# Alaa Mohamed Abdel-Hamed El-sayed

El obour, qalyubia, Egypt
**Mobile:** (+2) 01005861266
**Academic Email**: a.mohammed@sha.edu.eg
**Yahoo Email**: alaa200man@yahoo.com

## PERSONAL INFORMATION

**Date of birth**: 25/06/1984
**Current job:** Associate Prof. at Electrical Power and Machines Dep. EL-Shorouk Academy
**Marital Status:** Married
**Number of children:** 3
**Military Service Status:** Exempted

## EDUCATION

**2023** **Associate Professor** from the Supreme Council of Universities

**2017** Doctor of Philosophy in Electrical Engineering "Power and Electrical Machines Engineering"

Thesis title
"**Optimal Control of Micro Grids for Fault Tolerant Operation**"

Faculty
**Faculty of Engineering, Ain Shams University (ASU), Cairo, Egypt**

**2012** Master of Science degree; **"Optimization Techniques for Tuning the Controller of a Permanent Magnet Brushless Motor"**

In Electrical Engineering "Power and Electrical Machines", Helwan University, Cairo, Egypt

**2007** Bachelor of Science, Higher Institute of engineering, EL Shorouk Academy – Cairo, Egypt

- Higher Institute of Engineering, Electrical Power and Machines Department
- **B.Sc. Grade:** Excellent with honor
- **Project:** Electrical Distribution System Design for Sinai University
- **Project Grade:** Excellent

## Research interest:-

- Power System Control.
- Energy management of the Micro Grids.
- The applications of artificial intelligence and new evolutionary and heuristic optimization techniques in electric machines, power system, and renewable energy.

**List of Publications:-**

## Journal papers

- Abdelrahman M. Nasser, Amr Refky, Hamdy Shatla, and **Alaa M. Abdel-Hamed**, "A grey wolf optimization-based modified SPWM control scheme for a three-phase half bridge cascaded multilevel inverter", Scientific Reports, 14(1), **2024**. doi: 10.1038/s41598-024-57262-0
- **Alaa M. Abdel-Hamed**, Mohamed M. El-Shafhy, and Ebrahim A. Badran. A new method for ferroresonance suppression in an IEEE 33-bus distribution system integrated with multi distributed generation, Scientific Reports, 13, (3381), **2023**. doi: https://doi.org/10.1038/s41598-023-30268-w
- **Alaa M. Abdel-hamed** , Almoataz Y. Abdelaziz , and Yazan M Alsmadi (2022). An Optimized Control Scheme for Solar Energy Tracking Systems. International Journal of Renewable Energy Research (IJRER), Vol.12, No.3, pp. 1574–1583, **2022**, doi: https://doi.org/10.20508/ijrer.v12i3.13057.g8544
- **Alaa M. Abdel-Hamed**, Mohamed M. El-Shafhy, and Ebrahim A. Badran (2022). High Ohmic Reactor as a Shunt Limiter (HOR-SL) Method for Ferroresonance Elimination in the Distribution System. IEEE Access, Vol. 10, pp. 134217–134229, 2022, doi: 10.1109/ACCESS.2022.3231190.
- **Alaa M. Abdel-Hamed**, Almoataz Y. Abdelaziz, and Adel El-Shahat), " Design of a 2DOF-PID Control Scheme for Frequency/Power Regulation in a Two-Area Power System Using Dragonfly Algorithm with Integral-Based Weighted Goal Objective", Energies **2023**, Vol. 16, No. 486. doi: https://doi.org/10.3390/en16010486.
- **Alaa M. Abdel-Hamed**, Mohamed M. El-Shafhy, and Ebrahim A. Badran, "A new method for ferroresonance suppression in an IEEE 33-bus distribution system integrated with multi distributed generation", Sci Rep 13, 3381 (**2023**). https://doi.org/10.1038/s41598-023-30268-w
- Yazan M.Alsmadi, **Alaa M.Abdel-hamed**, Abo Eleyoun Ellissy, Amged S.El-Wakeel, Almoataz Y.Abdelaziz, VadimUtkin, and Ali Arshad Uppal, "Optimal Configuration and Energy Management Scheme of an Isolated Microgrid Using Cuckoo Search Optimization Algorithm", the Journal of Franklin Institute, Elsevier, Volume 356, Issue 8, Pages 4191-4214, May **2019**.
- **Alaa M. Abdel-hamed**, Ahmed R.Adly, Abo Eleyoun Ellissy, and H. Abdelfattah, "Optimal Sizing and Design of Isolated Micro-Grid systems",Journal of environmental scienc for sustainable society4(3):, 1, Dec. **2019**.

- Ahmed R.Adly, Ziad M. Ali, **Alaa M. Abdel-hamed**, "Enhancing the performance of directional relay using a positive-sequence superimposed component", Electrical Engineering (Springer), ***2019***.

- Ahmed R.Adly, **Alaa M. Abdel-hamed, "**Fault detection for multi-terminal transmission line with nuclear power plant based on wavelet transform", Arab Journal of Nuclear Science and Application, Vol. 52, 3, 144-152, **2019**.

- **Alaa M. Abdel-hamed,** Abou El-Eyoun K. M. Ellissy, Amged S. El-Wakeel and Almoataz Y. Abdelaziz, **"**Optimized Control Scheme for Frequency/ Power Regulation of Microgrid for Fault Tolerant Operation", Electric Power Components and Systems, Vol. 44, No. 13, PP. 1429–1440, **2016**.

- Amged Saeed El-Wakeel, Abou El-Eyoun Kamel Mohamed Ellissyb & **Alaa Mohamed Abdel-hamed**, **"**A Hybrid Bacterial Foraging-Particle Swarm Optimization Technique for Optimal Tuning of Proportional-Integral-Derivative Controller of a Permanent Magnet Brushless DC Motor", Electric Power Components and Systems,Vol. 43 (2015), No. 3 pages 309-319, 03 Jan 2015.

- F.Hassan, A.Wakeel, A.Kamel and **A. Abdel-hamed**, **"**Optimum Tuning of PID Controller for a Permanent Magnet Brushless Moto**r",** International Journal of Electrical Engineering & Technology (IJEET) Volume 4, Issue 2, pp. 53-64, March – April (2013).

## Conference papers

- Ahmed R.Adly, Ziad M. Ali, and **Alaa M. Abdel-hamed,** "A Novel Scheme for Fault Detection in a Series Compensated Line Based on Wavelet Transform", 2024 6th International Youth Conference on Radio Electronics, Electrical and Power Engineering (REEPE),**2024**. DOI: 10.1109/REEPE60449.2024.10479865

- Abdelrahman M. Nasser, **Alaa M. Abdel-Hamed**; Amr Refky, and Hamdy Shatla, "A Proposed PSO-Based Modified SPWM Switching Technique for a Cascaded Half-Bridge Multilevel Inverter", IEEE Xplore, 2024. DOI: 10.1109/MEPCON58725.2023.10462255

- **Alaa M. Abdel-Hamed**, and Ebrahim A. Badran, "An Improved PID Control Scheme for DC Servo Motor using Salp Swarm Algorithm", IEEE Xplore, 23rd International Middle East Power Systems Conference (MEPCON), Kafrelshiekh University, Egypt 13–15 December **2022**, pp. 1-8, 2022 IEEE, doi: 10.1109/MEPCON55441.2022.10021723.

- **Alaa M. Abdel-Hamed**, Mohamed M. El-Shafhy, and Ebrahim A. Badran, "Investigating Ferroresonance in the Distribution Zone", IEEE Xplore, 23rd International Middle East Power Systems Conference (MEPCON), Kafrelshiekh University, Egypt 13–15 December **2022**, pp. 1-8, 2022 IEEE, doi: 10.1109/MEPCON55441.2022.10021717.

- **Alaa M. Abdel-hamed**, Ahmed R. Adly, A. Kamel Ellissy, H. Abdelfattah, and A. Z. El-sayed, " Optimal Sizing and Design of Isolated Micro-Grid systems **",** First International ebql Conference, Egypt, December 13-15, **2018**.

- **Alaa Mohamed Abdel-hamed**, Almoataz Y. Abdelaziz, Amged S. El-Wakeel, and A. Kamel Mohamed Ellissy, "Design of a robust PID control scheme for frequency/power regulation of micro-grid (MG) for fault tolerant operation", IEEE Xplore, 17th International Middle-East Power System Conference (MEPCON'15) Mansoura University, Egypt, December 15-17, **2015**.

- **A. Abdel-hamed**, F.Hassan, A.Wakeel, and A.Kamel "Optimum Tuning of PID Controller for a Permanent Magnet Brushless Motor", ICEENG Conference, 29-31 May, **2012**.

## EXPERIENCE

**September 10/2007– 11/2012:**

Instructor at Higher Institute of Engineering, EL Shorouk Academy **in Electrical power and Machines Engineering Department.**

**September 11/2012– 2/2017:**

Assistant lecturer at Higher Institute of Engineering, EL-Shorouk Academy in Electrical power and machines Engineering Department.

Part Timer Teaching assistant at Arab Academy for Science, Technology & Maritime Transport

**September 2/2017– 5/2023:**

Asst. Prof. at Higher Institute of Engineering, EL-Shorouk Academy in Electrical power and machines Engineering Department.

Part time Dr. at Power and Machines Engineering Departement at Misr University For Science and Technology.

**September 6/2023– up till now:**

Associate. Prof at Higher Institute of Engineering, EL-Shorouk Academy in Electrical power and machines Engineering Department

**Experience in the Field of Quality**

- Quality coordinator within the program
- An internal auditor for educational effectiveness within the university

**Experience in the Field of Management**

- Member of the library committee at the institute level
- Member of the e-learning committee within the institute

**Main responsibilities and duties**

- holding office hours, attending lectures, keeping class records, creating/selecting class materials presenting new material/lecturing, leading discussions/answering questions, conducting review sessions, holding tutorial sessions, preparing/collecting solutions to questions, grading/providing feedback on assignments and exams, setting up the lab, running tutorial or lab section(s), demonstrating procedures or setting up demonstrations.

- **Quality Assurance** to ensure national accreditation and recognition as a leading educational institution by creating and spread quality assurance and accreditation awareness among students and employees, establishing an internal quality management system for all faculties and administrative units through a self-assessment process and Ensure that academic standards of programs are defined and achieved in line with equivalent standards nationally and internationally and the quality of learning opportunities and research

- **Help students for** choosing and registering in their courses during the advising period, Selection of courses each semester, Approving of the student's academic load and add/drop procedures, Following up on the student's academic progress and following up cases of probation & suspended students.

**Courses and certifications:**

**Training courses from National Authority for Quality Assurance and Accreditation of Education (NAQAAE):**

- **Strategic planning for colleges and institutes of higher education" (training plan for 2023)**
- **Self-evaluation of colleges and institutes of higher education (training plan for 2023)**
- **Description of programs and courses and evaluation of learning outcomes for colleges and institutes of higher education (training plan for 2023)**
- **Effective teaching and learning strategies for colleges and institutes of higher education" (Training plan for 2023)**
- **Examination and student evaluation systems for colleges and institutes of higher education" (Training plan for 2023)**
- **External review of colleges and institutes of higher education (training plan for 2023)**
- **External review of colleges and institutes of higher education (training plan for 2017)**
- **Strategic planning for colleges and institutes of higher education (training plan for 2017)**

- **Effective teaching and learning strategies for colleges and institutes of higher education" (Training plan for 2018)**
- **Self-evaluation of educational programs: colleges and institutes of higher education (training plan for 2019)**

**Training Ccourses approved by the Faculty Development Center at Cairo University, including:**

- **Leadership and governance**
- **Credit hours**
- **E-learning and hybrid education**
- **Question banks**
- **International publishing**
- **Funded research projects**

**Practical Training courses:**

- **Training course in power plants in east delta electricity production company**
- **A training course in academic leaders**
- **Training course in international publishing of scientific research**
- **Training course in e learning**
- **Training course in external rreview of calleges and iinstitutes of hhigher eeducation**
- **Or-CAD Course.**
- **MATLAB Course.**
- **AutoCAD Course**
- **ICDL Course**

**Teaching Courses:**

- **Utilization of Elec. Energy**
- **Renewable Energy**
- **Energy Conversion**
- **Electrical Machines**
- **MATLAB Programming Language**
- **Electrical Circuits**
- **Automatic Control**
- **Electrical Measurements and Tests**
- **Machine Design**
- **Technical Writing**
- **Automatic control**
- **Digital Control**
- **Electrical Circuits**

- **Generation of Electrical Energy**
- **Power System Analysis (1)**

## SKILLS:

### Programming and computer skills:

- MATLAB
- C++
- HOMER
- Pspice
- AutoCAD

### Technical skills

- Installation, configuration and testing electrical machines
- Troubleshooting circuit design and power Lab, simulation and controller design.

### Language skills:

- Native language Arabic
- Very Good in written and spoken English

### Career Objectives

I have been teaching and conducting research in academic environments in Egypt since 2007. The experience and students' feedback I got so far suggest that I should be continuing my research/teaching career.

I dedicate myself to becoming an effective university instructor. I constantly work to enhance my teaching skills and make the learning experience enjoyable for my students.

I am particularly interested in interacting with engineering students in a mentoring role and be able to provide academic and life skills counseling to help them succeed in engineering.

Finally, I look forward to working at an education institute where my teaching is assessed positively and my research interests are encouraged and respected.

### References

**Prof. Dr. Almoataz Youssef Abdelaziz**
Chair of IEEE Education Society Chapter in Egypt

Senior Editor of Ain Shams University Journal

Editor of Electric Power Components & Systems Journal
Electrical Power & Machines Department
Faculty of Engineering, Ain Shams University
Abdo Basha square, Abbassia, 11517
Cairo, Egypt
Mobile: +20-100-1372930
E-mail: almoataz_abdelaziz@eng.asu.edu.eg, almoatazabdelaziz@hotmail.com
https://eng.asu.edu.eg/profile/view/572
http://scholar.google.com.eg/citations?user=646RieYAAAAJ&hl=en
https://www.scopus.com/authid/detail.uri?authorId=7003870872

## Prof. Dr. Amged El-Wakeel, Professor

Board Member, New and Renewable Energy Authority (NREA),
Egyptian Electric Code Standing Committee Member,
Consultant Engineer, Consulting Engineering Office, MTC,
Former Head of Electrical Power and Energy Department,
MTC, Cairo, Egypt
Mob :(+2)01003773117
(+2)01067581052
draelwakeel@alumni.manchester.ac.uk
draelwakeel@alumni.manchester.ac.uk

## Prof. Dr. Ebrahim A. Badran

Electrical Engineering Department, Mansoura University
Mob :(+2)01020557718
(+2)01111109383
ebadran@mans.edu.eg