

Abdelmonem Asem Abdelmonem Draz

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Short Biography

Abdelmonem Draz (M'21), born in May 1995, has received M.Sc. degree (2021) and B.Sc. (2018) from electrical power and machines engineering department, Zagazig university, Egypt. He has been at the university of Zagazig as a teacher assistant since 2019. He has 6 Years of experience in low voltage and medium voltage industries, technical consultations and studies on power systems using various commercial software, and field tests (SAT and FAT) on different electrical equipment with diverse voltage levels. Moreover, he has delivered various training courses to the under and fresh graduates in addition to professional engineers with different clients. His scientific research interest is concerned with smart grid technologies, energy management solutions, transportation electrification, and the use of artificial intelligence approaches for optimizing the operation and protection of power systems. Also, he is a member of the IEEE since 2021.

Education

| Degree | University | Date | Comments |
|---|---------------------------|----------------|--|
| Ph.D. in electrical power and machines engineering | Zagazig University, Egypt | still pursuing | Thesis: "Synergy of fast charging stations and smart grids for transportation electrification". Advisors: Prof. Attia El-Fergany & Prof. Ahmed M. Othman |
| M.Sc. in electrical power and machines engineering | Zagazig University, Egypt | Jul. 2021 | Thesis: "Optimum settings of protection relays in power systems with and without distributed generators". Advisors: Prof. Attia El-Fergany & Prof. Mahmoud M. Elkholy |
| B.Sc. in electrical power and machines engineering | Zagazig University, Egypt | May 2018 | Accumulative grade: Excellent with honor's grade (92.72%), 1 st rank of the class. Graduation project: Excellent (200/200) <ul style="list-style-type: none">Overcurrent and earth fault relays coordination and arc flash hazard analysis of industrial distribution networks using ETAP.Grounding grid design of high voltage substations using ETAP.A simulation kit of earthing systems in low voltage sponsored by Schneider Electric. |

Academic Work Experience

| Position | Corporation | From | To | Responsibilities |
|---|-------------------------------------|-----------|-----------|---|
| Assistant Lecturer (Full time) | Zagazig University, Egypt | Oct. 2021 | Present | <ul style="list-style-type: none"> ➤ Delivered courses: <ul style="list-style-type: none"> • Power systems engineering I, II, III. • Power systems protection I, II. • Electrical machines II, III. • Power systems distribution. • Electrical power utilization. • Power systems economics. • Renewable energy engineering. • Electrical power and machines testing lab (3rd & 4th years). • Electrical circuits I, II. |
| Teacher Assistant (Full time) | | Jan. 2019 | Sep. 2021 | |
| Supervisor of Graduation Projects (Volunteer) | ABB sponsored | Sep. 2020 | Sep. 2021 | <ul style="list-style-type: none"> ➤ Provides technical support for the final year students. <ul style="list-style-type: none"> • (2020-2021) low and medium voltage distribution systems design. |
| Supervisor of Graduation Projects (Volunteer) | Schneider Electric sponsored | Jan. 2019 | Aug. 2022 | <ul style="list-style-type: none"> ➤ Provides technical support for the final year students. <ul style="list-style-type: none"> • (2021-2022) Power factor correction with harmonics mitigation. • (2020-2021) Low voltage motor protection simulator. • (2019-2020) Low voltage motor protection simulator. • (2018-2019) EcoStruxure lab (Virtual lab-KNX-PLC). |

Scientific Publications

- 1) Ahmed M. Othman, **Abdelmonem Draz**, Attia El-Fergany, “Design of self-healing techniques and strategies for smart microgrids”, *Chapter 13 in the Book: Advanced Frequency Regulation Strategies in Renewable-Dominated Power Systems*, Jan. 2024. <https://doi.org/10.1016/B978-0-323-95054-1.00005-6>.
- 2) **Abdelmonem Draz**, Ahmed M. Othman, Attia El-Fergany, “State-of-the-art with numerical analysis on electric fast charging stations: Infrastructures, standards, techniques, and challenges”, *Renewable Energy Focus*, Dec. 2023, 47, 100499. <https://doi.org/10.1016/j.ref.2023.100499>.

- 3) **Abdelmonem Draz**, Mahmoud M. Elkholy, Attia El-Fergany, “Optimized settings of over current relays in electric power systems”, *Chapter 3 in the Book: Modernization of Electric Power Systems: Energy Efficiency and Power Quality*, Jun. 2023. https://doi.org/10.1007/978-3-031-18996-8_3.
- 4) **Abdelmonem Draz**, Mahmoud M. Elkholy, Attia El-Fergany, “Automated settings of overcurrent relays considering transformer phase shift and distributed generators using gorilla troops optimizer,” *Mathematics*, Feb. 2023, 11(3), 774. <https://doi.org/10.3390/math11030774>.
- 5) Sayed Aldebawy, **Abdelmonem Draz**, Attia El-Fergany, “Harmonics mitigation using passive filters in distribution networks penetrated with photovoltaic power”, *2022 23rd International Middle East Power Systems Conference (MEPCON)*., Dec. 2022. <https://doi.org/10.1109/MEPCON55441.2022.10021757>.
- 6) **Abdelmonem Draz**, Mahmoud M. Elkholy, Attia El-Fergany, “Over-current relays coordination including practical constraints and DGs: Damage curves, inrush, and starting currents”, *Sustainability*, Feb. 2022, 14(5), 2761. <https://doi.org/10.3390/su14052761>.
- 7) **Abdelmonem Draz**, Mahmoud M. Elkholy, Attia El-Fergany, “Slime mould algorithm constrained by the relay operating time for optimal coordination of directional overcurrent relays using multiple standardized tripping curves”, *Neural Computing and Applications*, Mar. 2021, 33(18), 11875-11887. <https://doi.org/10.1007/s00521-021-05879-x>.
- 8) **Abdelmonem Draz**, Mahmoud M. Elkholy, Attia El-Fergany, “Soft computing methods for attaining the protective device coordination including renewable energies: Review and prospective”, *Archives of Computational Methods in Engineering*, Jan. 2021, 28(7), 4383-4404. <https://doi.org/10.1007/s11831-021-09534-5>.

Awards & Memberships

- Member of the IEEE (since 2021).
- TOEFL review course (score: 537) (2023).
- Member of the Egyptian Syndicate of Engineers (since 2019).
- 1st rank of 2018 graduation class (all departments).

Professional Skills

- Thorough knowledge of codes and standards includes **IEC, NEC, IEEE, NFPA, ANSI, BS, CIBSE and Egyptian Code**.
- Masterful in **ETAP** power station different modules such as load flow, short circuit, relay coordination, arc flash, harmonics analysis, transient stability, motor acceleration, grounding grid design, and DC systems analysis.
- Very familiar with power systems analysis using **PSCAD, DIgSILENT PF, PSSE, SKM, and HOMER**.
- Very familiar with **MATLAB, LATEX, Microsoft Office, and Prezi**.

- Good knowledge of **green buildings** design and requirements, **KNX** components and installations, and **REVIT MEP**.
- Basic knowledge of programming PLCs (S7-300 & S7-1200) using **TIA Portal** and **Simatic Manager**, VFDs (J1000, ABB, Parker, Schneider...etc.), SCADA systems and HMI screens using **Indusoft Web Studio**.
- Good practice of wiring control and power circuits using contactors, relays, timers...etc. and simulation using **EKTS**.

Undergraduate Trainings & Courses

- Finishing more than 200 online courses on **Schneider Electric** E-learning website.
- Trainee at **Schneider Electric** (energy university 2018 championship), **2nd rank**.
- **ECG -UTW** program **round 9** graduate (from Jul. 2017 to Sep. 2017).
- Automation diploma at **HA consulting group** (from Jun. 2016 to Sep. 2016).
- Summer training at **El-Sewedy Electric** (Aug. 2015).
- Substations configurations and protection session at **El-Sewedy Electric**.
- Lighting sessions design at **Fagerhult** and **3-Brothers**.
- PV systems design session at **Karm-Solar**.
- Switch gear design sessions at **ABB** and **Eaton**.