Name: Dr. Mohd Khair Hassan, *P.Eng*
Nationality: Malaysian
Date of Birth: 16th Nov 1974
Languages Bahasa Malaysia, English

Current Employment **Professor**
Department of Electrical and Electronic Engineering,
Faculty of Engineering,
Universiti Putra Malaysia (UPM)

khair@upm.edu.my ; drkhairhassan@gmail.com
+60172715737

Professional Qualification

1. Professional Engineer with Practicing Certificate (*P.Eng*) in Electronic – Board of Engineers, Malaysia (C116635)
2. Professional Engineer in Electronics - Federation of Engineering Institutions of Islamic Countries (FEIIC)- *FER* (10016)
3. Certified Trainer - Human Resources Development Corporation, Malaysia – 42881.
4. Certified Trainer- TüV Rhineland Malaysia 17524003

Academic Qualifications

1. Doctor of Philosophy in Automotive Engineering (Title: Development of Control Strategy for Electronic Control Unit in CNG-DI Engine), Universiti Putra Malaysia, Malaysia, 2011.
2. MSc. in Electrical Engineering (Title: Educational GUI Framework for Visualization and Tuning of Multivariable Control Systems University of Technology Malaysia, Malaysia, 2001
3. B.Eng. (Hons) of Electrical and Electronic Engineering-Control System (Title: Development of PID Control for Pontoon Pier System), University of Portsmouth, United Kingdom, 1998
4. Diploma in Electrical and Electronic Engineering, MARA Institute of Technology, Malaysia, 1995.

Research Interest: Battery Ageing, Energy Storage System, Automotive Electronic Control, Machine Learning, Advanced Modeling and Simulation

Learned Society:

1. Senior Member, Institute of Electrical and Electronic Engineer (IEEE)
2. The International Federation of Automatic Control (IFAC) Technical Committee- since 2018
3. International Association of Engineers (IAENG) No: 115244
4. Science and Engineering Institute (SCIEI) No: 0060 20120503001

Employment History

1. Universiti Putra Malaysia – 2001- present
2. Liverpool John Moores University (UK) - International College of Automotive (Malaysia) – 2014-2017 (1 sem/year)
3. University Of Agriculture, Faisalabad, Pakistan – 2015 (1 sem/year)
4. PROTON Sdn.Bhd (Car Manufacturer) – Engineer 2012
5. Private Engineering College, Negri Sembilan - 1999
6. Matsushita Japan – Semiconductor - 1995

ACADEMIC ADMINISTRATIVE DUTIES - (Universiti Putra Malaysia)

1. Panel Evaluation for Patent and Copyright Applications, Universiti Putra Malaysia (UPM), 2024–present
2. Technical Advisor, Electrical Maintenance, UPM Mosque, 2023–Present
3. Chairman, Green Technology @Faculty, Faculty of Engineering, 2023-2024
4. Chairman, STEM Program, Faculty of Engineering, 2022-2024
5. Accreditation Auditor, Malaysian Qualifications Agency (MQA) – UPM Self-Accreditation Audit (SWA), Since 2018
6. **Deputy Dean (Research and Innovation),** Faculty of Engineering, June 2022 – February 2024
7. **Head of Department, Electrical and Electronic Engineering,** Faculty of Engineering, June 2020 – June 2022
8. Committee Member, Evaluation of University Income Generation, Universiti Putra Malaysia, March 2020
9. Panel Advisor, Engineering Bookstore, Faculty of Engineering, 2016–2018
10. Academic Mentor, New Lecturer Mentorship Program (Dr. Nor Haziq Norsahperi), Faculty of Engineering, 2017–2018
11. Head, Control and Signal Processing Research Centre, Department of Electrical and Electronic Engineering, Since 2022
12. FELO, College 14, Universiti Putra Malaysia, 2008–2011
13. Expert Reference, Electrical and Electronic Safety and Health Committee, Faculty of Engineering 2003–2005
14. Departmental Development Coordinator, Department of Electrical and Electronic Engineering 2014–2016
15. Laboratory Coordinator, Department of Electrical and Electronic Engineering, 2014–2019
16. Final Year Project Coordinator, Department of Electrical and Electronic Engineering 2013–2015
17. Program Coordinator, UNITI College–UPM Bachelor Program in Electrical and Electronic, Engineering, 2002–2003

PROFESSIONAL APPOINTMENTS
(International, Government of Malaysia, Agencies, Industries)

1. **Visiting Scholar**, Kyushu Institute of Technology (Kyutech), Iizuka Campus, Department of Computer Science & Engineering, Fukuoka, Japan, September 2025 – February 2026
2. **Adjunct Professor**, Vellore Institute of Technology (VIT), Tamil Nadu, India, February 2025
3. **Adjunct Professor,** Lincoln University College, Malaysia, Since 2019-2021.
4. **Contributor (Writer),** Ministry of Higher Education (MOHE), *Malaysia Higher Education Blueprint 2026–2035 (Shift 5),* 2024–2025
5. **Expert Panel Evaluation** –High Centre of Excellence (HiCOE), Ministry of Higher Education, Malaysia, 2024-present
6. **President,** Malaysian Society for Automatic Control Engineers (MACE), 2024–2026
7. **External Assessor,** B.Eng (Hons), M.Eng, Diploma programme, various universities (UniKL-MFI, UMPSA, UTS, UniMAP, Lincoln University College, IKM, APU, MJII), 2018–2026
8. **Member, Board of Studies,** Mechatronic Department, Chandigarh University, Punjab, India 2023–2025
9. **Expert Panel (Evaluation & Monitoring),** Ministry of Science, Technology and Innovation (MOSTI), Malaysia, 2016–present.
10. **Panel Grant Evaluator,** Matching Grant Malaysia–Japan; FRGS, MOSTI; Internal Grant (Geran Putra, UPM), 2015- present
11. **Panel Grant Evaluator** – MOSTI, eDANA Funds (TED1 & TED2, SRF, RD) – Reviewed funding over RM50 million, Various -2019 - present

12. **Panel Grant Evaluator** , Business Start-Up Fund (BSF), Malaysia Technology Development Centre (MTDC– Total funding RM11 million, Various (2020–2024)
13. **Competency Evaluation Panel,** Malaysia Board of Technologists (MBOT), Electrical & Electronic Discipline, Since 2020
14. **Mentor for Professional Engineers**, Board of Engineers Malaysia (BEM), Electrical & Electronic Discipline, Since 2016
15. **Accreditation Panel (EAC),** Engineering Accreditation Council, Board of Engineers Malaysia (BEM), Since 2016
16. **Accreditation Panel (MQA),** Malaysian Qualifications Agency (MQA), Electrical & Electronic Engineering, Since 2015
17. **Accreditation Panel (ETAC),** Engineering Technology Accreditation Council (ETAC), MBOT Since 2018
18. **National Committee Member**, Engineering Education Technical Division, Institution of Engineers Malaysia (IEM), Since 2018
19. **Deputy President,** Malaysian Society for Automatic Control Engineers (MACE), 2018–2020
20. **Treasurer,** Malaysian Society for Automatic Control Engineers (MACE), 2017–2020
21. **Book Reviewer,** Instrumentation and Measurement, Universiti Teknologi Malaysia (UTM) 2022

PROFESSIONAL SERVICES-recent 5 years (Malaysian Government and Professional Agency)

1. Head of Evaluation Panel appointed by **Ministry of Science and Technology (MOSTI)** for Technological Research Funding code TDFxxxx63, amount approved RM942,800.00, 2023; TDFxxxx59 amount approved RM445,800 (TED1)-2023; RDxxxx44- amount approved RM1,520,000.00-2022; TEFxxxx40- amount approved RM2,287,700.00-2021.
2. Evaluation Panel appointed by **Ministry of Science and Technology (MOSTI)** for Strategic Research Funding code SRFxxxx-U4-3- amount approved RM8,200,000.00-2021; SRFxxxx-U4-8- amount approved RM 6,310,000.00-2021; 34/2021SRFxxxx- amount approved RM 12,778,500.00-2021
3. Evaluation Panel appointed by **Ministry of Science and Technology (MOSTI)** for Technological Research Funding code TEFxxxx12- amount approved RM2,911,800.00-2020
4. Evaluation Panel appointed by **Ministry of Science and Technology (MOSTI)** for Research and Development Funding code RDxxxx69- amount approved RM2,856,000.00-2020
5. Expert Panel – appointed by **Malaysian Technology Development Corporation (MTDC**), Business Start-Up Fund (BSF), Digital Switch xxxx Sdn.Bhd- RM 4,715,000, 2018.; EYEPORT xxxx Sdn.Bhd- RM6,000,000, 2017
6. Panel for Malaysian Scholarship (MSc, PhD), appointed by **Public Service Department, Malaysia** – 2018
7. Head of Panel for EAC Accreditation, **Board of Engineers Malaysia,** Bachelor of Electrical and Electronics Engineering with Honours , Universiti Teknologi Petronas (UTP), 2024; Universiti Tun Hussien Onn (UTHM , 2024, Universiti Sains Malaysia (USM) , 2023, Universiti Malaysia Perlis (UniMAP); University of Monash, Malaysia 2021
8. Panel for EAC Accreditation, **Board of Engineers Malaysia** , Bachelor of Electronic Engineering with Honours UCSI University, 2019.
9. Head of Panel for ETAC Accreditation, **Board of Engineers Malaysia** , Diploma of Engineering Technology in Electrical and Electronics Malaysian Institute of Marine Engineering Technology (UniKL MIMET), 2021; Politeknik Sultan Abdul Halim Mu'adzam Shah (Polimas), 2019
10. Academic Panel to Associate Professor Position – International Islamic University Malaysia, 2018
11. Panel Judge- National Robotic Competition Community Colleges, 2018

PATENT/ COPYRIGHT

1. A Laminated Battery with A Package Frame State; Intellectual Property Office, China. Patent No: 2023207677953/ SJR01882 (2023)
2. Optimization of Cascaded H-Bridge Multilevel Inverter Using Mother Optimization Algorithm (MOA), LY2025W12093.
3. Optimization of Cascaded H-Bridge Multilevel Inverter Using Hybrid Bonobo Optimization Algorithm and Grey Wolf Optimization Algorithm (BO-GWO), LY2025W12091.
4. Optimization of Cascaded H-Bridge Multilevel Inverter Using Starfish Optimization Algorithm (SFOA) LY2025W12092.
5. Method for Controlling Multiple Injection of Gaseous Fuel in a Direct Injection Engine PI20054808 (2020)
6. Flexible Electronic Wedge Brake Model Using Physical Modelling, LY2021M03762 (28/9/2021)
7. Energy Management Topology of Battery Electric Vehicle with Segmentation of Auxiliary Loads LY2022C03325 (14/9/2022)
8. A real-time path Planning System For A Robot or An Autonomous vehicle, PI2018000597, (2018)
9. Lightning Severity Classification v.1.0- software18/8/2014
10. Phyto-Herbal Electric Nose- Layout Design and of an integrated circuit, 25/8/2022
11. Phyto-Herbal Electric Nose- software; 25/8/2022

KEYNOTE/INVITED SPEAKER

2026

1. *AI-Driven Battery Remaining Useful Life Prediction for Circular Economy and Sustainable Energy Applications,* 2026 International Conference on Advanced Electronic and Automation Technologies (AEAT2026), Changchun, China, April 24 to 26, 2026.
2. *Intelligent Prediction of Lithium Battery Lifespan Using Hybrid Deep Learning Architectures*, 2026 International Conference on Electronic Devices and Intelligent Control (EDIC 2026) , March 27-29, 2026, Xiamen, China.

2025

3. *Fleet-Scale EV Electrification and Battery Circularity: Infrastructure Design and Recycling Frameworks,* 2025 International Conference on Intelligent Equipment, Vehicle Engineering and Automation Control (ICEVA 2025), Dec 5-7, 2025, Shenyang, China
4. *Battery Supply Chain and Circularity Circular Battery Solutions for Public Transport: Building Local Capacity in Malaysia's Climate,* 3rd ASEAN Battery Technology Conference 2025, 27th- 29th Aug 2025, Phuket. Thailand.
5. *Circular Economy of Retired Batteries for Second-Life Applications* International Experts Sharing Meeting Topic: Cultural Adaptation and Acceptance of New Energy Vehicles in Southeast Asia, China, 7th August 2025
6. *Evolution and Second-Life Potential of Lithium-Ion Batteries: A Data-Driven AI Approach to Enable Circular Economy Strategies,* Online Seminar at Gulf University for Science and Technology (GUST) on May 5, 2025, Kuwait
7. *Circular Economy–Driven Assessment of Battery Aging for Second-Life Applications: AI and Prognostic Strategies,* The 2nd International Conference on Electronic Circuit and Electronic Technology (C-ECET 2025), 18th - 20th July, 2025. Kuala Lumpur.
8. *Circular Economy and AI-Driven Battery Aging Assessment for Second-Life Applications,* Vellore Institute of Technology, Tamil Nadu, India, !8th March 2025.

2024

9. *Circular Economy - Driven Assessment of Battery Aging Resilience.,* 3rd International Conference on Electrical Engineering and Automatic Control (EEAC 2024), on Engineering (ETAE 2024). June 6-7, 2024 , China (www.iceeac.net)
10. *Circular Economy and Battery Ageing,* 2024 International Conference on Electrical Technology and Automation Engineering (ETAE 2024). March 8-10, 2024 in Hangzhou, China

2023 and before

11. *Advanced Control System Design – A review;* 2023 China-ASEAN Al Era Inter-disciplinary Talent Training Workshop for the School of Computer of Guilin University of Electronic Technology on November 12 and 13, 2023.

12. *Energy Management Topology for EV ,* The UNITED-Southeast Asia Automotive Interest Group (SAIG) – 2022 SAIG, Chulalongkorn University, 2022, Thailand
13. *Load segmentation for EV*, 2021, Department of Mechanical Engineering is organizing the 1st National Virtual Conference on Automation, Robotics, Artificial Intelligence and Mechatronics (ARAM-2021) on 19th March 2021., Sri Sivasubramaniya Nadar College of Engineering India
14. *Electric Vehicle – Model-Based Design (V-shape),* 2018, UTeM, Malaysia
15. Facilitator Route to Engineer-Board of Engineer Malaysia, 2020, UTeM, Malaysia
16. Facilitator , Implementation Of Model Based Design Approach For Energy Efficiency In Electric Vehicle, MACE Technical Seminar, UTeM, Melaka
17. Facilitator, Microcontroller and Embedded System, 2019, 2019, UTM, Malaysia
18. Invited Speaker, University Technical Officer Enhancement, Sri Lanka , 2018
19. Facilitator, MATLAB Modelling in Automotive Applications, PROTON Sdn.Bhd, 3-session for all 27 engineers, 2016

ACADEMIC AWARDS AND RECOGNITIONS

1. Best Industrial-University Collaboration Award, Universiti Putra Malaysia, 2021
2. Best Paper Award – Modeling and Simulation of Battery Electric Vehicle with Consideration of Propulsion Load and Auxiliary Load, International Malaysian Academic Association Congress Symposium, 2019
3. Best Paper Award – Modelling and Simulation of Electronic Wedge Brake-based Antilock Brake System, Intelligent Control & Automation Symposium, Universiti Teknologi Malaysia, 2018
4. **Excellent in Service**, Universiti Putra Malaysia (98% in 2014, 100% in 2023)
5. **Excellent in Teaching,** Faculty of Engineering, Universiti Putra Malaysia (2024–2004, multiple consecutive years)
6. **Most Innovative Award, Champion, and Cluster Award** – IoT Integrated Walker System for the Elderly, Global I-Lead STEM Camp & International STEM Olympiad, 2019
7. Silver Medal – Hardware-in-Loop (HiL) of Fault Detection for Air-Fuel Ratio Control Malaysia Invention & Design Society (MINDS), International Engineering Invention and Innovation Exhibition (i-ENVEX), Universiti Malaysia Perlis, 2014
8. Gold Medal – Electronic Control Unit (ECU) for Compressed Natural Gas Direct Injection (CNGDI) Vehicle, Malaysia Technology Expo, 21–23 February 2008
9. **Gold Medal** – Software System for Detecting Defective Symbols on Microchip with Adjustable Readability Level, International Exhibition of Ideas, Inventions & New Products (IENA), Nuremberg, Germany, 2007
10. Gold Medal – Software System for Detecting Defective Symbols on Micro Chip with Adjustable Readability, 18th International Invention, Innovation & Technology Exhibition (ITEX 2007), Kuala Lumpur, Malaysia
11. Silver Medal – New Electronic Control Unit Control Strategy for Compressed Natural Gas Direct Injection Vehicle, Pameran Rekacipta, Penyelidikan dan Inovasi, UPM, 2007
12. Special Award – Software System for Detecting Defective Symbols on Micro Chip with Adjustable Readability Level, Awarded by the Russian Government, ITEX 2007, Kuala Lumpur, 2007
13. Bronze Medal – Software System for Detecting Defective Symbols on Micro Chip with Adjustable Readability Level, Pameran Rekacipta, Penyelidikan dan Inovasi, UPM, 2006
14. **Gold Medal and Special Award** – Compressed Natural Gas Direct Injection Vehicle (CNGDI), Awarded by The Association of Polish Inventors, 55th World Exhibition of Innovation, Research and New Technology (Eureka-Onnova 06), Brussels, Belgium, 2006
15. Gold Medal – Compressed Natural Gas Direct Injection Vehicle (CNGDI), 17th International Invention, Innovation, Industrial Design and Technology Exhibition (ITEX 06), Kuala Lumpur, Malaysia, 2006

16. Best Design Award – ROBOCON, National ROBOT Competition, Ministry of Higher Education (MOHE), 2005
17. Academic Scholarship – Bachelor of Electrical and Electronic Engineering, University of Portsmouth, United Kingdom, awarded by Malaysian Public Service Department (JPA), 1996
18. Academic Scholarship – Master of Electrical Engineering, University of Technology Malaysia, awarded by Malaysian Public Service Department (JPA), 2000
19. Academic Scholarship – Doctor of Philosophy in Engineering, Universiti Putra Malaysia, awarded by Malaysian Public Service Department (JPA), 2004

TEACHING POTFOLIO

Year 1

1. **KEE 3011: Electrical and Electronic Technology**
   II-2001/2002, I-2002/2003, II-2002/2003, I-2003/2004
2. **KEE 3901: Laboratory of Electrical and Electronic I**
   I-2002/2003, I-2003/2004

Year 2

3. **KEE 3402: Control System**
   II-2001/2002, II-2002/2003, II-2012/2013, II-2025/2026
4. **ECC 3004: Engineering Statistic**
   I-2008/2009, I-2009/2010, I-2010/2011, II-2010/2011, I-2011/2012, II-2011/2012
5. **EEE 3012: Instrumentation System**
   I-2008/2009, I-2009/2010
6. **EEE 3908: Control System Laboratory II**
   II-2008/2009, II-2009/2010

7. Year 3
8. **KEE 3408: Microprocessor**
   II-2001/2002, II-2003/2004
9. **KEE 3904: Laboratory of Control System III**
   II-2002/2003, II-2003/2004
10. **EEE 3011: Industrial Control and Electronics**
    I-2011/2012, II-2011/2012
11. **KEE 3909A/B: Final Year Project**
    I,II-2001/2002, I,II-2003/2004, I,II-2013/2014

Year 4

12. **EEE 4403: Advanced Control System Design**
    I-2009/2010, I-2010/2011, I-2011/2012, II-2011/2012, III-2011/2012
13. **EEE 4404: Intelligent Control System**
    II-2013/2014, I-2014/2015
14. **KEE 4411: Computer Aided Control System Design**
    II-2003/2004, II-2008/2010
15. **EEE 4405: Embedded Control System**
    II-2009/2010, II-2010/2011
16. **ECV 3011: Engineers and Society**
    I-2019/2020, I-2020/2021, II-2021/2022, II-2022/2023, II-2025/2026

MSc/PhD

17. **EEE 5900: Advanced Modelling and Simulation**
    I-2012/2013, I-2013/2014, I-2018/2019, I-2021/2022
18. **EEE5404-Data Modelling and Simulation**
    II-2025/2026

Special Courses

19. **FF-602: Machine Vision and Industrial Automation Control**
    University of Agriculture, Faisalabad, Pakistan – I-2015
20. **5506ENGICA: Automation**
    Liverpool John Moores University – DRB-HICOM University of Automotive Malaysia (Twinning Program) – 2014–2017
21. **Starting School Programs for New Students**
    Various Faculties in UPM – 2015–2018
22. **MATLAB Modelling for Engineers**
    Professional Class for Industrial Participants – 2013–2015

OUTCOME BASED EDUCATION (OBE) in TEACHING EXPERIENCE – selected courses

1. Problem Blended Learning (PBL)
   - EEE 4403 Control System Design
   - EEE 4404 Intelligence Control System
2. Student Centered Learning (SCL)
   - ECV3011 Engineers and Society
   - KEE 4411 Computer Aided Control System Design
3. Case study
   - EEE 5900 Advanced Modelling and Simulation
   - EEE 3011 Industrial Electronics
   - KEE 3909A, B Final Year Project
4. Open ended Laboratory
   - EEE 3908 Control System Laboratory II
   - KEE 3904: Laboratory of Control System IV
5. Field trips – selected projects
   - SDG initiatives in Selangor and Kuala Lumpur
   - Construction of a Solar Charging System Station at the Engineering Faculty
   - Creation of an Automated Lighting System at Faculty of Engineering's Corridor
   - Creation of a mosquito repellant system surrounding the lake at the Faculty of Engineering
   - Competition for autonomous robots
   - Lane tracking robot for beginners
   - Exercise in a virtual laboratory for battery monitoring systems

STUDENT ACTIVITIES (Recent 5 years)

- Project Advisor "SHELL Selamat Sampai" Competition – 2019 (3rd place) , 2022 (Top 5), 2023
- Student Advisor, STEM project 2018, 2019,2023
- Academic Advisor for Exchange Student Program – France (4), Turkey (3) China (1)- since 2020
- Facilitator, NI competition, 2019
- Facilitator, IEEE Student branch programs, 2016- 2018
- Facilitator, IEM (Institute of Engineers Malaysia) for best Final Year Project, 2016- 2018
- Facilitator MATLAB Competition, 2016-2018
- Supervisor for Industrial Training of Polytechnic program , 2021
- Panel judge, FYP for Control Option since 2016
- Scholarship Application for Foreign – German Academic Exchange Service, 2020
- Panel for Scholarship Application for Oversea Studies appointed by Public Service Department, Malaysia, Ministry of Higher Education Malaysia- 2018
- Over 60 students have received supervision for their Final Year Projects, as part of the undergraduate program.

POSTGRADUATE SUPERVISION

Category	SUPERVISOR						EXAMINER					
	Current Student			Graduate			Current Student			Graduate		
	PhD	Master	Total	PhD	Master	Total	PhD	Master	Total	PhD	Master	Total
Chairman	3	2	5	6	11	13	2	0	1	0	10	10
Member	10	1	11	12	10	17	10	0	8	9	8	17
Total	13	3	16	18	21	30	12	0	9	9	18	27

THESIS EXAMINER- Doctor of Philosophy

International

1. Chockalingam Al, Development Of An Optimized Ensemble Artificial Neural Network Model For Solar Power Generation Prediction, Anna University, Chennai, India., 2026
2. Linkan Priyadarsini, *Motion Control Of Autonomous Underwater Vehicle Under Variable Operating Conditions,* Kalinga Institute of Industrial Technology, India, 2026.
3. Harin M Mohan, *Performance Analysis Of Optimal Power Management And Control Of Microgrid Under Uncertainties,* Vellore Institute of Technology, Tamil Nadu, India, 2026
4. Chockalingam Al, *Development Of An Optimized Ensemble Artificial Neural Network Model For Solar Power Generation Prediction,* Anna University, Chennai, India., 2026
5. Siyamak Ziyaei – *Study of Lean Combustion using Turbulent Jet Ignition (TJI) System with the Controlled Air Charge*, School of Engineering, RMIT University, Australia, 2025.
6. Yuvaraj M, *Development Of An Optimized Hybrid Deep Learning Model For Predicting Global Horizontal Irradiance For Solar Energy Applications,* Anna University, Chennai, India., 2025.
7. Nagarajan J, *Investigation And Performance Enhancement Of DcAc Converters Using Generalized Hopfield Neural Network And Soft Computing Techniques*, Anna University, Chennai, India., 2025.
8. R. Manikumar – *Certain Investigations on Optimized Deep Neuro Controllers for Nonlinear Shell and Tube Heat Exchanger*, Faculty of Engineering and Technology, Annamalai University, India, 2024
9. B. Girirajan – *Certain Investigations on Optimized CRONE Control Strategies for a Class of Nonlinear Processes*, Faculty of Engineering and Technology, Annamalai University, India, 2022
10. G. Thanigaivel – *Certain Investigations on Repetitive Control Strategies for Nonlinear Systems*, Faculty of Engineering and Technology, Annamalai University, India, 2021
11. Mr. Ajayam – *Design Optimization of Solar–Fuel Cell–Battery Hybrid EV Using Metaheuristic Algorithms*, Karunya Institute of Technology and Sciences, Tamil Nadu, India, 2020.

Malaysia

12. Musa Mohammed Bello – *A Multi-Mode Adaptive Command Shaping for a Non-Linear Double Pendulum Overhead Crane with Distributed Mass Payload*, Universiti Teknologi Malaysia (UTM), 2024
13. Aminurrashid Bin Noordin – *Enhanced Adaptive PID Controller Based on Sliding Mode Control Approach for Quadrotor UAV*, Universiti Teknologi Malaysia (UTM), 2024
14. Zainab Malik – *3-Channel Spatiotemporal Key Flow Frames as Features for Human Action Recognition Using 3D Convolutional Neural Network*, Malaysia–Japan International Institute of Technology (MJIIT), UTM Kuala Lumpur, 2024
15. Al-Rubaye Baqer Saleh Mahdi (GS59257) – *Towards Sustainable Energy Solutions: Integrating Photovoltaic Systems, Advanced Control Strategies, and Smart Microgrid Optimization*, Universiti Putra Malaysia (UPM), 2024
16. Moloody Abbas (GS50979) – *Development of a Mechatronics Test Rig System for the Intelligent Active Vibration Control of a Combined Single-Link Robotics Flexible Manipulator*, Universiti Putra Malaysia (UPM), 2024
17. Shaea Al-Ajmi – *Multi-Parallel Transistor Switch for Improved Efficiency of Low-Power DC-DC Boost Converter*, Universiti Putra Malaysia (UPM), 2024
18. Mokhalad Khaleel Hassoon Alghrairi – *Health Care Monitoring System of In-Stent Restenosis Coronary Artery by Using Wireless Pressure Sensor*, Universiti Putra Malaysia (UPM), 2023

19. Sharil Izwan bin Haris – *Fuzzy Logic-Based Self-Tuning PID Controller for Anti-Lock Braking System Utilizing Electronic Cone Wedge Brake*, Universiti Teknikal Malaysia Melaka (UTeM), 2023
20. Balogun Wasiu Adebayo – *A Dual-Mode Distributed-Delay Input Shaper for Swing Control of a Double-Pendulum Overhead Crane*, Universiti Teknologi Malaysia (UTM), 2023
21. Dong Huizhen (GS57810) – *Research on Pipeline Transport Characteristics of Cemented Paste Backfill Slurry Based on CFD*, Universiti Putra Malaysia (UPM), 2023
22. Basheer Husham Ali Al-Mafrachi – *Detection of Different Types of Distributed Denial of Service Attacks Using Multiple Features of Entropy and Sequential Probability Ratio Test*, Universiti Putra Malaysia (UPM), 2023
23. Al-Hchaimi Ahmed Abbas Jasim – *Prediction of Security Index for Network-Based Multi-Processor System-on-Chip Using Multi-Criteria Decision-Making*, Universiti Putra Malaysia (UPM), 2023
24. Irudayaraj Andrew Xavier Raj – *Intelligence-Based Control Techniques for Frequency Control of Networked Microgrid Systems*, Universiti Putra Malaysia (UPM), 2023
25. Maky Mohammed Sadiq Maky (GS59287) – *Modeling for Smart Antenna Based on Embedded Control Chip*, Universiti Putra Malaysia (UPM), 2023
26. Noor Jannah binti Zakaria – *Lane Detection for Driving Scenes Incorporating Fully Convolutional Network and Attention Mechanism*, Malaysia–Japan International Institute of Technology (MJIIT), UTM Kuala Lumpur, 2023
27. Nurul Dayana binti Salim – *Robust Optimal Controller for Hexarotor Micro Aerial Vehicles*, Malaysia–Japan International Institute of Technology (MJIIT), UTM Kuala Lumpur, 2023
28. Nor Arymaswati binti Abdullah (GS40496) – *System Identification Modelling and Compensator Design Using Particle Swarm Optimisation for Reactor TRIGA PUSPATI*, Universiti Putra Malaysia (UPM), 2022
29. Alowaid A. R. O. Alotaibi (GS49058) – *Design of Wind Turbine Integrated with Epicyclic Gearing for Electric Generator System*, Universiti Putra Malaysia (UPM), 2022
30. Sabo Aliyu (GS54742) – *Artificial Intelligence-Based Power System Stabilizers for Frequency Stability Enhancement in Multi-Machine Power Systems*, Universiti Putra Malaysia (UPM), 2022
31. Koo Yeong Chin – *Control-Theoretic Based Distributed Consensus Time Synchronization Protocol for Wireless Sensor and Actuator Network*, Universiti Sains Malaysia (USM), 2021
32. Khaleed S. K. H. S. Alrasheed (G1520923) – *Design of Solar Tracking System with Solar Photovoltaic (PV) Energy Harvesting System in Kuwait*, International Islamic University Malaysia (IIUM), 2021
33. Nurfarahin binti Onn – *Model Predictive Control of Proportional Servo-Hydraulic Extremity Robotic Device*, Universiti Teknologi Malaysia (UTM), 2021
34. Mohd Sabri bin Minhat – *Core Power Control Design and Analysis for Reaktor TRIGA PUSPATI*, Universiti Teknologi Malaysia (UTM), 2021
35. Abioye Abiodun Emmanuel – *Model-Based Control Strategy for Precision Irrigation Towards Water-Saving Agriculture*, Universiti Teknologi Malaysia (UTM), 2021
36. Irfan bin Abu Rahim – *Modelling and Experimental Study on Heat Oscillation Due to Energy Harvester*, Universiti Teknologi Malaysia (UTM), 2019
37. Tan Teng Fong – *Positioning Control of Pneumatic Artificial Muscle Systems*, Universiti Teknikal Malaysia Melaka (UTeM), 2019
38. Mohd Anuar bin Abu Bakar – *Flood Water Level Prediction Using Radial Basis Function Neural Networks*, Malaysia–Japan International Institute of Technology (MJIIT-UTM), 2018

THESIS EXAMINER- Master of Engineering

1. Wan Muhammad Hafeez Bin Wan Azree – *Ego Yaw Rate Extraction Using Lanenet Network*, Malaysia–Japan International Institute of Technology (MJIIT), UTM, 2023
2. Siti Nur' Atiqah Binti Halimi – *Monocular Vision Distance Estimation Using SSD and Deep Learning Algorithms for Assessment of Autonomous Emergency Steering and Braking Systems*, Malaysia–Japan International Institute of Technology (MJIIT), UTM, 2023
3. Fatimah Binti Abd Rahman (GS49822) – *Reliability Performance Study of Crankshaft Function in Engine Control Unit*, Universiti Putra Malaysia (UPM), 2023

4. Muhammad Fikri Irsyad Bin Mat Razi – *Development of Battery Model Based on Measured Internal Resistance Beyond Normal Operating Condition*, Universiti Teknologi Malaysia (UTM), 2022
5. Nurul Hannah Binti Mohd Yusof – *Consensus-Based Control for a Smart Water Distribution System*, Universiti Teknologi Malaysia (UTM), 2021
6. Muhammad Danial Bin Mohd Rosli (G1732641) – *Adaptive Robust Extended Kalman Filter for Stability Derivative Identification of Multirotor-Based Unmanned Aerial Vehicle*, International Islamic University Malaysia (IIUM), 2020
7. Nicholas Philip – *Optimized Cascade Control of Compressor Load Sharing via Fuzzy-PID Controller*, Universiti Teknologi Malaysia (UTM), 2020
8. Noor Erlia Nasha Binti Samsuria – *Enhanced Sliding Mode Control for a Full-Car Nonlinear Active Suspension*, Universiti Teknologi Malaysia (UTM), 2020
9. Allan Soon Chan Roong – *Proportional Integral–Proportional Derivative with Feedforward and Disturbance Compensation Control of a Magnetic Levitation System*, Universiti Teknikal Malaysia Melaka (UTeM), 2017
10. Jailani Jamaludin – *Cutting Force Using Disturbance Force Observer for XYZ Positioning Table*, Universiti Teknikal Malaysia Melaka (UTeM), 2015
11. Muhammad Azri Bin Abdul Wahed – *Micro Autonomous Underwater Vehicle for Coral Reef Inspection Using Fuzzy Robust Filter Control Technique*, Universiti Sains Malaysia (USM), 2018
12. Nurru Anida Binti Ibrahim – *Development of Driving Cycle in Kuala Terengganu City Using K-Means Method*, Universiti Malaysia Terengganu (UMT), 2019
13. Mohammad Hadi Sulaiman – *Wheel Alignment Monitoring System Using Laser Triangulation and Time-of-Flight with TCP/IP Communication Protocol*, Universiti Teknologi MARA (UiTM), 2018

Research Grants and Projects

1. Characteristics and Ageing of Li-Ion Battery with Remaining Useful Life (RUL) Estimation at Accelerated C-Rate, RM 6,000, Principal Investigator (PI), 2024, funded by *Geran Putra Inisiatif (GPI), Universiti Putra Malaysia (UPM).*
2. Parametric Modeling and Optimization for Enhanced Performance and Longevity of Lithium-Ion Batteries: Emphasizing Overcharging Prevention and High-Rate Charging Tolerance, RM 32,000, PI, 2024, funded by *Gulf University for Science and Technology (GUST), Kuwait.*
3. Prognostic and Diagnostic Analysis of Lithium-Ion Battery Health in Second-Life Applications Using AI Techniques (Submitted), RM 55,000, PI, 2024, funded by *MyTIGER – France.*
4. Feasibility of Repurposing Retired EV Batteries for Secondary Applications: A Comparative Study of Japan and Malaysia (Submitted), RM 58,500, PI, 2023, funded by *The Sumitomo Foundation, Japan.*
5. Prognostics and Health Management (PHM): Remaining Useful Life (RUL) for Primary and Secondary Uses of Lithium-Ion Batteries Using Machine Learning (Submitted), RM 640,000, PI, 2023, funded by *TÜBİTAK–MIGHT (Turkey–Malaysia).*
6. Characteristics of Accelerated C-Rate Li-Ion Battery Using Deep Learning Algorithm Neural Network (Submitted), RM 100,000, PI, 2023, funded by *Joint Research Project Grant (JRPG), Iran.*
7. Engineering Knowledge Transfer Units to Increase Students' Employability and Regional Development, RM 4,511,868, Research Member (M), 2019–2022, funded by *Erasmus+ UNITED (European Union Member States).*
8. Research and Educational Networking Program with HMA, UAE, RM 152,500, Research Member (M), 2017, funded by *Higher Motherland Academy Institute, United Arab Emirates.*
9. Optimal Position Control of an Uncertain Robotic Manipulator with Energy-Saving Feature for Pick and Place Application (9712700), RM 30,000, Research Member (M), 2024, funded by *GP-IPM – Geran Putra Inisiatif Putra Muda.*
10. Low-Speed Wind Turbine (9005006), RM 92,000, Research Member (M), 2024, funded by *Geran Innohub.*

11. Adaptive Machine Learning-Based Prognostic Model for Accurate Remaining Useful Life (RUL) Estimation of Lithium-Ion Batteries for Second-Life Applications (Submitted), RM 184,700, Principal Investigator (PI), 2023, funded by *Fundamental Research Grant Scheme (FRGS) – MOSTI.*
12. Lithium-Ion Battery Parametric Modeling of State-of-Charge and Charging Tolerance, RM 20,000, PI, 2022–present, funded by *GP-IPS (9735200).*
13. HyTalent – Program Malaysian Investment Development Authority (MIDA), RM 100,000, PI, 2021–present, funded by *Ministry of International Trade and Industry (MITI).*
14. Covid-19: Multipurpose Sanitizer Equipment, RM 5,000, PI, 2020 (Completed), funded by *Special Grant – UPM.*
15. Development of Cyber-Physical System with Control Area Network for Electric Vehicle, RM 43,000, PI, 2020 (Completed), funded by *Geran Putra, UPM.*
16. Development of Automated Chicken Slaughtering and Cleaning Machine, RM 37,750, PI, 2016 (Completed), funded by *PPRN, MOSTI Industrial Grant.*
17. Optimal Design of Energy Management System for Battery Electric Vehicle Using Hybrid Artificial Intelligence, RM 20,000, PI, 2015 (Completed), funded by *Geran Putra, UPM.*
18. Regenerative Braking Strategy for Electric Vehicles Using Adaptive Genetic Algorithm, RM 20,000, PI, 2015 (Completed), funded by *Geran Putra, UPM.*
19. Formulation of Hybrid Artificial Intelligence Control of Energy System for Electric Vehicle (EV), RM 147,000, PI, 2013–2015 (Completed), funded by *Fundamental Research Grant Scheme – MOSTI.*
20. Exploration on Hybrid Artificial Intelligence of Model-Based Calibration Engine, RM 63,000, PI, 2011–2013 (Completed), funded by *Experimental Research Grant Scheme – MOSTI.*
21. Parameter Optimizations of CNG Fueled Direct-Injection Engine Using GT-Suite Simulation Package, RM 30,000, PI, 2009–2011 (Completed), funded by *RUGS, UPM.*
22. Real-Time Inverted Pendulum Controllers for SISO and MIMO Analysis, RM 10,000, PI, 2003–2004 (Completed), funded by *New Lecturer Scheme, UPM.*
23. Audio-Based Relative Positioning for Rotorcraft UAVs Flying in Swarms Using Deep Learning, RM 143,000, Research Member (M), 2020–present, funded by *Fundamental Research Grant Scheme – MOSTI.*
24. Developing Advanced Home Appliances Control System for the Aged Generation (9625700), RM 50,000, Research Member (M), 2018–2022 (Completed), funded by *Geran Putra, UPM.*
25. Developing Smart Walker Prototype for Promoting Mobility Among Older Malaysians (9625600), RM 50,000, Research Member (M), 2018–2022 (Completed), funded by *Geran Putra, UPM.*
26. A Novel Practical Synchronization Control Approach for a Twin-Axes Table Driven System in Industrial Transportation, RM 78,000, PI, 2016–2018 (Completed), funded by *Fundamental Research Grant Scheme – MOSTI, in collaboration with UTeM.*
27. Parametric Modelling and Development of Battery Cell Balancing for Energy Optimization in Electric Vehicle (EV), RM 201,500, PI, 2015–2017 (Completed), funded by *MOSTI E-Science Fund, in collaboration with IIUM.*
28. Lightning Surges on Distribution Line and Its Effect on Transformer Design and Protection, RM 146,700, Research Member (M), 2015–2017 (Completed), funded by *GP-IPB, UPM.*
29. Nature-Inspired Parametric Analysis of Driver's Spinal Response to Steering Vibration Impact for Electric Vehicle Steering System, RM 50,000, Research Member (M), 2014–2016 (Completed), funded by *RACE-MOE, in collaboration with IIUM.*
30. Development of ECU for MEEGE Multi-Fuel Mixer for Green Engine, RM 329,600, Research Member (M), 2013–2015 (Completed), funded by *GP-IPB, UPM.*
31. Parametric Modelling and Intelligent Control for Vehicle Electrical Loads (VEL) Using Fuzzy Logic Control and Particle Swarm Optimization (FLC-PSO), RM 50,000, Research Member (M), 2012–2015 (Completed), funded by *Experimental Research Grant Scheme – MOSTI, in collaboration with IIUM.*
32. Formulation of Algorithm to Classify Distinctive Odor Patterns of Aromatic Plant Species Using Hybrid Artificial Intelligence Techniques, RM 121,500, Research Member (M), 2013–2015 (Completed), funded by *Fundamental Research Grant Scheme – MOSTI.*
33. Design and Development of Imaging Device for Detection of Tuberculosis Infection via Fluorochrome Acid-Dost Strained Tubercle Bacilli Samples, RM 105,000, Research Member (M), 2013–2015 (Completed), funded by *GP-IPB, UPM.*

34. Development of a Lifting Equation for Malaysian Population, RM 15,000, Research Member (M), 2013–2015 (Completed), funded by *GP-IPS, UPM.*
35. The First Radio Quiet Zone (RQZ) Map for Radio Astronomy in Malaysia, RM 183,000, Research Member (M), 2013–2014 (Completed), funded by *ANGKASA & MOSTI, in collaboration with UM.*
36. An Intelligent Load Control System for Autonomous Microgrid Based on Solar and Wind Energy, RM 14,300, Research Member (M), 2012–2013 (Completed), funded by *RUGS, UPM.*
37. Development of E-Nose Herbs Recognition System Based on Artificial Intelligence Technique, RM 63,000, Research Member (M), 2012–2014 (Completed), funded by *RUGS, UPM.*
38. Signal Processing Algorithm Development for Ultrasonic Imaging in In-Vivo Skin Characterization, RM 94,000, Research Member (M), 2012–2014 (Completed), funded by *RUGS, UPM.*
39. Development of Signal Emulator and Calibration Tool for Multifuel Electronic Control Unit of a Vehicle Power Train, RM 30,000, Research Member (M), 2009–2011 (Completed), funded by *RUGS, UPM.*
40. ROBOCON 2005, RM 150,000, Research Member (M), 2005 (Completed), funded by *Universiti Putra Malaysia (UPM).*
41. Development of Hybrid-Control for Dynamic System, RM 117,000, Research Member (M), 2002–2004 (Completed), funded by *Fundamental Research Grant Scheme – MOSTI.*
42. CNG/DI Engine and Transmission: Development of Electronic Control Unit and Its Diagnostic Kit, RM 2,935,648, Research Member (M), 2002–2007 (Completed), funded by *Fundamental Research Grant Scheme – MOSTI.*

PROFESSIONAL CONSULTATION- agencies/ Small and Midsize Enterprises

1. Modelling and Prediction of Nickel-Cadmium Battery Ageing, RM 169,800, 2019–2022, funded by *Tenaga Nasional Berhad (TNB) Sdn. Bhd.*
2. Wireless Charging for Bus, RM 100,000, 2022–present, funded by *Industry (SME).*
3. NI Laboratory for Electrical and Electronic Applications, RM 100,000, 2021–present, funded by *National Instruments.*
4. NI Laboratory for Engineering Applications, RM 360,000, 2021–present, funded by *National Instruments.*
5. Driving License Testing Automation Project – Pintar Drive Solution, RM 30,000, 2018, funded by *Malaysia Transport Department / Heitech Padu Berhad.*
6. Fountain Installation Project between AS Engineering and Faculty of Engineering, In-kind value RM 270,000, 2014–2021, funded by *AS Engineering.*
7. Pak Ngah Atan Endowment Project, UPM, RM 70,000, 2017–2021, funded by *MyAgeing, Malaysia.*
8. Innovation and Creative Project – Workshop Division Infantry 73, Kem Terendak, RM 50,000, 2016–2017, funded by *Kem Terendak, Melaka.*
9. Covid-19: Intubation Box, RM 10,000, 2020, funded by *Industry (SME).*
10. ECU and Harness Development, RM 5,000, 2017, funded by *Centre for Automotive Research (CAR), UKM.*
11. Modeling and Control of Air-Suspension System for Heavy Vehicle Application, RM 29,000, 2019–2020, funded by *APM Sdn. Bhd.*
12. Automation of Driving License Acquisition Test, Road and Transport Malaysia, RM 30,000, 2018–2023, funded by *Industrial Grant.*
13. EV Vehicle for Battery Monitoring, In-kind value RM 50,000, 2017, funded by *PROTON Sdn. Bhd.*
14. Development of Curriculum (COCU) Level 4 for Instrumentation and Control System – Subject Matter Expert (Consultant), RM 5,000, 2018, funded by *Ministry of Human Resources, Malaysia.*
15. Chicken Slaughter and Neck Cleaning for Halal Industry, RM 37,500, 2015, funded by *Hajar Hijrah Sdn. Bhd. under PPRN.*
16. PROTON Engineering Short Course Program – Facilitator for Advanced Modeling and Simulation, RM 25,000, 2015, funded by *PROTON Sdn. Bhd. R&D Division.*

PUBLICATIONS

- Scopus ID: 12446131300, H-index: 20
  https://www.scopus.com/authid/detail.uri?authorId=12446131300
- Google Scholar: Mohd Khair Hassan,H-index: 22
  https://scholar.google.com/citations?hl=en&user=17gnB6gAAAAJ
- https://orcid.org/0000-0002-5992-3892

a. Thesis PhD & MEng.

1. Mohd Khair Hassan, **Development of Control Strategy for Electronic Control Unit in CNG-DI Engine.** Universiti Putra Malaysia. 2011
2. Mohd Khair Hassan, **Educational GUI Framework for Visualization and Tuning of Multivariable Control Systems,** Universti Teknologi Malaysia, 2000

b. Book Chapter

1. **Book title: Theory and Applications for Engineering Research Vol. 7**
   - ❖ **Chapter 2:** *Understanding Supercapacitor Performance: Voltage Dynamics and Internal Parameter Calculations with Validating Experiments*
     http://dx.doi.org/10.9734/bpi/taer/v7/7262E
2. **Book title: Control Engineering in Robotics and Automations: SpringerLink, 2022**
   - ❖ **Chapter 5:** *Optimal Tuning of Fractional-Order PID Controller for Electric Power-Assisted Steering (EPAS) System Using Particle Swarm Optimization (PSO),* 169-182
     https://link.springer.com/book/10.1007/978-3-030-74540-0
3. **Book title: New Trends in Electrical Vehicle Powertrains, ISBN: 978-1-78985-022-2, 2019**
   - ❖ **Chapter 5:** *Worked Example of x-by-wire Technology in Electric Vehicle: Braking and Steering* Page 604 - https://www.intechopen.com/books/6767
4. **Book title: Big Data Analytics Framework for Smart Grid, CSC Press, 2023**
   - ❖ **Chapter 9:** *Big Data for Smart Grid A Case Study*, 2023, pp. 142–180
     https://doi.org/10.1201/9781032665399
5. **Lecture Notes in Computer Science,2018, Internet of Vehicles – Technologies and Services Towards Smart City, Springer, LNCS 11253**
   - ❖ *Improved Latency of CAN Vehicle Data Extraction Method.*

c. Policy, Standard

1. KOSMO! Selasa 19/4/2016 Artikel "*Rakyat Malaysia tidak minat EV sebab kurang kemudahan mengecas, tidak mampu bergerak jauh*"2016
2. **Level 3:** *Industrial Instrumentation and Control Operation and Maintenance* National Occupational Skills Standard (NOSS), Department of Skill Development, Ministry of Human Resources, MALAYSIA. 2013.
3. **Level 4:** *Industrial Instrumentation and Control System- Monitoring and Controlling* National Occupational Skills Standard (NOSS), Department of Skill Development, Ministry of Human Resources, MALAYSIA. 2013
4. **Level 5:** *Industrial Instrumentation & Control System- Planning and Technical Management* National Occupational Skills Standard (NOSS), Department of Skill Development, Ministry of Human Resources, MALAYSIA. 2013

d. Journals JCR/WoS

1. Integrated spatial-temporal feature alignment with graph convolutional and gated recurrent networks for traffic flow prediction, Karimeh Ibrahim Ata, Mohd Khair Hassan, Thamer. Alquthami, Ribhan Zafira Abdul Rahman,, Sameer Alani, Md Azizul Hoque , Syed Abdul Rahman Al-Haddad, PLOS One | https://doi.org/10.1371/journal.pone.0337661 April 28, 2026.
2. Industrial-Oriented Applications of Sparrow Search Algorithm in Machine Learning Optimization: A Review of Emerging Trends, Wang, L.,Hassan, M.K.,Mustafa Abro, G.E.,Soomro, M.,Mustafa, H. Computers Materials and Continua, 2026, 87(3), 7, DOI: 10.32604/cmc.2026.074207.
3. Advanced position control and artificial intelligence strategies for robust robotic manipulators with energy-saving features: a comprehensive review, Elshishini, Maryam Yasser; Norsahperi, Nor Mohd Haziq, Hassan, Mohd Khair;, Rashidi Ramli, Hafiz; Wan Hasan, Wan Zuha; Systems Science and Control Engineering, 10.1080/21642583.2026.2657100.
4. Enhancing ride comfort of semi-active suspension through collaboration control using dung beetle optimizer optimized Fuzzy PID controller, Kunlun, Z., As'arry, A., Liucuna, Z., Hairuddin, A. A., Hassan, M. K., Md Zain, M. Z. (2025),Advances in Mechanical Engineering, Vol. 17, Issue 1, pp. 1-14 (Q3, IF = 1.9).
5. Whale Optimization Algorithm based on Tent Chaotic Map for Feature Selection in Soft Sensors, Alrijeb, M.F.S. Othman, M.L., Ishak, A. Hassan, M.K., Albaker, B.M., Engineering Technology and Applied Science Research, 2025, 15(3), pp. 23537–23545.
6. Online optimal tuning of fuzzy PID controller using grey wolf optimizer for quarter car semi-active suspension system,Liu, Y., As'arry, A., Ahmed, H., Hairuddin, A. A., Hassan, M. K., Zakaria, M. Z., Yang, S. (2024), Advances in Mechanical Engineering, Vol. 16, Issue 2 (Q3, IF = 1.9)
7. A Review of Swirl Air Intake Effect on the Performance of a Compression Ignition Engine, Alias, Alias M.S.M.Hairuddin, Abdul Aziz, Hassan, Mohd Khair, Rezali, Khairil Anas Md, Jurnal Kejuruteraan, Article, 2025, https://doi.org/10.17576/jkukm-2025-37(3)-15
8. Deep neural networks for speech enhancement and speech recognition: A systematic review, Natarajan, Sureshkumar, Rahman Al-Haddad, Syed Abdul, Ahmad F.A, Kamil R., Mohd Khair Hassan, Ain Shams Engineering Journal Review 2025, https://doi.org10.1016/j.asej.2025.103405
9. Recent Advancements in Multilevel Inverters: Topologies, Modulation Techniques, and Emerging Applications. Taha, T.A.; Shalaby, M.; Wahab, N.I.A.; Zaynal, H.I.; Hassan, M.K.; Al-Sowayan, S.; Alawad, M.A. . Symmetry 2025, 17, 1010. https://doi.org/10.3390/sym17071010.
10. Electronic Wedge Brakes: A Review of Design, Modeling, Control Strategies, and Testing Methodologies, Mehrullah Soomro, Mohd Khair Hassan, Ghulam E. Mustafa Abro, And Maran Marimuthu, EEE Access, Vol 13, pp 67378-67399, 2025 , 10.1109/ACCESS.2025.3560756.. Q1
11. Optimization of fuel cell switching control based on power following strategy in fuel cell hybrid electrical vehicle, M.A.M., Radzi, Mohd Amran Mohd S.B., Shafie, S. Bin M.K., Hassan, Mohd Khair, International Journal of Renewable Energy Development, 2025. https://doi.org/10.61435/ijred.2025.60780.
12. Machine Learning-Driven Soft Sensor Implementation for Real-Time Fault Detection in CDU of Oil Refinery,Alrijeb, Mothena Fakhri Shaker, Othman, Mohammad Lutfi, Ishak, Aris, Hassan, Mohd Khair, Albaker, Baraa Munqith, Engineering, Technology and Applied Science Research, Vol 15,2025**.** https://doi.org/10.48084/etasr.9781
13. Advanced Algorithms in Battery Management Systems for Electric Vehicles: A Comprehensive Review, SymmetryAnith Khairunnisa Ghazali,Nor Azlina Ab. Aziz, and Mohd Khair Hassan. , vol 17, 3,2025.
14. Enhancing ride comfort of semi-active suspension through collaboration control using dung beetle optimizer optimized Fuzzy PID controller,Zhang, K., As'arry, A.,Zhu, L.,Hassan, M.K.,Md Zain, M.Z. Advances in Mechanical Engineering, 2025, 17(1). DOI :10.1177/16878132251314332,**Q3**
15. A multi-Layer CNN-GRUSKIP model based on transformer for spatial TEMPORAL traffic flow prediction.Karimeh Ibrahim Mohammad, Mohd Khair Hassan, Syed Abdul Rahman Al-Haddad , Thamer Alquthami , Ayad Ghany Ismaeel , Sameer Alani 2024, Ain Shams Engineering Journal. https://doi.org/10.1016/j.asej.2024.103045, **Q1**
16. Active Force Control for Semi-Active Suspension with Magnetorheological Damper, Liu, Y. Nurshahiera, A. As'arry, A. Hairuddin, A.A. Hassan, M.K.,Journal of Advanced Research in Applied Mechanics, 2024, 122(1), pp. 156–162, doi. 10.37934/aram.122.1.156162, **Q4**

17. Liu, Y., As'arry, A., Ahmed, H., Hassan.M.K, Zakaria, M.Z., Yang, S. Online optimal tuning of fuzzy PID controller using grey wolf optimizer for quarter car semi-active suspension system, Advances in Mechanical Engineering, 2024, 16(2), DOI10.1177/16878132231219620, **Q2**
18. Active Force Control for Semi-Active Suspension with Magnetorheological Damper, Liu, Y., Nurshahiera, A., As'arry, A., Ahmed, H., Hairuddin, A. A., Hassan, M. K. (2024), Journal of Advanced Research in Applied Mechanics, Vol. 122, Issue 1, pp. 156-162. (Scopus)
19. Mohd Hanif Che Hasan, Mohd Khair Hassan ,Fauzi Ahmad , Mohammad Hamiruce Marhaban, Sharil Izwan Haris, Ehsan Arasteh, Simplifying the electronic wedge brake system model through model order reduction techniques, Bulletin of Electrical Engineering and Informatics Vol. 13, No. 2, April 2024, pp. 893~904ISSN: 2302-9285, DOI: https://doi.org/10.11591/eei.v13i2.581, **Scopus**
20. Abdulhadi Abdulsalam Abulifa, Azura Che Soh, Mohd Khair Hassan, Raja Kamil and Mohd Amran Mohd Radzi Integrating Fuzzy Logic and Brute Force Algorithm in Optimizing Energy Management Systems for Battery Electric Vehicles Pertanika Journal of Science & Technology, Volume 32, Issue 2, March 2024 DOI: https://doi.org/10.47836/pjst.32.2.17, Scopus
21. Taha, T.A., Abdul Wahab, N.I., Hassan, M.K., Taha, F.H., Hashim, A.M. Real-Time Optimal Switching Angle Scheme for a Cascaded H-Bridge Inverter using Bonobo Optimizer, Journal of Robotics and Control (JRC), 2024, 5(4), pp. 918–930 , doi: 10.18196/jrc.v5i4.21701, Scopus
22. Ahmed Sahib Tukkee ,Noor Izzri bin Abdul Wahab ,Nashiren Farzilah binti Mailah ,Mohd Khair Bin Hassan, Optimal performance of stand-alone hybrid microgrid systems based on integrated techno-economic-environmental energy management strategy using the grey wolf optimizer, r. PLoS ONE 19(2): e0298094, PLOS ONE | https://doi.org/10.1371/journal.pone.0298094 February 8, 2024.**Q1**
23. Hoque, M.A.,Hassan, M.K., Hajjo, A., Tokhi, M.O, Neural Network-Based Li-Ion Battery Aging Model at Accelerated C-Rate,. Batteries, 2023, 9(2), 93. (Q2, IF: 5.938) https://doi.org/10.3390/batteries9020093, **Q2**
24. Hoque, M.A., Hassan, M.K., Hajjo, A., Tsuyoshi Okita, Characteristics of Li-Ion Battery at Accelerated C-Rate with Deep Learning Method, Arabian Journal for Science and Engineering (AJSE)-Vol 48,pages 15127–15137, (2023) (Q2, IF:2.807) https://link.springer.com/article/10.1007/s13369-023-08034-x
25. Md Azizul Hoque, Mohd Khair Hassan, Abdulrahman Hajjo and Taha A. Taha. Investigation of Battery Energy Storage System (BESS) During Loading Variation, Journal of Advanced Research in Applied Sciences and Engineering Technology, Vol 110, Issue 1 (2023). (Scopus) DOI: https://doi.org/10.37934/aram.110.1.8696**. Scopus**
26. Yunyun Liu, Azizan As'arry, Mohd Khair Hassan, Abdul Aziz Hairuddin & Hesham Mohamad, Review of the grey wolf optimization algorithm: variants and applications, Neural Computing and Applications (2023) **(Q1.IF 6.0)** https://link.springer.com/article/10.1007/s00521-023-09202-8
27. Ghazali AK, Hassan MK, Radzi MAM, As'arry A. Optimizing Energy Harvesting: A Gain-Scheduled Braking System for Electric Vehicles with Enhanced State of Charge and Efficiency. Energies. 2023; Vol 16 issue (12):4561. https://doi.org/10.3390/en16124561. **(Q3, IF: 3.252)**
28. Mohd Rizal Hussain, Nuzul Azam Haron, Raja Ahmad Azmeer Raja Ahmad Effendi, Fakhrul Zaman Rokhani, Siti Anom Ahmad, Asmidawati Ashari, Mohd Khair Hassan, Mohd Shahrizal Dolah & Saiful Hasley Ramli, Design Requirement of Bathroom and Toilet for the Elderly in Malaysia, JST Vol. 31 (4) Jul. 2023. **(Q3, IF: 0.13)** https://doi.org/10.47836/pjst.31.4.15
29. Hesham Ahmed,Azizan As'arry,Abdul Aziz Hairuddin,Mohd Khair Hassan,Liu Yun Yun,Erasmus C.U, Online DE optimization for Fuzzy-PID controller of Semi-active suspension system featuring MR damper. IEEE Access Journal. 2022. Vol 10, pg 129125 - 129138 **(Q1. IF: 3.367)** https://doi.org/10.1109/ACCESS.2022.3196160
30. Ali Mohsen Alsabari, M. K Hassan, Azura CS, Ribhan Zafira, Modeling and validation of lithium-ion battery with initial state of charge estimation, Indonesian Journal of Electrical Engineering and Computer Science , Vol. 21, No. 3, March 2021, pp. 1317~1331 **(Scopus)** http://dx.doi.org/10.11591/ijeecs.v21.i3.pp1317-1331
31. Abdulhadi Abdulsalam Abulifa, Azura Che Soh *, Mohd Khair Hassan, Raja Mohd Kamil Raja Ahmad and Mohd Amran Mohd Radzi, Control strategies for energy management system in electric vehicle using high-level supervisory control, International Journal of Science and Technology Research Archive, 2022, 03(02), 037–044. (Scopus) http://dx.doi.org/10.53771/ijstra.2022.3.2.0116
32. A.A. Abulifaa, Dr.A. Che Sohb, Dr.M. K. Hassanc, Dr.R.M.K. Raja Ahamdd, Dr.M.A. MohdRadzie, Mathematical Modelling and Simulation of Battery Electric Vehicle Based on Backward-Facing Approach

Technique, Turkish Journal of Computer and Mathematics Education, Vol.12 No.14 (2021), 5032- 5041. https://doi.org/10.17762/turcomat.v12i14.11484

33. N.F.M. Radzi, A. Che Soh, A.J. Ishak , M.K. Hassan, Feature Extraction Technique Using Weighted Histogram Analysis Method (WHAM) for Herbs Discrimination Based on Gas Chromatography Signal, IEEE Access, Volume 9, 2021, DOI: 10.1109/ACCESS.2021.3060822 **(Q1. IF: 3.367)** https://doi.org/10.1109/ACCESS.2021.3060822
34. Ali Mohsen Alsabari, M.K Hassan, Azura CS , Ribhan Zafira, Experimental design for an enhanced parametric modeling of supercapacitor equivalent circuit model, Indonesian Journal of Electrical Engineering and Computer Science , Vol. 23, No. 1, July 2021, pp. 63~74 (Scopus) http://dx.doi.org/10.11591/ijeecs.v23.i1.pp63-74
35. Mohd Hanif Che Hasan, Mohd Khair Hassan, Fauzi Ahmad, Mohammad Hamiruce Marhaban, Sharil Izwan Haris, A dynamic model of electronic wedge brake: experimental, control and optimization, Indonesian Journal of Electrical Engineering and Computer Science Vol. 23, No. 2, August 2021, pp. 740~751. **(Scopus)** ,http://dx.doi.org/10.11591/ijeecs.v23.i2.pp740-751
36. Kamarudin, N.H., Ahmad, S.A., Hassan, M.K. (2019). Physiological responses on lifting postures during manual lifting task. Journal of Engineering Science and Technology. 14 (Special Issue on SU18), pp. 261-272. **(Scopus)**

37. Magdy Abdullah Eissa, Aduwati Sali, Mohd Khair Hassan, A. M. Bassiuny And Rania R. Darwish Observer-Based Fault Detection With Fuzzy Variable Gains and Its Application to Industrial Servo System, IEEE Access Journal, 131224-131238, vol 8, 2020, DOI: 10.1109/ACCESS.2020.3010125 **(Q1, IF: 3.367)** https://doi.org/10.1109/ACCESS.2020.3010125
38. Ghazali A K , Hassan M K , Radzi M A M and As'arry A, Electric vehicle with sliding mode control super-twisting control strategy, January 2020, Journal of Physics Conference Series 1432(1):012023 , 1432(2020), 012023 **(Scopus)** https://doi.org/10.1088/1742-6596/1432/1/012023
39. Ghazali A K , Hassan M K , Radzi M A M and As'arry A , Sliding Mode Control Optimization Method Using Fuzzy-Gain Scheduling for Regenerative Braking System, Jour of Adv Research in Dynamical & Control Systems, Vol. 12, 04-Special Issue, 2020, 1504-1509 **(Scopus)**
40. Ismail, A.,Ahmad, S.A.Che Soh, A.Hassan, M.K., Harith, H.H. MYNursingHome: A fully-labelled image dataset for indoor object classification, Data in Brief, 2020, 32, 106268 **(Q2, IF: 0.2)**
41. Al-Mahrouk, A.M., Mailah, N.F. Mohd Radzi, M.A. Hassan, M.K. Systematic review of multilevel and matrix usage in power electronics: Circuit types, system taxonomy, applications and recommendations, International Review of Electrical Engineering, 2020, 15(2), pp. 108-125 **(Scopus)**
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43. Khairul Nizam, Mohd Khair Hassan, Ishak Aris, Ibrahim Mat, Nik Anis Alina, *Issues and Challenges of ECU Development,* RENTAS Symposium 2004, 24-25 Nov 2004, Faculty. Of Engineering. UPM.
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45. Azura C. S., M.K. Hassan, Li Hong Fey, *Intelligent Movement Control For Robots Using Fuzzy Logic*, International Conference Artificial Intelligence in Engineering and Technology (ICAET 2004), 3-5 Aug. 2004, Sabah ,Malaysia.
46. Mohd Khair Hassan, Khairul Nizam Zainuddin*, Development Of Control Strategy Of Ecu For CNG–Di Engine ,* CNG-DI and Transmission Workshop, 21-23 Dec 2004, Hotel Equtorial, Melaka.
47. Mohd.Khair Hassan, Ribhan Zafira Abdul Rahman, Norhayati Hamid, Mohd Liakot Ali, Learning Aid for Electric Circuits Analysis with MATLAB based GUI*,* Proceeding of *The Seventh Triennial AEESEAP Conference*, Univ.Malaya.8,9 Dec 2003, pp 233.
48. Y.S.E.Ali, SBM Noor, S.M Bashi and M.K Hassan*, Microcontroller Performance for DC Motor Speed Control, National Power and Energy Conference*, Equtorial, Bangi.2003
49. Ikmal Arif Abd. Jalal, Mohd Khair Hassan, Mohd Amrallah Mustafa, *Smart Lighting Management System*, *SCOReD 2003*, Palm Garden Renaissance Hotel, Putrajaya. 25-26 August 2003.
50. Y.S.Ettomi, S.B.M.Noor, S.M.Bashi and M.K. Hassan, *Microcrontroller Based Adjustable Closed-Loop DC Motor Speed Controller, SCOReD 2003*, Palm Garden Renaissance Hotel, Putrajaya. 25-26 August 2
51. Zulkifli Abd Rahman, Wan Zuha Wan Hasan, Samsul Bahari, Mohd Khair Hassan, *Doppler Effect Method For Speed Trap Detector, SCOReD 2003*, Palm Garden Renaissance Hotel, Putrajaya. 25-26 August 2003.

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53. Mohd Khair Hassan, Samsul Bahari Mohd Noor, Brian Dyer, *Mathematical Model Of Pontoon System, Proc of World Engineering Congress 2002*, 22-24 July 2002, Kuching Sarawak, Malaysia.

SUMMARY OF JOURNAL REVIEW CONTRIBUTIONS- recent 3 years

1. **IEEE Access** – 18 manuscript reviews conducted consistently between 2018 and 2025.
2. **IEEE Transactions on Industrial Electronics** – 10 reviews focusing on intelligent control and automation systems.
3. **IEEE Transactions on Intelligent Vehicles** – 8 reviews emphasizing electric and autonomous vehicle technologies.
4. **Measurement and Control** – 9 reviews in the areas of instrumentation and process control.
5. **IEEE Transactions on Automation Science and Engineering** – 4 reviews on robotics and automation applications.
6. **IEEJ Journal of Industry Applications (Japan)** – 7 reviews demonstrating active international collaboration.
7. **Energy Storage** – 7 reviews related to lithium-ion battery modeling and RUL prediction.
8. **Advances in Mechanical Engineering** – 5 reviews integrating mechanical and control systems research.

JOURNAL EDITOR- recent 3 years

1. Associate Editor of the International, Journal of Advances in Applied Sciences (IJAAS), ISSN 2252-8814 for a three-year term starting 1 January 2024, and ending on 31 December 2026.
2. Energy Storage (specialty section of Frontiers in Energy Research)- 2024- present
3. Intelligent Algorithms and Control for Battery Management System- MDPI 2023- present
4. Associate editor, International Journal of Advances in Applied Sciences, since 2020

CONFERENCE COMMITTEE- recent 3 years

1. Publication Chair- 2024 3rd International Conference on Electrical Engineering and Automatic Control (EEAC 2024). *June 7-9, 2024 | Kunming, China*
2. Technical Program Committee -The 2023 IEEE International Conference on Industry 4, Artificial Intelligence, and Communications Technology(IAICT'2023) will be held as Hybrid Conference (onsite and virtual), Bali - Indonesia, July 13-15, 2023.
3. Program committee of CLAWAR 2022 (25th International Conference on Climbing and Walking Robots and the Support Technologies for Mobile Machines)., Germany.
4. SPECTROMED APRIL 21-25, 2024 Mediterranean Congress on Mass Spectrometry
5. and Its Applications, Hammamet -TUNISIA
6. National Virtual Conference on Automation, Robotics, Artificial Intelligence and Mechatronics (ARAM-2021), 16-19 March 2021, India
7. Southeast Asia Automotive Interest Research Group (SAIG), 28 Sept 2021 , Thailand
8. International Faculty Development Program (IFDP) from 5th July, 2021 to 10th July, 2021 at Chandigarh University, India.

9. 2023 China-ASEAN Al Era Inter-disciplinary Talent Training Workshop for the School of Computer of Guilin University of Electronic Technology on November 12 and 13, 2023.
10. 2024 3rd International Conference on Electrical Engineering and Automatic Control (EEAC 2024)
11. Co-Chairman of the Conference Secretariat Team for the 2nd SAIG Conference that will be held on 23rd to 24th May 2022 at Putrajaya, Malaysia.
12. 2nd MACE Research Symposium, (MaRS 2023) 17 - 18 July 2023 Universiti Teknologi Malaysia (UTM) Kuala Lumpur