

# AYEDH ALQAHTANI – CURRICULUM VITA

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Electrical Engineering Department  
College of Technological Studies  
Public Authority for Applied Education & Training

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## CURRENT POSITION

**Assistant Professor**, Electrical Engineering Department  
College of Technological Studies (CTS)  
Public Authority for Applied Education & Training, PAAET  
Kuwait

## EDUCATION

- PhD The Ohio State University**, Electrical Engineering  
*Dec. 2013*  
Dissertation: “Modeling and Control of Photovoltaic Systems for Microgrids”
- MSc. University of Southern California**, Electrical Engineering  
*Jan. 2006*
- MSc. Kuwait University**, Electrical Engineering  
*May. 2004*
- BSc. University of North Carolina at Charlotte**, Electrical Engineering  
*May 2000*

## EXPERIENCE

### **UNCCharlotte Cameron Research Center, (1/1999-5/2000)**

- Worked in Microelectronics Clean Room.

### **Kuwait University, (10/2000-5/2004)**

#### *Laboratory Engineer and TA*

- Taught several electrical engineering laboratories for undergraduate students including: Electric Circuits, Microelectronic systems, and VLSI systems.
- Responsible for preparing, maintaining, repairing, planning and placing orders for laboratories equipment.
- Worked with professors in assorted assignments.
- Aided in establishing Microelectronics Fabrication Clean Room.

**College of Technological Studies, PAAET, Kuwait, (1/2006-12/2008)**

*Lecturer*

- Taught several electrical engineering courses and laboratories for undergraduate students including: Electric Machinery Fundamentals, DC and Sync. Machines, Electrical Measurements, Advanced Computer Applications, Electrical Drawing, and Field Training.
- Revised syllabus to meet accreditation standards.
- Worked with professors in assorted assignments and committees.

**College of Technological Studies, PAAET, Kuwait, (1/2014-now)**

*Assistant Professor*

- Teaching several electrical engineering courses and laboratories for undergraduate students.
- Carry out debate sessions in regular classes to help students to understand the subjects better.
- Arrange expert visits for students on a periodic basis to create an interest about the subject.
- Provide students with information outside the classroom such as the future prospects on the subject, its importance, etc.
- Direct students on how to use the study materiel for positive results in potential work.
- Engage students/colleagues in related local conferences and meetings.
- Serve on academic/administrative committees to deal with institutional policies.
- Write grant proposals to secure external research funding.

**PUBLICATIONS**

A. Alqahtani, "A simplified and accurate photovoltaic module parameters extraction approach using Matlab," 2012 IEEE International Symposium on Industrial Electronics (ISIE), vol., no., pp.1748-1753, 28-31 May 2012.

A. Alqahtani, M. Abuhamdeh, and Y. Alsmadi, "A simplified and comprehensive approach to characterize photovoltaic system performance," Energytech, 2012 IEEE, vol., no., pp.1-6, 29-31 May 2012.

A. Alqahtani, and V. Utkin, "Self-optimization of photovoltaic system power generation based on sliding mode control," IECON 2012 - 38th Annual Conference on IEEE Industrial Electronics Society, vol., no., 25-28 October 2012.

A. Alqahtani, and V. Utkin, "Control of photovoltaic system power generation using sliding mode control," International Conference on Power System Technology (POWERCON 2012), November 2012.

A. Alqahtani, M. Abuhamdeh, Y. Alsmadi, and V. Utkin "Photovoltaic power optimization using sliding mode control with two axis tracking system," Energytech, 2013 IEEE, vol., no., pp.1-6, 21-23 May 2013.

A. Alqahtani, S. Marafi, B. Musallam and N. El Din Abd El Khalek, "Photovoltaic Power Forecasting Model Based on Nonlinear System Identification," in *Canadian Journal of Electrical and Computer Engineering*, vol. 39, no. 3, pp. 243-250, Summer 2016.

Ayedh Alqahtani, Mohammad Alsaffar, Mohamed El-Sayed, and Bader Alajmi, "Data-Driven Photovoltaic System Modeling Based on Nonlinear System Identification," *International Journal of Photoenergy*, vol. 2016, Article ID 2923731, 9 pages, 2016.

Ayedh Alqahtani, Mohammad Alsaffar, Mohamed El-Sayed, and, Hussian Behbehani, "A Photovoltaic System Experiment in a Laboratory Environment," *International Journal of Electrical Engineering Education*, vol. 55, issue 1, pp. 31-43, 2018.

Alsmadi, Y. M., Alqahtani, A., Giral, R., Vidal-Idiarte, E., Martinez-Salamero, L., Utkin, V., ... Abdelaziz, A. Y. (2020). Sliding Mode Control of Photovoltaic Based Power Generation Systems for Microgrid Applications. *International Journal of Control*, 1–45.

**RESEARCH  
COLLABORATION**

- Conducted a photovoltaic experimental set-up in cooperation with the Renewable Energy Group in the Institute for Energy and Environment, University of Stirling Glasgow, in Scotland, United Kingdom. 2012.
- Established a collaborative research work, between Rovira i Virgili University, in Tarragona, Spain and the Ohio State University. 2013.
- Established a collaborative research work with Ministry of Electricity & Power, Department of Studies and Research, Kuwait. 2015.
- Established a collaborative research work with Electrical Engineering Department, College of Petroleum & Engineering, Kuwait University. 2017.

**PROFESSIONAL  
AFFILIATIONS**

IEEE, member  
IEEE Industrial Electronics Society, member  
IEEE Power & Energy Society, member  
IEEE Control Systems Society, member  
IEEE Power Electronics Society, member  
Kuwaiti Engineers Society, Life membership

**PROFESSIONAL  
SERVICE**

**Session Chair**  
IEEE Transportation Electrification Conference & Expo Asia-Pacific, 2014.  
**Reviewer for:**

- IEEE Transactions on Industrial Electronics.
- IEEE Transactions on Power Electronics.
- IEEE Journal of Photovoltaic.
- IET Power Electronics.
- IEEE Transactions on Sustainable Energy.

### **Workshop**

- Delivered a five days workshop “*Fundamentals of Solar Photovoltaic Systems*” for faculty members under the supervision of Ebn Al-Haitham In-Service Training Center, Public Authority for Applied Education & Training. January 2019.
- Delivered a five days workshop “*Writing and publishing books*” for faculty members under the supervision of Ebn Al-Haitham In-Service Training Center, Public Authority for Applied Education & Training, 2017.
- Delivered a five days workshop “*Using emerging technologies in instruction and learning*” for faculty members under the supervision of Ebn Al-Haitham In-Service Training Center, Public Authority for Applied Education & Training, 2016.

### **Invited Speaker**

- Delivered a lecture “*Education and renewable energy Hand-in-Hand*” for Intersolar ME 2023, Dubai, 2023.
- Delivered a lecture “*Graduate Education: Need or Prestige*” for new graduate students under the supervision of the office of Vice-Dean for Academic Affairs, College of Petroleum & Engineering, Kuwait University, 2014.
- Delivered a lecture “*Engineers who have changed the world*” for engineering students under the supervision of the office of Vice-Dean for Student Affairs, College of Petroleum & Engineering, Kuwait University, 2017.
- Delivered a lecture “*Engineers who have changed the world*” for engineering students under the supervision of the office of Vice-Dean for Student Affairs-Female, College of Technological Studies, PAAET, 2017.
- Delivered a lecture “*A photovoltaic system experiment in a laboratory environment*” for Electrical Engineering Department, School of Engineering, Australian College of Kuwait, 2018.
- Delivered a lecture “*A photovoltaic system projects in Kuwait*” for Electrical Engineering Department, School of Engineering, American University of Kuwait, 2019.

### **HONORS & AWARDS**

- Winner of best paper presentation award in IECON 2012 – 38<sup>th</sup> Annual Conference of IEEE Industrial Electronics.
- Winner of Fourth Annual John D. and Alice Nelson Kraus Memorial

Student Poster Competition, the Ohio State University, Oct 2012.

**LANGUAGES**

- Arabic.
- English.
- Spanish: beginner.

**COMPUTER  
SKILLS**

- Matlab & Simulink.
- Pspice.
- Labview.
- Mathematica.
- PSCAD.
- Scilab.

**VOLUNTEER  
EXPERIENCE &  
CAUSES**

- Participated in cleaning and rearranging multiple laboratories in the ECE Department, at Ohio State University.
- Obtained a donation from Wagan Tech, for the ECE Department at Ohio State University, to provide solar power cube (sophisticated solar power generator) for educational demonstration, encouraging students to play role in creating future environmental friendly technology.

**GRADUATE  
COURSES**

- Engineering Analysis I
- Mathematical Optimization
- Solid State Electronics
- Power Systems
- Advanced Power System Protection
- Electric Power Distribution
- High Voltage Engineering and Lab.
- Special Topics Course: Photovoltaic Systems.
- Power Engineering Analysis
- Impact of Computing
- Lumped Systems Theory
- Energy and the Environment
- Electromech Motion
- Power System Control
- Sliding Mode Control
- Control Sig-Sys Lab.

**REFERENCES**

**Vadim I. Utkin**, Professor  
Department of Electrical & Computer Engineering  
The Ohio State University  
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**Longya Xu**, Professor  
Department of Electrical & Computer Engineering  
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