



UNIVERSITI PUTRA MALAYSIA

CURRICULUM VITAE



A. Biodata

- a. Name: Mohd Khair Hassan
- b. Salutation: Associate Professor. P.Eng, PhD
- c. Department: Electrical and Electronic
- d. Faculty: Engineering
- e. Field of Specializations:
Control System, System Identification and modelling,
x-by-wire, Automotive Electronic Control,

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B. EDUCATION AND ACADEMIC QUALIFICATIONS

Degree	Class/Achievement	University Awarded	Year
PhD	Automotive Engineering	Universiti Putra Malaysia	2011
Master	Electrical and Electronic (Control)	University of Technology Malaysia	2001
B.Eng	Electrical and Electronic Engineering (Control)	Portsmouth, United Kingdom	1998
Diploma	Electrical and Electronic Engineering	Mara Institute of Technology, Malaysia	1995

C. PROFESSIONAL QUALIFICATION

Membership	Qualification	Field	Institution
C116635	Professional Engineer-with practicing certificate	Electronic	Board of Engineers Malaysia
2015	Malaysian Qualifications Agency (MQA) Panel	Electronic /Automotive	Malaysian Qualifications Agency
2016	Engineering Accreditation Council (EAC) Panel	Electronic	EAC, Board of Engineers Malaysia

D. ACADEMIC AWARDS AND RECOGNITIONS

	Name of awards	Title	Award Authority	Year
1	Excellent in Service	Excellent in Service	Universiti Putra Malaysia	2014, 2015,16
2	Professional Engineer	Professional Engineer	Board of Engineers Malaysia	2014
3.	Excellence in Service	Excellence in Service	Universiti Putra Malaysia	2004, 2011, 2013
4	Silver Medal	Hardware-in-Loop (HiL) of Fault Detection for Air-Fuel Ratio Control Principal Investigator	International Engineering Invention and Innovation Exhibition (i-ENVEX). April 11 th -13 th 2014: Universiti Malaysia Perlis	2014
5	Excellent in Teaching	Excellent in Teaching	Faculty of Engineering	2013, 2012, 2011, 2010, 2009, 2004
6.	Gold Medal	Electronic Control Unit (ECU) for Compressed Natural Gas Direct Injection (CNGDI) Vehicle Researcher	Malaysia Technology Expo 2008, 21-23 February 2008.	2008
7.	Gold Medal	Software system for detecting defective symbols on microchip with adjustable readability level. Researcher	International Exhibition of Ideas-Inventions-New Products (IENA) 2007, Nuremberg, Germany, 1 st – 4 th November, 2007.	2007
8.	Gold Medal	Software System for Detecting Defective Symbols on Micro Chip with Adjustable Readability Level Researcher	18 th International Invention, Innovation & Technology Exhibition (ITEX 2007), 18-20 May 2007 Kuala Lumpur, Malaysia.	2007

9.	Silver Medal	New Electronic Control Unit Control Strategy for Compressed Natural as Direct Injection Vehicle- Researcher	Pameran dan, Penyelidikan dan Inovasi, UPM	Rekacipta	2007
10	Special Awards from Russian Government,	Software System for Detecting Defective Symbols on Micro Chip with Adjustable 7 Readability Level. Researcher	18 th International Invention, and Innovation & Technology Exhibition (ITEX 2007), 18-20 May 2007 Kuala Lumpur, Malaysia.		2007
11.	Bronze Medal	Software System for Detecting Defective Symbols on Micro Chip with Adjustable Readability Level: Researcher	Pameran dan, Penyelidikan dan Inovasi, UPM	Rekacipta	2006
12.	Gold Medal and Henry Goh Special Award for Environmental Innovation (Renewable Energy)	Compressed Natural Gas Direct Injection Vehicle (CNGDI) Researcher	17 th International Invention, Innovation, Industrial Design and Technology Exhibition (ITEX 06), 19-21 May 2006 Kuala Lumpur, Malaysia.		2006
13	Gold Medal and Special Awards from The Association of Polish Inventor, Poland.	Compressed Natural Gas Direct Injection Vehicle (CNGDI) Researcher	55 th World Exhibition of Innovation, Research and New Technology 2006, (Eureka-Onnova 06), Brussels, Belgium, 23-27 Nov 2006		2006
14.	Best Design	ROBOCON Researcher	National ROBOT Competition 2005, 22-23 April 2005, MOHE ROBOCON 2005		2005
15.	Scholarship	Bachelor of Electrical and Electronic Engineering	Jabatan Perkhidmatan Awam, Malaysia		1996
16	SLAB	Master in Electrical	Kementerian Pendidikan Malaysia		1999
17	SLAB	Doctor of Philosophy	Kementerian Pengajian Tinggi		2005

E. PUBLICATIONS

a. Cited Journals

1. T.A.T. Mohd¹, M.K. Hassan^{1,2}, Ishak Aris¹, Azura C.S.¹ and B.S.K.K Ibrahim³ *Application of Fuzzy Logic in Multi-Mode Driving for a Battery Electric Vehicle Energy Management, International Journal on Advanced Science, Engineering and Information Technology*, Vol. 7 (2017) No. 1, pages: 284-290, DOI:10.18517/ijaseit.7.1.1960. (Scopus)
2. Y. Hoon, M.A.M. Radzi, M.K. Hassan, and N.F. Mailah, "A Self-Tuning Filter-Based Adaptive Linear Neuron Approach for Operation of Three-Level Inverter-Based Shunt Active Power Filters under Non-Ideal Source Voltage Conditions," *Energies*, vol. 10, no. 5, pp. 1-28, March 2017. (2016 IF = 2.262, Q2)
3. Y. Hoon, M.A.M. Radzi, M.K. Hassan, and N.F. Mailah, "Neutral-point Voltage Deviation Control for Three-level Inverter-based Shunt Active Power Filter with Fuzzy-based Dwell Time Allocation," *IET Power Electronics*, vol. 10, no. 4, pp. 429-441, 31 March 2017. (2016 IF = 3.547, Q1)
4. Y. Hoon, M.A.M. Radzi, M.K. Hassan, and N.F. Mailah, "A Refined Self-Tuning Filter-Based Instantaneous Power Theory Algorithm for Indirect Current Controlled Three-Level Inverter-Based Shunt Active Power Filters under Non-sinusoidal Source Voltage Conditions," *Energies*, vol. 10, no. 3, pp. 1-20, March 2017. (2016 IF = 2.262, Q2)
5. N. F. M. Radzi*, A. Che Soh, A. J. Ishak, M. K. Hassan, U. K. Mohamad Yusof, *Aromatic Herbs Classification by Using Discriminant Analysis Techniques*. *Indonesian Journal of Electrical Engineering and Computer Science*, Vol. 5, No. 3, March 2017, pp. 530 ~ 535
6. Y. Hoon, M.A.M. Radzi, M.K. Hassan, and N.F. Mailah, "A Simple Neutral-Point Voltage Deviation Minimization Method for Three-Level Inverter-Based Shunt Active Power Filter," *International Journal of Simulation: Systems, Science and Technology*, vol. 17, no. 41, pp. 33.1-33.6, 2016. (Scopus)
7. Y. Hoon, M.A.M. Radzi, M.K. Hassan and N.F. Mailah, "DC-Link Capacitor Voltage Regulation for Three-Phase Three-Level Inverter-Based Shunt Active Power Filter with Inverted Error Deviation Control," *Energies*, vol. 9, no. 7, pp. 1-25, July 2016. (2016 IF = 2.262, Q2)
8. M. K. Hassan, N. F. H. Eko and S. Shafie, *Tuberculosis Bacteria Counting Using Watershed Segmentation Technique*, *Pertanika J. Sci. & Technol.* 25 (2): 275 - 282 (2017) (Scopus)
9. Findi, Ahmed H.M, Marhaban M.Hamiruce, Raja Kamil. Mohd Khair Hassan, *Collision Prediction Based Q-Learning for Mobile Robot Navigation in Unknown Dynamic Environments*, *Journal of Computational and Theoretical Nanoscience* (2016)
10. Findi, Ahmed H.M, Marhaban M.Hamiruce, Raja Kamil. Mohd Khair Hassan, *Collision Prediction Based Genetic Network Programming-Reinforcement Learning for Mobile Robot Navigation in Unknown Dynamic Environment*, *Journal of Electrical & Technology (JEET)* (2016)
11. Rabiatuladawiyah Abu Hanifah, Siti Fauziah Toha, Mohd Khair Hassan, Salmiah Ahmad. *Power reduction optimization with swarm based technique in electric power assist steering system*. *Energy* 102 (2016) 444-452 . I.F 5.153 (Q1)
12. Batool Abdulsamad Alkharasani, Mohd Khair Hassan ,Rini Akmeliawati, Ribhan Zafira , Siti Anom Ahmed, *PID-Sliding Surface based Sliding Mode Controller for Anti-lock Braking system of Electric Vehicle*. *Advanced Science Letters, Adv. Sci. Lett.* 22, 2734–2737 (2016) ISSN: 1936-6612 (Print): EISSN: 1936-7317
13. T.A.T. Mohd¹, M.K. Hassan^{1,2}, Ishak Aris¹, Azura C.S.¹ and B.S.K.K. Ibrahim³ , *A Review of Energy Management System in Battery Electric Vehicle with Hybrid Electrical Energy Source*, *FEIIC International Journal of Engineering and Technology*, Vol. 13, No.1, 2016, pp. 105-113.

14. Y. Hoon, M.A.M. Radzi, M.K. Hassan, N.F. Mailah, and N.I.A. Wahab, "A Simplified Synchronous Reference Frame for Indirect Current Controlled Three-level Inverter-Based Shunt Active Power Filter," *Journal of Power Electronics*, vol. 16, no. 5, pp. 1964-1980, September 2016. (2016 IF = 1.047, Q3)
15. Y. Hoon, M.A.M. Radzi, M.K. Hassan and N.F. Mailah, "Enhanced Instantaneous Power Theory with Average Algorithm for Indirect Current Controlled Three-Level Inverter-Based Shunt Active Power Filter under Dynamic State Conditions," *Mathematical Problems in Engineering*, vol. 2016, pp. 1-12, 2016. (2016 IF = 1.454, Q3)
16. T. A. T. Mohd, M. K. Hassan, Ishak Aris, A. Che Soh, B. S. K. K. Ibrahim, and M. K. Hat, *Simulation Based Study of Electric Vehicle Parameters*, *ARPN Journal of Engineering and Applied Sciences*, vol. 10, Issue 19 (2015) pp. 8541-8546 (Scopus)
17. Abdulrahman Abdulkareem S. Al-Shanoon, Siti Anom Ahmad and Mohd. Khair B. Hassan, *A Susceptibility Study on Piezoresistive Sensor in a Pliable and Rigid Robotic Claws Model*, *ARPN Journal of Engineering and Applied Sciences*, VOL. 10, NO. 19, OCTOBER 2015, 9106-9113
18. Bahmanshiri Adel and Mohd Khair Hassan, *Optimal Design of Electric Power Assisted Steering (EPAS) System Using Particle Swarm Optimization (PSO)*, *Optimal Control Applications and Methods*, 2015 (Reviewed) (IF 1.535)
19. Ameer Sedera, Mohd Khair Hassan, Mohd Amran Bin Mohd Radzi and SF Tohad, *Mathematical Design and Analysis of Anti-Lock Brake System for Electric Vehicle Based On Brake-By-Wire Technology*, *International Journal of Electric and Hybrid Vehicles*; Vol.7, No.4, 2015, 303-322 -
20. T. A. T. Mohd, M. K. Hassan, and WMK. A. Aziz, *Mathematical Modeling and Simulation of Electric Vehicle using MATLAB-Simulink*, *Journal of Mechanical Engineering and Sciences*, 2015, *Journal of Mechanical Engineering and Sciences (JMES)*, Vol. 8, pp. 1312-1321, June 2015
21. U.K. Mohamad Yusof, A. Che Soh, N.F. M. Radzi, A.J. Ishak, M.K. Hassan, S.A. Ahmad, S. Khamis. *Selection of feature analysis electronic nose signals based on the correlation between gas sensor and herbal phytochemical*. *Australian Journal of Basic and Applied Sciences*, 9(5) March 2015, Pages: 360-367
22. Mohd Hafiz Mohd Nordin, Mohd Khair Hassan, Azura Che Soh, Mohd Amran Mohd Radzi, *Hardware-In-Loop of Fault Detection system for Air-Fuel Ratio Control*, *Applied Mechanics and Materials* Vol. 663 (2014) pp 233-237
23. Nor Aziah Mohd Azubir, Mohd Khair Hassan, Hairi Zamzuri, Saiful Amri Mazlan, *Development of PROTON Electric Vehicle Control Unit (eVCU) using State Machine Deterministic Rule-Based Approach* *Applied Mechanics and Materials* Vol. 663 (2014) pp 532-538
24. Siti Fauziah Toha, Nor Hazima Faeza, Nor Aziah Mohd. Azubair, Nizam Hanis, Mohd. Khair Hassan, Babul Salam KSM Ibrahim, *Lithium Iron Phosphate Intelligent SOC Prediction for Efficient Electric Vehicle*, *Advanced Materials Research* Vols. 875-877 (2014) pp 1613-1618.
25. Seyed Mohammad Hussein S, Siti A. Ahmad, Azura Che Soh, Mohd K Hassan, Asnor J Ishak. *The Combined Statistical Minimized Point Distance (SMPD) and Texture Based Image Processing Techniques and Their Applications in Plant Species Recognition*. Submitted to *IET Image Processing*. 2014
26. Mohammed Ahmed, Samsul Bahari B Mohd Noor, Mohd Khair B Hassan, Azura Bt Che Soh. *A Review of Strategies for Parabolic Antenna Control*, *Australian Journal of Basic and Applied Sciences*, 8(7) May 2014, Pages: 135-148
27. Nor Hafeezah Kamarudin, Siti Anom Ahmad, Mohd Khair Hassan, Rosnah Mohd Yusuff, Siti Zawiah Md Dawal. *A Review of the NIOSH Lifting Equation and Ergonomics Analysis*, *Advanced Engineering Forum* Vol. 10 (2013) pp 214-219. (DOI:10.4028/www.scientific.net/AEF.10.214)

28. Seyed Mohammad Hussein S, Siti A. Ahmad , Azura Che Soh, Mohd K Hassan, Asnor J Ishak *Introducing New Statistical Shape Based and Texture Feature Extraction Methods in The Plant Species Recognition System*. International Journal of Engineering and Technology, Vol.10, No. 2, 56–61, 2013
29. M.Seifi, A.che Soh, N.I.Abd.Wahab, M.K.Hassan, *Modeling of PV Standalone Microgrid Based on IEEE 1562-2007,1361-2003 and 1013-2007*. International Review on Modeling and Simulations (I.R.E.M.O.S), vol 6,N2, 2013 pp 515-525.
30. M.K Hassan, N.A.M. Azubir, Nizam.H.M.I, S.F Toha, B.S.K.K Ibrahim , *Optimal Design of Electric Power Assisted Steering System (EPAS) Using GA-PID Method* , Procedia Engineering 41 (2012) 614-621.
31. B.S.K.K.Ibrahim N.Aziah.M.A, S. Ahmad, R. Akmeliawati, Nizam H.M.I,A.G.A.Muthalif S.F.Toha and M.K.Hassan, *Fuzzy-based Temperature and Humidity Control for HVAC of Electric Vehicle*, Procedia Engineering 41 (2012) 904 – 910.
32. Mohd Khair Hassan and Ishak Aris, *Modeling brake torque of CNGDI using two stage regression technique* , International Review of Mechanical Engineering (IREME),2012. Vol. 6 n. 3, pp. 621-624 .
33. Mohd Khair. H, Aishawarya.K, Ribhan Zafira A.R and Siti Anom.A, *Design a PID Controller for a Constant Speed of Combustion Engine*, Australian Journal of Basic and Applied Sciences, 5(12): 1586-1593, 2011
34. M.K. Hassan, R.Z. Abdul Rahman, A,Che Soh, M.Z.Z Ab Kadir, *Lightning Strike Mapping for Peninsular Malaysia Using Artificial Intelligence Techniques*. Journal of Theoretical and Applied Information Technology (JATIT) 34(2), 2011, 202-214.
35. Azura Che Soh, Mohd Khair Hassan, Ribhan Zafira Abdul Rahman, *A Fuzzy Classifier System for Malfunction Traffic Light System Classification*, Journal of Theoretical and Applied Information Technology (JATIT) 34(2), 2011, 226-240.
36. Mohd.Khair, H and Ishak, .A. *The Effect of the Ignition Dwell Time at Constant Speed for CNGDI Engine*, Australian Journal of Basic and Applied Sciences, 4(10): 4691-4694, 2010
37. M.K Hassan, I.Aris, S.Mahmod, R. Sidek , *Influence of injection and ignition of CNG fuelled direct injection engine at constant speed*, Australian Journal of Basic Applied Science, 4(10): 4870-4879, 2010, ISSN 1991-8178, 2010.
38. Masjuki H.Hassan, M.Abul Kalam and TM Indra Mahlia, Ishak Aris and M.Khair Nizam, *Experimental Test of aNew Compressed Natural Gas Direct Injection Engine*. Energy and Fuels 2009, Vol 23, 4981-4987, Scopus I.F 2.79. Q2

b. Non-cited Journal

1. G. R. Lai, A. Che, Soh, , H. Md. Sarkan,,R. Z. Abdul Rahman, M. K. Hassan, *Controlling Traffic Flow in multilane0isolated using ANFIS approach techniques*, Journal of Engineering Science and Technology Vol. 10, No. 8 (2015) 1009 – 1034.
2. Ahmed Abdulelah, Azura Che Soh,MohdKhair Hassan and SamsulBahariMohd Noor. *Controlling the Pitch and Yaw Angles of Twin Rotor MIMO System in Simulation Based Platform using Fuzzy Logic*. Open Journal of Artificial Intelligence , OJAI 2014, (1):1-6 (DOI:10.12966/ojai.02.01.2014)
3. Mohd Azubir N.A, Md.Idris N.H, Ahmad S, Akmal R.A, Toha S.F, Ibrahim B.S.K.K , Hassan M.K. *Development of Control Strategy on Segregation of HVAC Energy Efficiency as Non Propulsion Electrical Hotel Load in EV*. Journal of Engineering. Vol 4. Pg 14-20. 2012

4. Mohd.Khair Hassan, Ishak Aris, Khairul Nizam Zainuddin and Nik Anis Alina, *Torque and Power of CNGDI Engine with Two Different Piston Crown Shapes*, Journal of Applied Sciences Research 5(8): 949-954, 2009.
5. M.K Hassan, I.Aris, S.Mahmod, R. Sidek *An experimental result of exhaust emission concentration relative to various injection timing of CNG fuelled direct injection engine*. European Journal of Scientific Research, ISSN 1450-216X Vol.25 No.3 (2009), pp.405-416.
6. Wan Zuha A.H.,Zulkifli A.R., Samsul B.M.N, M.Khair H., Liakot A. and Syed A.R, *Doppler Effect Method For Speed Trap Detector*. Journal of Industrial Technology Vol.14 (2) 2005, 97-111.
7. M.K Hassan, A. Mustaffa and Norhayati , *A Comphensive GUI with MATLAB Based for Classical, Modern and Electric Circuit Analysis*, Engineering Transactions, Mahanakorn University of Technology, Vol 7, No 1(16), Jan-June 2004, 57-75.
8. Azura Che Soh, Mohd Khair Hassan, Mohd Amran Mohd Radzi and Li Hong Fay, *Development Of Fuzzy Logic Controller For Movement Control Of Robotic System*, Journal of Industrial Technology Vol.14 (2) 2005, 113-137.
9. I Aris, M.K. Hassan, I.Mat, K.Nizam,N.A.Alina,R.K.Zakiah,R.Sidek, S.Mahmood, *Model-Driven Electronic Control Unit with Real-Time Embedded Target*, Engineering Transactions, Mahanakorn University of Technology, Thailand.,Vol.8,No.1(18),Jan-June 2005, 62-80.
10. Ibrahim Mat, Ishak Aris, Mohd Khair, Roslina Mohd. Sidek, , Nik Anis Alina and Syed Malik, *Electronic Control Unit for Vehicles:Issues and the Way Forwards*, Journal of Industrial Technology, SIRIM Berhad. Vol.15 (1) 2006, 73-85.
11. Mohd Liakot Ali, Mohd Khair Hassan, Wan Zuha Wan Hasan and Tan Yar Loon, *Sythesis of 8-bit smart Card Microprocessor Using Harvard Architecture and RISC*, Journal of Industrial Technology , Vol 14 (1) 2005, 37-58.

c. Book(s)

e. Proceeding(s)

1. M. K. Hassan, T. A. T. Mohd, *A Review of Energy Management System in Battery Electric Vehicle with Hybrid Electrical Energy Source*, International Conference on Engineering Education 2015, Madinah, Kingdom of Saudi Arabia, 29-30 November 2015
2. N. Mohamad Zaber, A.J Ishak, A. Che Soh, M.K. Hassan, “Designing PID Controller for Position Control with Disturbance”, 2015 International Conference on Computer, Communication, and Control Technology , 21 - 23th April, 2015, Kuching, Sarawak, Malaysia.
3. A.Abdullelah,A.Che Soh, N.A. Abdullah, M.K. Hassan and S.B.Mohd Noor, *Simulated Real Time Controller Using Modified Hill Climbing Algorithm on Fixed Wing Airplane*, The 2015 10th Asian Control Conference (ASCC 2015), May 31-June, 2015, Kota Kinabalu Sabah, Malaysia.
4. M.K Hassan, S.F Toha, B.S.K.K Ibrahim, N.Aziah .M.A, *Power Consumption Efficiency of Electric Power Assisting Steering System for Electric Vehicle: MBD Approach*. 2nd International Symposium on Applied Engineering and Sciences (SAES2014), Kyushu Institute of Technology, Japan 20th – 21th Dec. 2014.
5. U. K. Mohamad Yusof, A. Che Soh, A. J. Ishak, M. K. Hassan, K.K.Chow, “*Selection of Feature Analysis Electronic Nose Signals Based on the Correlation between Gas Sensor and Herbal*

- Phytochemical*”, 2nd International Symposium on Applied Engineering and Sciences 2014 (SAES 2014), 20-21 Dec 2014, Japan.
6. N. Mohamad Zaber, A.J Ishak, A. Che Soh, M.K. Hassan, R.Z. Abdul Rahman and Z. Zainal Abidin, “Control Positioning of Radio Telescope using PID Controller with Varying Parameters for High Precision Output”, The 6th International Conference On Postgraduate Education (ICPE-6 2014), 17-18 Dec 2014, UTeM, Melaka
 7. Mohd Rafiuddin Mohd Nordin, Ribhan Zafira Abdul Rahman, Mohd Khair Hassan, A. Che Soh and Siti Anom Ahmad, “Identify The High And Low RFI Level Base On Image Processing With Gray Level Co-Occurrence Method”, World Research and Innovation Convention of Engineering & Technology (WRICET), 25-26 Nov 2014, Putrajaya, Malaysia.
 8. Mohammed Ahmed, Samsul Bahari Mohd Noor, Mohd Khair Hassan, Azura Che Soh, “Parabolic Antenna Control Using The T-S Type Fuzzy Logic”, The Second International Conference on Defence and Security Technology(DSTC 2014), 24-25 September 2014, Kuala Lumpur.
 9. Mohammad Seifi, Azura Che Soh, Mohd Khair Hassan and Noor Izzri Abd. Wahab. *An Innovative Demand Side Management for Vulnerable Hybrid Microgrid*. 2014 IEEE Innovative Smart Grid Technologies Conference- Asia (ISGT ASIA), 20-23 May 2014, Kuala Lumpur, Malaysia.
 10. Maged S.Saeed, Asnor J. Ishak, Siti A.Ahmad, Mohd K. Hassan, *Design A Low Cost Electromyography Amplifier Circuit*. 1st Mini Symposium on Artificial Intelligence and Robotics, Kuala Lumpur, Malaysia, 11 December 2013.
 11. M.Azhar Omar, M.Khair Hassan, Azura Che Soh, M.Z.A.Ab.Kadir. *Lightning Severity Classification Utilising the Meteorological Parameters: A Neural Network Approach*. 2013 IEEE International conference on Control System, Computing and Engineering, 29 Nov-1 Dec, 2013, Penang Malaysia.
 12. Chow Kar Kit, Azura Che Soh, Umi Kalsom Mohammad Yusuf , Asnor Juraiza Ishak, Mohd Khair Hassan and Shamsul Khamis. E-Nose Herbs Recognition System based on Artificial Neural Network Technique. The 2013 IEEE International Conference on Control System, Computing and Engineering, 29 Nov - 1 Dec 2013, Penang, Malaysia.
 13. N. Aziah M.A, Nizam H.M.I, S. Ahmad, R.Akmeliawati , S. F. Toha, B.S.K.K. Ibrahim, M.K. Hassan, *Control Strategy of Segregation on HVAC Energy Efficiency as Non Propulsion Electrical Hotel Load in EV* , 593-597, , 2012 IEEE International Conference on Power and Energy (PECon), 2-5 December 2012, Kota Kinabalu Sabah.
 14. B.S.K.K. Ibrahim, N.A.M. Azubir, N.H.M. Ishak, M.K. Hassan, S.F. Toha, M.A.Z. Abidin, H.F. Ismail and H. Zamzuri. *PI-Fuzzy Logic Control for 3 Phase BLDC Motor for Electric Vehicle Application*. Conference of 2012 UKSim-AMSS 6th European Modelling Symposium
 15. Mohd Khair Hassan , Ishak Aris, *Modeling Brake Torque of CNGDI Engine Using Two-Stage Regression Technique*. Regional Conference on Automotive Research (ReCAR) 2011, 14-15th December 2011. Kuala Lumpur, Malaysia
 16. Mohd Khair Hassan , Ishak Aris, Roslina Sidek and Senan Mahmud *Power and torque comparison FOR CNG and Petrol Using LES software*. World Engineering Congress 2010, 2nd – 5th August 2010, Kuching, Sarawak, Malaysia Conference on Engineering and Technology Education.
 17. M.K Hassan, I.Aris, S.Mahmod and R. Sidek, *Exhaust gas concentration of CNG fuelled direct injection engine at MBT timing*, International Advanced of Technology Congress, 2009, PWTC, Kuala Lumpur, 3-5 November 2009.

18. M.A. Kalam, H.H. Masjuki, M. Redzuan, T.M.I. Mahlia, M. A. Fuad, M. Mohibah, Ku. Halim, A.Ishak and M.Khair, A.Shahrir and A.Yusoff, *Experimental Test of a New Compressed Natural Gas Engine With Direct Injection*, SAE paper no. 2009-01-1967, USA.
19. M.A. Kalam, H.H. Masjuki, M. Redzuan, T.M.I. Mahlia, M. A. Fuad, M. Mohibah, Ku. Halim, A.Ishak and M.Khair, A.Shahrir and A.Yusoff, *Development and Test of a New Catalytic Converter for Natural Gas Fueled Engine*, SAE paper no: 2008-01-1550, USA.
20. M.K Hassan, I.Aris, S.Mahmod, R. Sidek, K.N. Zainuddin, N.A.Alina, H.H Masjuki, M. Redzuan, M.A.Kalam, *The Influence of Fuel Injection Timing Towards Exhaust Emissions in Compressed Natural Gas Direct Injection (CNGDI) Engine-An Experimental Study*, 3rd Brunei International Conference on Engineering and Technology, BICET2008, 3-4 Nov.2008
21. M.K Hassan, I.Aris, S.Mahmod, R.Sidek, K.N. Zainudin, N.A.Alina, H.H. Masjuki, M.Redzwan, M.A. Kalam, *The Effects of Ignition and Injection Timings On Compressed Natural Gas Direct Injection (CNGDI) Multicylinder Engine*, 1st Engineering Conference, Energy and Environment, 27-28 December 2007, Kuching Sarawak.
22. I.Aris, M.K Hassan, S.Mahmod, R.Sidek, K.N. Zainudin, N.A.Alina, H.H. Masjuki, M.Redzwan, M.A. Kalam, *Experimental Test and Simulation of Compressed Natural Gas Direct Injection (CNGDI) Single cylinder Engine*, 1st Engineering Conference, Energy and Environment, 27-28 December 2007, Kuching Sarawak.
23. Mohd Khair Hassan, Ishak Aris, Jasronita Jasni, Senan Mahmud, roslina Sidek, Hashim Hizam, *Comparative Study of The Potential of Campro 1.6L Engine Fuelled by Compressed Natural Gas*, World Engineering Congress 2007 (WEC 2007), 5-9 August, Penang, Malaysia.
24. Mohd Khair Hassan, Ishak Aris, K.N. Zainuddin, H.H Masjuki, M. Redzuan, M.A.Kalam *Performance Analysis Of 1.6l Campro Engine Using Motec And OEM Engine Control Unit*, Proc.of the 2nd International Engineering Convention 2007 (IntEC2007), 9-14 Mac 2007. Jeddah, Arab Saudi.
25. I.Aris, M.K. Hassan, R.Sidek, S.Mahmod, I.Mat, K.N.Zainuddin, N.A.Othman, R.K.Z.Sahbudin. *Trend in Electronic Control Unit Development With Real-Time Embedded Target*, Proc. Of the Brunei International Conference of Engineering and Technology (BICET) 2005, Brunei Darussalam, 15-18 August 2005.
26. Mohd Khair Hassan, Ishak Aris, Roslina Sidek, Senan Mahmud, *Model-Based Approach with Real Time Embedded Target for Rapid ECU Development: An Overview*, Proceeding of the Jordan International of Electrical and Electronic Engineering Conference (JIEEEEC) 2005, 15-17 Nov, 2005. Amman, Jordan.
27. 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.
28. **Ishak Aris**, Maaspaliza Azri, Zainab Hasan, M. K. Hassan, M. Khalid, S. M. Amin and H. A. Cyril, “*Development of Software System for Detecting Defective Symbols on Integrated Circuit Chip with Adjustable Readability Level*”, CD Proceeding of the 9th International Conference on Mechatronics Technology (ICMT), Kuala Lumpur, 5-8 December 2005.
29. 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.
30. 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 Equatorial, Melaka.

31. 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 AESEAP Conference*, Univ.Malaya.8,9 Dec 2003, pp 233.
32. 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*, Equatorial, Bangi.2003
33. 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.
34. Y.S.Ettomi, S.B.M.Noor, S.M.Bashi and M.K. Hassan, *Microcontroller Based Adjustable Closed-Loop DC Motor Speed Controller*, *SCORED 2003*, Palm Garden Renaissance Hotel, Putrajaya. 25-26 August 2
35. 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.
36. Mohd Khair Hassan, Syed Malik Faizal, *EMS Applications and Components*. Direct Injection Technology and EMS Development Workshop, 23/9- 24/9/ 2003, Hotel Residence, Putrajaya, Malaysia
37. 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.

f. Seminar Papers Presented (orally)

1. M. K. Hassan, T. A. T. Mohd, *A Review of Energy Management System in Battery Electric Vehicle with Hybrid Electrical Energy Source*, International Conference on Engineering Education 2015, Madinah, Kingdom of Saudi Arabia, 29-30 November 2015
2. T.A.T. Mohd, M.K. Hassan, Ishak Aris, B.S.K.K. Ibrahim, and M.K. Hat. *Simulation based study of electric vehicle parameter*, Int. Conf. of Electrical and Electronic Engineering (IC3E), Melaka. 10-11 August, 2015.
3. M.K Hassan, S.F Toha, B.S.K.K Ibrahim, N.Aziah .M.A, *Power Consumption Efficiency of Electric Power Assisting Steering System for Electric Vehicle: MBD Approach*. 2nd International Symposium on Applied Engineering and Sciences (SAES2014),Kyushu Institute of Technology, Japan 20th – 21th Dec. 2014.
4. M.Azhar Omar, M.Khair Hassan, Azura Che Soh, M.Z.A.Ab.Kadir. *Lightning Severity Classification Utilising the Meteorological Parameters: A Neural Network Approach*. 2013 IEEE International conference on Control System, Computing and Engineering, 29 Nov-1 Dec, 2013, Penang Malaysia.
5. M.K Hassan, N.Aziah .M.A, Nizam.H.M.I, A.G A Mutalib, S.F Toha, B.S.K.K Ibrahim. *A Comparative Study of Power Consumption of Electric Power Steering System*, 180-184, 2012 IEEE International Conference on Power and Energy (PECon), 2-5 December 2012, Kota Kinabalu Sabah.
6. Mohd Khair Hassan , Ishak Aris, *Modeling Brake Torque of CNGDI Engine Using Two-Stage Regression Technique*. Regional Conference on Automotive Research (ReCAR) 2011, 14-15th December 2011. Kuala Lumpur, Malaysia
7. Mohd Khair Hassan , Ishak Aris, Roslina Sidek and Senan Mahmud *Power and torque comparison FOR CNG and Petrol Using LES software*. World Engineering Congress 2010, 2nd –

- 5th August 2010, Kuching, Sarawak, Malaysia Conference on Engineering and Technology Education.
8. M.K Hassan, I.Aris, S.Mahmod and R. Sidek, *Exhaust gas concentration of CNG fuelled direct injection engine at MBT timing*, International Advanced of Technology Congress, 2009, PWTC, Kuala Lumpur, 3-5 November 2009.
 9. M.K Hassan, I.Aris, S.Mahmod, R. Sidek, K.N. Zainuddin, N.A.Alina, H.H Masjuki, M. Redzuan, M.A.Kalam, *The Influence of Fuel Injection Timing Towards Exhaust Emissions in Compressed Natural Gas Direct Injection (CNGDI) Engine-An Experimental Study*, 3rd Brunei International Conference on Engineering and Technology, BICET2008, 3-4 Nov.2008
 10. M.K Hassan, I.Aris, S.Mahmod, R.Sidek, K.N. Zainudin, N.A.Alina, H.H. Masjuki, M.Redzwan, M.A. Kalam, *The Effects of Ignition and Injection Timings On Compressed Natural Gas Direct Injection (CNGDI) Multicylinder Engine*, 1st Engineering Conference, Energy and Environment, 27-28 December 2007, Kuching Sarawak.
 11. I.Aris, M.K Hassan, S.Mahmod, R.Sidek, K.N. Zainudin, N.A.Alina, H.H. Masjuki, M.Redzwan, M.A. Kalam, *Experimental Test and Simulation of Compressed Natural Gas Direct Injection (CNGDI) Single cylinder Engine*, 1st Engineering Conference, Energy and Environment, 27-28 December 2007, Kuching Sarawak.
 12. Mohd Khair Hassan, Ishak Aris, Jasronita Jasni, Senan Mahmod, roslina Sidek, Hashim Hizam, *Comparative Study of The Potential of Campro 1.6L Engine Fuelled by Compressed Natural Gas*, World Engineering Congress 2007 (WEC 2007), 5-9 August, Penang, Malaysia.
 13. Mohd Khair Hassan, Ishak Aris, K.N. Zainuddin, H.H Masjuki, M. Redzuan, M.A.Kalam *Performance Analysis Of 1.6l Campro Engine Using Motec And OEM Engine Control Unit*, Proc.of the 2nd International Engineering Convention 2007 (IntEC2007), 9-14 Mac 2007. Jeddah, Arab Saudi.
 14. I.Aris, M.K. Hassan, R.Sidek, S.Mahmod, I.Mat, K.N.Zainuddin, N.A.Othman, R.K.Z.Sahbudin. *Trend in Electronic Control Unit Development With Real-Time Embedded Target*, Proc. Of the Brunei International Conference of Engineering and Technology (BICET) 2005, Brunei Darussalam, 15-18 August 2005.
 15. Mohd Khair Hassan, Ishak Aris, Roslina Sidek, Senan Mahmod, *Model-Based Approach with Real Time Embedded Target for Rapid ECU Development: An Overview*, Proceeding of the Jordan International of Electrical and Electronic Engineering Conference (JIEEEEC) 2005, 15-17 Nov, 2005. Amman, Jordan.
 16. 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.
 17. 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 Equatorial, Melaka.
 18. 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.
 19. 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.

20. Mohd Khair Hassan, Syed Malik Faizal, *EMS Applications and Components*. Direct Injection Technology and EMS Development Workshop, 23/9- 24/9/ 2003, Hotel Residence, Putrajaya, Malaysia
21. 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.

g. Other Presentation (Poster/Product/Exhibition/Showcase)

	Name of authors	Title	Poster/Product/Exhibition/Showcase	Year
1	Mohd Khair, Mohd Hafiz Nordin, Azura che Soh, Mohd Amran Mohd Radzi	Hardware-in-Loop (HiL) of Fault Detection for Air-Fuel Ratio Control Principal Investigator	Malaysia Invention & Design Society (MINDS) at International Engineering Invention and Innovation Exhibition (i-ENVEX). April 11 th -13 th 2014: Universiti Malaysia Perlis	2014
2	Mohd Khair Hassan, Aiman Razak,	Hybrid Artificial Intelligence of Battery Balancing for Electric Vehicle.	The 5th Exposition on Islamic Innovation 2014	2014

h. Other Equivalent Outcomes (Monograph/Module/Popular Writing & Article/Design etc)

	Title	Poster/Product/Exhibition/Showcase	Year
1	<i>Industrial Instrumentation and Control Operation and Maintenance: Level 3</i> Panel Contributor	National Occupational Skills Standard (NOSS), Department of Skill Development, Ministry of Human Resources, MALAYSIA.	2013
2	<i>Industrial Instrumentation and Control System- Monitoring and Controlling Level 4</i> Panel Contributor	National Occupational Skills Standard (NOSS), Department of Skill Development, Ministry of Human Resources, MALAYSIA.	2013
3	<i>Industrial Instrumentation & Control System- Planning and Technical Management Level 5</i> Panel Contributor	National Occupational Skills Standard (NOSS), Department of Skill Development, Ministry of Human Resources, MALAYSIA.	2013

F. RESEARCH ACTIVITIES

a. Research Grants:

i. Principal Investigator

No	Project Title	Amount (RM)	Year	Funder
1	Development of Cyber-Physical System with Control Area Network of Electric Vehicle	42,000	2/2018	UPM
2	Development of Automated Chicken Slaughtering and Cleaning Machine	37,750 Completed	1/2016	PPRN, MOSTI
2	Optimal Design of Energy Management System for Battery Electric Vehicle using Hybrid Artificial Intelligence	20,000 Completed	12/2015	Geran Putra
3	Regenerative Braking Strategy for Electric Vehicles using Adaptive Genetic Algorithm	20,000 Completed	12/2015	Geran Putra
4	Formulation of Hybrid Artificial Intelligence Control of Energy System for Electric Vehicle (EV)	147,000 Completed	2013-15	FRGS, MOSTI
5	Exploration on Hybrid Artificial Intelligence of Model-Based Calibration Engine	63,000 Completed	2011-13	ERGS, MOSTI
6	Parameter Optimizations of CNG Fuelled Direct-Injection Engine Using GT-Suite Simulation Package	30,000 Completed	2009-11	RUGS, UPM
	Real Time Inverted Pendulum Controllers for SISO and MIMO Analysis	10,000 Completed	2003-04	New Lecturer Scheme, UPM

ii. Co-Researcher

No	Project Title	Amount (RM)	Year	Funder
1	A Novel Practical Synchronization Control Approach for a Twin axes Table Driven System in Industrial Transportation	78000	2016-2018	MOSTI FRGS <i>Collaboration with UTeM</i>
2	Parametric Modelling and Development of Battery Cell Balancing for Energy Optimization in Electric Vehicle (EV)	201,500	2015-17	MOSTI E-Science Fund <i>Collaboration with IIUM</i>
3	Lightning Surges on Distribution Line and Its Effect on Transformer Design and Protection	146,700 On-going	2015-17	GP-IPB, UPM
4	Nature-Inspired Parametric Analysis of Driver's Spinal Response to Steering Vibration Impact for Electric Vehicle Steering System	50,000 On-going	2014-16	RACE-MOE <i>Collaboration with IIUM</i>
5	Development of ECU for MEEGE Multi-fuel Mixer for Green Engine	329,600 On-going	2013-15	GP-IPB, UPM

6	Parametric Modelling and Intelligent Control for Vehicle Electrical Loads (VEL) using Fuzzy logic control and Particle Swarm Optimisation (FLC-PSO)-	50,000 Completed	2012-15	ERGS,MOSTI <i>Collaboration with IIUM</i>
7	Formulation of Algorithm to Classify Distinctive Odors Pattern of Aromatic Plant Species using Hybrid Artificial Intelligence Techniques	121,500 On-going	2013-15	FRGS,MOSTI
8	Development of A lifting Equation for Malaysia population	15,000 On-going	2013-15	GP-IPS
9	The First Radio Quiet Zone(RQZ) Map for Radio Astronomy in Malaysia	183,000 Completed	2013-14	ANGKASA & MOSTI <i>Collaboration with UM</i>
10	An Intelligent Load Control System for Autonomous Microgrid Based on Solar and Wind energy	14,300 Completed	2012-13	RUGS
11	Development of E-Nose Herbs Recognition System Based on Artificial Intelligence Technique	63,000 Completed	2012-14	RUGS
12	Signal Processing Algorithm Development for Ultrasonic Imaging in In-Vivo Skin Characterization-	94,000 Completed	2012-14	RUGS
13	Development of Signal Emulator and Calibration Tool for Multifuel Electronic Control Unit of a Vehicle Power Train	30,000 Completed	2009-11	RUGS
14	ROBOCON 2005	150,000 Completed	2005	UPM

b. Patent/Commercialization

i) Patent

No.	Title	Status (Granted/Pending)
1	Phyto-Herbal Electric Nose- Layout Design and of an integrated circuit	Azura Che Soh, Umi Kalsom Mohamad Yusof, Asnor Juraiza Ishak, Mohd Khair Hassan
2	Method for Controlling Multiple-injection of Gaseous Fuel in a Direct Injection Engine PI20054808.	Ishak Aris, Khairul Nizam, Nik Anis Alina and Mohd Khair Hassan

ii) Copyright

No.	Title	Status (Granted/Pending)
1	Lightning Severity Classification v.1.0- software 18/8/2014	Copyrighted

2 Phyto-Herbal Electric Nose- software 25/8/2015

Mohd Khair Hassan, Muhammad Azhar Omar, Azura Che soh and Mohd Zainal Abidin Ab Kadir.
Copyrighted
Azura Che Soh, Umi Kalsom Mohamad Yusof, Asnor Juraiza Ishak, **Mohd Khair Hassan**

c. Editorial Committee & Journal Reviewer

No	Title	Authority/Funding	Designation
1	American Journal of Modeling and Optimization	(http://www.sciepub.com/journal/AJMO). :ISSN (Print): 2333-1143	Editorial Committee
2	Journal of Automation and Control Engineering	(www.aicit.org/jace/home/editorial.html). ISSN : 2287-6529	Editorial Committee
3	Progress in Intelligent Computing and Applications	www.humanpub.org/pica/home/editorial.html) ISSN: 2287-4844	Editorial Committee
4	Mathematical Problems in Engineering	IF 1.082	Reviewer
5	IEEJ Journal of Industry Applications (The Institute of Electrical Engineers of Japan)	IF 0.213	Reviewer
6	Journal of Automation and Control Engineering	SCOPUS	Reviewer
7	American Journal of Vehicle Design	SCOPUS	Reviewer
8	World Journal of Modelling and Simulation	SCOPUS	Reviewer
9	ARNP Journal of Engineering and Applied Science	SCOPUS	Reviewer
10	Asian Journal of Fuzzy and Applied Mathematics (AJFAM)	-	Reviewer