

CURRICULUM VITAE

Dr. Zulfiqar Ali Memon

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Electrical & Computer Engineering department,
College of Engineering and Information technology,
Ajman University, U.A.E.

Education:

Qualification	University	Year
Ph.D Electrical Engineering	Brunel University London	1987-1991
Thesis Title	Magneto-resistive Elements for use in Tactile Sensor Design for Robot assembly applications	
BE Electrical Engineering	Mehran University of Engineering & Technology, Jamshoro, Pakistan	1982-1986

EXPERIENCE:

Sep. 2024- Todate	Ajman University,	Associate Professor,
Aug. 2009- Aug. 2024	Ajman University,	Assistant Professor,
Sep.1999- June 2009	Khalifa university of science technology and research, Sharjah. (formerly known as ETISALAT university college)	Assistant Professor,
Oct.1996- Aug 1999	ETISALAT College of Engineering Sharjah	Lecturer
Feb.1995- Oct.1996	Brunel University London,	Lecturer/senior Research fellow
Aug. 1994 - Feb.1995	Dawood College of Engineering & Technology, Karachi, Pakistan	Assistant Professor
Dec.1993- Aug. 1994	Brunel University London,	Research Consultant
Aug.1991-Dec.1993	Pakistan Navy Engineering College Karachi, Pakistan.	Associate Professor
Aug. 1991-Dec.1993	Dawood College of Engineering & Technology, Karachi, Pakistan.	Visiting Professor
Jan. 1988-Apr.1991	Brunel University London	Demonstrator

April 1987- Oct.1987	Karachi Electric Supply Corporation Karachi, Pakistan	Assistant Electrical Engineer
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ADMINISTRATIVE AND OTHER EXPERIENCE:

DEC.1993 - Aug.1994	In-Charge of research team: (TROJAN PHASE 2),	Brunel University UK
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Feb.1995 - Oct.1996.	Project Manager: (TROJAN PHASE 3), Developing Microelectronics Circuit Breakers,	Brunel University UK
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Feb.1995 - Oct.1996.	Member: Curriculum development committee,	Brunel University UK
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1997-1999	Member: Curriculum development committee, Engineering Sharjah.	Etisalat college of
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2001-2002	Member: Resources committee,	Etisalat college of Engineering Sharjah.
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2000-June 2009	Personal tutor coordinator,	Khalifa University Sharjah.
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Feb. 2007-June 2009	Year coordinator,	Khalifa University (Sharjah).
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June. 2010- to date	Internship coordinator	Ajman University.
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June. 2013- to date	Member of search committee,	Department of ECE Ajman University.
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June. 2013- to date	Member of Curriculum committee	Department of ECE Ajman University
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Courses taught:

- Power System Analysis
- Power System Protection & Control
- Electrical Power Distribution Systems
- Power Electronics
- Instrumentation and measurement.
- Control Engineering.
- Signals and Systems.
- Microprocessor.
- Matlab and Simulation
- Electrical Circuits.
- Analog and Digital Electronics.
- Electrical Machines & power system.
- Industrial Electronics,

- Mechatronics.
- Robotics.

LABS CONDUCTED:

- Analog and digital Electronics
- Power Electronics
- Measurements
- Control Engineering
- Electrical machines & Power Systems
- Microprocessor
- Electrical circuits

SENIOR LEVEL PROJECTS:

Supervised many senior level projects in the field of renewable energy, Instrumentation and control using PLCs for controlling different devices.

- Sensor fusion.
- Smart homes.
- Industrial Electronics,
- Digital control.
- Electro magnetics.
- Magneto-resistive Thin film Sensors,
- Residual Current Devices using Thin Film Technology,
- Industrial Robots.

RESEARCH INTEREST:

- Renewable Energy
- Microgrids
- Sensor fusion.
- Magneto-resistive Thin film Sensors.
- Residual Current Devices using Thin Film Technology.
- Electro magnetics.

Funded Research Projects:

Ajman University **2020-21:** Design and Control of Renewable Energy based Hybrid AC/DC Microgrid

Ajman University **2021-22:** Analysis of Coordinated Power Dispatch and Load Control Scheme for Optimal Operation of the Islanded Microgrids

Ajman University **2022-23:** Interconnection & Coordination of Multi-Microgrids to Promote Penetration & Efficient Utilization of Renewable Energy

Ajman University **2022-23:** Application of enhanced evolutionary algorithms on power system operation and planning problem considering renewable energy sources

Ajman University **2023-24:** Energy Flexibility Assessment, Quantification and Power Sharing of Building Microgrids

Ajman University **2024-25**: Transition of Conventional Buildings into Green Buildings using Retrofitting Practices: A Techno-Economic Evaluation using Comparative Parametric Design Analysis

TRAINING:

- Post graduate training: Real time systems incorporating design and implementation of real time systems, system-interfacing, real time data acquisition systems.
- Semiconductor Fabrication Technology: The use of sputtering equipment, photolithography techniques, design of sub-miniature pattern of thin film devices; deposition and analysis of ultra thin films, designing PC controlled automated equipments.
- Finite Element analysis, PC-Opera, (For Electro Magnetic and Electro Static Modeling, Simulation and analysis).

REFEREED JOURNAL PAPERS

1. **Fuzzy-Logic-Based Cascaded Decentralized Control and Power Quantification of Residential Buildings for Effective Energy Load Management**, Muhammad Hanzala, Zulfiqar Memon, Muhammad Imtiaz Hussain, Fawad Azeem, Naeem Shahzad and Jun-Tae Kim, Buildings. September 2024, <http://doi.org/10.3390/buildings14092896>
2. **Multi-Objective Energy Management in Microgrids: Improved Honey Badger Algorithm with Fuzzy Decision-Making and Battery Aging Considerations**. Mohana Alanazi, Abdulaziz Alanazi, Zulfiqar Ali Memon, Ahmed Bilal Awan and Mohamed Deriche, Energies. September 2024, <http://doi.org/10.3390/en17174373>
3. **Design and assessment of energy management strategy on rail coaches using solar PV and battery storage to reduce diesel fuel consumption**. Sipra, Abdullah Tariq; Azeem, Fawad; Memon, Zulfiqar Ali; Baig, Sobia; Jaffery, Mujtaba Hussain, Energy. February 2024, <https://doi.org/10.1016/j.energy.2023.129718>
4. **Comparative techno-economic assessment of electric vehicle charging preferences: A quantitative study for sustainable EV policy in Pakistan**, Muhammad Aizaz Mouhy-Ud-Din; Fawad Azeem; Zulfiqar Memon; Jahagir Arshad, Energy for Sustainable Development. December 2023, <http://dio.org/10.1016/j.esd.2023.101355>
5. **Optimizing Hybrid Photovoltaic/Battery/Diesel Microgrids in Distribution Networks Considering Uncertainty and Reliability**, Zulfiqar Ali Memon, Mohammad Amin Akbari, Sustainability, Sep-2023. <https://doi.org/10.3390/su142215417>
6. **An Improved Cheetah Optimizer for Accurate and Reliable Estimation of Unknown Parameters in Photovoltaic Cell and Module Models**, Zulfiqar Ali Memon, Mohammad Amin Akbari and Mohsen Zare. Applied Sciences, Sep-2023. <https://doi.org/10.3390/app13189997>

7. **“A non-simulation-based linear model for analytical reliability evaluation of radial distribution systems considering renewable DGs”**, Mohana Alanazi, Abdulaziz Alanazi, Mohammad Amin Akbari, Mohamed Deriche, Zulfiqar Ali Memon. *Applied Energy*, April-2023. <https://doi.org/10.1016/j.apenergy.2023.121153>
8. **A novel automated demand response control using fuzzy logic for islanded battery-operated rural microgrids**, Azeem, Fawad; Memon, Zulfiqar Ali; Baig, Sobia; Manzoor, Tareq; Abbas, Faisal; Shah, Mohd Asif. *IET Renewable Power Generation* Feb-2023. <https://doi.org/10.1049/rpg2.12713>
9. **A two-way pre-installation assessment framework for microgrids under power systems expansion planning**, Fawad Azeem, Zulfiqar Ali Memon, Sobia Baig, Ahmed Bilal Awan. *Sustainable Energy Technologies and Assessments*, Feb. 2023. <https://doi.org/10.1016/j.seta.2022.102920>
10. **“Robust Dynamic Control of Constant-Current-Source-Based Dual-Active-Bridge DC/DC Converter Used for Off-Board EV Charging”**, Ashfaq, M.H., Memon, Z.A., Chaudhary, M.A.Rahim, N.A., Hussain, M.M. *Energies*, Nov.2022, 15(23), <https://doi.org/10.3390/en15238850>
11. **“Multiobjective reconfiguration of unbalanced distribution networks using improved transient search optimization algorithm considering power quality and reliability metrics”**, Alanazi, M., Alanazi, A., Almadhor, A., Memon, Z.A. *Scientific Reports*, August-2022, <https://doi.org/10.1038/s41598-022-17881-x>
12. **“Feasibility Assessment of Rural Hybrid Microgrid Using Canal-Based Microhydel Resources: A Case Study of Renala Khurd Pakistan”**, Sustainability, Misbah Sattar, Fawad Azeem , Zulfiqar Memon, Hasan Zidan and Sobia Baig. Nov-2022. <https://doi.org/10.3390/su142215417>
13. **“A Modified CPS-PWM for Capacitor Voltage Reduction at Low-Speed Operation of MMC Based Variable Speed Drive”**, Safia Babikir Bashir, Hasan A. Zidan, and Zulfiqar Ali Memon. *International Journal of Power Electronics and Drive System (IJPEDS)* April- 2022. <http://doi.org/10.11591/ijpeds.v13.i3.pp1326-1339>
14. **“Determining Optimal Power Flow Solutions Using New Adaptive Gaussian TLBO Method”** Alanazi, A., Alanazi, M., Memon, Z.A., Mosavi, A., *Applied Sciences* (Switzerland), August 2022, 12(16), 7959. <https://doi.org/10.3390/app12167959>
15. **“Hill Climbing Artificial Electric Field Algorithm for Maximum Power Point Tracking of Photovoltaics”**, Alanazi, M., Alanazi, A., Memon, Z.A., Csaba, M., Mosavi, A. *Frontiers in Energy Research*, July 2022, 10, 905310, <https://doi.org/10.3389/fenrg.2022.905310>
16. **“Experimental Validation of Different PV Technologies Using a Physical-based Model”**, *Optical and Quantum Electronics*, Hamdy Abdelhamid; Khaled El-Shekh; Khalil ElKhamisy; Zulfiqar Memon June-2022 . <https://doi.org/10.1007/s11082-022-03768-8>
17. **“Demand Side Management Techniques for Home Energy Man-agement Systems for Smart Cities”**, Muhammad Majid Hussain, Rizwan Akram, Zulfiqar Ali Memon, Waqas Javed4, Mian Hammad Nazir, Muhammad Siddique, *Sustainability*, Oct- 2021, 13(21), 11740; <https://doi.org/10.3390/su132111740>
18. **“Comparative analysis of dish Stirling engine and photovoltaic technologies: Energy and economic perspective “**, Ahmed Billal Awan, **Zulfiqar Ali Memon**, *Sustainable Energy Technologies and Assessments*. April 2021. <https://doi.org/10.1016/j.seta.2021.101028>

19. **“Adaptation of Grid Tied Photovoltaic (GT-PV) System as Retrofit Renewable Energy Model for Single-Family House in UAE”**. A.H. Chohan, **Z.A. Memon** , A.I. Che-Ani , M.S. Arar, J. Awad, International Journal of Integrated Engineering. Issue 1, 2021.
20. **“An Innovative PID Controller in Conjunction with DC Electric Motor for Control of Hybrid Electric Vehicle”**, M Majid Hussain, **Zulfiqar A Memon**, M Akmal Chaudhary, M Siddique. *International Journal of Electrical and Electronics Engineering (IJEET).issue 7, 2020.*
21. **“Power balancing of grid connected PV system based on MMC under different irradiation conditions”** , Safia Babikir Bashir, Hasan A. Zidan*, **Zulfiqar Ali Memon** *International Journal of Electrical Power and Energy Systems, 117, May-2020, <https://doi.org/10.1016/j.ijepes.2019.105717>*
22. **“Three-step Iterations for Variational-like Inequalities”** . M. A. Noor, **Z. Ali Memon**. International journal of pure and Applied Mathematics, Volume 21, NO: 1 2005, 35-42.
23. **“Regularized General Variational Inequalities”** M. A. Noor, K. I. Noor, **Z. Ali Memon**. Nonlinear Analysis Forum Vol.9 (1), June 2004. pp 55-63.
24. **“Stability of Implicit Resolvent Dynamical Systems”** . M.A Noor K. I. noor and **Z. Ali Memon**. Journal of mathematical Inequalities & Applications. Volume:6, Number 3, July 2003, pp 553-562
25. **“Algorithms for General Mixed Quasi Variational Inequalities”** . M.A Noor and **Z. Ali Memon**. Journal of Inequalities in pure and Applied Mathematics, Volume 3, Issue 4, Article 59, 2002. pp 1-7.
26. **“Implementation of Guard-Based Feedback Pico-Ammeter”**. **Z.A.Memon**, B.S.Chowdhry, M.I. Bhatti. Sindh University Research Journal Vol.27.No.1 1995. Pp,27-37.
27. **"Magnetoresistive Sensors for Multitrack Information retrieval system "**. **Z.A.Memon**, B.S.Chowdhry, M.I. Bhatti. Sindh University Research Journal Vol.26.No.1 1994.
28. **"Serpentine Magnetoresistive Elements for Tactile Sensor Applications"**. **Z.A.Memon**, P.AdL, R.T.Rakowski, D.J.Mapps. IEEE Trans. Mag. Vol.26, No.5, September 1990 pp.2047-2050.

INTERNATIONAL CONFERENCE PROCEEDINGS

1. **“Reinforcement Learning for Nash Noncooperative and Pareto Cooperative Optimal Linear Systems”**, Gajic, Zoran; Memon, Zulfiqar; Awan, Ahmed Bilal, 4th International Arab Conference on Information Technology, ACIT 2023 Ajman 6 December 2023 through 8 December 2023.
2. **“Performance Assessment between adaptive Neuro Fuzzy interference system (ANFIS) and Fuzzy Logic Membership functions to Reduce the Diesel consumption for Electrical Load of train in Hybrid Power Generation System”** Fawad Azeem, Zulfiqar Ali Memon, ICSAS 23 Curtin University Dubai, 9-11 Dec. 2023

3. **“Control of Hydrogen based Virtual Power Plant in Hybrid AC/DC Microgrids”**, El-Deib, A.A., Abdelhamid, H., El-Shekh, K., Elkhamisy, K., Memon, Z. IEEE Conference on Power Electronics and Renewable Energy, CPERE 2023, Luxor Egypt, Feb-2023
4. **“Characterization of Baseband Electrical Memory in Microwave Devices using Enhanced Multi-tone Measurement System”**, Muhammad Akmal Chaudhary, **Zulifqar Ali Memon**, Zubaida Yusoff‡, Jonathon Lees, Johannes Benedikt, Paul Tasker, International conference on computing, Electronic and Electrical Engineering (ICE CUBE) April 2016.
5. “Investigation of Baseband Electrical Memory Effects on the Dynamic Characteristics of Power Transistors”. Muhammad Akmal Choudhary, **Zulfiqar Ali Memon**, Jonathon lees INMIC, Lahore Pakistan 16 December 2013.
6. "Fractional-Order Power System Stabilizer" Reyad El-Khazali*, Z. A.Memon**, Nabeel Tawalbeh***4th IFAC Workshops on Fractional Differentiation and its Applications FDA '10, Badajoz Madrid Spain, October 18-20, 2010
7. “Noise performance of fractional-order phase-locked loop” R. El-Khazali, W. Ahmad, Z. Ali Memon. ICSPC07, Dubai, U.A.E 24-27 November 2007.
8. “An Intelligent Autopilot For a Container Ship ” . **Z. Ali Memon**, M. Ali Unar, A.Q. Rajput. ICMSAO/05-1, Proceedings of the first International Conference on Modeling, Simulation and Applied Optimization, Sharjah, U.A.E. 1-3 February 2005.
9. “Linear Magnetic Sensor Based ON OFF-Diagonal Magnetic Impedance in Amorphous Wires” . S. Sandacci, D.P. Makhnovskiy, L. V. Panina, M.A. Akhter. **Z.Ali Memon**. ICECS 2003, 10th IEEE international conference on Electronics, circuits and Systems, 14-17 Dec. 2003, sharjah United Arab Emirates. pp 1200-1203.
10. “MATLAB Based Training Toolbox for Controller Design” **Z. Ali Memon** and B.A Majeed. Proceedings of the first International conference. A Millennium Dawn in Training and Continuing Education, University of Bahrain, April 2001, 239-244.
11. “Training and Development of Control Engineers: The Role of the IEC-61131-3 Standard” B.A Majeed and **Z. Ali Memon**. Proceedings of the first International Conference. A Millennium Dawn in Training and Continuing Education, University of Bahrain, April 2001, 183-186.
12. “A novel Residual current Device (RCD) utilising Artificial Neural Networks”. P.AdI, **Z.A.Memon** and R.T.Rakowski. Eurosensors XIV. The 14th European conference on solid-state transducers. August 27-30, 2000, pp537-540.
13. “High Sensitivity Magnetoresistive residual Current Sensor with Overload protection for use in Safety Critical Systems” P.AdI, R.T.Rakowski, **Z.A.Memon**, S.C. Powel, C.Tylor. The 1999 Sensor & Transducer Conference BRIMINGHAM UK, FEBRUARY 17th, 1999. pp1-9.
14. “A Magneto-Optic Residual Current Sensor for Direct Current applications” P.AdI, **Z.A.Memon**, B.E.Jones, L.M.Martinez, International Conference on Trends in Industrial Measurement and Automation, MADRAS, INDIA, January 3-7 1996.
15. “A Magnetoresistive Current Sensor for Line Current Monitoring Applications” P.AdI, R.T. Rakowski, **Z.A.Memon**, S.C.Powel, International Conference on Trends in Industrial Measurement and Automation, MADRAS, INDIA, January 3-7 1996.
16. “Design of a magneto-optic sensor for a residual current device” L.M.Martinez, P.AdI, **Z.A.Memon**, B.E.Jones,. 6th International Conference on Industrial Metrology. ZARAGOZA, SPAIN, OCTOBER, 25-27, 1995.
17. “A Magnetoresistive Current Sensor for Industrial Current Monitoring Application” P.AdI, R.T.Rakowski, **Z.A.Memon**, S.C. Powel. 6th International Conference on Industrial Metrology. ZARAGOZA, SPAIN, OCTOBER, 25-27, 1995.
18. "Robot Handling of Food Products". **Z.A.Memon**, P.AdI, R.T.Rakowski. Conference on Sensors and Their Applications V, Edinburgh, Institute of Physics (IOP), September, 22-25 1991.
19. "Serpentine Magnetoresistive Elements for Tactile Sensor Applications". **Z.A. Memon**, P.AdI, R.T. Rakowski. International Conference on Magnetism (IEEE), Brighton, April 1990, Poster.

20. "Tactile Sensor for Normal and Shear force Detection". P.AdI, **Z.A.Memon**, R.T.Rakowski. International Workshop, on Sensorial Integration for Industrial Robots, Architecture and Applications, ZARAGOZA, SPAIN. November, 22-24,1989.
21. "Handling Objects of Unknown Characteristics". P.AdI, **Z.A.Memon**, R.T.Rakowski. 6th Symposium on Information Control Problems in Manufacturing Technology, MADRID. September 26-29, 1989.

BOOK (CONTRIBUTION)

"Robot Handling of Food Products". AdI, Memon, Rakowski published in "Sensors: technology, systems and applications", the Adam Hilger series on Sensors. IOP publishing Ltd., pp511-517, ISBN 0-7503-0157-0.

PROFESSIONAL QUALIFICATIONS:

- Member of Institute of Electrical Engineers **(MIET),UK.**
- The Council of Chartered Engineering Institutions UK **C.Eng. (UK)**
- Senior Member of Institute of Electrical and Electronics **(SMIEEE) USA**
- Member of Institute of Electrical Engineers **(Pakistan).**
- Member of Engineering Council **(Pakistan).**

Guest Editor

- Energies MDPI journal April 2023-April 2024

REVIEWER:

- International Journal of Computer-Integrated Manufacturing.
- Energies MDPI journal.
- Machines MDPI journal
- Sensors MDPI journal.
- Applied sciences MDPI journal.
- Sustainability MDPI journal
- 10th IEEE international conference on Electronics, circuits and Systems.
- Tencon '05-IEEE Region 10 Conference'.
- 24th International Arab Conference on Information Technology (ACIT)