Mahmoud Elkhouli

1. *Personnel Data*

A'sharqiyah University, College of Engineering
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2. *Short Biography*

Mahmoud Elkhouli received the BSc degree (1994), MSc degree (1998) and PhD degree (2001), all in Electrical Power and Machines Engineering from Zagazig University in Zagazig, Egypt. He has been listed as 1st rank over his graduated colleagues (1994). He has been with the University of Zagazig since 1995, presently as Assistant Professor at College of Engineering, ASU university and Full Professor at Faculty of Engineering, Zagazig University. Elkhouli has authored/co-authored numerous articles published in the refereed renowned journals. Mahmoud has been given many awards for distinct international publishing. In addition, he delivered numerous short courses and participated in many fields of electrical technical studies. He is a Senior Member of the IEEE (Member # 950991234)).

He is a reviewer to evaluate the scientific production to fill the positions of professors and assistant professor for 14th edition at Supreme Council of Egyptian Universities- Electrical Power and Machines Engineering Committee (Member # 27134).

Elkhouli developed the electrical studies and design of many projects for many factories and companies (i.e BESS study for Toshiba International Corporation Pty Ltd Australia, Procter & Gamble (P&G) Egypt, P&G Nigeria, Mobinil, Continental Touristic Investment and Hotels Co Ltd, Cairo, SEGA.M, National Service Projects Agency for the Armed Forces (Egypt), El Arabia for Import & Export and zagazig university.

His researches are concerned with the renewable energy (Wind, PV and Fuel Cell), application of the artificial intelligent techniques in control the electric drives, energy saving of electrical machines, power electronics and solving electric power system problems

3. Education

Degree	University	Date	Comments
Ph.D. Degree in Electrical Power and Machines Engineering	Zagazig University, Egypt	Nov. 2001	**Thesis:** 'Optimum Characteristics of Three Phase Drives for Digital Speed Control'
M.Sc. Degree in Electrical Power and Machines Engineering	Zagazig University, Egypt	Apr., 1998	**Thesis:** 'Performance Analysis of Twin Induction Motors with Field Oriented Control.
B.Sc. in Electrical Power and Machines Engineering	Zagazig University, Egypt	May, 1994	**Project:** 'Optimum design of three phase transformers **Overall Accumulated:** *Very good (84.38%)* *1st rank of my graduated colleagues and Excellent grade (91.30%), Final year.*

4. Employment

4.1 Academic

Position	Place
Assistant Professor	A'sharqiyah University, College of Engineering
Quality Academic manager of electric power and machines program	Zagazig University, Egypt.
Professor from Egyptian Supreme Council of Universities	Zagazig University, Egypt.
Head of Electrical Department	Electrical Department, Faculty of Engineering, King Khalid University – ABHA – KSA
Associate Professor	Zagazig University, Egypt.
Assistant Professor	Zagazig University, Egypt.
Assistant professor	Electrical power and Machines Department, Faculty of Engineering, Derna, Omar Almukhtar University, Libya
Assistant lecturer	Zagazig University, Egypt.
Demonstrator	Zagazig University, Egypt.

4.2 Industrial

Position	Place
Renewables & Drives Team Leader	SMART SOLUTIONS Company
Technical Consultant	Integrated Bureau for Engineering & Consultations (IBEC) Office – Cairo- Egypt
Technical Support	SEGA.M CO for electrical product 10th Ramadan Egypt
Technical Consultant	Technical Research and Consulting Center - Zagazig- Egypt
Head of electrical department	Roshdy Metal Industries (RMI) factory and Roshdy Company for General Contracts. Zagazig-Egypt

5. Prizes, Appreciations and Awards

- ✓ Distinct International publishing in highly impact factor Journals for 2016/2017/2018/2019/2020,2021/2022/2023 (Zagazig University–Egypt).
- ✓ Appreciation from faculty of Engineering (Zagazig University–Egypt/2001).
- ✓ Appreciations/ recognition award for the best graduation project in electrical engineering department, faculty of Engineering, King Khalid University, KSA. (2014).
- ✓ . Appreciation from students Affairs, King Khalid University, KSA for the success students' activities. (2013/2014).
- ✓ Distinct award for the head of electrical engineering department in faculty of Engineering, King Khalid University, KSA. (2012/2013).
- ✓ Appreciation from students Affairs, King Khalid University, KSA for Organization and success 3rd scientific conference of high education students. (2012).
- ✓ Appreciations/ recognition awards for appreciate performance in developing the faculty of engineering, Derna, Omar Almukhtar University, Libya. (2009-2010).

6. Research & Academic Interests

- Applications of artificial intelligent techniques to control of electric machines,
- Energy saving and Efficiency maximization electric drive systems,
- Wind energy conversion system (WECS), operation, maximum power point tracking, active and reactive power control, & optimizations,
- Photovoltaic (PV) studies, operation, parameters estimation and maximum power point using soft computing algorithms,
- Fuel Cell (FC) studies, operation, parameters estimation and it's applications in electric vehicles and
- Coordination studies.
- Power system studies for Battery Energy Storage System (BESS).

7. Published Papers in the Journals and Conferences

[1] Bahgat, B.H., A. El-Hay, ***Mahmoud M. Elkholy***, "Advanced fault detection technique of three phase induction motor: comprehensive review", Discover Electronics, Vol. 1, 9 (2024). https://doi.org/10.1007/s44291-024-00012-3.

[2] Ashraf Abd El-Raouf, ***Mahmoud M. Elkholy***, M. A. Farahat and Mohammed Elsayed Lotfy," Demand Response Approach for Coordinated Scheduling of EV Charging in a Micro-Grid", Electric Power Components and Systems, Vol. *52*(6), 905–916, 2024, https://doi.org/10.1080/15325008.2023.2237021, **WOS Index/Scopus Cited**

[3] Bahgat, B.H., A. El-Hay, Tole Sutikno, ***Mahmoud M. Elkholy***, "Revolutionizing motor maintenance: a comprehensive survey of state-of-the-art fault detection in three-phase induction motors", International Journal of Power Electronics and Drive Systems (IJPEDS), Vol. 15, No. 3, (2024), pp. 1968-1989, DOI: 10.11591/ijpeds.v15.i3.pp1968-1989.(**Scopus Cited)**

[4] Ashraf, H., ***Mahmoud M. Elkholy***, Abdellatif, S.O., A. A. El-Fergany, "Honey badger optimizer for extracting the ungiven parameters of PEMFC model: Steady-state assessment", 24th International Middle East Power Systems Conference (MEPCON), Mansoura University, Egypt 19-21 December 2023, **(IEEE Sponsored/Scopus Cited)**

[5] H. Ashraf, ***Mahmoud M. Elkholy***, S. O. Abdellatif, and A. A. El-Fergany, "Accurate emulation of steady-state and dynamic performances of PEM fuel cells using simplified models," Scientific Reports 2023;13(1):19532. https://doi.org/10.1038/s41598-023-46847-w. **WOS Index/Scopus Cited**

[6] M. Abdelateef Mostafa, Enas A. El-Hay, ***Mahmoud M. Elkholy***, "An Overview and Case Study of Recent Low Voltage Ride Through Methods for Wind Energy Conversion System", Renewable and Sustainable Energy Reviews, Vol. 183, September 2023, https://doi.org/10.1016/j.rser.2023.113521 **, WOS Index/Scopus Cited**

[7] M. Abdelateef Mostafa, Enas A. El-Hay, ***Mahmoud M. Elkholy***, "Optimal Low Voltage Ride through of Wind Turbine Doubly Fed Induction Generator based on Bonobo Optimization Algorithm", Scientific Reports, 13, 7778 (2023). https://doi.org/10.1038/s41598-023-34240-6, **WOS Index/Scopus Cited**

[8] Abdelmonem Draz, ***Mahmoud M. Elkholy***, A. A. El-Fergany, "Automated settings of over-current relays considering transformers phase shift and distributed generators using gorilla troops optimizer", Mathematics 2023, 11(3), 774; https://doi.org/10.3390/math11030774. **JCR WOS Index/Scopus Cited**

[9] M. Abdelateef Mostafa, Enas A. El-Hay, ***Mahmoud M. Elkholy***, "Optimal maximum power point tracking of wind turbine doubly fed induction generator based on driving training algorithm, Wind Engineering,2023,. https://doi.org/10.1177/0309524X221150443. **JCR Scopus Cited**

[10] M. Abdelateef Mostafa, Enas A. El-Hay, ***Mahmoud M. Elkholy***, "Recent Trends in Wind Energy Conversion System with Grid Integration Based on Soft Computing Methods: Comprehensive Review,Comparisons and Insights, Archives of Computational Methods in

Engineering, Available online 8 November 2022, In press https://doi.org/10.1007/s11831-022-09842-4. **JCR WOS Index/Scopus Cited**

[11] Ashraf, H., ***Mahmoud M. Elkholy***, Abdellatif, S.O., A. A. El-Fergany, "Synergy of neuro-fuzzy controller and tuna swarm algorithm for maximizing the overall efficiency of PEM fuel cells stack including dynamic performance", Energy Conversion and Management: X, Vol. 16, December 2022, 100301, https://doi.org/10.1016/j.ecmx.2022.100301. **JCR WOS Index/Scopus Cited**

[12] Ashraf, H., ***Mahmoud M. Elkholy***, Abdellatif, S.O., A. A. El-Fergany, "Honey badger optimizer for extracting the ungiven parameters of PEMFC model: Steady-state assessment", Energy Conversion and Management, Vol. 258 (15), 15 April 2022, https://doi.org/10.1016/j.enconman.2022.115521. **JCR WOS Index/Scopus Cited**

[13] Abdelmonem Draz, ***Mahmoud M. Elkholy***, A. A. El-Fergany, "Over-Current Relays Coordination Including Practical Constraints and DGs: Damage Curves, Inrush, and Starting Currents", Sustainability 2022, 14, 2761. https://doi.org/10.3390/su14052761. **JCR WOS Index/Scopus Cited.**

[14] Ashraf, H., Abdellatif, S.O., ***Mahmoud M. Elkholy***, A. A. El-Fergany, "Computational Techniques Based on Artificial Intelligence for Extracting Optimal Parameters of PEMFCs: Survey and Insights", Archives of Computational Methods in Engineering, Available online 15 February 2022, In press (2022). https://doi.org/10.1007/s11831-022-09721-y. **JCR WOS Index/Scopus Cited**

[15] Ahmed H. Abd-Elkareem, M. A. El-Hameed, ***Mahmoud M. Elkholy***, "Effective damping of local low frequency oscillations in power systems integrated with bulk PV generation", Protection and Control of Modern Power Systems", 6:41 (2021), pp1-13, https://doi.org/10.1186/s41601-021-00219-6, **Scopus Cited.**

[16] ***Mahmoud M. Elkholy***, Enas A.El-Hay, A. A. El-Fergany, "Synergy of electrostatic discharge optimizer and experimental verification for parameters estimation of three phase induction motors ", Engineering Science and Technology, an International Journal, Available online 18 October 2021, In press (doi: 10.1016/j.jestch.2021.09.013), **JCR ISI Index/Scopus Cited**

[17] Abdelmonem Draz, ***Mahmoud M. Elkholy***, A. A. 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 2021;33(18):11875–11887, doi: 10.1007/s00521-021-05879-x. **JCR ISI Index/Scopus Cited.**

[18] Ahmed H. Abd-Elkareem, M. A. El-Hameed, ***Mahmoud M. Elkholy***, "Designing optimal power system stabilizer for synchronous generator with and without damper windings ", The Egyptian International Journal of Engineering Sciences and Technology, Vol. 34, 2021, pp65-75. (doi: 10.21608/EIJEST.2021.58288.1040)

[19] Abdelmonem Draz, ***Mahmoud M. Elkholy***, A. A. El-Fergany, "Soft Computing Methods for Attaining the Protective Device Coordination Including Renewable Energies: Review

and Prospective, Archives of Computational Methods in Engineering, Vol. 28(1), January 2021, pp. 491-501, (doi: 10.1007/s11831-021-09534-5). **JCR ISI Index/Scopus Cited.**

[20] ***Mahmoud M. Elkholy***, M. A. El-Hameed, A. A. El-Fergany, "Artificial ecosystem-based optimizer to electrically characterize PV generating systems under various operating conditions reinforced by experimental validations", IET Renewable Power Generation, 2021 (doi: 10.1049/rpg2.12059), **JCR ISI Index/Scopus Cited.**

[21] M. A. El-Hameed, ***Mahmoud M. Elkholy***, A. A. El-Fergany, "Three diode model for characterization of industrial solar generating units using Manta-rays foraging optimizer: Analysis and validation", Energy Conversion and Management, Vol. 209 , 2020, pp. 491-501. (doi: 10.1016/j.enconman.2020.113048), **JCR ISI Index/Scopus Cited.**

[22] Elbarbary Z. M. Salem, Haitham Z. Azazi, Saad F. Al-Gahtani, ***Mahmoud M. Elkholy***, "Open Gate Fault Diagnosis and Tolerant for Voltage Source Inverter Fed Speed Sensorless Induction Motor Drive", International Journal of Electronics, Accepted author version posted online: 18 Apr 2020, https://doi.org/10.1080/00207217.2020.1756434. **JCR ISI Index/Scopus Cited.**

[23] Mohammed A. El-Hameed, ***Mahmoud M. Elkholy***, Attia El-Fergany, "Efficient frequency regulation in highly penetrated power systems by renewable energy sources using stochastic fractional optimizer" IET Renewable Power Generation, Vol.13, No. 12, 09 September 2019, pp. 2174 – 2183 , doi: 10.1049/iet-rpg.2019.0186., **JCR ISI Index/Scopus Cited.**

[24] ***Mahmoud M. ELkholy***, E. A. Elhay, "Efficient dynamic performance of brushless DC motor using soft computing approaches", Neural computing and Applications, Vol. 32, 2020, pp. 6041-6054, doi: 10.1007/s00521-019-04090-3, **JCR ISI Index/Scopus Cited.**

[25] ***Mahmoud M. Elkholy***, Fathi Abd-Elkader, "Optimal energy saving of doubly fed induction motor based on scalar rotor voltage control and water cycle algorithm", COMPEL: The International Journal for Computation and Mathematics in Electrical and Electronic Engineering, Vol. 38 No. 2, 2019. pp. 793-814, doi: 10.1108/COMPEL-05-2018-0225, **JCR ISI Index/Scopus Cited.**

[26] ***Mahmoud M. Elkholy***, M. A. El-Hameed, A. A. El-Fergany, "Harmonic analysis of hybrid renewable microgrids comprising optimal design of passive filters and uncertainties", Electric', Power Systems Research, Vol. 163, No. PA, 2018, pp. 491-501. (doi: 10.1016/j.epsr.2018.07.023), **JCR ISI Index/Scopus Cited.**

[27] E. A. Elhay, ***Mahmoud M. ELkholy***, "Optimal Dynamic and Steady State Performance of Switched Reluctance Motor Using Water Cycle Algorithm", IEEJ Transactions on Electrical and Electronic Engineering, Vol.13, No. 6, 2018, pp. 882-890. (doi:10.1002/tee.22642), **JCR ISI Index/Scopus Cited.**

[28] ***Mahmoud M. Elkholy***, "Steady state and dynamic performance of self excited induction generator using facts controller and teaching learning-based optimization algorithm" COMPEL: The International Journal for Computation and Mathematics in Electrical and

Electronic Engineering, Vol. 37 No. 1, 2018. pp. 77-97, doi: 10.1108/COMPEL-12-2016-0589, **JCR ISI Index/Scopus Cited**.

[29] Abdullah Elewa, ***Mahmoud M. Elkholy***, Mahdi El-arini, "Adaptive MPPT for PV Systems under Partial Shadow Condition and Different Loads using Advanced Optimization Techniques" Proc. of the Nineteenth International Middle East Power Systems Conference MEPCON 2017 Shebin El- kom, Egypt, Dec. 19-21,2017. **ISI Index/Scopus Cited**.

[30] Radwa.R.Abou El-Ela, ***Mahmoud M. Elkholy***, S.I.Selem, H.M.B.Metwally, "Parameter Estimation of Lithium-Ion Batteries Dynamic Model Based on Water Cycle Algorithm", Proc. of the Nineteenth International Middle East Power Systems Conference MEPCON 2017 Shebin El- kom, Egypt, Dec. 19-21,2017. **ISI Index/Scopus Cited**.

[31] ***Mahmoud M. Elkholy***, "Optimal Energy Saving for Variable Speed Single Phase Induction Motor Drives", Proc. of the Nineteenth International Middle East Power Systems Conference MEPCON 2017 Shebin El- kom, Egypt, Dec. 19-21,2017, **ISI Index/Scopus Cited**.

[32] Ashraf Abd El-Raouf, ***Mahmoud M. Elkholy***, M. A. Elhameed, M. El-Arini, "Effect of Antlion Optimized Facts to Enhance Three Phase Induction Motor Dynamic Performance", Proc. of the Nineteenth International Middle East Power Systems Conference MEPCON 2017 Shebin El- kom, Egypt, Dec. 19-21,2017. **ISI Index/Scopus Cited**.

[33] ***Mahmoud M. Elkholy***, Zakaria Elbarbary, "Performance Analysis of Indirect Rotor Field Orientation Five Phase Induction Motor Using Eight Switch Inverter", International Journal of Power Electronics and Drive System (IJPEDS), Vol.8, No.3, September 2017, pp. 1128-1138, doi: 10.11591/ijpeds.v8i3, **Scopus Cited**.

[34] ***Mahmoud M. Elkholy***, Zakaria Elbarbary, "performance analysis of indirect rotor field orientated control for five phase induction motor drive", Engineering Research Journal, Vol. 40, No. 1, January 2017, PP. 9-18.

[35] Ashraf Abd Elraouf, ***Mahmoud Elkholy***, M. A. Elhameed and Mahdi El-Arini, "Antlion-based optimization of facts devices' controllers to enhance three phase induction motor dynamic performance", European Journal of Research, № 4 (4), 2017, pp. 6-28. (ISSN 2521-3261 (Online), ISSN 2521-3253 (Print), doi: 10.26739/2521-3253-2017-4-4-1.

[36] ***Mahmoud M. Elkholy***, H. M. B. Metwally, Garib M. Regal, M. Ali Sadek, "Optimal active and reactive power control of wind turbine driven DFIG using TLBO algorithm and artificial neural networks", International Journal of Renewable Energy Technology, Vol. 8, No. 2 , 2017, pp. 132-153, doi: 10.1504/IJRET.2017.086810 (ISSN online:1757-398X, ISSN print: 1757-3971).

[37] ***Mahmoud M. Elkholy***, H. M. B. Metwally, Garib M. Regal, M. Ali Sadek, "Efficient Operation of Wind Turbine with Doubly Fed Induction Generator Using TLBO Algorithm and Artificial Neural Networks", International Review on Modelling and Simulations (I.RE.MO.S.), Vol. 9, N. 6 , December 2016, pp. 464-472, doi: 10.15866/iremos.v9i6.10309. **Scopus Cited**.

[38] ***Mahmoud M. Elkholy***, Ahmed Fathy, "Optimization of a PV fed water pumping system without storage based on teaching-learning-based optimization algorithm and artificial neural network", Solar Energy, Volume 139, 1 December 2016, pp. 199-212, **JCR ISI Index/Scopus Cited**.

[39] ***Mahmoud M. Elkholy***, Mohammed A. Elhameed "Minimization of Starting Energy Loss of Three Phase Induction Motors Based on Particle Swarm Optimization and Neuro Fuzzy Network", International Journal of Power Electronics and Drive System (IJPEDS), Vol.7, No.4, December 2016, pp1038-1048, doi: 10.11591/ijpeds.v7.i4. **Scopus Indexed**.

[40] ***Mahmoud M. Elkholy***, Mohammed A. Elhameed, "Efficient Sensorless Speed Control of Induction Motors Using Hybrid Grey Wolf Optimizer and Neural Network", International Review of Automatic Control (I.RE.A.CO.), Vol. 9, No. 2, March 2016, pp. 55-63, doi: 10.15866/ireaco.v9i2.8721, **Scopus Indexed**.

[41] Mohammed A. Elhameed, ***Mahmoud M. Elkholy***, "Assessment of Optimal Power Flow Using Cuckoo Search Optimization Technique", Proc. of the 17th International Middle East Power Systems Conference (MEPCON'2015), Mansoura University, Egypt, Dec. 15-17, 2015, pp. 1-5 (IEEE Sponsored).

[42] Mohammed A. Elhameed, ***Mahmoud M. Elkholy***, "Optimal Power Flow Using Cuckoo Search Considering Voltage Stability", WSEAS TRANSACTIONS on POWER SYSTEMS, Vol. 11, 2016, pp. 18-26, **Scopus Indexed**.

[43] ***Mahmoud M. Elkholy***, Mohammed A. Elhameed "Braking of Three Phase Induction Motors by Controlling Applied Voltage and Frequency Based on Particle Swarm Optimization Technique", International Journal of Power Electronics and Drive System (IJPEDS), Vol. 5, No. 4, April 2015, pp. 520-528, doi: 10.11591/ijpeds.v5.i4.pp520-528, **Scopus Indexed**.

[44] ***Mahmoud M. Elkholy***, Mohammed A. Elhameed "Braking of Three Phase Induction Motors by Controlling Applied Voltage and Frequency Based on Particle Swarm Optimization Technique", International Review of Automatic Control (I.RE.A.CO.), Vol. 8, No. 2, March 2015, pp. 106-112, doi: 10.15866/ireaco.v8i2.5056, **Scopus Indexed**.

[45] ***Mahmoud M. Elkholy***, Mohammed A. Elhameed "Neuro-Genetic Adaptive Optimal Controller for DC Motor", International Journal of Power Electronics and Drive System (IJPEDS), Vol.4, No.3, September 2014, pp. 393-399, doi: 10.11591/ijpeds.v4i3.5750, **Scopus Indexed**.

[46] Zakaria M. Salem, ***Mahmoud M. Elkholy***, "Performance Analysis of Field Orientation of Induction Motor Drive under Open Gate of IGBT Fault", International Journal of Power Electronics and Drive System (IJPEDS), Vol.3, No.3, September 2013, pp. 304-310, (doi: 10.11591/ijpeds.v3i3.4310), **Scopus Indexed**.

[47] Hamed EL-Shewy**,** ***Mahmoud M. Elkholy***, Nashwa M. Mounir, "Effects of Early Switching OFF angle on Stepping Motors Performance", The Egyptian International Journal of ENG. Sciences & Technology, Faculty of engineering, Zagazig University, Vol. 14(2), May 2011, pp.245-256. (doi: 10.21608/EIJEST.2011.96696)

[48] ***Mahmoud M. Elkholy***, Hamid M.Elshwey and Afaf F. Abdel-kader, "Effects of Different Parameters on the Average characteristics of Switched Reluctance Motor", International Journal of Engineering Science and Technology (IJEST), Vol. 3, No. 9, September 2011, PP.6969 – 6982. (e-ISSN: 0975-5462. p-ISSN:2278-9510)

[49] S.E Kandil and ***Mahmoud M. Elkholy***, "Maximum Efficiency Operation of Three Phase Induction Motor Fed From Variable Frequency Single Phase Supply", Proc. of the 13th International Middle East Power Systems Conference MEPCON 2009, Assiut University, Egypt, Dec. 20-23, 2009, pp. 350-355 **(IEEE Sponsored)**.

[50] ***Mahmoud M. Elkholy***, Hamid M.Elshwey and Afaf F. Abdel-kader, "Developed Operation of Switched Reluctance Motor by Advancing the Switching ON Angle", Proc. of the 13th International Middle East Power Systems Conference MEPCON 2009, Assiut University, Egypt, Dec. 20-23, 2009, pp. 344-349 **(IEEE Sponsored)**.

[51] H. M. El Shewy, F. E. Abd Al Kader, ***Mahmoud M. Elkholy*** and A. El Shahat, "Dynamic Modeling of Permanent Magnet Synchronous Motor Using MATLAB – Simulink", Proceedings of the 6th ICEENG (International Conference on Electrical Engineering) Conference, Military Technical College Kobry El-Kobbah Cairo, Egypt, 27-29 May, 2008.

[52] ***Mahmoud M. Elkholy***, "Adaptive Model for Three Phase Induction Motor Using Neural Networks", Engineering Research Journal, Faculty of Engineering, Minoufiya University, Egypt, Vol, 30, No. 2, April 2007, pp.143-148. (ISSN: 1110-1180)

[53] S.E Kandil and ***Mahmoud M. Elkholy***, "Improved running characteristics of single phase induction motors by capacitor excitation of the auxiliary winding", Proc. of the 8th International Middle East Power Systems Conference MEPCON 2005, Port Said Egypt, pp. 231-237 **(IEEE Sponsored)**.

[54] ***Mahmoud M. Elkholy***, "Torque maximization and efficiency improvement of a capacitor type single phase induction motor using capacitor and voltage control", Proc. of the Ninth International Middle East Power Systems Conference MEPCON 2003, Shebin El- kom, Egypt, Dec. 16-18,2003, pp. 339-344 **(IEEE Sponsored)**.

[55] N. A. Elsonbaty and ***Mahmoud M. Elkholy***, "Optimum Characteristics of Variable Frequency Synchronous Motor Drive", Engineering Research Journal, Faculty of Engineering, Minoufiya University, Egypt, Vol. 25, No. 1, January 2002, pp.187-200.

[56] H. M. B Metwally, F. E. Abdel-Kader, H. M. El-shewy, ***Mahmoud M. Elkholy***, "Proposed torque optimized behavior for digital speed control of induction motors", Energy Conversion and Management, Vol. 43, PP. 1675-1688, 2002, doi: 10.1016/S0196-8904(01)00123-6, **JCR ISI Index/Scopus Cited**.

[57] H. M. B Metwally, F. E. Abdel-Kader, H. M. El-shewy, ***Mahmoud M. Elkholy***, "Optimum performance characteristics of doubly fed induction motors using field oriented control", Energy Conversion and Management, Vol. 43, PP. 3-13, 2002, doi: 10.1016/S0196-8904(01)00016-4, **JCR ISI Index/Scopus Cited**.

[58] ***Mahmoud M. Elkholy***, N. Elsonbaty, F. E. Abd El-Kader and H.M. ElShewy, "High Performance Low Speed Operation Of Brushless Cascaded Induction Motor", Proc. of the

6th International Middle East Power Systems Conference MEPCON 98, Mansoura, Egypt, Dec. 15-17, 1998, PP. 449-457 **(IEEE Sponsored)**.

8. *Under Review Papers in the Journals and Conferences*

[1] M. Mansour Algendy, Enas A. El-Hay, Mahmoud M. Elkholy, "A comprehensive review of permanent magnet synchronous motors: Control strategies Challenges and Insights", Scientific Reports, Under Review. (2024)

[2] M. Abdelateef Mostafa, Enas A. El-Hay, Mahmoud M. Elkholy, "Torque ripple minimization and maximum power point tracking of wind turbine doubly fed induction generator based on bonobo optimization algorithm", Energy, Under Review. (2024)

[3] H. Ashraf, S. O. Abdellatif, Mahmoud M. Elkholy and A. A. El-Fergany, " Semiempirical implementation for the characteristic identification of PEM fuel cells with help of optimization methods " Scientific Reports, Under Review. (2024)

9. *Thesis Supervison*

- **PhD**: Thesis Title: "Optimal Performance of Doubly Fed Induction Generator Driven by Wind Turbine Using Advanced Techniques", Completed.
- **PhD**: Thesis Title: "Optimal Control of wind turbine doubly fed induction generator based on soft computing approaches", Completed.
- MSc: Thesis Title: "Performance Assessment of Fuel Cells Stack with AC motor drive", Completed.
- MSc: Thesis Title: "Hybrid Electric Vehicles based on Solar Energy", Completed.
- MSc: Thesis Title: "Improvement the performance of the photovoltaic system based on modern techniques", Completed.
- MSc: Thesis Title: "Developed operation of the switched reluctance motor", Completed.
- MSc: Thesis Title: "Self excited induction generator", Completed.
- MSc: Thesis Title: "The effect of SVC on the dynamic performance of three phase induction motors", Completed.
- MSc: Thesis Title: "Study and Control of Electrical Machines", Completed.
- MSc: Thesis Title: "Optimum Settings of Protection Relays in Power Systems with and without Distributed Generators", Completed.
- MSc: Thesis Title: "Enhancement of the dynamic performance of synchronous generators", Completed
- **PhD**: Thesis Title: "Optimal operation of electric vehicles integrated with renewable energy", On going.
- MSc: Thesis Title: "Optimal operation of three phase permanent magnet synchronous motor drives", On going.
- MSc: Thesis Title: "Steady State and Dynamic Performance of Three Phase Induction Motors fed from PV", On going.
- MSc: Thesis Title: "Optimal Operation of Single Phase Induction Motor Drives", On going.
- MSc: Thesis Title: "Advanced Fault Diagnosis Techniques of Three Phase Induction Motors", On going.
- MSc: Thesis Title: "Optimum operation of isolated wind turbine doubly fed induction generator ", On going.

10. Reviewer for Theses

- **PhD**: Thesis Title: "Optimal Control of wind turbine doubly fed induction generator based on soft computing approaches", Zagazig University, Egypt.
- **PhD**: Thesis Title: "Optimal Performance of Doubly Fed Induction Generator Driven by Wind Turbine Using Advanced Techniques", Zagazig University, Egypt.
- **PhD**: Thesis Title: "Enhancement of Power System Stability Using FACTS Devices", Aligarh Muslim University, India.
- **PhD**: Thesis Title: "Hybrid Electric Vehicles based on Solar Energy ", Zagazig University, Egypt.
- **MSc:** Thesis Title: " Strengthening Fault Ride-Through Capabilities of Micro-grids using Energy Storage Device", Zagazig University, Egypt.
- **MSc:** Thesis Title: " Improvement the performance of the photovoltaic system based on modern techniques", Zagazig University, Egypt.
- **MSc**: Thesis Title: "The effect of SVC on the dynamic performance of three phase induction motors ", 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: "The effect of SVC on the dynamic performance of three phase induction motors", Zagazig University, Egypt.
- MSc: Thesis Title: "Hybrid Electric Vehicles based on Solar Energy", Zagazig University, Egypt.
- MSc: Thesis Title: "Performance Improvement of Hybrid excitation Synchronous Motors for Electric Vehicles Applications", Zagazig University, Egypt.
- MSc: Thesis Title: "Studying the impact of DG technologies on the power quality of distribution networks", Zagazig University, Egypt.
- Shared in Many Comperhensive exams for PhD students.

11. Book Chapters

- M. El-Hameed, ***Mahmoud M. Elkholy***, *A. EL-Fergany*, "Effective frequency control in renewable dominated power systems", In: Sandeep Dhundhara, Yogendra Arya and Ramesh C. Bansal(eds), Chater 3, "Advanced Frequency Regulation Strategies in Renewable-Dominated Power Systems", 1st Edition - September 1, 2023, eBook ISBN: 9780323950558, DOI ::https://doi.org/10.1016/C2021-0-02707-3, **Elsevier Inc. publishing house**
- A. Draz, ***Mahmoud M. Elkholy***, *A. EL-Fergany*, A. (2023). Optimized Settings of Over Current Relays in Electric Power Systems. In: Zobaa, A.F., Abdel Aleem, S.H. (eds) Modernization of Electric Power Systems Energy Efficiency and Power Quality, eBook ISBN: ISBN 978-3-031-18996-8. https://doi.org/10.1007/978-3-031-18996-8., **Springer Nature Switzerland.**
- M. El-Hameed, ***Mahmoud M. Elkholy***, *A. EL-Fergany* "Harmonics suppression in polluted renewable isolated/grid-connected microgrids, *Chapter 4* In: Energy Efficiency of Modern Power and Energy Systems, Elsevier, (Accepted and in proof),. **Elsevier Inc. publishing house**
- M. Abdelateef Mostafa, Enas A. El-Hay, and ***Mahmoud M. ELkholy***, Recent maximum power point tracking methods for wind energy conversion system, Elsevier, *Chapter 6* In: Energy Efficiency of Modern Power and Energy Systems, (Accepted and in proof). **Elsevier Inc. publishing house**
- Hossam Ashraf, ***Mahmoud M. Elkholy***, Sameh O. Abdellatif, and Attia A. El-Fergany, "Energy saving of isolated microgrids comprising PEM fuel cells stack feeding variable loads based on

AI-based approaches", *Chapter 7* In: Energy Efficiency of Modern Power and Energy Systems, Elsevier, (Accepted and in proof),. **Elsevier Inc. publishing house**.

12. Scientific Memberships:

- ✓ Senior Member of the IEEE-USA. Member number: 95091234.
- ✓ Member of the Egyptian Syndicate of Engineers. Member number: 1/1994/3107101/8.

13. Professional Memberships and Positions:

- ✓ Head of control of the Electrical Departments (2022-2023)/(2023-2024)
- ✓ Member of the Faculty Council, Faculty of Engineering, Zagazig University, Egypt,. (2023-2024).
- ✓ Member of the Postgraduate Council, Faculty of Engineering, Zagazig University, Egypt (2023-2024).
- ✓ Member of the Faculty Council, Faculty of Engineering, King Khalid University, Abha, KSA. (2012/2013, 2013/2014).
- ✓ Member of the Library Committee, Faculty of Engineering, Zagazig University, Zagazig, Egypt. (2019/2020).
- ✓ Member of the post graduate studies Committee, Faculty of Engineering, Zagazig University, Zagazig, Egypt for many years.
- ✓ Member of the Laboratories Committee, Faculty of Engineering, Zagazig University, Zagazig, Egypt.
- ✓ Member of Control Committee for many years, Faculty of Engineering, Zagazig University, Zagazig, Egypt.

14. Refereeing and Reviewing for Journals/Conferences

- ✓ IEEE Transactions on Power Electronics – (IEEE)
- ✓ IEEE Transactions on Industrial Electronics – (IEEE)
- ✓ Engineering Applications of Artificial Intelligence – (Elsevier)
- ✓ Engineering Science and Technology, an International Journal - (Elsevier)
- ✓ Alexandria Engineering Journal – (Elsevier).
- ✓ Swarm and Evolutionary Computation- (Elsevier)
- ✓ Journal of Electrical Engineering & Technology – (Springer Nature)
- ✓ Electric Power Components and Systems – (Taylor& Francis).
- ✓ IET Electric Power Applications – (Wiley)
- ✓ International Journal of Numerical Modelling: Electronic Networks, Devices and Fields – (Wiley)
- ✓ COMPEL: The International Journal for Computation and Mathematics in Electrical and Electronic Engineering – (Emerald Group Publishing).
- ✓ Electrical Engineering (Springer Nature)
- ✓ International Journal of power electronic and drive systems (IJPEDS) (
- ✓ American Journal of Electrical Power and Energy
- ✓ Egyptian International Journal for Engineering Sciences and Technology, Egypt.

- ✓ Journal of Engineering Research and Reports – India
- ✓ Asian Journal of Mathematics and Computer Research
- ✓ Current Journal of Applied Science and Technology
- ✓ MEPCON conference. (Elsevier)
- ✓ Chairman of Session B5 entitled "Power System Quality" at (MEPCON'24), Mansoura University, Egypt, Dec. 19-21, 2023.
- ✓ ENERGIES

15. Editorial board activities

✓ 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_Virtual_Power_Plant

16. Attended Workshops, Symposiums, and Conferences – old to recent

- ✓ Sixth International Middle East Power Systems Conference MEPCON'98 Mansoura, Egypt, December, 15-17, 1998.
- ✓ Ninth International Middle East Power Systems Conference MEPCON 2003, Shebin El- kom, Egypt, Dec. 16-18, 2003)
- ✓ Tenth International Middle East Power Systems Conference MEPCON 2005, Port Said Egypt, Dec. 13-15, 2005).
- ✓ International Conference on Electrical Engineering) Conference, Military Technical College Kobry El-Kobbah Cairo, Egypt, 27-29 May, 2008
- ✓ Thirteenth International Middle East Power Systems Conference MEPCON 2009, Assiut University, Egypt, Dec. 20-23, 2009
- ✓ Training of High Voltage Equipment, Terco, Sweden at the King Kahlid University, KSA, February 21-23, 2012.
- ✓ 15th International Middle East Power Systems Conference (MEPCON'15), Mansoura University, Egypt, Dec. 15-17, 2015.
- ✓ 19th International Middle East Power Systems Conference MEPCON 2017 Shebin El- kom, Egypt, Dec. 19-21, 2017
- ✓ 24th International Middle East Power Systems Conference (MEPCON'24), Mansoura University, Egypt, Dec. 19-21, 2023.

17. Teaching Work & Experience

18.a Undergrade Courses:

Power electronics – Power system - Electrical machines (1) – Electrical machines (2) – Electrical machines (3) – Electric Drive Systems – Protection of power system - Electromagnetic fields – Fundamental of Electrical Engineering – Electric

Circuits – Electronic Circuits (1) – Electrical engineering for mechanical engineering – Teaching and supervised many lab activities.

18.b Postgraduate Courses:

Intelligent Systems and Its Applications in Electrical Machines – Renewable energy resources- Advanced topics in electrical machines – Special Electrical Machines — Advanced Electrical Machines – Computer applications in the Electrical Machines

18. Graduate Projects

- ✓ Smart operation of induction motors drives fed from PV using AI and PLC
- ✓ Smart and Developed Operation of Isolated Wind Turbine Squirrel Cage Induction Generators Using PLC
- ✓ Smart and Efficient Operation of Three Phase Induction Motor Drive using PLC
- ✓ Efficient operation of water pumping three phase induction motor powered by PV
- ✓ Efficient operation of three phase induction motors fed from single phase supply based on PLC
- ✓ Intelligent Energy Saving of variable speed three phase induction motor drive
- ✓ Design of electrical power distribution system for Buildings
- ✓ Speed control of three phase induction motors with energy saving based in ANN and PI controller
- ✓ Unity power factor operation of three phase synchronous generators
- ✓ Constant voltage constant frequency self-excited three phase induction generator

19. Short Courses (Delivered) to graduate Engineers/Technicians

- ✓ "Harmonic Analysis using ETAP", ELsewedy Electric T&D, (EGYPT)
- ✓ "Battery Sizing Calculations using ETAP", ELsewedy Electric T&D, (EGYPT)
- ✓ "Grounding Calculation using ETAP", ELsewedy Electric T&D, (EGYPT)
- ✓ "Motor Acceleration Study using ETAP", ELsewedy Electric T&D, (EGYPT)
- ✓ "Parameterization - Application Development of AC Variable Frequency Drives" (EcoMan Training institutes) (Dubai)
- ✓ "Circuit Breakers and its Maintenance" (Libyan Iron and Steel Company)
- ✓ "Circuit Breakers and Control Fundamentals" (King Khalid University, KSA)
- ✓ "Protection Fundamentals" (SEGA-M 10th Ramadan – Egypt)
- ✓ "Circuit Breakers" (SEGA-M 10th Ramadan – Egypt)
- ✓ "Synchronous generators and Transformers Protection" (SEGA-M 10th Ramadan – Egypt)
- ✓ "Induction Motors Protection" (SEGA-M 10th Ramadan – Egypt)
- ✓ "Short Circuit and Coordination studies" (SEGA-M 10th Ramadan – Egypt)

20. Industrial and Technical Activities

- ✓ Battery Unit Simulation/ Power System Studies for Toshiba 20HQ DC Container (Toshiba International Corporation Pty Ltd Australia.
- ✓ Power System Studies (Short Circuit – Selectivity – Flash Hazard) for Procter & Gamble Egypt factory (6th October) via Integrated Bureau for Engineering & Consultations (IBEC) Office to many production lines (Always 4 - Elite 1 - ELITE 13 - ELITE 14 – Packing – Pumpers
- ✓ Power System Studies (Short Circuit – Selectivity – Flash Hazard) for Procter & Gamble, Nigeria.(Healthcare Site and Ibadan Site) via Integrated Bureau for Engineering & Consultations (IBEC) Office
- ✓ Design the electric studies for Reef Oasis Palms Resort (160 room) via Integrated Bureau for Engineering & Consultations (IBEC) Office
- ✓ Inspect the earthing system for Procter and Gamble Egypt factory (6th October) via Integrated Bureau for Engineering & Consultations (IBEC) Office
- ✓ Inspect the earthing system for Procter and Gamble factory Nigeria via Integrated Bureau for Engineering & Consultations (IBEC) Office
- ✓ Design the earthing system for IT room of Egyptian Industrial Development Bank via Integrated Bureau for Engineering & Consultations (IBEC) Office
- ✓ Design the earthing system and ATS for Egyptian Company for Mobile Services (MobiNil) via Integrated Bureau for Engineering & Consultations (IBEC) Office
- ✓ Design the electric studies and Supervision of Electronic Exam center for Faculty of Medicine via Consulting and Research Center /Faculty of Engineering- Zagazig University. (2550 units)
- ✓ Design the electrical studies for ANSHAS projects (6 stations) via Consulting and Research Center /Faculty of Engineering- Zagazig University.
- ✓ Inspect the transformers and MDBs of 10th Ramadan hospital branch of Zagazig University
- ✓ Inspect group of motors for "The Arab Company for Import and Export" via Consulting and Research Center /Faculty of Engineering- Zagazig University.
- ✓ Inspect the earthing and electrical distribution system for Zagazig university hospitals
- ✓ In Roshdy Metal Industries and General Contracts & Trade, the following projects have been implemented:
  - Design, Execute and Maintenance the operating units of the AC induction motors of different rating from fraction horsepower to 200 HP
  - Maintenance the brushes and brushless synchronous generators of different types (brushes and brushless), Transformers and different types of welding machines (AC and DC)
  - Execute the distribution system for Roshdy Metal Industries factory
  - Maintenance the Hard Chroming unit (1000 A) of hydraulic pistons
  - Design and execute many control circuits for hydraulic components as Pumps, pressure switches and solenoids

- Design and execute many control circuits for different electrical equipment such as: Electrical Vibrators, Bentonite mixers
- Maintenance the control circuits of workshop equipment as: Lathes, Scrapers, drills.
- Participate in design and execute the control system of TBM (Tunnel Boring Machine) for Roshdy Metal Industry Company.
- Supervision on Electrical installation on the project of protection the bridge of ELSALAM Canal
- Speed Control of induction motors using VFD with local or remote control.

21. Special Activities & Professional Skills

- ✓ Carried-out various technical studies using **ETAP** and **SKM** (for many projects).
- ✓ Good knowledge and very familiar with **PSCAD program**.
- ✓ Good knowledge and very familiar with **DigSilent PowerFactory program**
- ✓ Good knowledge and very familiar with MATLAB environment including several toolboxes.
- ✓ Good knowledge and very familiar with Visio program for drawing electric circuits.
- ✓ Good knowledge about AutoCad (2D drawing).
- ✓ Good knowledge about Professional Relux for lighting design.
- ✓ Artificial Intelligence (AI) simulation programs like ANN, fuzzy logic, neuro fuzzy and optimization algorithms.

// End of Resume //