



# **RESUME**

# Attia El-Fergany

## 1. <u>Personnel Data</u>

Zagazig University, Faculty of engineering, Department of electric power and Machines P. O. Box: 44519 Zagazig, Zagazig – Egypt. +20 100 5705526 (Cellular Egypt) +20 55 2304987 (Fax) Emails: <u>el\_fergany@zu.edu.eg</u> / <u>el\_fergany@ieee.org</u> Date of birth: 19<sup>th</sup> May 1971 Marital status: Married Nationality: Egypt Driving License: Available and Valid Passport: Available and Valid

#### 2. <u>Short Biography</u>

Attia El-Fergany (SM'14) received the BSc degree (1994), MSc degree (1998) and PhD degree (2001), all in Electrical Power Engineering from Zagazig University in Zagazig, Egypt. He has been with the University of Zagazig since 1998, presently as Full Professor (Distinguished) since 2018. El-Fergany has authored/co-authored numerous articles published in the refereed renowned journals. Attia has been given many awards for distinct international publishing. He has been listed among Top 2% impactful scientists globally (Stanford Ranking) for the consecutive years, Oct., 2020: Rank number 11889 (over the world), 223 out of 186,014 in the Energy field and 4th Rank (Egypt). On Oct., 2021; ranked 7,623 overall/globally, 155 out of 229,150 in the Energy field and 7th Rank (Egypt). On Oct., 2022; ranked 7,945 overall, 154 out of 321,394 (Energy sector) and on Oct., 2023; ranked 6,968 globally and 133 out of 287,766 in the Energy field. In addition, he delivered numerous short courses and participated in many electrical technical studies and consultations. He is an Associate Editor of the AEJ and BEEI journals. He is a Senior Member of the IEEE, and a Member of the IET. His research is concerned with the use of intelligent techniques to solve electric power system problems.









# 3. <u>Education</u>

Degree	University	Academic year	Comments
Ph. D. Degree in Electrical Engineering	Zagazig University, Egypt	2001/2002	<b>Thesis:</b> 'Artificial neural networks and expert systems for alarm processing in power systems'
M. Sc. Degree in Electrical Engineering	Zagazig University, Egypt	1998/1999	<b>Thesis:</b> 'Fault discrimination of electric power systems through expert system'.
B. Sc. in Electrical Power and Machines Engineering	Zagazig University, Egypt	1994/1995	<ul> <li>Project: 'Peak load shaving using Co-generation'</li> <li>Overall Accumulated: Very good (82.02%) - 2<sup>nd</sup> ranks of my colleagues and Excellent grade (91.60%), Final year.</li> </ul>

# 4. <u>Employment</u>

Position	Place	From	То
Technical Manager	Smart Solutions-Tech, Egypt	2024	Now
Technical Studies TL	Smart Solutions-Tech, Egypt	2020	2023
Head of Department	Zagazig University, Egypt.	2019	2025
Distinguished Professor from Egyptian Supreme Council of Universities	Zagazig University, Egypt.	2018	Now
Associate Professor	Zagazig University, Egypt.	2013	2018
Training Superintendent	ADMA-Opco/ADNOC, UAE.	2010	2015
Electrical Instructor	ADMA-Opco/ADNOC, UAE.	2004	2010
TechnicalSupport&Consultant (Part time)	PetroPro for Consultancy & Training, Egypt.	2009	2012
Technical Consultant (Part time)	OMEGA for Consultants and Contracting, Egypt.	2002	2004
Assistant Professor	Zagazig University, Egypt.	2001	2013
Assistant lecturer	Zagazig University, Egypt.	1998	2001
Electrical Maintenance Engineer	Qarun Petroleum Company, Egypt.	1996	1998
Technical Engineer	ElectroGeorge group Co. – Cairo, Egypt.	1995	1996
Sales Engineer	ABB High Voltage Co. – Cairo, Egypt.	1994	1995







# 5. <u>WORK HISTORY AND ACTIVITIES</u>

#### □ <u>2024 – Now</u> – Technical Manager @ Smart Solutions – Tech, Egypt.

- ✓ Review of reports, and check all documents prepared by the team members
- ✓ Provide technical guidance to the Technical Studies team and project electrical engineers,
- ✓ Development and review of electrical power system simulation models for Power Systems and hybrid plants including renewables,
- ✓ Balanced and Unbalanced Load Flow Analysis, and AC and DC Short Circuit Study,
- ✓ Quasi Dynamic/Time-Domain Simulations,
- ✓ Optimal Power flow and unit commitment studies,
- ✓ Relay Protection Setting and Coordination Study,
- ✓ Network Reconfiguration Studies using Optimization Techniques,
- ✓ Optimal Allocation of Distributed generations (Renewable and Traditional),
- ✓ Optimal Reactive Power Compensation,
- ✓ CT and VT sizing Calculations and Adequacy Study,
- ✓ Earthing/Grounding Grid Sizing and Calculations,
- ✓ Insulation Co-ordination Study and Transient Recovery Voltage and EMT Studies,
- ✓ RMS, Transient Stability and Angle Stability Study,
- ✓ Renewable integration and Grid impact studies with renewables (PV and wind),
- ✓ Evaluation of Voltage Stability with Renewables,
- ✓ Motor Starting Study and Verification of Transient/Starting Voltage Drop During Starting,
- ✓ AC & DC Arc Flash Hazard Analysis for AC networks and BESS systems,
- ✓ Power Quality, Harmonic Study & Passive Filter Sizing,
- ✓ Sizing calculations of low and medium voltage power cables,
- ✓ Sizing calculations of overhead conductors,
- ✓ Preparing load list, cable schedule, and CB schedules,
- ✓ Sizing calculations of power transformers, and generators,
- ✓ Sizing calculations of earthing zig-zag transformer & NER/NGR,
- ✓ Sizing calculations of battery systems, battery chargers and UPSs,
- ✓ Preparing overall single line diagram and low voltage AC&DC single line diagram.
- ✓ Preparing technical specifications, reviewing Technical data, and sizing calculations of high voltage power cables (500, 220, 66 kV),
- ✓ Delivered many short courses (public and in house),
- $\checkmark$  Delivered many courses for under and post grades, and
- $\checkmark\,$  Supervisions of some PhD and MSc students.

#### □ <u>2020 – 2023</u> – Technical Studies Team Leader @ Smart Solutions - Tech, Egypt.

- $\checkmark$  Balanced and Unbalanced Load Flow Analysis, and AC and DC Short Circuit Study,
- ✓ Optimal Power flow and unit commitment studies,
- ✓ Relay Protection Setting and Coordination Study,







- ✓ Network Reconfiguration Studies using Optimization Techniques,
- ✓ Optimal Allocation of Distributed generations (Renewable and Traditional),
- ✓ Optimal Reactive Power Compensation,
- ✓ CT and VT sizing Calculations and Adequacy Study,
- ✓ Earthing/Grounding Grid Sizing and Calculations,
- $\checkmark\,$  Insulation Co-ordination Study and Transient Recovery Voltage and EMT Studies,
- ✓ RMS, Transient Stability and Angle Stability Study,
- ✓ Evaluation of Voltage Stability with Renewables,
- ✓ Motor Starting Study and Verification of Transient/Starting Voltage Drop During Starting,
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- ✓ Power Quality, Harmonic Study & Passive Filter Sizing,
- ✓ Sizing calculations of low and medium voltage power cables,
- ✓ Preparing load list, cable schedule, and CB schedules,
- ✓ Sizing calculations of power transformers, and generators, earthing zig-zag transformer & NER/NGR,
- ✓ Sizing calculations of battery systems, battery chargers and UPSs,
- ✓ Delivered many short courses (public and in house),
- ✓ Delivered many courses for under and post grades, and
- ✓ Supervisions of some PhD and MSc students.

#### □ <u>2016 – 2021</u> – Consultant, and trainer (Free Lancer)

- $\checkmark$  Delivered many short courses (public and in house),
- ✓ Conducted many technical studies including Load flow, short circuit (IEC/ANSI), relay coordination, DC & AC arc flash analysis, harmonic analysis, etc.,
- ✓ Calculations of HZ REF (64) for MV/LV transformer and for generator,
- $\checkmark$  Delivered many training short courses for various industrial sectors,
- ✓ Delivered many courses for under and post grades, and
- ✓ Supervisions of some PhD and MSc students.

# <u>2010 – 2015</u> – Training Supervisor (ADMA-OPCO, Abu Dhabi – UAE). Through Delton UK/ HFAK UAE

- ✓ Monitor and supervise the implementation of Competency Development Program to fresh graduate Operators & Technicians.
- ✓ Monitor and supervise the preparation of PDP for CAMS graduates.
- ✓ Monitor the implementation of CAMS graduates MPRs/ real work.
- ✓ Monitor and supervise Developees Assessments during the implementation of the competency development program in accordance with training methodology.
- ✓ Conduct, assess and monitor progress of Developees.
- ✓ Suggest & prepare specific action plans for problematic cases Developees.
- ✓ Review / upgrade training curriculums. And







✓ Coordinate with Line management the training needs for Ops & Techs progression/ promotion to senior posts.

#### 2009 to 2012 - Technical Support & Consultant @ PetroPro for Consultancy & Training, Egypt.

- ✓ Inspection and assessment of Bibliotheca Alexandria (BA) and issuing Handover reports for all electrical systems.
- Carried-out various technical studies to variety of industry complexes (i.e. Cable sizing, Switchgear LV & MV, Short circuit & Relay studies, Arc Flash, Motor starting & Transient Stability).
- ✓ Conducted Short circuit & relay co-ordination study for WNPOC via PetroPro using ETAP Package (Mala fields).
- ✓ Reviewed short circuit calculations & Relay co-ordinations study of Qarun Petroleum Company -Egypt.
- ✓ Good knowledge about IEC/BS, NFPA, NEC, DIN/VDE and NEMA standard codes,
- ✓ Good knowledge about the safety of electric systems and classified hazard areas.
- ✓ Power quality activities i.e. measurements harmonics & filter sizing, and power factor correction equipment sizing,
- ✓ Experienced with motor starting methods including Star/Delta, Autotransformer and soft start soft stop, etc.. both power and control circuits. Some little experience with AC drives variable speed drives VSD, direct torque control.

# <u>2004 – 2010 -</u> Electrical Instructor (ADMA-OPCO, Abu Dhabi – UAE). Through Delton UK/ HFAK UAE

- ✓ Class Room Basic Modules Teaching/Assessing,
- ✓ On-Job training (OJT),
- ✓ Coaching for the SGEP (Specific Gap Elimination Program),
- ✓ Technical Short Courses,
- ✓ E-learning, CBT training,
- ✓ QPRs Trainees Quarterly Progress Records writing,
- ✓ Reviewing the Trainees' Daily Log Sheets/Reports,
- ✓ Writing the Quizzes, Assignments & Task-sheets,
- ✓ Co-ordinating with the line personnel on training,
- ✓ Updating of Trainees' Competency List / Task Book,
- ✓ Preparing Coaching and OJT materials,
- ✓ Participation/Observer in the Internal Verification, and
- $\checkmark\,$  Preparing the candidates for the External Verification.

#### 2002 –2004 Part Time Basis (3-4 complete days/week)

## In parallel with the university duties, as a Technical Support with OMEGA for Consultants and Electro-Mechanical Contracting Company, Cairo – Egypt.







- ✓ Design of LV power and motor control center panels,
- ✓ Issue workshop drawings for both medium and low voltage switchgears,
- ✓ Design and issue shop drawing for Power factor correction panels, ATS and AMF for low voltage systems,
- $\checkmark$  Excellent capabilities of reading and trace wiring power and control diagrams,
- $\checkmark$  Co-ordination and short circuit calculations for power system utilities,
- ✓ Provide/Support all junior engineers (Sales, technical studies, and even in the factory) for any technical issues,
- $\checkmark$  Intensive technical discussions with clients and be close with them, and
- ✓ Excellent skills for the selection of the majority brand name manufacturers of electrical equipment i.e. El\_Sewedy Cables, ABB, Siemens, GE, Schnieder, Carlo Gavazzi that includes but not limited to motor control centers and power centers:
  - LV & HV Circuit breakers operation, sizing and selection.
  - Contactors (with different utilization categories) operation, sizing and selection & Thermal overload range selection.
  - Cable tables sizing and selection.

# <u>2001 – 2012 -</u> Lecturer in the faculty of engineering, department of electric power Eng. – Zagazig university – Zagazig – Egypt.

- ✓ Work and Finalize approximately 4 researches in different points (Power system co-ordination enhanced by ES, Fault diagnosis through Petri-net, etc.. Refer to detailed technical published papers),
- ✓ Conducting several courses for different disciplines/years for undergraduate engineers and involved in many lab activities including Lab safety, electric machines experiments and Power system simulators,
- ✓ Sharing in erection of data base system using MS access and visual basic programming for Student's Result recording,

# <u>1998 – 2000</u> - Assistant lecturer (the faculty of engineering, Department of electric power Eng. – Zagazig University – Zagazig, Egypt.

- ✓ Conducting research related to power system fault diagnosis during Ph.D. stage,
- ✓ Using artificial intelligence tools (Expert system, Fuzzy logic, Neural networks and Petri nets) in power system studies,
- ✓ Preparing laboratory experiments for undergraduate classes of Department of Electrical Power and Machines Engineering,
- ✓ Teaching undergraduate classes in Department of Electrical Power and Machines Engineering.

## **<u>1996 - 1998</u>** - Electric maintenance Engineer at Qarun Petroleum Company, Egypt.

- ✓ Installation, Commissioning, Start-Up of Quarn Field Substation at start of the project,
- ✓ Involved in many tasks of inspection and testing of both MV and LV Switchboards in both ElectroGeorge and Schneider Electric/EMG at different stages of manufacturing (Tests include Visual tests, Insulation tests, Review wiring diagrams, operations and interlocks),







- ✓ Maintenance of induction motors, generators, transformers, power, MCC and control panels with different manufacturers (US motors, Toshiba, Caterpillar, Schneider Electric, EG, ...),
- $\checkmark$  Maintenance of Electric systems for chemical injection skids and heaters in process area,
- $\checkmark$  Trouble shooting for power system control and its relevant diagnostics,
- ✓ Preparation of spare parts list of large varieties of electrical systems,
- ✓ Electrical Submersible pumps (ESP) commissioning, installation and start-up with different suppliers (CenerLift and Reda pumps), including VFD,
- ✓ ESP troubleshooting and its relevant analysis,
- $\checkmark$  Power cables and submersible cables tests and fault locating,
- ✓ PM for DC batteries, UPS and battery chargers, and
- ✓ Routine maintenance and measurements of CP effectiveness.

#### □ <u>1995 – 1996</u> - Techno-Commercial Engineer at ElectroGeorge group Co. , Egypt.

- ✓ Preparation of technical and commercial proposals for LV and MV up to 33 kV switchboards,
- ✓ Technical studies for MV networks (Load Flow, Short Circut and Rely Co-ordination),
- ✓ Sharing in the preparation of filing system coding,
- ✓ Preparation of price list for L.V. components,
- ✓ Quality control for 400 V power and motor control center panels, and almost all LV components and Following up with quality control of our products (Switchboards),
- $\checkmark$  Contacting with client to meet his requirements,
- $\checkmark$  Controlling that the design drawings are ready as per time schedule and approved by the client,
- ✓ Controlling the material flow from AEG/GE Germany,
- $\checkmark$  Controlling the manufacturing process in the factory, and
- $\checkmark$  Following up with installation and commissioning at the site.

## □ <u>1994 – 1995</u> - Sales Engineer at ABB High Voltage Co. – Cairo, Egypt.

- ✓ Preparation of technical and commercial proposals for 220/66/11 kV substations,
- $\checkmark$  Obtain offers form the sub-suppliers with assistance of the supply management when required,
- ✓ Review that the offered equipment is complying technically with the client's requirement,
- ✓ Prepare the quotation in the light of the relevant procedures, company policy and guidelines,
- ✓ Preparation of calculation of prices including calculation factors using company guidelines,
- ✓ Preparing the input for contract negotiations with client,
- ✓ Preparing handing over the project documents to the project management department,
- ✓ Prepare the inputs required for use in the department, budget and reports...etc., and
- $\checkmark$  Follow-up with the Engineering office and Factory stages of Manufacturing.

## 6. <u>Prizes, Appreciations and Awards</u>

✓ IEEE PES Chapter Outstanding Engineer Award, by IEEE PES chapter Egypt, 2021/2022.







- ✓ Top 2% impactful scientists globally (Stanford Ranking), Oct., 2020: Rank number 11889 (over the world), 223 out of 186,014 in the Energy field. On Oct., 2021; ranked 7,623 overall, 155 out of 229,150 in the Energy field. On Oct., 2022; ranked 7,945 overall, 154 out of 321,394 in the Energy field. On Oct., 2023; ranked 6,968 overall, 133 out of 287,766 in the Energy field.
- ✓ Certificate of Appreciation from ITC Egypt 2021.
- ✓ Top 1% Peer reviewers in Engineering, Publons, 2018/2019.
- ✓ Top 1% Peer reviewers in Cross-field, Publons, 2019.
- ✓ Distinct International publishing in highly impact factor Journals and Paper's Citations from 2012 to 2022 (Zagazig University-Egypt).
- ✓ 'Marquis Who's Who' has selected his biographical profile for inclusion in the 32<sup>nd</sup> Edition Who's Who in the World® 2015.
- ✓ 2<sup>nd</sup> prize from Egyptian Syndicate of Engineers (Zagazig-Egypt/1994).
- ✓ Appreciation from faculty of Engineering (Zagazig University–Egypt/2001).
- ✓ Appreciations/spot recognition awards for appreciate performance in developing UAE nationals (ADMA-Opco/ADNOC-UAE/2006, 2008, 2010 & 2013).

## 7. <u>Special Activities & Professional Skills</u>

- ✓ Knowledgeable & very familiar about ETAP power station different modules and DigSilent Power Factory, and PSSE.
- ✓ Knowledgeable about electric transient simulation programs like EMTDC/PSCAD, Simulink/MATLAB and EMTP-ATP (Windows).
- ✓ Carried-out various technical studies to variety of industry complexes (i.e. cable sizing, short circuit & relay studies, AC and DC arc-flash analysis, motor starting & transient stability) using ETAP, and DigSilent PowerFactory Packages (for numerous projects).
- ✓ Good knowledge about IEC/BS, NFPA, ASNZS, NEC, DIN/VDE and NEMA standard codes.
- ✓ Grid code, compliance and grid impact studies.
- ✓ Testing and commissioning of protective relays & electrical projects.
- ✓ Power system loss minimizations, voltage improvement and power factor correction studies.
- $\checkmark$  Good knowledge about the safety of electric systems and classified hazard areas.
- ✓ Power quality activities i.e. measurements harmonics & filter sizing, and power factor correction equipment sizing,
- ✓ Good knowledge and good experience with MATLAB environment including several toolboxes. Artificial Intelligence (AI) simulation programs like SNNS under LINUX,







easy ANN (windows), fuzzy logic, Optimization and neural network toolboxes of MATLAB environment.

✓ Good knowledge about AutoCad (2D drawing).

# 8. <u>Research & Academic Interests</u>

- Applications of heuristic's and soft computing techniques to power systems,
- Power systems protection, operations & optimizations,
- Power quality issues, and harmonics,
- Distributed generation and renewable energy resources, and
- Stability analysis, and Impact studies of renewable integrations.

#### 9. <u>Internet Research</u>

#### Links to web home pages

Elsevier Scopus	Scopus Author ID: 6603172334
Author Identifier	http://www.scopus.com/authid/detail.url?authorId=6603172334
Researchgate	http://www.researchgate.net/profile/Attia_El-Fergany?ev=hdr_xprf
Google Scholar	https://scholar.google.com.eg/citations?user=SQFP2tYAAAAJ&hl=en
ORCID	http://orcid.org/0000-0003-3476-1361
Kudos	https://www.growkudos.com/profiles/71364/
WoS	Web of Science Researcher ID: D-2117-2013
	https://www.webofscience.com/wos/author/record/1360301

#### • <u>Citations and H-indexd as of 15/Dec./2024</u>

	Scopus	Google Scholar
Citations	5,229	6,400
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#### 10. <u>Published Papers in the Journals and Conferences</u>

Conferences		Journals		
Local	International	Local	International	
6	13	0	126	
Total Impact Factor (2023)			<b>600</b> +	

## 8.1 In Refreed Journals

- [J1] AA El-Fergany, "Reviews on Load Flow Methods in Electric Distribution Networks", Archives of Computational Methods in Engineering, 2025;In press. <u>https://doi.org/10.1007/s11831-024-10191-7</u>. JCR ISI Index/Scopus Cited.
- [J2] H Ashraf, A Draz, AM Elmoaty, AA El-Fergany, "Precise modelling of commercial photovoltaic cells/modules of different technologies using hippopotamus optimizer", Energy Conversion and Management 2025;325:119382. <u>https://doi.org/10.1016/j.enconman.2024.119382.</u> JCR ISI Index/Scopus Cited.
- [J3] MH Alqahtani, A Draz, AM Shaheen, AA El-Fergany, "Advanced Relay Coordination in Power Networks Considering Transformer Inrush and Motor Starting Currents via Weighted Mean Variance Optimizer", IEEE Access 2024;12:184953 – 184975. <u>https://doi.org/10.1109/ACCESS.2024.3511698</u>. JCR ISI Index/Scopus Cited.
- [J4] AK Abdelaal, AM Shaheen, AA El-Fergany, MH Alqahtani, "Sliding mode control based Dynamic Voltage Restorer for Voltage Sag Compensation", Results in Engineering 2024;24:102936. https://doi.org/10.1016/j.rineng.2024.102936. JCR ISI Index/Scopus Cited.
- [J5] AM Shaheen, A Alassaf, I Alsaleh, AA El-Fergany, "Enhancing model characterization of PEM Fuel cells with human memory optimizer including sensitivity and uncertainty analysis", Ain Shams Engineering Journal 2024;15 (11):103026. <u>https://doi.org/10.1016/j.asej.2024.103026</u>. JCR ISI Index/Scopus Cited.
- [J6] A Draz, AM Othman, AA El-Fergany, "Harmonics Mitigation in Distribution Networks comprising Smart Online Electric Vehicles Chargers Based on Equal Sharing Algorithm", e-Prime-Advances in Electrical Engineering, Electronics and Energy 2024;9:100728. https://doi.org/10.1016/j.prime.2024.100728. JCR ISI Index/Scopus Cited.
- [J7] AA El-Fergany, AM Agwa, "Red-Billed Blue Magpie Optimizer for Electrical Characterization of Fuel Cells with Prioritizing Estimated Parameters", Technologies 2024;12(9):156. https://doi.org/10.3390/technologies12090156. JCR ISI Index/Scopus Cited.







- [J8] A Draz, AM Othman, AA El-Fergany, "Optimal techno-economic assessment of isolated microgrid integrated with fast charging stations using radial basis deep learning", Scientific Reports 2024;14(1):20571. https://doi.org/10.1038/s41598-024-70063-9. JCR ISI Index/Scopus Cited.
- [J9] Lakhdar Chaib, Mohammed Tadj, Abdelghani Choucha, Fatima Zahra Khemili, Attia A. El-Fergany, "Improved crayfish optimization algorithm for parameters estimation of photovoltaic models", Energy Conversion and Management 2024;313:118627. https://doi.org/10.1016/j.enconman.2024.118627. JCR ISI Index/Scopus Cited.
- [J10] Mohammed H Alqahtani, Sulaiman Z Almutairi, Ali S Aljumah, Abdullah M Shaheen, Ghareeb Moustafa, Attia A El-Fergany, "A Proportional-Integral-One Plus Double Derivative Controller-Based Fractional-Order Kepler Optimizer for Frequency Stability in Multi-Area Power Systems with Wind Integration", Fractal and Fractional 2024;8(6):323. https://doi.org/10.3390/fractalfract8060323. JCR ISI Index/Scopus Cited.
- [J11] A. A. El-Fergany, "Reviews, Challenges, and Insights on Computational Methods for Network Reconfigurations in Smart Electricity Distribution Networks," Archives of Computational Methods in Engineering 2023;31:1233-1253. https://doi.org/10.1007/s11831-023-10007-0. JCR ISI Index/Scopus Cited.
- [J12] Ashraf K Abdelaal, Amira IA Alhamahmy, Hossam El Deen Attia, Attia A El-Fergany, "Maximizing solar radiations of PV panels using artificial gorilla troops reinforced by experimental investigations", Scientific Reports 2024;14(1):3562. <u>https://doi.org/10.1038/s41598-024-53873-9</u>. JCR ISI Index/Scopus Cited.
- [J13] Islam Ismael, Attia A El-Fergany, Eid A Gouda, Mohamed F Kotb, "Cooperation search algorithm for optimal parameters identification of SOFCs feeding electric vehicle at steady and dynamic modes", International Journal of Hydrogen Energy 2024;50:1395-1407. <u>https://doi.org/10.1016/j.ijhydene.2023.07.027</u>. JCR ISI Index/Scopus Cited.
- [J14] Abdullah M Shaheen, Abdullah Alassaf, Ibrahim Alsaleh, Attia A El-Fergany, "Advancements in Model Parameter Estimation for Proton Exchange Membrane Fuel Cells via Enhanced Artificial Hummingbird Algorithm", International Journal of Energy Research 2024;2024:7616065. <u>https://doi.org/10.1155/2024/7616065</u>. JCR ISI Index/Scopus Cited.
- [J15] A.M. Moheb, E.A. El-Hay, <u>A.A. El-Fergany</u>, "Consolidation of LVFRT capabilities of microgrids using energy storage devices", Scientific Reports 2023;13:22294. <u>https://doi.org/10.1038/s41598-023-49659-0</u>.JCR ISI Index/Scopus Cited.
- [J16] H. Ashraf, M. M. Elkholy, S. O. Abdellatif, and A. <u>A. El-Fergany</u>, "Accurate emulation of steady-state and dynamic performances of PEM fuel cells using simplified models," Scientific Reports 2023;13(1):19532. <u>https://doi.org/10.1038/s41598-023-46847-w</u>. JCR ISI Index/Scopus Cited.
- [J17] A. M. Shaheen, A. R. Ginidi, R. A. El-Sehiemy, <u>A. El-Fergany</u>, and A. M. Elsayed, "Optimal parameters extraction of photovoltaic triple diode model using an enhanced artificial gorilla troops optimizer," Energy 2023:283:129034, doi: https://doi.org/10.1016/j.energy.2023.129034. JCR ISI Index/Scopus Cited. JCR ISI Index/Scopus Cited.
- [J18] A. Draz, A. M. Othman, and <u>A. A. El-Fergany</u>, "State-of-the-Art with Numerical Analysis on Electric Fast Charging Stations: Infrastructures, Standards, Techniques, and Challenges," Renewable Energy Focus 2023;47:100499. <u>https://doi.org/10.1016/j.ref.2023.100499</u>. JCR ISI Index/Scopus Cited.
- [J19] Mohammed TADJ, Lakhdar CHAIB, Abdelghani CHOUCHA, Al-Motasem Aldaoudeyeh, Ahmed Fathy, Hegazy Rezk, Mohamed Louzazni and <u>Attia El-Fergany</u>, "Enhanced MPPT-Based Fractional-Order PID for PV Systems Using Aquila Optimizer," Mathematical and Computational Applications 2023;28(5):99. <u>https://doi.org/10.3390/mca28050099</u>. JCR ISI Index/Scopus Cited.
- [J20] F. Z. Khemili, O. Bouhali, M. Lefouili, L. Chaib, <u>A. A. El-Fergany</u>, and A. M. Agwa, "Design of Cascaded Multilevel Inverter and Enhanced MPPT Method for Large-Scale Photovoltaic System Integration," Sustainability 2023;15(12):9633. <u>https://doi.org/10.3390/su15129633</u>. JCR ISI Index/Scopus Cited.
- [J21] R. El-Schiemy, A. Shaheen, <u>A. El-Fergany</u>, and A. Ginidi, "Electrical parameters extraction of PV modules using artificial hummingbird optimizer," Scientific Reports 2023;13(1):9240, 2023. <u>https://doi.org/10.1038/s41598-023-36284-0.</u> JCR ISI Index/Scopus Cited.
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- [J105] <u>Attia El-Fergany</u>, "Optimal allocation of multi-type distributed generators using backtracking search optimization algorithm", Int. J. Electr. Power & Energy Systems 2015;64:1197-1205, doi: 10.1016/j.ijepes.2014.09.020. JCR ISI Index/Scopus Cited.
- [J106] <u>Attia El-Fergany</u>, "Involvement of cost savings and voltage stability indices in optimal capacitor allocation in radial distribution networks using artificial bee colony algorithm", Int. J. Electr. Power & Energy Systems 2014;62:608-616, doi: 10.1016/j.ijepes.2014.05.012. JCR ISI Index/Scopus Cited.
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- [J109] <u>A.A. El-Fergany</u>, A. Othman, M. El-Arini, "Synergy of a genetic algorithm and simulated annealing to maximize real power loss reductions in transmission networks", Int. J. Electr. Power & Energy Systems 2014;56:307-315. JCR ISI Index/Scopus Cited.
- [J110] <u>A.A. El-Fergany</u>, Almoataz Y. Abdelaziz, "Multi-objective capacitor allocations in distribution networks using artificial bee colony algorithm", J. E lectr. Eng. Technology 2014;9(2):441-451. JCR ISI Index/Scopus Cited.
- [J111] <u>Attia A. El-Fergany</u>, Almoataz Y. Abdelaziz, "Capacitor allocations in radial distribution networks using cuckoo search algorithm", IET Generation, Transmission & Distribution 2014;8(2):223-232. JCR ISI Index/Scopus Cited.
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- [J113] <u>Attia A. El-Fergany</u>, Almoataz Y. Abdelaziz, "Capacitor placement for net saving maximization and system stability enhancement in distribution networks using artificial bee colony-based approach", Int. J. Electr. Power Energy Systems 2014;54:235-243, doi: 10.1016/j.ijepes.2013.07.015. JCR ISI Index/Scopus Cited.
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- [J119] <u>A.A. El-Fergany</u>, Mahdi El-Arini, "Meta-heuristic algorithms based active power loss minimization", Int. Review Electr. Eng. (IREE) 2012;7(6):6216-6224. <u>Scopus Cited.</u>
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- [J121] <u>Attia A. El-Fergany</u>, "Revenue maximization for capacitor placement in distribution networks using differential evolution and pattern search", Int. Review Modelling & Simulation (IREMOS) 2012;5(4):1733-1740. Scopus Cited.
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- [J123] <u>A.A. El-Fergany</u>, "Solution of economic load dispatch problem with smooth and non-smooth fuel cost functions including line losses using genetic algorithm", *Int. J. Computer Electr. Eng. (IJCEE)*, V. 3, N. 5, Oct., 2011, pp. 706-710, doi: 10.7763/IJCEE.2011.V3.407.
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- [J125] <u>A.A. El-Fergany</u>, "Design and optimize substation grounding grid based on IEEE std. 80 2000 using GUI and MATLAB codes", Int. J. Eng. Sci. Techn. (IJEST) 2011;3(7):6033-6039. (Indexed Copernicus).
- [J126] <u>A.A. El-Fergany</u>, "Economic dispatch with convex and non-convex fuel cost functions including line losses using PS and GA approaches", IJEECS 2011;03(01):9-13.

# 8.2 Refereed Conference Papers

- [C1] H. Ashraf, M. M. Elkholy, S. O. Abdellatif, A. <u>A. El-Fergany</u>, "Optimal Starting of IM Energized by PEM Fuel Cells Stack without Energy Storage Devices", Published in: 2023 24<sup>th</sup> International Middle East Power Systems Conference (MEPCON), 19-21 Dec 2023, Mansoura, Egypt.
- [C2] Ahmed M. El-Bashbishi, <u>Attia A. El-Fergany</u>, "Calculation Methods of Voltage Unbalance Factor", Published in: 2023 24<sup>th</sup> International Middle East Power Systems Conference (MEPCON), 19-21 Dec 2023, Mansoura, Egypt.
- [C3] S. Aldebawy, A. Draz, <u>A.A. El-Fergany</u>, "Harmonics Mitigation Using Passive Filters in Distribution Networks Penetrated with Photovoltaic power", Published in: 2022 23rd International Middle East Power Systems Conference (MEPCON), 13-15 Dec 2022, Cairo, Egypt, doi: 10.1109/MEPCON55441.2022.10021757.
- [C4] D. Emad, M.A. El-Hameed, <u>A.A. El-Fergany</u>, "Techno-Economic Design and Evaluation of Autonomous Micro-Grid for Remote Area in Sinai-Egypt Case study", 2<sup>nd</sup> International Conference for Engineering Sciences and Applications, ICESA 2021, 22-23 Oct 2021, Holiday Inn Hotel, Maadi, Cairo, Egypt.
- [C5] <u>Attia El-Fergany</u>, "Distributed generators allocation using backtracking search technique", Paper ref. 214, pp. 1-9, 16th MEPCON'14, Cairo, 23-25 Dec. 2014.
- [C6] <u>A. El-Fergany</u>, A. Y. Abdelaziz, and B. K. Panigrahi, "Artificial bee colony-based approach for optimal capacitor placement in distribution networks." pp. 424-435, Swarm, Evolutionary, and Memetic Computing: 4th International Conference, SEMCCO 2013, Chennai, India, December 19-21, 2013, Proceedings, Part I 4 2013. Doi: 10.1007/978-3-319-03753-0\_38
- [C7] <u>Attia El-Fergany</u>, "Capacitor placement for energy loss and overall cost minimizations in distribution networks using differential evolution and pattern search", Paper ref. 141, 15<sup>th</sup> MEPCON'12, Alexandria, 23-25 Dec., 2012.
- [C8] <u>A.A. El-Fergany</u>, Mahdi El-Arini,, "Minimization of energy loss using integrated evolutionary approaches", Proceedings of EPEC'12, London, Ontario, Canada, 10-12 Oct., 2012, pp. 323-329. doi: 10.1109/EPEC.2012.6474973.
- [C9] <u>A.A. El-Fergany</u>, Mahdi El-Arini, "Emission / economic load dispatch using combination of genetic algorithm and pattern search", paper 2012TD0017, IEEE PES Transmission and Distribution Conference and Exposition, Orlando, Florida, USA, May 2012, pp. 1-7.
- [C10] <u>A.A. El-Fergany</u>, "Protective devices co-ordination toolbox enhanced by an embedded expert system medium and low voltage levels", CIRED'03, Barcelona, Spain, Session No. 3, May 2003.







- [C11] <u>A.A. El-Fergany</u>, M.T. Yousef, A.A. El-Alaily, "Fault diagnosis of power systems using binary information of breakers and relays through DPNs," in Proc. Int. Conf. Power System Technology—PowerCon, Kunming, China, Oct. 2002, vol. 2, pp. 1122–1126. DOI: 10.1109/ICPST.2002.1047576.
- [C12] M.T. Youssef, <u>A.A. El-Fergany</u>, A.A. El-Alayly, "The Relationship between weather variables and electricity demand", Paper # 354, 37<sup>th</sup> International Universities Power Engineering Conference, 9-11<sup>th</sup> Sep., 2002, Staffordshire University, UK.
- [C13] <u>A.A. El-Fergany</u>, M.T. Yousef and A.A. El-Alaily, "Fault diagnosis in power systems-substation level –through hybrid artificial neural networks and expert system", IEEE/PES 2001, Nov. 2001, NY, USA, doi: <u>10.1109/TDC.2001.971235.</u>
- [C14] <u>A.A. El-Fergany</u>, M. T. Yousef and A. A. El-Alaily, "Development of a rule-based ES for alarm processing in electric power systems", Proceedings of the Universities Power Engineering Conference (UPEC), Sept. 2001, Swansea, U.K., Vol. 36, pp. 1605-1509.
- [C15] <u>A.A. El-Fergany</u>, M.T. Yousef and A.A. El\_Alaily, "A Hybrid fault diagnosis system using ANNs ES techniques", UPEC'01, Sept. 2001, Swansea, U.K.
- [C16] <u>A.A. El-Fergany</u>, M.T. Yousef, M.E. Mandour, A.A. El-Alaily, "An enhanced expert system for power systems fault diagnosis – substation level", International Conference on Communication, Computer and power, ICCCP01, Feb. 2001, Muscat–Oman, pp. 357-362.
- [C17] <u>A.A. El-Fergany</u>, M.T. Yousef, M.E. Mandour, A.A. El-Alaily, "Artificial neural networks for fault diagnosis in power systems", UPEC'00, Belfast 6-9 Sept. 2000, U.K., subject code P044.
- [C18] <u>A.A. El-Fergany</u>, M.T. Yousef, M.E. Mandour, A.A. El-Alaily, "Alarm processing of power systems using fuzzy expert system", UPEC'00, Belfast 6-9 Sept. 2000, U.K., subject code P258.
- [C19] <u>A.A. El-Fergany</u>, M.E. Mandour, A.A. El-Alaily, "Fault diagnosis through expert system", UPEC'98, Edinburgh, Sept., 1998, U.K.

#### 11. <u>Thesis Supervison</u>

- **4** MSc: Thesis Title: "Renewable Hybrid Energy Micro-Grid", Completed.
- MSc: Thesis Title: "Optimum Settings of Protection Relays in Power Systems with and without Distributed Generators", Completed.
- **4** MSc: Thesis Title: "Performance Assessment of Fuel Cells Stack with AC motor drive", Completed.
- MSc: Thesis Title: "Effect of Shading on PV Cells Performance and Its connection with Electrical Power System", Completed.
- **4** MSc: Thesis Title: "Optimal Coordination of protective Relays Using Intelligent methods", on going.
- MSc: Thesis Title: "Strengthening Fault Ride-Through Capabilities of Micro-grids using Energy Storage Device", on going.
- MSc: Thesis Title: "Optimal Operation of Waste Water Lifting Station Using SCADA and Artificial Intelligence Methods", on going.
- PhD: Thesis Title: "Synergy of Fast Charging Stations and Microgrids for Transportation Electrification", on going.

#### 12. <u>Reviewer for MSc and PhD Theses</u>

- MSc: Thesis Title: "Faults Detection in Induction Motors Fed by Power Electronic Converter", Mansoura University, Egypt.
- PhD: Thesis Title: "Enhancing The Load Frequency Controllers of Low Inertia Isolated Microgrids", Cairo University, Egypt.
- MSc: Thesis Title: "Optimal performance of distributed generation on micro-grid based on new trends", Zagazig University, Egypt.







- MSc: Thesis Title: "Impact of DFIG-based Wind Turbine on Power System Stability", Mansoura University, Egypt.
- MSc: Thesis Title: "Effect of Shading on PV Cells Performance and Its connection with Electrical Power System", Zagazig University, Egypt.
- MSc: Thesis Title: "The effect of SVC on the dynamic performance of three-phase induction motors", Zagazig University, Egypt.
- PhD: Thesis Title: "Optimum capacitor placement and sizing in active radial distribution systems using meta-heuristic optimization algorithms", National Institute of Technology Silchar, India.
- **4** MSc: Thesis Title: "Renewable Hybrid Energy Micro-Grid", Zagazig University, Egypt.
- MSc: Thesis Title: "A new strategy to solve the problem of intermittency in renewable energy (solarwind) using hydrogen energy storage", Zagazig University, Egypt.
- MSc: Thesis Title: "Optimum Settings of Protection Relays in Power Systems with and without Distributed Generators", Zagazig University, Egypt.
- MSc: Thesis Title: "Applications of Superconducting Fault Current Limiters for Protection of Micro Grids", Mansoura University, Egypt.
- PhD: Thesis Title: "Frequency Stability Enhancement of Electrical Power Systems Considering High Renewable Energy Penetration", Aswan University, Egypt.
- MSc: Thesis Title: "Performance Assessment of Fuel Cells Stack with AC motor drive", Zagazig University, Egypt.
- MSc: Thesis Title: "Effective frequency regulation for power systems with increased renewable energy penetration", Zagazig University, Egypt.
- 4 Shared in Many Comperhensive exams for PhD students.

#### 13. <u>Book Chapters</u>

- [Ch1] <u>Attia EL-Fergany</u>, "Network reconfiguration to allocate open points in distribution networks using soft computing", Chapter 3 in the book: Energy Efficiency of Modern Power and Energy Systems, pp. 33-49, Elsevier, 2024. <u>https://doi.org/10.1016/B978-0-443-21644-2.00003-8</u>.
- [Ch2] M. El-Hameed, M. Elkholy, and <u>Attia EL-Fergany</u>, "Harmonics suppression in polluted renewable isolated/grid-connected microgrids", Chapter 4 in the book: Energy Efficiency of Modern Power and Energy Systems, pp. 49-71, Elsevier, 2024. <u>https://doi.org/10.1016/B978-0-443-21644-2.00004-X</u>.
- [Ch3] Hossam Ashraf, Mahmoud M Elkholy, Sameh O Abdellatif, and Attia A El-Fergany, "Energy saving of isolated microgrids comprising proton exchange membrane fuel cells stacks feeding variable loads based on artificial intelligence-based approaches", Chapter 4 in the book: Energy Efficiency of Modern Power and Energy Systems, pp. 123-139, Elsevier, 2024. <u>https://doi.org/10.1016/B978-0-443-21644-2.00007-5</u>.
- [Ch4] M. El-Hameed, M. Elkholy, and <u>A. EL-Fergany</u>, "Effective frequency control in renewable dominated power systems", Chapter 3 in the Book: Advanced Frequency Regulation Strategies in Renewable-Dominated Modern Power Systems, pp. 37-60: Elsevier, 2024. https://doi.org/10.1016/B978-0-323-95054-1.00008-1
- [Ch5] Enas El-Hay, M. El-Hameed, H. Hasanien, and <u>A. EL-Fergany</u>, "Frequency control of hybrid autonomous microgrids comprising electric vehicles aggregator based on lightning attachment procedure optimizer", Chapter 11 in the Book: Advanced Frequency Regulation Strategies in Renewable-Dominated Modern Power Systems, pp. 235-254: Elsevier, 2024. https://doi.org/10.1016/B978-0-323-95054-1.00012-3
- [Ch6] Ahmed Othman, and <u>Attia El-Fergany</u>, "Design of Self-healing Techniques and Strategies for Smart Microgrids", Chapter 13 in the Book: Advanced Frequency Regulation Strategies in Renewable-Dominated Modern Power Systems, pp. 279-306: Elsevier, 2024. https://doi.org/10.1016/B978-0-323-95054-1.00005-6
- [Ch7] Abdelmonem Draz, Mahmoud Elkholy, and <u>Attia El-Fergany</u>, "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, pp. 79-98: Springer, 2023. https://doi.org/10.1007/978-3-031-18996-8\_3

# 14. <u>Funded Research Work</u>

[1] Ahmed Agwa, <u>Attia El-Fergany</u>, Gamal Sarhan, "Dynamic and steady-state modeling of fuel cells based on atom search optimizer", The Deanship of Scientific Research, Research Center, College of Engineering, Northern Border University, 2019. Project Number: ENG-2018-3-9-F-7813.

#### 15. <u>Scientific Memberships:</u>

- ✓ Senior Member of the IEEE-USA since 2014 (Member since 2011). Member number: 91310181.
- ✓ *Member* of IEEE Power Engineering Society (PES), since 2011.
- ✓ *Member* of IEEE Education Society for 2 years.
- ✓ *Member* of the Institute of Engineering & technology (IET)-UK. Member number: 1100282338.
- ✓ Senior Member of International Association of Computer Science and Information Technology (IACSIT). Member number: 80341984
- ✓ *Member* of the Egyptian Syndicate of Engineers. Member number: 1/1994/3107202/8.
- ✓ *Member* of Society of Egyptian Engineers.
- ✓ International Solar Energy Society (ISES)-Germany, *Professional Member*.
- ✓ Member of Natural Sciences Publishing (NSP)-USA. *Member number: NSP-151159.*
- ✓ Member of the Joint Working Group WG55 (IEC)-TC39 (IEEE) for the P61869-105 since October 2017.

#### 16. <u>Professional Memberships and Positions:</u>

- ✓ Member of the Reviewers' Committee of Egyptian Supreme Council of Universities for Egyptian Universities Promotion Committee (EUPC), Egypt for 13th round for promoting associate and full professors from 2019 to 2022.
- ✓ Appointed via Institute of Electrical and Electronics Engineers (IEEE) to participate in the work of the IEC, including the work of creating International Standards and other IEC publications since 2017.
- ✓ Member of the Faculty Council, Faculty of Engineering, Zagazig University, Zagazig, Egypt. (2019/2020, 2020/2021, 2021/2022, 2022/2023, 2023/2024).
- ✓ Member of the Credit Programs Committee, Faculty of Engineering, Zagazig University, Zagazig, Egypt. (2022/2023, 2023/2024).
- ✓ Member of the cultural relations Committee, Faculty of Engineering, Zagazig University, Zagazig, Egypt. (2018/2019).
- ✓ Member of the Library Committee, Faculty of Engineering, Zagazig University, Zagazig, Egypt. (2017/2018).
- ✓ Member of the Library Committee, Faculty of Engineering, Zagazig University, Zagazig, Egypt. (2017/2018).
- ✓ Member of the Laboratories Committee, Faculty of Engineering, Zagazig University, Zagazig, Egypt. (2016/2017).
- ✓ Member of the Crisis and Disaster Committee, Faculty of Engineering, Zagazig University, Zagazig, Egypt. (2020/2021, 2021/2022).







✓ Member of Monitoring Control for many years, Faculty of Engineering, Zagazig University, Zagazig, Egypt.

# 17. <u>Refereeing and Reviewing for Journals/Conferences</u>

- ✓ Electric Power Components and Systems Taylor & Francis.
- ✓ International Transactions on Electrical Energy Systems (formerly known as European Transactions on Electrical Power (ETEP)) Wiely.
- ✓ IET Journals (formerly IEE Proceedings): Generation, Transmission & Distribution UK.
- ✓ International Journal of Electrical Power and Energy Systems Elsevier.
- ✓ Electric Power System Research Elsevier.
- ✓ Energy Conversion & Management Elsevier.
- ✓ IEEE Transactions on Power Systems USA.
- ✓ IEEE Access USA.
- ✓ JEET (Journal of Electrical Engineering & Technology) South Korea.
- ✓ Ain Shams Engineering Journal Elsevier.
- ✓ Energy Reports Elsevier
- ✓ Applied Energy Elsevier.
- ✓ ISA transactions Elsevier.
- ✓ Neural computing & Applications Springer.
- ✓ Alexandria Engineering Journal Elsevier.
- ✓ Applied soft computing Elsevier, and many more
- ✓ On a yearly basis for MEPCON conference.

# Complete list regarding the details of this part may be obtained from https://www.webofscience.com/wos/author/record/1360301

#### 18. <u>Refereeing and Reviewing for Promotional Committe and research Projects</u>

- ✓ Reviewed TWO Files for promotions to associate professor for 13<sup>th</sup> cycle, Egypt.
- ✓ Reviewed SIX Files for promotions committee of 14<sup>th</sup> cycle, Egypt.
- ✓ Reviewed One File for promotion to Professor for University of Hafr Al-Batin, Saudi Arabia.
- $\checkmark$  One Research project for Qatar National Research fund (QGrants) for Proposal number
  - "NPRP14S-0305-210019" entitled 'Systematic AI-Based Approach for the Integration and Management of EVs Charging Stations in Large Public Facilities' July 2021.
  - "ARG01-0513-230140" entitled 'Engineering Roadmap to Optimal Power Grid Integration of Renewable Energy in Qatar', Sept., 2023.







- "ARG01-0517-230196" entitled 'Ensuring Qatar Grid Resilience through AI based Controlled Islanding of the Power System in the Presence of Intermittent Sources and Loads', Sept. 2023.
- MME04-0607-230060 entitled 'Concept Design and Validation of an Energy-efficient Clear Solar Glass Greenhouse for Higher Food Production in Arid Climate of Qatar', Oct., 2023

# 19. <u>Editorial board activities</u>

- ✓ Editorial Board Member, Alexandria Engineering Journal (AEJ) An International Journal [IF = 3.732/Q1, ranking it 21 out of 91, ISI & Scopus Indexed], Publisher: Elsevier. <u>https://www.journals.elsevier.com/alexandria-engineering-journal/editorial-board</u>
- ✓ Editorial Board Member, Bulletin of Electrical Engineering and Informatics (BEEI) An International Journal [CiteScore = 1.7/Q3, Scopus Indexed}, Publisher: IAES.

# https://beei.org/index.php/EEI/about/editorialTeam

✓ Editorial Board Member, IAES International Journal of Robotics and Automation (IJRA) – An International Journal, Publisher: IAES.

https://ijra.iaescore.com/index.php/IJRA/about/editorialTeam

✓ Guest Editor for Special Issue "Sustainability of Distributed Generation through Virtual Power Plant" with Sustainability– An International Journal [IF = 3.251/Q2, ISI & Scopus Indexded)/Publisher: MDPI, Switzerland.

https://www.mdpi.com/journal/sustainability/special issues/Sustainab Distributed Generation Virt ual Power Plant.

- ✓ Editorial Board Member, Journal of Applied Power Engineering (IJAPE), IAES, <u>https://ijape.iaescore.com/index.php/IJAPE/about/editorialTeam</u>
- ✓ Guest Editor for Special Issue " Optimal Power Flow: Optimization and Control of Electric Power Systems" with Energies – An International Journal [IF = 3.004/Q3, ISI & Scopus Indexed) / Publisher: MDPI, Switzerland.

## 20. <u>Attended Workshops, Symposiums, and Conferences – old to recent</u>

- ✓ International Conference on Communications, Computers and Power (ICCCP01, Muscat, Oman Feb. 12-14, 2001). Paper
- ✓ Electrical Power and Energy Conference (EPEC 2012 London, Ontario, Canada from October 10 to 12, 2012). Paper
- ✓ The 15<sup>th</sup> International Middle East Power Systems Conference (MEPCON'12 Alexandria, Egypt, December, 23-25, 2012) by Alexandria University. Paper + Attendance.
- ✓ The 16<sup>th</sup> International Middle East Power Systems Conference (MEPCON'14 Cairo, Egypt, December, 23-25, 2014) by Ain Shams University. Paper + Attendance.







- ✓ The 19<sup>th</sup> International Middle East Power Systems Conference (MEPCON'19 in Al-Azhar Conference Center, Cairo by Meniofia University, December, 19-21, 2017). Attendance only.
- ✓ Member of International Committee chairs for CAAI 2017.
- ✓ The 20<sup>th</sup> International Middle East Power Systems Conference (MEPCON'20, Al-Masah Hotel, Cairo, by Cairo University, December, 18-20, 2018). Attendance only.
- ✓ The 21<sup>th</sup> International Middle East Power Systems Conference (MEPCON 2019, by Tanta University, December, 17-19, 2019). Attendance only.
- ✓ Member of the Scientific Committee of ICESA Conference Electrical Track 2021. http://icesa-egypt.org/scientific%20committe
- ✓ The 22<sup>nd</sup> International Middle East Power Systems Conference (MEPCON'21 by Assuit University, December, 14-16, 2021). Session Chairman via zoom + Session keynote speaker. <u>http://mepcon.edu.eg/time%20table.html</u>
- ✓ International Conference on Electronics and Electrical Engineering in Dubai, UAE during March 21-23, 2022 Invited Speaker (<u>https://www.albedomeetings.com/2022/eeemeet</u>).
- ✓ The 23<sup>rd</sup> International Middle East Power Systems Conference (MEPCON'22 by Kafrelsheikh University, December, 13-15, 2022). Session Chairman of Session E-4 'Power Quality'.
- ✓ The 24<sup>th</sup> International Middle East Power Systems Conference (MEPCON'22 by Mansoura University, December, 19-21, 2023). Session Chairman of Session A 'Power Systems Control'.

#### 21. <u>Teaching Work & Experience</u>

#### **19.a Undergrade Courses:**

Fundamentals of electrical engineering - Electric machines (1) - Electrical testing's and instrumentations - Protective earthing systems concept and design - Power system measurements (2) - Power system analysis (1) - Power system protection -Power system operation & control - Electrical engineering for mechanical engineering - Utilization of electric energy - Power quality & harmonics-Teaching and supervised many lab/OJT activities.

#### **19.b Postgraduate Courses:**

Power System Protection Using Artificial Intelligence EPE 617 for Masters - Power system quality EPE 619 for Masters - Power System Protection, EPE 508 for Diploma.

#### 22. <u>Five-Days Short Courses (Delivered) to graduate Engineers/Technicians</u>

Conducted several short courses around 200 successful training programs (in-house and/or public) via different Training institutes/providers such as EcoMan, Masters, SOS, IFM, EuroMatch, Define, APEX, IBEC, BTS, etc... for different clients ADDC, ADWEA, Transco, ARAMCO, ZADCO, ADCO, GASCO, Takreer, ADGAS, DUBAL, FEWA, BAPCO, Saudi Electricity, AADC, Tebodin Middle East, SRC, PDO, WNPOC, OXY, DEWA, PetroFac, KAFCO,







QAFCO, QP, Mobily, BanaGas, Lindenberg Emirates, KOC, Kahrmaa, and many more (with different nationalities). Examples of delivered courses are:

Modern electric power systems: design, modeling, analysis & problem solving - LV & HV switchgear operation & maintenance - Electrical submersible pump (ESP) for oil wells -Variable Speed Motor Drive - Electric power distribution system for industrial plants -Electrical equipment installations & maintenance in hazardous areas - Production of electrical drawings - Electrical distribution equipment -Electrical equipment: UPS, generators, motors & switchgear - Electrical drawings & diagrams - Practical Troubleshooting of Electrical Equipment and Control Circuits - Power quality & harmonics - National Electrical Safety Code - Electrical safety & arc flashing hazards and analysis -Fault Analysis in Electrical Networks - Modern protective relays for power systems - Design of modern distribution Networks - Design of LV & HV switchgear - Short Circuit & Fault Analysis Calculations in Distribution Power Systems - Safe operation & maintenance of circuit breakers & switchgears - Power system protection for engineers & technicians -Troubleshooting, maintenance & protection of AC electrical motors & drives - Electrical hazards & safety - Generator control systems - Generator excitation systems - Technical principals of inspection & auditing electrical installations in buildings - Practical distribution transformer - operation & maintenance - Earthing of utility and industrial distribution systems - Wiring regulations E-01 "Regulations & Supervision Bureau (RSB)" - UPS & batteries power supplies - Electrical power system basics for nonelectrical professionals - Troubleshooting & maintenance of power distribution equipment's -Electrical inspection & testing workshop Basic electrical & instrumentation design - Power transformer diagnostic, method, maintenance and lifetime extension - Power Generation & Transmission - Power Network Essentials - Earthing, Bonding, Lightning & Surge Protection of Electrical & Electronic System and Equipment - Substation Automation System & Application - Modern Electrical Power Systems and FACTS and many more.

#### Complete detailed list is available upon request.

## 23. Graduate Projects

- ✓ Fault Diagnosis in power system substations using Expert System Technique Academic year 1998/1999.
- ✓ Peak load shaving using co-generation facilities Academic year 1999/2000.
- ✓ Fault location in transmission lines using Artificial neural networks Academic year 2002/2003.
- ✓ M.V and L.V power system relay co-ordination through MATLAB environment Academic year 2003/2004.
- ✓ Power Quality issues in industrial power systems, Academic year 2004/2005.
- ✓ Protective device coordination for OC and EF Academic year 2017/2018.







- ✓ Relay co-ordination and Arc-flash study Academic year 2019/2020.
- ✓ Relay co-ordination, Arc-flash study and motor starting analysis Academic year 2020/2021.
- ✓ Settings of protection units of large generator Academic year 2021/2022.
- ✓ Integrated protection units of Medium and large generators Academic year 2023/2024.

#### 24. <u>Some of Industrial Technical studies and Consultations</u>

Title	Owner		
Power factor issues at ElKomy Steel Factory – Suez	ElKomy Steel Factory - Egypt		
Review short circuit & Relay co-ordination of main network – Qarun Field	Qarun Petroleum CoEgypt		
Inspection & Handover report between BA & Gemmo: Inspection of all	Bibliotheca Alexandria (BA)-		
main power system components including HV CBs, Relays, Generator,	Egypt		
Transformers, LV & HV Switchboards			
Electrical PMWI's for Bibliotheca Alexandria via MMT	Bibliotheca Alexandria (BA)-		
	Egypt		
Update of Protection System for Mala Fields at Block 5A via Star	WNPOC/Star Contracting-		
Contracting	Sudan		
Load flow analysis, short circuit analysis and coordination study for Mala	WNPOC/Star Contracting-		
Fields at Block 5A via Star Contracting	Sudan		
Study the adequacy of CTs for WNPOC network	WNPOC/Star Contract-Sudan		
Review setting of relays of new Das Training center substation as per co-	ADMA-Opco (Abu Dhabi –		
ordination study, review of short circuit & Arc flash study.	UAE)		
Review the ground grid design as per IEEE 80 of Um Alnar by MacMott	Abu Dhabi –UAE		
Review Load Flow, Short Circuit, Motor Starting, , Dynamic Stability	ADMA-Opco (Abu Dhabi –		
Studies of New Potable Water Generation Units, Das Island	UAE)		
Creation of Maintenance checklists for ADCO – Abu Dhabi (UAE).	FIRST / UAE		
Competency models for Taweela Station – Abu Dhabi (UAE).	EcoMan / UAE		
Review Short circuit analysis and over current coordination study for MV	AL Nouran Sugar Factory,		
and LV electrical network and highlight any violations	Egypt		
Technical support to Canal Project (Sugar) – Minia	APEC, Egypt		
Wootech Medium Density Fiberboard (MDF) – Generator settings and	APEC, Egypt		
relay co-ordination study – Review			
Calculations of HZ REF (64) for MV/LV transformer and for generator –	Neom – Saudai Arabi		
Sindalah Island (KSA)			
Load flow, harmonic study and relay co-ordination	Canal Sugar Factory		
Renewable integration feasibilities	Zafrana		
And many more			

#### 25. <u>References</u>

Available upon request.

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