 14, Number 2, pages 103-108.
- Esra’a Bashayreh and Eman Abdelhafez,” **Estimation of power produced by PV generator Based on Artificial Neural Networks**”, International Journal of Applied Engineering Research, 2017, Volume 12, Number 19, pp. 9209-9216.
- Mohammad H. Salah, Mohammad A. Abu Mallouh, Mohammad Youssef, Eman Abdelhafez, Mohammad Hamdan, and Brian Surgenor, “**Hybrid Vehicular Fuel Cell/Battery Powertrain Test Bench: Design, Construction, and Performance Testing**”, Accepted for publication in Transactions of the Institute of Measurement and Control, 2016.
- Layth Mohsin, Ahmad Sakhrieh, Ahmad Aboushi, Amer Hamdan, Eman Abdelhafez, Mohammed Hamdan, “**Optimized Cleaning and Cooling for Photovoltaic Modules Based on the Output Performance**”, Accepted for publication in Thermal Science Journal, 2016.
- Mohammad Hamdan, Mohammad Shehadeh, Ahmad Al Aboushi, Amer Hamdan and Eman Abdelhafez, “**Photovoltaic Cooling Using Phase Change Material**”, Accepted for publication in Jordan Journal of Mechanical and Industrial Engineering, 2018.
- Eman Abdelhafez” **Modelling of Nanofluid Cooled PV Module**” Submitted for publication (2017).
- Mohammad Hamdan and Eman Abdelhafez, “**Estimation of Power Produced by PV Generator Using Data Mining in MATLAB**”, Submitted for Publication (2017).
- Nabeel Aboshaban, Eman Abdelhafez and Maram Saber,” **Estimation of power produced by PV generator using Data Mining: a case study**”, Submitted for Publication (2017).
- Eman Abdelhafez, Ahmad Al Aboushi and Esraa Al-Turk, “**Water Disinfection by Solar Energy**”, Submitted for publication (2017).