



Name: Dr. Mohamad Hussein Farhat

Rank: Associate Professor - Electrical & Electronics Engineering

Title: Head of Electrical & Electronics Engineering Department

Personal Information

Nationality: British

AU Joining Date: 21 Aug 2016

E-Mail Address: m.farhat@au.edu.kw

Professional Information

Education:

Qualification: Doctorate

Major: Electrical and Electronic Engineering

College/University: London Metropolitan University

Year: 2007-2010

Qualification: Masters

Major: Mobile and Personal Communication

College/University: King's College, University of London, 2006

Year: 2005-2006

Qualification: Bachelor

Major: Electronic and Communications Engineering

College/University: London Metropolitan University

Year: 2002-2005

Specialization:

Electronics & Communications

Current Academic Position:

Associate Professor - Electrical & Electronics Engineering

Current Professional Positions:

- Institute of Electrical and Electronics Engineers (IEEE)
- Member of the Institute of Engineering and Technology (IET)
- Member, Order of Engineers – Lebanon.

Previous Administrative Position Held:

- Team leader for Electronic and Communication Diploma (ACM, Kuwait)

Previous Academic Positions Held:	• 2013 —2016: Assistant Professor of Electrical and Electronic, American College of the Middle East. • 2012—2013: Assistant Professor of Electrical and Electronic, Jubail Industrial College, KSA. • 2007—2012: Lecturer of Electronic and Communication, London Metropolitan University, UK.
Fellowships And Honors:	• Member of the Institute of Electrical and Electronics Engineers (IEEE) • Member of the Institute of Engineering and Technology (IET) • Member, Order of Engineers – Lebanon.
Teaching Experience:	• 2016 — Present: Associate Professor - Electrical & Electronics Engineering, Australian University, Kuwait. • 2013 —2016: Assistant Professor of Electrical and Electronic, American College of the Middle East. • 2012—2013: Assistant Professor of Electrical and Electronic, Jubail Industrial College, KSA. • 2007—2012: Lecturer of Electronic and Communication, London Metropolitan University, UK. Courses Taught: <i>Postgraduate Courses:</i> • Satellite Communications • Microwave and Optical Communications <i>Undergraduate Courses:</i> • Process Measurements • Control System • Signal and Control • Digital Signal Processing • Linear Integrated System • Introduction to Communication • Introduction to Electronics • Microwave Wireless Systems • Linear Circuit Analysis 1,2 • Digital Electronics • Computer Hardware and Software Architecture • Calculus 1,2 • Embedded Operating Systems • Power Electronics • Mobile Radio Communication
Industrial And Technical Experience:	NA
Research Interest:	Reconfigurable devices, techniques to suppress spuri in filters for electromagnetic compatible (EMC) systems, Novel microstrip resonators for frequency selective applications using metamaterial phenomena, optical sensors, renewable energy, structural health monitoring and Engineering education

Research Grants:	• 2025: Developing an AI-Powered PMV System for Comfort-Optimized Bus Stops in Kuwait. AU Research Grant, Kuwait. (KD1500) Principal Investigator • 2025: Experimental Correlations for the Physical Properties of Sea Water Contaminated with Crude Oil / Crude Oil Components at Varying Ranges of Environmental Conditions and Internal Sea Water Characteristics AU Research Grant, Kuwait (KD1420) Co-Investigator • 2025 Design and Control of Efficient Three-Port Converters for Renewable Energy Applications. AU Research Grant, Kuwait. (KD1500) Co-Investigator • 2024: Development of a Wi-Fi-Enabled DC Power Meter for an AI-Controlled Off-Grid Completely Direct Current Solar Air Conditioning System. AU Research Grant, Kuwait (KD1500) Co-Investigator • 2023: Design and Digitalization of Modern Prototype Drilling Rig Systems for Teaching and Research AU Research Grant, Kuwait. (KD1500) Co-Investigator • 2022: Development of an Organic Rankine Cycle (ORC) System Powered by a Solar Concentrator Optimized for Residential Application in Kuwait. KFAS. (KD 8150) Principal Investigator. • 2021: Safe Water Temperature Monitoring System using Optical Fibers. AU Research Grant, Kuwait. (KD1500) Principal Investigator • 2021: Development of a Hybrid Renewable Energy System Optimized for Kuwait Environment, KFAS (KD 5250) Co-Investigator • 2020: Real Time Spatial Measurements for Bridge Structures Using Fiber Optics Techniques, KFAS. (KD 5500) Principal Investigator • 2019: Comprehensive Design of a Cell Phone Tower Powered by Different Renewable Energy Sources, AU Research Grant, Kuwait. (KD1170) Co-Investigator • 2019: Enhancement of Student Learning and Interaction in Engineering Programs at Australian University by Using Audience Response Systems, AU Research Grant, Kuwait. (KD1125) Principal Investigator • 2017: Improving Energy Efficiency in University Buildings Using Building Information Modeling (BIM), AU Research Grant, Kuwait. (KD1080) Co-Investigator
Research and Publications including Journal and Books:	Conference Papers: • M. Farhat, Y. Mazloun, S. Wakim, W. Bou Nader, M. Al-Ebrahim, N. Ghareeb. "Optimizing Solar Parabolic Concentrators with Cylindrical and Conical Receivers for Improved Thermal Performance".10th International Conference on Sustainable and Renewable Energy Engineering (ICSREE 2025). Nice, France. E3S Web Conf. Volume 636, 2025 • Amadi, K. W., Alsaba, M. T., Iyalla, I., Farhat, M. H., Bitayib, B. M., and J. Ugoyah. "Enhancing PDC Bit Performance Analysis Through Reverse Engineering and Finite Element Methods in Forensic Study." Paper presented at the SPE Nigeria Annual International Conference and Exhibition, Lagos, Nigeria, August 2024. doi: https://doi.org/10.2118/221588-MS

- M. Farhat, M. H. Yassin, M. Nahas and A. Bilal, "Fiber Bragg Grating Sensors vs Strain Gauges for Static Bridge Monitoring System," 2024 IEEE International Instrumentation and Measurement Technology Conference (I2MTC), Glasgow, United Kingdom, 2024, pp. 1-6, doi: 10.1109/I2MTC60896.2024.10560727.
- M. Farhat, K. Munisami and M. Nahas, "Safe Water Temperature Monitoring System Using Optical Fibers," 2023 IEEE International Instrumentation and Measurement Technology Conference (I2MTC), Kuala Lumpur, Malaysia, 2023, pp. 01-05, doi: 10.1109/I2MTC53148.2023.10175996.
- M. Nahas, M. Farhat, S. Asaad and M. A. Mannah, "Assessment of a Hybrid Renewable Energy System: The Case of Kuwait," 2022 International Conference on Electrical and Computing Technologies and Applications (ICECTA), Ras Al Khaimah, United Arab Emirates, 2022, pp. 15-18, doi: 10.1109/ICECTA57148.2022.9990329.
- Sami Asaad, Hassan Salti, Mohamad Farhat "Engineering Students Engagement in a Hybrid Learning Mode: A comparative study" 18th International CDIO Conference 2022.
- M Farhat, M Nahas, H Salti "implementation and evaluation of a new PBL Assessment mechanism" 17th International CDIO Conference, Thanyaburi, Bangkok, Thailand, June 21-23, 2021. pp.507-515.
- Majdi Alomari, Nafesah Alshdaifat, Michel Nahas, Mohamad Farhat, "Assessment of occupants' energy conserving behaviors in the Kuwaiti academic buildings", 4th International Conference on Green Energy Technology (ICGET 2019), Rome, Italy, 16-18 July 2019.
- M. Farhat, B.S. Virdee "Microstrip Bandpass Filter with Wide Stopband and High Out-of-Band Rejection Based on Inter-Digital Capacitor" 20th International Conference on Electronics and Communication Engineering Boston, USA, April 23 - 24, 2018
- M. Farhat, B. S. Virdee, " Compact Quad-Band Bandpass Filter Based on Stub-Loaded Resonators "International Microwave Symposium 2017, Honolulu, Hawaii, June 4-9, 2017 Accepted
- M. Farhat, B.S. Virdee, M.N. Moghaddasi, "Ultra-Wideband Spurious-Free Quasi-Elliptic Function Filter", IEEE Proceedings of Asia-Pacific Microwave Conference, Pacifico Yokohama, Japan, 7-10 Dec. 2010, pp. 1201-1204
- M. Farhat "Dual-band Bandpass Filter Using Embedded Short-Circuited Resonators in the Open-loop C-shape Resonator" IET European Microwave conference, Manchester, UK, 10-13 Oct.2011, pp.759-762
- M. Farhat, B. S. Virdee, "Compact Quasi-Elliptic Bandpass Filter" IEEE Proceedings of Asia-Pacific Microwave Conference, Melbourne, 5-8 Dec. 2011, pp. 1051 - 1053
- M. Farhat, B. S. Virdee, "Dual-Band Bandpass Filter Using Open-Loop Resonators" IEEE Proceedings of Asia-Pacific Microwave Conference, Melbourne, 5-8 Dec. 2011, pp. 1054 - 1057

- M. Farhat, B.S. Virdee, K.U. Ahmed "Novel Microstrip Bandpass Filter with Ultra-Wide Stopband" German Microwave Conference, 12-14 March 2012, pp. 29-32 ISBN: 978-3-9812668-5-6
- M. Farhat, B. S. Virdee, "Diplexer based on composite left/right-handed transmission line" German Microwave Conference, 12-14 March 2012, pp. 46-49. ISBN: 978-3-9812668-5-6

Journal Papers:

- Mohamad Farhat, Arash Mehdizadeh, Ahmad Sedaghat, Mohamed EL Badawy, Bassem Djedi, Mohamad Iyad Al-Khiami, Ali Mostafaeipour, Mohammad Nazififard, "Origami-inspired urban wind turbines: Scalable bladeless designs for decentralized renewable energy". Green Technologies and Sustainability, 2025, 100253, ISSN 2949-7361, <https://doi.org/10.1016/j.grets.2025.100253>.
- Ahmad Sedaghat, Bassem Djedi, Mohamad Farhat, Mohamad Iyad Al-Khiami, Mohamed El Badawy. "A novel origami inspired single rotor horizontal axis wind turbine". Journal of Energy Systems. 2025;9(3):271-9.
- Nader Ghareeb, Abeer Alanazi, Ahmad Sedaghat, Mohamad Farhat, Arash Mehdizadeh, Hayder Salem, Mohammad Nazififard, Ali Mostafaeipour. "Integrating experimental and theoretical approaches for enhanced machine learning modeling of solar radiation". Engineering Science and Technology, an International Journal, Volume 70, 2025, 102156, ISSN 2215-0986, <https://doi.org/10.1016/j.jestch.2025.102156>.
- Mohamad Farhat, Michel Nahas, Nader Ghareeb, Kevin Munisami. "Enhancing technical and interpersonal skills in engineering education through audience response system in project-based learning". International journal of engineering pedagogy, Volume 9 Issue 4 April 2025.
- Yassin, M.H., Mohamad Farhat, Soleimanpour, R., Michel Nahas. "Fiber Bragg grating (FBG)-based sensors: a review of technology and recent applications in structural health monitoring (SHM) of civil engineering structures". Discov Civ Eng 1, 151 (2024). <https://doi.org/10.1007/s44290-024-00141-4>
- Mohammad Hany Yassin, Mohamad Farhat, Michel Nahas, Ahmad Said Saad, Investigation of fiber Bragg grating sensor measurability in concrete beams under static load conditions, Heliyon, Volume 10, Issue 22, 2024, <https://doi.org/10.1016/j.heliyon.2024.e4010>
- Yassin, M.H., Lakys, R.E., Zein-Eddine Merouani, Adel Jumah, Mohamad Farhat. "Performance analysis of palm tree microfibers in concrete". Sci Rep 15, 5128 (2025). <https://doi.org/10.1038/s41598-024-84111-x>
- Mohamad Farhat, Youssef Mazloun, Samer Wakim, Wissam Bou Nader, Meshari AL Ebrahim, Nader Ghareeb, "Energy optimization of parabolic dish solar concentrator coupled to organic Rankine cycle: Experimental and analytical investigation of cavity receiver design and

	covering effects" International Journal of Thermofluids, Volume 23, 2024, https://doi.org/10.1016/j.ijft.2024.100730. • Nader Ghareeb, Mohamad Farhat "Effect of Finite Element Type on Modeling, Analysis and Control of a Cantilevered Beam" Journal of Mechanical Engineering Research and Developments, Vol. 45, No. 2, pp. 43-52. 2022 • H. Salti, M. Farhat, M. Abdul Niby, I. Zabalawi "Towards a flexible 2+2 hands-on engineering technology curriculum" World Transactions on Engineering and Technology Education, Vol.19, No.4, 202. • N. Ghareeb, S. Soleimani, M. Farhat, K. Khanafer "Analytical and Numerical Calculations of Deformation in Piezoelectric Bimorphs with Variable Piezo-thicknesses" International Journal of Applied Engineering Research (Netherlands) Vol. 6 No. 2, 2021 • M. Farhat, M. Nahas, N Ghareeb, R. El Khoury "Enhancement of student learning and interaction in engineering programmes using an audience response system" World Transactions on Engineering and Technology Education, Vol.19, No.2, 2021. • Farhat, M., Virdee, B. & Ghareeb, N. H. (2019). Microstrip Bandpass Filter with Wide Stopband and High Out-of-Band Rejection. American Journal of Engineering and Applied Sciences, 12(4), 543-548. • N. Ghareeb and M. Farhat, "Smart Materials and Structures: State of the Art and Applications", Nano Tech Appl. 2018; 1(2): 1-5, ISSN: 2639-9466 • M. Farhat, M. Abdul-Niby, M. Nahas, M. Alomari "Compact Tri-Band Bandpass Filter with High Out-of-Band Rejection", ETASR - Engineering, Technology & Applied Science Research, Vol 7, No 4, 2017 • M. Farhat, J. Munisami, M. Abdul-Niby, M. Nahas, "Compact Quint-Band Bandpass Filter Based on Stub-Loaded Resonators", ETASR - Engineering, Technology & Applied Science Research, Vol 7, No 3, 2017 • M. Farhat, M. Abdul-Niby, M. Abdullah, A. Nazzal "A Low-Cost Automated Weather Station for Real Time Local Measurements" ETASR - Engineering, Technology & Applied Science Research, Vol 7, No 4, 2017
Paper Presentations at Professional Conferences:	• M. Farhat, Y. Mazloun, S. Wakim, W. Bou Nader, M. Al-Ebrahim, N. Ghareeb. "Optimizing Solar Parabolic Concentrators with Cylindrical and Conical Receivers for Improved Thermal Performance".10th International Conference on Sustainable and Renewable Energy Engineering (ICSREE 2025). Nice, France. E3S Web Conf. Volume 636, 2025 • M. Farhat, M. H. Yassin, M. Nahas and A. Bilal, "Fiber Bragg Grating Sensors vs Strain Gauges for Static Bridge Monitoring System," 2024 IEEE International Instrumentation and Measurement Technology Conference (I2MTC), Glasgow, United Kingdom, 2024, pp. 1-6, doi: 10.1109/I2MTC60896.2024.10560727. • M. Farhat, K. Munisami and M. Nahas, "Safe Water Temperature Monitoring System Using Optical Fibers," 2023 IEEE International Instrumentation and Measurement Technology Conference (I2MTC), Kuala

	Lumpur, Malaysia, 2023, pp. 01-05, doi: 10.1109/I2MTC53148.2023.10175996. • M. Farhat, M Nahas, H Salti "Implementation and evaluation of a new PBL Assessment mechanism" 17th International CDIO Conference, Thanyaburi, Bangkok, Thailand, June 21-23, 2021. pp.507-515. • M. Farhat, B.S. Virdee "Microstrip Bandpass Filter with Wide Stopband and High Out-of-Band Rejection Based on Inter-Digital Capacitor" 20th International Conference on Electronics and Communication Engineering Boston, USA, April 23 - 24, 2018 • M. Farhat "Dual-band Bandpass Filter Using Embedded Short-Circuited Resonators in the Open-loop C-shape Resonator" IET European Microwave conference, Manchester, UK, 10-13 Oct.2011 • M. Farhat, B.S. Virdee, K.U. Ahmed "Novel Microstrip Bandpass Filter With Ultra-Wide Stopband" German Microwave Conference, 12-14 March 2012, pp. 29-32. ISBN: 978-3-9812668-5-6 • M. Farhat, B. S. Virdee, "Diplexer based on composite left/right-handed transmission line" German Microwave Conference, 12-14 March 2012, pp. 46-49. ISBN: 978-3-9812668-5-6
College Service including committee Membership:	• Curriculum Committee (Chair) • Appointment and promotion committee (Member) • Auditing, QM and Accreditation Committee (Member) • Teaching, Learning, Validation & Moderation Committee (Member) • Research & Faculty Development Committee (Member)
National Service:	NA
College Committees:	Member of the College of Engineering Council in AU.