



AHMED M. ZOBAA

ASSISTANT PROFESSOR CAIRO UNIVERSITY FACULTY OF ENGINEERING

Ahmed M. Zobaa received the B.Sc. (Hons), M.Sc., and Ph.D. degrees in electrical power and machines from Cairo University, Giza, Egypt, in 2013, 2018, and 2023, respectively. He was a Teaching Assistant from 2013 to 2018, an Assistant Lecturer from 2018 to 2023, and is now Assistant Professor at Cairo University. He was a part-time Teaching assistant at the American University in Cairo (AUC) from 2014 to 2023. His research interests include power quality, Photovoltaics, and renewable energy. Dr. Ahmed M. Zobaa is also a Registered Member of the Egypt Syndicate of Engineers since 2013. He has been an IEEE member since 2010, the IEEE Power and Energy Society (PES) since 2015, and IEEE Young Professionals since 2015.

 [linkedin.com/in/a7medzoba3](https://www.linkedin.com/in/a7medzoba3)

 a.m.zobaa@eng.cu.edu.eg

 +2-01063785395

 <https://scholar.cu.edu.eg/?q=amzobaa/>

RELEVANT SKILLS

- University Teaching
- Electrical Engineering
- Fluency in English

WORK EXPERIENCE (ACADEMIC)

Cairo University, Faculty of Engineering, Electrical Power Engineering Department

Assistant Professor

January 2024 till Now

Teaching Utilization of Electrical Energy (EPM623) and Digital Relays (EPM625) for postgraduate students.

Teaching Renewable Energy Sources Grid-connected Systems (EPE4013), Power Electronics Applications (EPMN311), Electrical Power Distribution (EPES412), and Design of Renewable Energy Equipment (MEPS432) courses for undergraduate students.

Assistant Lecturer

November 2018 to December 2023

Teaching Assistant

January 2014 to November 2018 (4 years 10 months)

Teaching courses, researching, and developing some lab experiments. Some of the courses I've taught are Electric Circuits I, Principles of Energy Conversion, Computer Applications, Electric Measurements II, Electric Circuits II, Generation of Electric Energy, Utilization of Electric Energy, Elements of Power Systems, Power System Protection, and Automatic Control I.

The American University in Cairo (AUC) School of Sciences and Engineering (SSE)

Adjunct Assistant Professor

January 2024 till Now

Teaching Circuit Analysis I lab (ECNG2109) course.

Part-time Teaching Assistant

September 2014 to December 2023 (9 years 11 months)

Teaching General Electrical Engineering (ENGR3212), Power and Machines (ECNG360), Circuit Analysis I (ECNG2105), and Circuit Analysis I lab (ECNG2109) courses for undergraduate students.

The British University in Egypt (BUE)

Faculty of Energy and Environmental Engineering

Adjunct Assistant Professor

January 2024 till July 2024

Teaching Electric Machines I (BES124) and Network Interfacing of Renewable Resources (RENE324) courses.

Ahram Canadian University (ACU)

Faculty of Engineering

Adjunct Assistant Professor

January 2024 till July 2024

Teaching Electrical Measurements I (EPC103n) and Practical Applications in Electrical Engineering 6 (EEP406) courses.

WORK EXPERIENCE (ACADEMIC)

Zewail City, University of Science and Technology (ZC, UST)

Renewable Energy Engineering Department

Adjunct Assistant Professor

September 2024 till Now

Teaching Power Electronics (REE411) course.

Institute of Aviation Engineering and Technology (IAET)

Electric Power and Machines Department

Adjunct Assistant Professor

September 2024 till Now

Supervising a graduation project group of senior-year students.

WORK EXPERIENCE (PROFESSIONAL)

ZS Engineering Consultancy

5th Settlement, Cairo, Egypt

Project Manager

February 2024 till Now

Responsible for managing a number of local and international MEP design projects in Egypt, Saudi Arabia, and Bahrain. The project management includes both technical and financial aspects.

Schneider Electric Egypt

Zohr Development Project

Electric Design Engineer

January 2017 till December 2017

Responsible for developing electrical design layouts for Zohr's ground station "The largest Egyptian Natural Gas field in the Midterannean". The design included LV lighting, power and SLD layouts and MV layouts.

Generation and Utilization of Electric Energy Lab

Faculty of Engineering, Cairo University

Renewable and Protection Lab Engineer

January 2014 till December 2023

Responsible for developing, teaching, and preparing lab experiments, which included:

- ATS Power and Control Circuits.
- Renewable Energy (PV and Wind) labs including:
 - Schneider XW PRO hybrid solar inverter.
 - Schneider MPPT 80-600 MPPT and charge controller.
- Protection Relays and CBs labs, including:
 - Schneider MCB and NSX MCCB testing lab.
 - Schneider SEPAM and Tesys relays (Overcurrent, Unbalance, Earth fault protection).
 - SEL HV distance, differential, and overcurrent relays.
 - CT and PT testing.
 - ABB REF615, REF620.
 - SIEMENS DIGSI 4 and 5.

EDUCATION

Doctorate of Philosophy in Electrical Power and Machines Engineering

Cairo University, Faculty of Engineering

March 2019 to November 2023

Thesis title: "Innovative Approaches for Effective Harmonic Mitigation and Resonance Damping in Electric Power Systems: A Study of Novel Methods and Techniques"

These publications were extracted from the thesis:

1. A. M. Zobaa, S. H. E. Abdel Aleem and H. K. M. Youssef, "Comparative Analysis of Double-Tuned Harmonic Passive Filter Design Methodologies Using Slime Mould Optimization Algorithm," 2021 IEEE Texas Power and Energy Conference (TPEC), College Station, TX, USA, 2021, pp. 1-6.
2. A. M. Zobaa, S. H. Abdel Aleem, and H. K. Youssef, "Bi-Level Damped DoubleTuned Harmonic Passive Filters Design: Multi-Criteria Decision-Making Analysis," Ain Shams Engineering Journal, vol. 14, no. 9, p. 102082, 2023.
3. A. M. Zobaa, S. H. Abdel Aleem, and H. K. Youssef, " Hosting Capacity Enhancement of Harmonically Distorted Distribution Systems Using MultiObjective Artificial Hummingbird Algorithm," Accepted in MEPCON 2023.

Master of Science in Electrical Power and Machines Engineering

Cairo University, Faculty of Engineering

October 2013 to July 2018

Thesis title: "Modeling and Assessment of Different Photovoltaic Maximum Power Point Tracking Techniques"

Grade: Excellent. GPA: 4 out of 4.

Bachelor of Engineering in Electrical Power and Machines Engineering

Cairo University, Faculty of Engineering

September 2008 to May 2013

Grade: Distinct with honors (1st on my class out of 280 students).

Graduation Project: Design of Electrical Work for a Residential Area. (Grade: Excellent)

General Certificate of Secondary Education

ElMalek ElSaleh Secondary School

September 2005 to July 2008

Grade: 99.9% (52 on The Arab Republic of Egypt)

RESEARCH PROJECTS

[1] Submitted a joint research project proposal for the Egypt-UK Cooperation STDF funding program 2024 with a research team from Zewail University, Egypt in collaboration with an English team from Brunel University London.

[2] Prepared a joint research project proposal for the Egypt-China Cooperation STDF funding program - Call 7 in collaboration with a Chinese research team from Hohai University, but did not submit it this year, we plan to submit it in the call of 2025.

JOURNAL PUBLICATIONS

- [1] N. Hidayah Abdul Kahar, A. F. Zobaa, R. A. Turkey, A. M. Zobaa, S. H. E. Abdel Aleem, and B. Ismail, "Comparative analysis of optimal damped and undamped passive filters using MIDACO-solver," *Ain Shams Eng. J.*, vol. 14, no. 8, p. 102056, 2023.
- [2] A. M. Zobaa, S. H. E. Abdel Aleem, and H. K. M. Youssef, "Bi-Level damped double-tuned harmonic passive filters design: Multi-criteria decision-making analysis," *Ain Shams Eng. J.*, vol. 14, no. 9, p. 102082, 2023.
- [3] M. M. Alhaider, S. H. E. Abdel Aleem, Z. M. Ali, and A. M. Zobaa, "Harmonics management and hosting capacity enhancement: Optimal double-resistor damped double-tuned power filter with artificial hummingbird optimization," *PLoS One*, vol. 19, no. 5, p. e0303207, 2024.

CONFERENCE PUBLICATIONS

- [1] A. M. Zobaa, S. H. E. Abdel Aleem, and H. K. M. Youssef, "Comparative analysis of double-tuned harmonic passive filter design methodologies using slime mould optimization algorithm," in *2021 IEEE Texas Power and Energy Conference (TPEC)*, 2021.
- [2] A. M. Zobaa, H. E. Shady Abdel Aleem, and K. M. Hosam Youssef, "Hosting capacity enhancement of harmonically distorted distribution systems using multi-objective artificial hummingbird algorithm," in *2023 24th International Middle East Power System Conference (MEPCON)*, 2023.

BOOKS/BOOK CHAPTERS

- [1] A. F. Zobaa, S. H.E. Abdel Aleem, and A. M. Zobaa, "Introductory chapter: Emerging electric machines - advances, perspectives and applications," in *Emerging Electric Machines - Advances, Perspectives and Applications*, IntechOpen, 2021.

CERTIFICATIONS

The American University in Cairo

- Teaching and Learning Essentials for Teaching Assistant I, December 2021.
- Teaching and Learning Essentials for Teaching Assistant II, May 2022.
- Teaching and Learning Essentials for Teaching Assistant III, December 2022.
- Teaching and Learning Essentials for Teaching Assistant IV, May 2023.

The British Council

IELTS Academic Exam, 7.5 overall score, July 2017.

EDX Courses

- ET3034x: Solar Energy, by DelftX, December 2015.
- EE40LX: Electronic Interfaces: Bridging the Physical and Digital Worlds, by BerkeleyX, May 2015.
- 20220214x: Principles of Electric Circuits, by TsinghuaX, January 2015.

Schneider Electric Energy University Courses

- How to Use Energy University, December 2014.
- Lighting I: Lighting Your Way, December 2014.
- Lighting II: Defining Light, December 2014.
- Energy Efficiency Principles, December 2014.
- Demand Response and Smart Grids, December 2014.
- Power Factor and Harmonics, December 2014.

CERTIFICATIONS

LinkedIn Learning Courses

- Introduction to Identity and Access Management, November 2023.
- Cisco Networking Foundations: Switching and Routing, September 2023.
- Cisco Networking Foundations: Fundamentals of Cisco Networking, August 2023.
- Cisco Networking Foundations: IP Addressing, August 2023.
- Become a PLC developer, June 2022.
- Electrical Systems: Panel Boards, Frequency Drives and Transformers, June 2022.
- HTML Essential Training, June 2022.
- Introduction to CSS, June 2022.
- Learning Access for Office 365, June 2022.
- Learning C++, June 2022.
- Learning Industrial Automation, June 2022.
- Learning MATLAB, June 2022.
- Learning PLC Ladder Logic, June 2022.
- MATLAB 2018 Essential Training, June 2022.
- PLC Ladder Logic Essential Training, June 2022.
- PLC Memory Organization, June 2022.
- PLC Program Flow and Control Instructions, June 2022.
- PLC Sequencer Logic, June 2022.

SOFTWARES/PROGRAMMING LANGUAGES

- MATLAB/SIMULINK
- PSCAD
- C++
- Python
- AUTOCAD
- REVIT
- ETAP
- Ecodial

LANGUAGES

- Arabic: Mother tongue
- English: Excellent command (IELTS score: 7.5)