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**Biographical sketch:**

(Academic Degrees- Fellowships and Associations)

Academic Qualifications:

- 1- **B.Sc.** with general grade as Distinction with Degree of Honor (Rank: 1st), June 1973, in Faculty of Engineering, Alexandria University, Egypt. Specialization: Electrical Power Engineering.
- 2- **M.Sc.** degree, August 1976, in Faculty of Engineering, Alexandria University, Egypt. Specialization: Power System Analysis. Thesis title: *“Methods of Solution of Large Scale Power Systems Problems on Digital Computers”*.
- 3- **Ph.D.** (Doctor of Engineering), March 1983, in Division of Engineering, Graduate School, Tohoku University, Japan. Specialization: Power System Stability & Control. Thesis Title: *“Optimal Decentralized Control & Stabilization of Interconnected Power Systems”*

	<p><u>Memberships:</u></p> <ol style="list-style-type: none"> 1- IEEE-USA: SENIOR MEMBER since February 1999. 2- IEEE-Product Safety Engineering Society-USA: Charter Member since January 2005. 3- Egyptian Engineering Syndicate: ENGINEER MEMBER.
<p>Publications:</p>	<p><u>Research Papers Has Been Published in Technical Conference Proceedings:</u></p> <ol style="list-style-type: none"> [1] N. Abu Taleb, A. Mussa and M.A. El-Gammal “<i>Piecewise Optimal Load Flow Solution Technique</i>”, IEEE Mexico Power Systems Conference, Mexico City, June 1976. [2] M.A. El-Gammal and K. Kimura, “<i>Optimal Modal Control in Power Systems</i>”, International Symposium in Large-Scale Systems, Kyoto, Japan, Sept 1981. [3] M.A. El-Gammal and K. Kimura, “<i>A Decentralized Optimal Modal Control of Large-Scale Power Systems</i>”, CIGRE & IFAC International Conference on Large High Voltage Systems, Florence, Italy, Sept 1983. [4] M.A. El-Gammal, “<i>A Parallel Preconditioned Conjugate Gradient Algorithm for Fast Decoupled Load Flow</i>”, Proceedings of Int. AMSE Conference in the Application of Signals, Data and System Methodologies to Engineering Problems, Alexandria, Egypt, Vol.1, pp.3-9, Dec 1992. [5] M.A. El-Gammal, “<i>Power System Stabilizer Output Feedback Design for Expanding Construction of Multi-machine System</i>”, Stockholm Power Tech. International Symposium by IEEE Power Engineering Society & Royal Institute of Technology, Stockholm, Sweden, Procc. SPT PS 12-03-0058, pp.363-369, June 1995. [6] M.A. El-Gammal, A.R. Abdelaziz, E.N. Abdallah and A. Abdel Mordi, “<i>Capacity Constraints in Reliability Analysis</i>

- of Power Systems-An Ordered State Algorithm*”, Proceedings of Fifth Int. Middle East Power System Conference (MEPCON'97) by IEEE Power Engineering Society & Alexandria University, Alexandria, Egypt, pp.315-319.
- [7] M. Abu Ella, **M.A. El-Gammal**, E.N. Abdallah and K.M. Kordi, “*Performance Evaluation of Commonly used Digital Distance Protection Algorithm with Series Compensated Lines*”, Proceedings of Fifth Int. Middle East Power System Conference (MEPCON'97) by IEEE Power Engineering Society & Alexandria University, Alexandria, Egypt, pp.536-546.
- [8] **M.A. El-Gammal**, *Optimal Shunt Compensators for Demand-Side Management of Industrial Loads in Non-Sinusoidal Systems*”, Proceedings of 4th Int. Conference in Electronic, Circuits and Systems (ICECS'97) by IEEE CAS Society Region-8 Conference & Electronics Research Institute, Cairo, Egypt, Dec. 1997.
- [9] Atif Z. Khan and **M.A. El-Gammal**, “*Estimation of Steady-State Voltage Stability Limit for Various Load Stress Conditions*”, invited paper in NAPS International Conference by IEEE Power Engineering Society, Laramie, U.S.A., Oct 1997.
- [10] Adel L. Mohammadein, **M.A. El-Gammal** and Raafat. F. Sidhom, “*Transient Performance of Unbalanced Self Excited Stand Alone Induction Generator*”, Proceedings of International Conference on Electrical Machines (ICEM 98), pp.1936-1941, Sept 1998, Istanbul, Turkey.
- [11] A. Mussa, **M.A. El-Gammal**, E. Abdallah and N. Aziz, “*An Efficient Graph Partitioning Technique in Calculating the Reliability of Power Systems with Continuity of Supply Criterion*”, 6th Int. Middle East Power System Conference

- (MEPCON'98) by IEEE Power Engineering Society & Mansura University, Dec 1998, Mansura, Egypt.
- [12] A. Mussa, **M.A. El-Gammal**, E. Abdallah and Ahmed Abou El-Soud, "*Determination of Harmonic Pollution Sources in Distribution Networks Through Simple Measurements*", 3rd Regional Conference of CIGRE in Arab Countries (Towards Advanced Electrical Technology), Doha-Qatar, May 1999.
- [13] Tarek I. ElShennawy, **Mahmoud A. El-Gammal**, Amr Y. Abou-Ghazala, "*Voltage Sag Effects on the Process Continuity of a Refinery with Induction Motors Loads*," The 2009 World Congress on Power Engineering (WCPEE'09), Cairo, Egypt, 5-8 October 2009.
- [14] A. Mussa, **M.A. El-Gammal**, A.A.Ghazala and Amani I. Attia, "*New Modified particle Swarm Optimization Technique for Solving the Unit Commitment Problem*", 3rd Regional Conference of CIGRE in Arab Countries (Towards Advanced Electrical Technology), Doha-Qatar, May 2009.
- [15] Hamdan .S, El-Zawawi. A , " Testing of a Modified Particle Swarm Optimization Algorithm using Different Benchmark Functions", Soft Computing Applications, 2009,Sofa'09', 3rd International Workshop on July 29 2009 Aug 12009,Pages : 113-116.IEEE CNF.

Research Papers Has Been Published in Journals:

- [1] **M.A. El-Gammal** and M. Kimura, "*Stabilization of Power Systems Through Decentralized Control*", the Bulletin of Electrical and Electronic Engineering Society of Japan, Dec. 1983 (in Japanese Language).
- [2] S. Deghadie, **M.A. El-Gammal** and M.A. Abd Alla, "*Decentralization of the Unified Power System of Egypt*", Alexandria Engineering Journal, Vol.31, No.1, pp.B97-102,

Jan 1992.

- [3] S. Deghadie, **M.A. El-Gammal** and M.A. Abd Alla, "*Decentralized Control of the Unified Power System of Egypt*", Alexandria Engineering Journal, Vol.29, No.4, pp.B179-188, Oct 1990.
- [4] **M.A. El-Gammal** , "*The Optimal Decentralized Modal Load-Frequency Control of Interconnected Power Systems*", Alexandria Engineering Journal, Vol.32, No.2, pp.B87-92, April 1993.
- [5] **M.A. El-Gammal**, Azza Hassan and M.A. Sabbah, "*An Attempt to an Optimal Solution for On-Farm Rice Production Losses Problems in Egypt*", Alexandria Journal of Agriculture Research, Vol.38, No.1, pp.19-33, 1993.
- [6] **M.A. El-Gammal** Nagui Sorial and Ahmed Abdel Razek, "*A Computer Package for Determining the Real Time Network Observability*", Alexandria Engineering Journal, Vol.35, No.2, pp.B23-30, April 1993.
- [7] **M.A. El-Gammal** Nagui Sorial and Ahmed Abdel Razek, "*Computer Aided Modeling of Power System in Real-Time Mode*", Alexandria Engineering Journal, Vol.35, No.2, pp.B31-39, April 1993.
- [8] Atif Z. Khan and **M.A. El-Gammal**, "*Estimation of Steady-State Voltage Stability Limit for Various Load Stress Conditions*", Electric Power Research Journal, Jan 1998.
- [9] Ahmed R. Abdelaziz, Ahmed A. Hossam El-Din, **M.A. El-Gammal** and Walid M. Ali, "*An Interrupted Adaptive genetic Algorithm for Power Network Planning*", .Vol.39, No.10, October 2000.
- [10] **M.A. El-Gammal**, Amr Abu Ghazala and Tarek El-Shennawy, "*Detection, Localization and Classification of Power Quality Disturbances using Discrete Wavelet*

	<p><i>Transform Techniques</i>," Alexandria Engineering Journal, Vol.42, No.1, January 2003.</p> <p>[11] A. Moussa, M.A. El-Gammal, E. N. Abdallah and A. I. Attia, "<i>Solution of Load Balancing Problem in Medium Voltage Distribution systems using Genetic Algorithm</i>," Alexandria Engineering Journal, Vol.43, No.2, March 2004.</p> <p>[12] A. Moussa, M.A. El-Gammal, E. N. Abdallah and A. Abouelseoud, "<i>A New Methodology for On-Line Power Quality Assessment</i>," Alexandria Engineering Journal, Vol.43, No.5, June 2004.</p> <p>[13] A. Moussa, M.A. El-Gammal, E. N. Abdallah and A. I. Attia, "<i>A Genetic Based Algorithm for Loss Reduction in Distribution Systems</i>," Alexandria Engineering Journal, Vol.43, No.6, Nov 2004, pp.747-753.</p> <p>[14] Tarek I. ElShennawy, Mahmoud A. El-Gammal, Amr Y. Abou-Ghazala, "<i>Voltage Sag Effects on the Process Continuity of a Refinery with Induction Motors Loads</i>," American Journal of Applied Science, Vol.6, No.8, Aug 2009, pp.1626-1632.</p> <p>[15] Tarek I. ElShennawy, Mahmoud A. El-Gammal, Amr Y. Abou-Ghazala, Abdel Monem Moussa, "<i>Mitigation of Voltage Sags in a Refinery with Induction Motors Using Dynamic Voltage Restorer (DVR)</i>," European Journal of Scientific Research, Vol.36, No.1, 2009, pp.118-131.</p> <p>[16] Tarek I. ElShennawy, Mahmoud A. El-Gammal, Amr Y. Abou-Ghazala, "Effect of Voltage Sags on Induction Motors," Mediamira Science Publishers, Vol.50, No.4, 2009.</p> <p>[17] Tarek I. ElShennawy, Mahmoud A. El-Gammal, Amr Y. Abou-Ghazala, "Voltage Sag Effects on the Process Continuity of a Refinery with Induction Motors Loads," American Journal of Applied Sciences 6 (8): 1626-1632,</p>
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- [19] A. Mussa, **M.A. El-Gammal**, E. Abdallah, Amr ElZawawy and Shawkat Hemdan, "*A Modified Particle Swarm Optimization Algorithm and its Application in the Economic Dispatch in Power Systems*", *Alexandria Engineering Journal*, Vol.49 No.2, march 2010.
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- [21] Tarek I. ElShennawy, **Mahmoud A. El-Gammal**, Amr Y. Abou-Ghazala, "Costs of Custom Power Devices Versus the Financial Losses of Voltage Sags and Short Interruptions: A Techno-economic Analysis," *International Journal of Computer and Electrical Engineering*, Vol. 2, No. 5, October, 2010, 1793-8163.
- [22] **Mahmoud A. El-Gammal**, Amr Y. Abou-Ghazala, Tarek I. ElShennawy " Effects of Voltage Sags on a Refinery with Induction Motors Loads," *Iranian Journal of Electrical and Computer Engineering*, Vol. 9, No. 1, Winter-Spring 2010.
- [23] Tarek I. ElShennawy, **Mahmoud A. El-Gammal**, Amr Y. Abou-Ghazala, " A Dynamic Voltage Restorer for Voltage Sag Mitigation in a Refinery with Induction Motors Loads," *International Journal on Electrical Engineering and*

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MASTERS THESIS SUPERVISED:

- [1] Ashraf Al Taweel, "System Analysis Of Post-Harvest Rice Production Losses in Egypt", Alexandria University, College Of Agriculture, Dept. Of Agriculture Engineering, Alexandria, Egypt, Dec. 1987.
- [2] Azza Hassan," Systems Analysis Of On-Farm Rice Production Losses in Egypt", Alexandria University, College Of Agriculture, Dept. Of Agriculture Engineering, Alexandria, Egypt, Dec. 1987.
- [3] Mohammed Adel Abd Allah, "Decentralized Control for Stabilizing U.P.S. Of Egypt", Alexandria University, College Of Engineering, Dept. Of Electrical Engineering, Alexandria, Egypt, March 1988.
- [4] Mohammed Fahmi Khalil, "An Equivalent Power System Network Modeling Based Harmonic Analysis", Alexandria University, College Of Engineering, Dept. Of Electrical Engineering, Alexandria, Egypt, March 1993.
- [5] Ahmed Wael Abdel Razek, "Computer Aided Modeling Of Power Systems In Real-Time Mode", Alexandria university, College Of Engineering, Dept. Of Electrical Engineering, Alexandria, Egypt, March 1994.

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- [7] Raafat Farag Sidhom, "Steady-State & Transient-State Analysis Of Wind-Driven Induction Generators", Alexandria University, College Of Engineering, Dept. Of Electrical Engineering, Alexandria, Egypt, 1996.
- [8] Ahmed Abdel Mordi, "Application Of Fuzzy Concepts in Reliability Measures of Power Systems", Alexandria University, College Of Engineering, Dept. Of Electrical Engineering, Alexandria, Egypt, 1998.
- [9] Mohammed Mustafa Sidki, "Output Feedback Control for Stabilizing Multi-machine Power Systems: Alexandria University, College Of Engineering, and Dept. Of Electrical Engineering, Alexandria, Egypt, 1998.
- [10] Nader Amin Samaan." Application Of Hybrid Expert Systems & Neural Network in Reliability Measures Of Power Systems", Alexandria University, College Of Engineering, Dept. Of Electrical Engineering, Alexandria, Egypt, 1998.
- [11] Ahmed Abu El-Seaud Taha, "Separation of Customer and Supply Harmonics in Distribution Systems", Alexandria University, College Of Engineering, Dept. Of Electrical Engineering, Alexandria, Egypt, 1996.
- [12] Walid M. Ali," An Interrupted Adaptive Genetic Algorithm for Power Network Planning", Alexandria University, College Of Engineering, Dept. Of Electrical Engineering, Alexandria, Egypt, 2000.

- [13] Tarek El-Shennawy, "Detection, Localization and Classification of Power Quality Disturbances using Discrete Wavelet Transform Techniques," Alexandria University, College Of Engineering, Dept. Of Electrical Engineering, Alexandria, Egypt, 2002.
- [14] Amany Ibrahim Attia, "Application of Genetic Algorithms to Solution of Load Balancing Problem in Distribution Systems," Alexandria University, College Of Engineering, Dept. Of Electrical Engineering, Alexandria, Egypt, 2003.
- [15] Fouad Zaidan, "*Optimal VAR Allocation for Distribution Systems*," Beirut Arab University, College Of Engineering, Dept. Of Electrical Engineering, Beirut, Lebanon, 2004.
- [16] Mohamed Tarnini, "*Application of Modern VAR Control Techniques for Stabilization of Power Systems*," Beirut Arab University, College Of Engineering, Dept. Of Electrical Engineering, Beirut, Lebanon, 2004.
- [17] Mona Kaseb, "*Voltage Sag and Harmonics Propagation in Power Systems*," Dept. Of Electrical Engineering, Alexandria, Egypt, July, 2011.
- [18] Islam Azmy, "*A Novel Technique for Enhanced Internal and Active Power Support from Grid Connected DFIG Wind Turbines*," Dept. Of Electrical Engineering, Alexandria, Egypt, October, 2011.
- [19] Mohamed Hussein Ragab, "*Hybrid System Consists of Wind Energy Generator, Photovoltaic and Storage Batteries System*," Dept. Of Mechanical Engineering, Alexandria, Egypt, October, 2012.

PhD THESIS SUPERVISED:

- [1] Ahmed Abu El-Seaud Taha, "Design of Programmable Electronic Circuit for Power Quality Improvement in Electrical Power Systems," Alexandria University, College Of Engineering, Dept. Of Electrical Engineering, Alexandria, Egypt, 2004.
- [2] Shawkat Hamdan, "Modified Particles Swarm Optimization Techniques in electric Power System Analysis," Beirut Arab University, College Of Engineering, Dept. Of Electrical Engineering, Beirut, Lebanon, registered in November 2003.
- [3] Mohamed Tarnini, "*Active Power Filters*," Beirut Arab University, College Of Engineering, Dept. Of Electrical Engineering, Beirut, Lebanon, May, 2010.
- [4] Tarek El-Shennawy, "Effects of Voltage Sags on the Process Continuity of a Refinery with Induction Loads", Alexandria University, College Of Engineering, Dept. Of Electrical Engineering, Alexandria, Egypt, July.2010.
- [5] Amani Ibrahim attia, " *A New Modified Particle Swarm Optimization Technique for Solving the Unit Commitment Problem*," Alexandria University, College Of Engineering, Dept. Of Electrical Engineering, Alexandria, Egypt, March, 2011.

PUBLISHED BOOKS

1. Control Applications of Power Systems. Arab Academy for Science & Technology press, 1998.
2. Electrical Energy Systems, Alexandria University, 3rd edition,

	<p>2009.</p> <p>3. Electrical Power System Engineering (Part-I), 1st edition, 2010.</p>
<p>Academic Research interests:</p>	<p><u>Research Interests:</u></p> <ol style="list-style-type: none"> 1- Transient Stability & Control of Interconnected Power Systems. 2- Power System Voltage Stability. 3- 3- Reactive Power Control and SCADA Automation in Distribution Power Systems. 4- Electrical Power Systems Quality. 5- Grid Integration of Wind Energy Conversion Systems. 6- Integration of Renewable Energy into Electric Power Systems. <p><u>Teaching Interests:</u></p> <p><u>Basic Courses:</u></p> <ol style="list-style-type: none"> 1- Electrical Circuit Analysis. 2- Electrical Energy Systems. 3- Electrical and Electronic Measurements. <p><u>Specialized Courses:</u></p> <ol style="list-style-type: none"> 1- Power System Analysis. 2- Power System Dynamics and Stability. 3- Protection of Power Systems. 4- Power System Quality. 5- Electric Design in Commercial and Industrial Buildings. 6- Power System Management, Operation and Control. 7- Renewable Energy Resources. 8- Economics and Conservation of Energy Systems.