Mahmoud Refaat Mohamed El-Ghazaly

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PERSONAL INFORMATION:

Gender	**:** Male
Nationality	**:** Egyptian
Social status	**:** Married
Military Status	**:** Started 2016- Finished 2017

RESEARCH INTERESTS:

Renewable Power Generation, Solar Photovoltaic, Wind Power Generation, Energy Storage, Distribution Systems, Power Electronics, Electrical Power Systems, Electrical Network Analysis, High Voltage Engineering, Electric Vehicles, Programming with MATLAB/Simulink, Electric Motors Drive (Modeling, Analysis, and control), and PLC Automation.

EXPERIENCES:

29/06/2016 - Present   **Teaching Assistant**

- E. E. Department, Faculty of Engineering, Assiut University, Assiut, Egypt.
- Supervision of graduation projects in the fields of Renewable Energy, Power Systems Distribution Systems, Energy Storages, Power Electronics Control systems, PLC Automation Power Systems, and High Voltage Engineering.
- Help students to understand their lessons.

EDUCATION:

19/06/2021 - Present   **Ph. D. in Electrical Engineering**

- E. E. Department, Faculty of Engineering, Assiut University, Assiut, Egypt.

General

- Solar PV in Power Systems.
- Wind Energy Generation.
- Hybrid Energy Storage.
- Voltage Stability.
- Electrical Power System Quality.
- Control System.
- Power Electronics.

➢ Mathematical Engineering.

➢ MATLAB/Simulink

Occupational
Thesis title: Optimum Sizing and Location of Hybrid Energy Storage for Improving Performance of an Electric-grid Connected Distribution-system Supported by PV and Wind Resources.

28/09/2017 - 22/04/2020   **M. Sc. in Electrical Engineering**

➢ E. E. Department, Faculty of Engineering, Assiut University, Assiut, Egypt.

General

➢ Solar PV in Power Systems.

➢ Electrical Power System Quality.

➢ Control System.

➢ Power Electronics.

➢ Mathematical Engineering.

➢ MATLAB/Simulink

Occupational
Thesis title: A New Formulation of "Perturb and Observe" Method for Maximum Power Tracking in PV Systems.

20/09/2010 - 30/07/2015   **B. Sc. in Electrical Engineering**

➢ EE Department, Faculty of Eng., Assiut University, Assiut, Egypt.

General

➢ English Language, Mathematics, and Physical Education.

➢ Overall Rating: Excellent with honors.

➢ Graduation project: Renewable Energy (getting the full mark).

Occupational

➢ Electric Circuits (Analysis, Design).

➢ Electrical Power System (Analysis, Control, HVDC, FACTS).

➢ High Voltage Engineering.

➢ Electronics-Programming Skills (MATLAB, C++).

➢ Renewable Energy (PV, Wind).

➢ Energy Storage Systems.

➢ Power Electronics.

➢ Automation (PLC).

➢ Industrial Measurement Systems.

TRAINING:

Academic training:

10/06/2018 – 11/06/2018	Electronic Course Design Skills
24/06/2018 – 25/06/2018	Information Technology Applications in Teaching
29/07/2018 – 20/07/2018	Activating Electronic courses
17/02/2019 – 18/02/2019	Professional Behavior
14/04/2019 – 15/04/2019	Organizing Scientific Conferences
28/04/2019 – 29/04/2019	Funding Scientific Research and Grants
18/07/2023 – 20/07/2023	Scientific Research Ethics
18/07/2023 – 22/07/2023	Crisis Management
13/08/2023 - 15/08/2023	Publishing Research in International Journals
01/10/2023 – 03/10/2023	Modern Trends in the Development of Higher Education Institutions

Industrial training:

30/8/2014-6/9/2014   **Khalda Petroleum Company training**

Occupational

- ➤ Solar Energy Generation.
- ➤ Electrical Power Control Systems.
- ➤ Advanced Protection Systems.
- ➤ Electric Machines Maintenance.

6/7/2013-25/7/2013   **Egypt Aluminum Company training**

Occupational

- ➤ HVDC and HVAC Engineering.
- ➤ Central Control Systems.

> ➢ Advanced Protection Systems.
> ➢ Advanced Power Electronics.
> ➢ Electric Transformers Maintenance.

QUALITY GRANT CONTRIBUTIONS

2018 - 2020   Contribution to the Faculty of Engineering at Assiut University's local quality certification efforts.

2022/2023   Active participation in the Communication and Electronics Department's ABET certification efforts at the Faculty of Engineering, Assiut University.

2023/2024   Active participation in the Electric Power and Machines Department's ABET certification efforts at the Faculty of Engineering, Assiut University.

PROJECTS

Projects funded by STDF

1- **An optimized AI Map for Solar Energy Maximization and Prediction – PV Stand-Alone System for Green Hydrogen Generation and Storage for a House Hybrid Loads.**

Undergraduate projects

1- **Design a Distribution System of a New University Buildings, 2019.**

The primary objective of this project is to design and implement an efficient electrical distribution system for a new educational building, including lighting, sockets, and power outlets.

2- **Design an Irrigation System for a Farm Depending on Solar Energy, 2018.**

This integrated system operates independently of the electrical grid. The PV modules are precisely sized to meet the system's needs. The primary components are the PV modules, converter, and submersible pump. Batteries are not required because irrigation occurs only during daylight hours.

3- **Design a Solar-Powered Electric Feeding System for an Educational Building, 2017.**

This project designs a network to supply electricity to a building generated from solar energy only during working hours. The system relies entirely on PV modules and a converter, with batteries omitted.

4- **Improvement of a Small-Scale PV System, 2015.**

This project developed a novel approach to enhancing photovoltaic (PV) module efficiency by reducing its operating temperature. The approach utilizes a closed-loop cooling system that circulates water around the module's rear surface.

PERSONAL SKILLS:

Mother Tongue(s):	Arabic
Other Language(s):	English

Communication Skills:

- Working in team
- Making good presentation of my ideas

Job-related Skills:

- Explaining problems in simple ways.
- Able to develop ideas of the students.
- Difficult problem solving.
- Experience in carrying out experimental research.
- Excellent research skills.
- Welcome with student's discussions.

Computer Skills:

- Windows package (7, 8 and 10).
- Microsoft office package (97-2019).
- Internet facilities and handling.
- Good Knowledge of MATLAB (SIMULINK).

Soft Skills:

- Problem Solving skills, team leaders and self-starters.
- Skilled in working with own hands.
- Skilled in working through a research group.
- Self-Motivated.
- Excellent Communication and Interpersonal Skills.
- Good with computers and internet.
- Self-learning.

PUBLICATIONS:

1- Mazen Abdel-Salam, Mohamed Th El-Mohandes, and Mahmoud El-Ghazaly. "An Efficient Tracking of MPP in PV Systems Using a Newly Formulated P&O-MPPT Method Under Varying Irradiation Levels." Journal of Electrical Engineering & Technology, vol. 15. no. 1, pp. 501-513, 2020.

2- Khamies, Mohamed, Mazen Abdel-Salam, Ahmed Kassem, Mohamed Nayel, Mahmoud El-Ghazaly, and Mohamed Hashem. "Evaluating supercapacitor

energy storage for voltage sag minimization in a real distribution feeder." *Journal of Energy Storage,* vol. 101, no. January, p. 113742, 2024.

3- El-Ghazaly, Mahmoud, Mazen Abdel-Salam, Mohamed Nayel, and Mohamed Hashem. "Techno-economic utilization of hybrid optimized gravity-supercapacitor energy-storage system for enriching the stability of grid-connected renewable energy sources." *Journal of Energy Storage* vol. 101, no. January, p. 115002, 2025.

4- El-Ghazaly, Mahmoud, Mazen Abdel-Salam, Mohamed Nayel, and Mohamed Hashem. " Multi-objective optimal performance of a distribution system based on integrating renewable energy sources and hybrid energy systems" *Journal of Engineering Sciences,* vol. 53, no. 4, pp. 118-135, 2025.

CITATIONS:

1. The award of Prof. El-Wardany for excellence in Engineering Sciences, 2012/2013 at Assiut University, Assiut, Egypt.

2. The award of Prof. Badawy for excellence in Power System Engineering, 2013/2014 at Assiut University, Assiut, Egypt.

3. The award of Prof. Azoz for excellence in Power System Engineering, 2013/2014 at Assiut University, Assiut, Egypt.

4. The award of Prof. El-Harras for excellence in Electric Machines Engineering, 2013/2014 at Assiut University, Assiut, Egypt.