

CURRICULUM VITAE



**PROF. Ir. DR.
RIZALAFANDE CHE ISMAIL**

PERSONAL DATA

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Malaysia Perlis, Pauh Putra Campus, 02600 Arau, Perlis,

ACADEMIC QUALIFICATIONS

- Ph.D, Microelectronics System Design, June 2012, Newcastle University, United Kingdom.
- Master of Engineering (M.Eng.), Microelectronics System Design Engineering, July 2005, Royal Melbourne Institute of Technology, Australia
- Bachelor of Engineering (B.Eng), Electronic Engineering, Dec. 2001, Universiti Teknologi Malaysia
- Diploma of Engineering (Electrical Power), Jun 1999, Universiti Teknologi Malaysia

PROFESSIONAL QUALIFICATION/MEMBERSHIP

- Professional Engineer (P.Eng), Board of Engineers Malaysia (BEM)
- Corporate Member, Institute of Engineers Malaysia (IEM)
- Senior Member, Institute of Electrical & Electronics Engineers (IEEE)
- Member, British Computer Society (BCS)
- Member, Malaysian Technical Standards Forum Bhd. (MTSFB) under Malaysia Communications and Multimedia Commission (MCMC)

AREA OF SPECIALIZATION / RESEARCH

- Digital System Design
- High Performance Computer Arithmetic
- VLSI Design
- FPGA Design
- Low Power Architecture

EMPLOYMENT HISTORY

Universiti Malaysia Perlis (UniMAP)

- Jun 2020 – present : Professor, Faculty of Electronic Engineering Technology
- Jan 2015 – May 2020 : Assoc. Professor, School of Microelectronic Engineering
- Apr 2010 – Dec 2014 : Senior Lecturer, School of Microelectronic Engineering
- Feb 2005 – Apr 2010 : Lecturer, School of Microelectronic Engineering
- Feb 2003 – Feb 2005 : Teaching Engineer, School of Microelectronic Engineering

Albukhary International University (AIU) - *secondment*

- Feb 2020 – May 2021 : Professor, School of Computing and Informatics

Newcastle Univeristy, United Kingdom

- Jan 2008 – Dec 2011 : Lab Demonstrator, Department of Electrical, Electronic & Computer Engineering

Intel Product (M) Pte. Ltd.

- Dec 2001 – Feb 2003 : Product Engineer, Board Design Centre Malaysia (BDCM)

ADMINISTRATIVE EXPERIENCE

Universiti Malaysia Perlis (UniMAP)

- May 2021 – present : Deputy Vice Chancellor (Research & Innovation)
- Mac 2013 – present : University Senate Member
- Mac 2019 – Feb 2020 : Dean, Research Management & Innovation Centre (RMIC)
- Aug 2014 – Feb 2020 : Lt. Kol. Bersekutu (PA), Angkatan Pertahanan Awam Malaysia
- Jan 2012 – Feb 2020 : Chairman, University Promotional Secretariat (Outreach Team)
- Mac 2013 – Feb 2019 : Dean, School of Microelectronic Engineering
- Feb 2005 – Dec 2007 : Programme Chairperson of Electronic Engineering Programme, School of Microelectronic Engineering
- Feb 2005 – Dec 2007 : Industrial Training Coordinator of Electronic Engineering Programme, School of Microelectronic Engineering
- Feb 2005 – Dec 2007 : FYP Coordinator of Electronic Engineering Programme, School of Microelectronic Engineering

Albukhary International University (AIU)

- Feb 2020 – May 2021 : *Deputy Vice Chancellor*, Academic and Research *Director*, AIU Center of Excellence on Socioeconomics, Development and Innovation (ACE-SEDI)
Acting Director, Yunus Social Business Centre (AIU-YSBC)
Editor-in-Chief, Albukhary Social Business Journal (ASBJ)

LINKS WITH OTHER AGENCIES

- July 2019 – Sept 2019 : Visiting Lecturer, Intel Malaysia Sdn. Bhd.
- Mac 2019 – present : Vice President, Malaysian Research & Innovation Society (MyRIS)
- Jan 2019 – Jan 2020 : ETAC Advisory Panel, Universiti Teknologi Malaysia Kuala Lumpur

- Mac 2018 – Mac 2019 : External Examiner Panel, Politeknik Tuanku Syed Sirajuddin Perlis
- Dec 2018 – present : External Examiner Panel, Politeknik Tuanku Sultanah Bahiyah Kedah
- Sept 2017 (2 weeks) : Visiting Lecturer, OTH Regensburg Germany
- Dec 2017 – present : EAC/ETAC Accreditation Panel, Board of Engineers Malaysia
- Jan 2014 – present : Visiting Professor, Universitas Ubudiyah Indonesia Aceh
- Apr 2012 – present : Research Fellow, Collaborative Microelectronic Design Excellence Centre (CEDEC), USM

TEACHING ACTIVITIES

- **UNDERGRADUATE**

EMT126 – Engineering Writing
 EMT125 – Digital System I
 EMT212 – Analogue Electronic II
 EMT251 – Introduction to IC Design
 EMT351 – Digital IC Design
 EMT363 – VLSI Design
 EMT451 – Analogue IC Design

- **POSTGRADUATE (COURSEWORK)**

EMT563 – Advanced Digital System Design
 EMT552 – Research Methodology

RESEARCH ACTIVITIES

Research Grants

2020 – 2022	Project Leader , Community Empowerment Project in Baling and Sik Kedah, Albukhary International University, Grant Value RM980,000
2019	Project Leader , Program Industry Certified in IC Design, Ministry of Education Malaysia, Grant Value RM150,000
2018	Co-researcher , e-PADDY Smart Monitoring System, Malaysian Communication & Multimedia Commission 2018, Grant Value RM87,000
2018	Co-researcher , Modelling of a Soil Nutrients-EC Correlationship for Paddy Field Nutrient Treatment Map using the Internet of Things (IoT) Connectivity 2018, Grant Value RM120,000
2018	Co-researcher , A New Technique of Highly Efficient Power Amplifier for Internet of Thing (IoT) Applications 2018, Grant Value RM97,000
2017	Project Leader , <i>Program Sahsiah dan Kepimpinan Sosial dan Komuniti Fasa 2</i> , Ministry of Higher Education, Grant value RM120,000
2016	Project Leader , <i>Program Sahsiah dan Kepimpinan Sosial dan Komuniti Fasa 1</i> , Ministry of Higher Education, Grant value RM120,000
2014 – 2017	Co-researcher , Modeling of an Efficient DNA/Protein Sequencer Using Hardware Description Language(HDL) For Biomedical Applications, FRGS 2014, Grant Value RM120,000
2014 – 2017	Co-researcher , Design and Fabrication of DC High Voltage Low Current

2013 – 2015	Power Supply Mode, CREST-USAINS 2014, Grant value RM161,000 Co-researcher , A New Technique to Obtain Ultra Low Power Wireless Sensor Network Transceiver for Agriculture Applications, FRGS 2013, Grant value RM90,000
2012 – 2015	Project Leader , High Performance Logarithmic Number System and Its Application in Video Graphic Architecture, ERGS 2012, Grant value RM80,000
2007 – 2009	Co-researcher , Development of Portable Multi-channel Biosensor Using Nanogap Capacitor for Biomedical (DNA Hybridization) Detection, Science-Fund 2007, Grant value RM514,000
2005 – 2007	Project Leader , Analysis and Design of CMOS Based VLSI Subsystems, UniMAP Short Term Grant 2005, Grant value RM15,000

Publications

	GOOGLE SCHOLAR	SCOPUS
TOTAL CITATIONS	518	306
H-INDEX	11	10

Updated 21 Jan 2022

• Books

2019	Rizalafande Che Ismail (Co-Editor), "Garis Panduan Program My STEM Ambassador", Kementerian Pengajian Tinggi Malaysia, Modul Untuk Semua Universiti Awam.
2017	Rizalafande Che Ismail (Book Chapter), "Electronic Circuit and System: Designs and Applications", Universiti Malaysia Perlis Publishing, ISBN: 978-967-5415-62-5
2015	Sohiful Anuar Zainol Murad, Mohd Nazrin Md Isa, Rizalafande Che Ismail , "Dgital and Analogue Electronics : Circuits and Systems", Publisher: Universiti Malaysia Perlis.
2015	Kamarudin Hussin, Mazmin Mat Akhir, Khairul Azwan Ismail, Rizalafande Che Ismail , Nazirah Zainul Abidin, Nur Marwani Maliki, "Ke Arah Kecemerlangan Universiti Bertaraf Dunia: Inisiatif Program Peningkatan QS Stars", Publisher: Universiti Malaysia Perlis.
2015	Kamarudin Hussin, Mazmin Mat Akhir, Khairul Azwan Ismail, Rizalafande Che Ismail , Nazirah Zainul Abidin, Khatijahusna Abd Rani, Nur Marwani Maliki (Researchers), "Roadmap Universiti Malaya Ke Arah 100 Institusi Terbaik Dunia: Analisis dan Strategi", Publisher: Universiti Malaysia Perlis.
2015	Mohd Mustafa Al Bakri Abdullah, Rizalafande Che Ismail , Rafiza Razak, Muhammad Mahyiddin Ramli, Shayfull Zamree Abd Rahim, Mohd Nasir Mat Saad (Editors), "Design and Development of Sustainable Manufacturing Systems", Trans Tech Publications, ISBN: 978-3-03835-676-9
2013	Rizalafande Che Ismail (Book Chapter), "Integrated Electronics: Designs and Systems", Universiti Malaysia Perlis Publishing, ISBN: 978-967-5415-62-3
2013	Rizalafande Che Ismail , Sohiful Anuar Zainol Murad, "High Performance Complex Number Multiplier: Design and Analysis", Lambert Academic Publishing, ISBN: 978-3-659-38044-0
2012	Sohiful Anuar Zainol Murad, Rizalafande Che Ismail , Mukhzeer Mohamad Shahimin, "Wireless Ultra-Wideband CMOS Power Amplifier", Lambert Academic Publishing, ISBN 978-3-8484-4048-1

- 2007 *Compilers*: Norina Idris, Norhawati Ahmad, **Rizalafande Che Ismail**, Muammar Md Isa, Siti Zarina Md Naziri, Muhammad Imran Ahmad, "CMOS VLSI : A Design Perspective", Pearson: Prentice Hall, Jilid 1
- 2007 *Compilers* : Norina Idris, Siti Zarina Md Naziri, **Rizalafande Che Ismail**, Razaidi Hussin, Faizah Abu Bakar, "Verilog 2001 for Beginners", Pearson : Prentice Hall, Jilid 1

- **Journals**

- 2021 Siti Zarina Md Naziri, **Rizalafande Che Ismail** , Mohd Nazrin Md Isa , Razaidi Hussin, 'Less Memory and High Accuracy Logarithmic Number System Architecture for Arithmetic Operations', Indonesian Journal of Electrical Engineering and Computer Science, Vol. 15, No. 3, September 2020.
- 2021 Yousef A. Baker El-Ebiary, Amer Hatamleh, **R.C Ismail**, Khalid Thaher Amayreh, Safuan. H, Samer Bamansoor, *S. Saat, 'Customer Review on Confidence, Readiness and Security in Electronic Commerce', Turkish Journal of Computer and Mathematics Education, Vol.12 No.10 (2021), pp. 6513 – 6518, 2021.
- 2021 Yousef A. Baker El-Ebiary, Samer Bamansoor, Safuan. H, **R.C Ismail**, S. Saat, M Hafiz Yusoff, Rashed Karim, 'eBay e-Commerce Platform Opportunities and Obstacles', Turkish Journal of Computer and Mathematics Education, Vol.12 No.10 (2021), pp. 6531 –6536, 2021.
- 2021 Yousef A. Baker El-Ebiary, Amer Hatamleh, S. Saat, Khalid Thaher Amayreh, M Hafiz Yusoff, Rajina R. Mohamed, **R.C Ismail**, 'The Effectiveness of using Electronic Commerce Mobile Applications During Covid-19 Pandemic', Turkish Journal of Computer and Mathematics Education, Vol.12 No.10 (2021), pp. 6537 –6541, 2021.
- 2021 Yousef A. Baker El-Ebiary, **R.C Ismail**, Rajina R. Mohamed, Seita Almandeel, Safuan. H, Helmi Murad Ebrahim, S. Saat, 'The Leadership and the institutional excellence at the Saudi Arabia's Universities in the light of the vision 2030: An applied study on the academicians', Turkish Journal of Computer and Mathematics Education, Vol.12 No.10 (2021), pp. 6542 –654, 2021.
- 2020 Yousef A.Baker El-Ebiary, **Rizalafande Che Ismail**, Nahg Abdul Majid Alawi, Mohd Hafiz Yusoff, Syarilla Iryani A. Saany, Samer Bamansoor, 'E-Payment and Accounting Issues in Insurance Companies in the Use of E-Commerce', Journal of Mechanics of Continua and Mathematical Sciences, pp. 660-666, 2020.
- 2020 Yousef A.Baker El-Ebiary Yasser Mohamed Tarshany, Mohd Hafiz Yusoff, **Rizalafande Che Ismail**, Samer Bamansoor, Syarillalryani A. Saany, 'The Objectives For Keeping The Mind And Its Applications In Artificial Intelligence E-Games As A Model In Covid-19 Time', Journal of Mechanics of Continua and Mathematical Sciences, pp. 647-659, 2020.
- 2019 Nor Asilah Khairi, Asral Bahari Jambek, **Rizalafande Che Ismail**, 'Performance evaluation of arithmetic coding data compression for internet of things applications', Indonesian Journal of Electrical Engineering and Computer Science, pp. 591-597, 2019.
- 2019 Nor A Azmi, Sohiful AZ Murad, Azizi Harun, **R.C Ismail**, '5V to 6kV DC-DC Converter Using Switching Regulator with Cockcroft-Walton Voltage Multiplier for High Voltage Power Supply Module', Recent Advances in

- Electrical & Electronic Engineering (Formerly Recent Patents on Electrical & Electronic Engineering), vol 12, pp. 162-171, 2019.
- 2018 DS Nurdin, MN Isa, **R.C Ismail**, MI Ahmad, 'Development of BRCA1 DNA Sequence Profile of Early Diagnosis of Breast Cancer', Journal of Telecommunication, Electronic and Computer Engineering (JTEC), vol. 10, issue1-17, pp. 11-15, 2018.
- 2017 MN Isa, D Muhsen, MI Ahmad, SA Murad, SN Mohyar, **R.C Ismail**, K Benkrid, 'Design and Analysis of an Efficient Repository System for Protein Coefficients in Systolic Array-Based Architecture by Using Xilinx Virtex-5 FPGA', Advanced Science Letters, pp. 11267-11271, 2017.
- 2016 **R.C Ismail**, SAZ Murad, MNM Isa, 'Performance Analysis on Various Low Power Design Techniques', ARPN Journal of Engineering and Applied Sciences, pp. 3957-3961, 2016.
- 2016 JN Coleman, **R.C Ismail**, 'LNS With Co-transformation Competes With Floating-Point', IEEE Transactions on Computers, pp. 136-146, 2016.
- 2015 C Husin, M Fikri, F Abu Bakar, AF Hasan, **R Che Ismail**, TMATM Yusof, 'Energy Saving Switched-Mode Regulator in Motorcycle Power Supply', Applied Mechanics and Materials 815, pp. 359-363, 2015.
- 2015 F Abu Bakar, Z Murad, S Anuar, **R Che Ismail**, M Isa, 'Digital All-Pass Filter Modeling Based on Desired Group Delay Using Advanced Material: A Review on the Signal Processing Part', Applied Mechanics and Materials 815, pp. 338-342, 2015.
- 2015 MN Md Isa, Z Murad, S Anuar, MI Ahmad, MM Ramli, **R Che Ismail**, 'An Efficient Scheduling Technique for Biological Sequence Alignment', Applied Mechanics and Materials 754, pp. 1087-1092, 2015.
- 2015 SAZ Murad, MM Shahimin, MN Md Isa, **R.C Ismail**, N Ahmad, MNM Yasin, 'High linearity 3.0–5.0 GHz ultrawideband CMOS up-conversion mixer with parallel capacitor', Microwave and Optical Technology Letters 57 (2), pp. 427-429, Feb 2015, IF 0.623 Q4 Jurnal.
- 2014 B Ismail, SIS Hassan, **R.C Ismail**, AR Haron, A Azmi, 'Selective Harmonic Elimination of Five-level Cascaded Inverter Using Particle Swarm Optimization', International Journal of Engineering and Technology, ISSN. 0975-4024, pp. 5220-5232, 2014.
- 2014 S.A.Z Murad, M.M Shahimin, **R.C Ismail**, M.N.M Isa, "Design and Implement the Bondwire Inductors for Switching Power Amplifier", Australian Journal of Basic and Applied Sciences, Vol. 8 Issue 3, pp. 228-233, 2014.
- 2014 S.A.Z Murad, **R.C Ismail**, M.M Shahimin, M.F Ahmad, R. Sapawi, 'Development of Varied CMOS Ring Oscillator Topologies in 0.13-um CMOS Technology', *Applied Mechanics and Materials*, vol 446-447, pp 882-886, 2014.
- 2013 **R.C Ismail**, J.N Coleman, N. Norzahiyah, Z. Sauli, 'A Comparative Analysis Between Logarithmic Number System and Floating Point ALU', *American-Eurasian for Scientific Information (AENSI Journals)*, pp. 3601-3606, 2013.
- 2013 **R.C Ismail**, N. Norzahiyah, A.B Jambek, 'Improved Addition and Subtraction in Logarithmic Number System: Technique and Analysis', *American-Eurasian for Scientific Information (AENSI Journals)*, pp. 3607-3610, 2013.

- **Conference Proceedings**

- 2021 KM Yong, R Hussin, A Kamarudin, **RC Ismail**, MNM Isa, SZM Naziri, 'Design and Analysis of 32-Bit Signed and Unsigned Multiplier Using Booth, Vedic and Wallace Architecture', *Journal of Physics: Conference Series* 1755 (1), 012008.
- 2021 LK Qi, R Hussin, A Kamarudin, **RC Ismail**, MNM Isa, SZM Naziri, ' "LOOK & BLINK" Two Step Verification Security Log in System', *Journal of Physics: Conference Series* 1755 (1), 012009.
- 2021 CW Ci, SZM Naziri, **RC Ismail**, R Hussin, MNM Isa, MSSM Basir, 'Crypto-Core Design using Camellia Cipher', *Journal of Physics: Conference Series* 1755 (1), 012019.
- 2021 NNC Othaman, MNM Isa, R Hussin, **RC Ismail**, SZM Naziri, SAZ Murad, 'Development of Soil Electrical Conductivity (EC) Sensing System in Paddy Field', *Journal of Physics: Conference Series* 1755 (1), 012005.
- 2021 KH Teoh, **RC Ismail**, SZM Naziri, R Hussin, MNM Isa, M Basir, 'Face Recognition and Identification using Deep Learning Approach', *Journal of Physics: Conference Series* 1755 (1), 012006.
- 2021 JSC Turner, AB Shahrman, A Harun, SAZ Murad, MN Isa, **RC Ismail**, 'Modelling on Impact of Building Obstruction for V2I Communication Link in Micro Cellular Environment', *Journal of Physics: Conference Series* 1755 (1), 012031.
- 2021 M Basir, **RC Ismail**, KH Yusof, NIA Katim, MNM Isa, SZM Naziri, 'An implementation of Short Time Fourier Transform for Harmonic Signal Detection', *Journal of Physics: Conference Series* 1755 (1), 012013.
- 2021 MH Yusoff, KT Amayreh, **RC Ismail**, A Hatamleh, R Karim, RR Mohamed, 'Food and Beverage in Covid-19, Shopee in Online Shop Brooklyn. Store', *Annals of the Romanian Society for Cell Biology*, 7746–7753, 2021.
- 2021 AJA Alnagrat, **RC Ismail**, SZS Idrus, 'Extended Reality (XR) in Virtual Laboratories: A Review of Challenges and Future Training Directions', *Journal of Physics: Conference Series* 1874 (1), 012031.
- 2020 NAZ Rahman, **RC Ismail**, AHM Shapri, MN Isa, 'Enhancing fractal image compression speed using peer adjacent mapping with sum of absolute difference for computed radiography images', *AIP Conference Proceedings*, pp. 020011, 2020.
- 2020 NN Che Othaman, MN Md Isa, **RC Ismail**, MI Ahmad, CK Hui, 'Factors that affect soil electrical conductivity (EC) based system for smart farming application', *AIP Conference Proceedings*, pp. 020055, 2020.
- 2020 NAZ Rahman, **RC Ismail**, AHM Shapri, MN Isa, 'Peer adjacent mapping with optimum parameters for fractal image compression on medical images', *AIP Conference Proceedings*, pp. 020010, 2020.
- 2020 Premganesha Sugumaran, Siti Zarina Md Naziri, **Rizalafande Che Ismail**, 'Design and comparison of 8-bit hybrid and fixed point arithmetic unit', *AIP Conference Proceedings*, pp. 020060, 2020.
- 2020 MSSM Basir, **RC Ismail**, MNM Isa, 'A Novel Double Co-Transformation for a Simple and Memory Efficient Logarithmic Number System', *2020 IEEE International Conference on Semiconductor Electronics (ICSE)*, pp. 25-28, 2020.
- 2020 MSSM Basir, **RC Ismail**, SZM Naziri, MNM Isa, SAZ Murad, A Harun, 'Speed and Area Efficient FXP Adders and Multipliers: A Comparative Analysis for

- LNS System', IOP Conference Series: Materials Science and Engineering, pp. 012061, 2020.
- 2020 NAZ Rahman, **RC Ismail**, AHM Shapri, 'An Improved Irreversible Fractal Scheme for Medical Image Compression', IOP Conference Series: Materials Science and Engineering, pp. 012069, 2020.
- 2020 R Shuaimi, **RC Ismail**, MN Hazwan Hadzir, MNM Isa, AB Jambek, 'Investigation of Scribing Quality Defect of Thin Film Solar Cell Using Machine Vision', IOP Conference Series: Materials Science and Engineering, pp. 012060, 2020.
- 2020 CY Sheng, **RC Ismail**, SZM Naziri, MNM Isa, SAZ Murad, A Harun, 'Hybrid Floating Point/Logarithmic Number System Processor', IOP Conference Series: Materials Science and Engineering, pp. 012059, 2020.
- 2020 MSSM Basir, **RC Ismail**, SZM Naziri, 'An Investigation of Extended Co-Transformation using Second-Degree Interpolation for Logarithmic Number System', 2020 FORTEI-International Conference on Electrical Engineering (FORTEI-ICEE), pp. 59-63, 2020.
- 2019 MA Fadzilla, AB Shahrman, A Harun, MSM Hashim, ZM Razlan, WK Wan, Z Ibrahim, AH Abdullah, JSC Turner, KAA Kassim, MSA Khalid, Z Jawi, MHM Isa, **RC Ismail**, 'Integration of Asset Tracking System through Trilateration Method as Detection Mechanism', IOP Conference Series: Materials Science and Engineering, pp. 012038, 2019.
- 2019 JSC Turner, AB Shahrman, A Harun, MSM Hashim, ZM Razlan, WK Wan, Z Ibrahim, AH Abdullah, MA Fadzilla, KAA Kassim, MSA Khalid, Z Jawi, MHM Isa, SAZ Murad, **RC Ismail**, 'Effect of Roadways Plantation on Signal Propagation Analysis in Connected Autonomous Vehicle Communication', IOP Conference Series: Materials Science and Engineering, pp. 012056, 2019.
- 2018 NZ Muhammad, A Harun, SAZ Murad, AB Jambek, MNM Isa, SN Mohyar, **R.C Ismail**, HF Hawari, 'RTL platform validation of digital intellectual property (IP) of real time clock (RTC) for customized wireless microcontroller unit', AIP Conference Proceedings, pp. 020092, 2018.
- 2018 DS Nurdin, MNM Isa, **R.C Ismail**, MI Ahmad, 'High Performance Systolic Array Core Architecture Design for DNA Sequencer', MATEC Web of Conferences, pp. 06009, 2018.
- 2017 ASA Salam, MNM Isa, MI Ahmad, **R.C Ismail**, 'Comparison of edge detection techniques for M7 subtype Leukemic cell in terms of noise filters and threshold value', EPJ Web of Conferences, pp. 01074, 2017.
- 2017 DS Nurdin, MN Isa, **R.C Ismail**, MI Ahmad, 'Optimized Smith Waterman Processor Design for Breast Cancer Early Diagnosis', AIP Conference Proceedings 1885 (1), 020238, 2017.
- 2017 NA Azmi, SAZ Murad, A Harun, **R.C Ismail**, MNM Isa, MA Zulkifeli, 'Design of 5 V DC to 20 V DC Switching Regulator for Power Supply Module', AIP Conference Proceedings 1885 (1), 020249, 2017.
- 2016 R Shuaimi, **R.C Ismail**, MNM Isa, SAZ Murad, 'Machine vision for laser defect in PV solar modules', Electronic Design (ICED), 2016 3rd International Conference on, pp. 113-116, 2016.
- 2016 NA Azmi, **R.C Ismail**, SS Januar, SAZ Murad, MNM Isa, WY Lim, 'Design of DC high voltage and low current power supply using Cockroft-Walton (CW) voltage multiplier,' Electronic Design (ICED), 2016 3rd International Conference on, pp. 13-17, 2016.
- 2016 SZM Naziri, **R.C Ismail**, AYM Shakaff, 'Implementation of LNS addition and subtraction function with co-transformation in positive and negative region:

- A comparative analysis', Electronic Design (ICED), 2016 3rd International Conference on, pp. 1-6, 2016.
- 2016 Murad, SN Mohyar, M Mahyiddin, **R.C Ismail**, 'DNA sequence alignment: From algorithm to systolic architecture', Electronic Design (ICED), 2016 3rd International Conference on, pp. 304-308, 2016.
- 2016 MA Rosli, SAZ Murad, **R.C Ismail**, 'A 900-2400 MHz AC-DC Rectifier Circuit for Radio Frequency Energy Harvesting', MATEC Web of Conferences 78, 01096, 2016.
- 2016 SZM Naziri, **R.C Ismail**, AYM Shakaf, 'An Analysis of Interpolation Implementation for LNS Addition and Subtraction Function in Positive Region', International Conference on Computer & Communication Engineering, pp. 499-504, 2016.
- 2015 FA Bakar, SAZ Murad, **R.C Ismail**, M Isa, 'A 160 MHz gm-C low-pass filter design based on a lossy integrator synthesis', IEEE Student Conference on Research and Development (SCOREd), pp. 427-430, 2015.
- 2015 SZM Naziri, **R.C Ismail**, AYM Shakaff, 'Arithmetic addition and subtraction function of logarithmic number system in positive region: An investigation', IEEE Student Conference on Research and Development (SCOREd), pp. 447-450, 2015.
- 2015 B Ismail, SIS Hassan, MH Arshad, M Isa, **R.C Ismail**, MNKH Rohani. 'Application of PSO to determine the HEPWM switching angles of a three phase cascaded multilevel inverter', IEEE Student Conference on Research and Development (SCOREd), pp. 234-238, 2015.
- 2014 **R.C Ismail**, S.Z.M Naziri, S.A.Z Murad, J.N Coleman, 'An Analysis of FXP Adders and Multipliers for Speed and Area Efficient LNS Arithmetic Unit', 2nd International Conference on Electronic Design, pp. 238-243, 2014.
- 2014 AFM Razy, SZM Naziri, **R.C Ismail**, N Idris, 'Investigation and Design of the Efficient Hardware-Based RNG for Cryptographic Applications', 2nd International Conference on Electronic Design, pp. 255-260, 2014.
- 2014 A Azizan, SAZ Murad, **R.C Ismail**, MNM Yasin, 'A Review of LNA Topologies for Wireless Applications', 2nd International Conference on Electronic Design, pp. 320-324, 2014.
- 2014 MN Isa, SAZ Murad, **R.C Ismail**, MI Ahmad, AB Jambek, MK Kamil, 'An Efficient Processing Element Architecture for Pairwise Sequence Alignment', 2nd International Conference on Electronic Design, pp. 461-464, 2014.
- 2014 AB Jambek, **R.C Ismail**, SNS Baharudin, 'Design and Analysis of a Two-Stage OTA for Sensor Interface Circuit', IEEE Symposium on Computer applications & Industrial Electronics (ISCAIE), pp. 88-92, 2014.
- 2014 MN Isa, MI Ahmad, SAZ Murad, **R.C Ismail**, K Benkrid, 'Biological sequence alignments: A review of hardware accelerators and a new PE computing strategy', IEEE Region 10 Symposium, pp. 39-44, 2014.
- 2013 **R.C Ismail**, SAZ Murad, R Hussin, JN Coleman, 'Improved Subtraction Function for Logarithmic Number System', Elsevier Procedia Engineering 53, pp. 387-392, 2013.
- 2013 **R.C Ismail**, MK Zakaria, SAZ Murad, 'Hybrid logarithmic number system arithmetic unit: A review', IEEE International Conference on Circuits and Systems (ICCAS), pp. 55-58, 2013.
- 2013 V Retnasamy, Z Sauli, NIM Nor, M Palianysamy, **R.C Ismail**, OT Say, H Kamarudin, 'Different Shear Height Stress Evaluation on-0.7 Cu Based Lead Free Solder', Proceedings of the 2013 UKSim 15th International Conference on Computer Modelling and Simulation, pp. 317-320, 2013.

- 2013 Z Sauli, V Retnasamy, OT Say, S Taniselass, **R.C Ismail**, AKT Yeow, H Kamarudin, 'Shearing Speed Stress Comparison between Sn-3.9 Ag-0.6 Cu and Sn-3.5 Ag-0.7 Cu Solder Ball', Proceedings of the 2013 UKSim 15th International Conference on Computer Modelling and Simulation, pp. 321-324, 2013.
- 2013 Z Sauli, V Retnasamy, R Vairavan, **R.C Ismail**, N Khalid, MFC Husin, H Kamarudin, 'Stress and Temperature Simulation Using Copper-Diamond Composite Slug', Proceedings of the 2013 UKSim 15th International Conference on Computer Modelling and Simulation, pp. 299-303, 2013.
- 2013 R Vairavan, Z Sauli, V Retnasamy, **R.C Ismail**, NIM Nor, NS Nadzri, H Kamarudin, 'High Power LED Thermal and Stress Simulation on Copper Slug', Proceedings of the 2013 UKSim 15th International Conference on Computer Modelling and Simulation, pp. 294-298, 2013.
- 2012 R Hussin, **R.C Ismail**, E Murralli, A Kamarudin, 'Wireless Traffic Light Controller for Emergency Vehicle through XBee and Basic Stamp Microcontroller', Elsevier Procedia Engineering 41, pp. 636-642, 2012.
- 2012 R Hussin, MR Juhari, NW Kang, **R.C Ismail**, A Kamarudin, 'Digital Image Processing Techniques for Object Detection From Complex Background Image', Elsevier Procedia Engineering 41, pp. 340-344, 2012.
- 2012 **R.C Ismail**, R Hussin, SAZ Murad, 'Interpolator algorithms for approximating the LNS addition and subtraction: Design and analysis', IEEE International Conference on Circuits and Systems (ICCAS), pp. 174-179, 2012.
- 2012 SAZ Murad, MF Ahamd, MM Shahimin, **R.C Ismail**, KL Cheng, R Sapawi, 'High efficiency CMOS Class E power amplifier using 0.13 μm technology', IEEE Symposium on Wireless Technology and Applications (ISWTA), 85-88, 2012.
- 2011 **R.C Ismail**, JN Coleman, 'ROM-less LNS', IEEE Symposium on Computer Arithmetic (ARITH), 43-51, 2011.
- 2008 R Hussin, AYM Shakaff, N Idris, Z Sauli, **R.C Ismail**, A Kamarudin, 'An efficient modified booth multiplier architecture', International Conference on Electronic Design, pp. 1-4, 2008.
- 2007 R Hussin, AYM Shakaff, N Idris, Z Sauli, **R.C Ismail**, A Kamarudin, 'Redesign the 4: 2 compressor for partial product reduction', ACST'07: Proceedings of the 3rd IASTED Conference on Advances in Computer Science and Technology, pp. 54-57, 2007.
- 2006 R Hussin, A Yeon, N Shakaff, N Idris, **R.C Ismail**, A Kamarudin, 'Improved booth encoding for reduced area multiplier', IEEE International Conference on Semiconductor Electronics, pp. 773-775, 2006.
- 2006 **R.C Ismail**, R Hussin, 'High performance complex number multiplier using Booth-Wallace algorithm', IEEE International Conference on Semiconductor Electronics, pp.786-790, 2006.

SUPERVISION

POSTGRADUATE (GRADUATED)

- 2021 Mohd Suffyan, PhD, Double Co-transformation Subtraction Logarithmic Number System for ALU System, **Main Supervisor**.
- 2021 Rus Helmi Suhaimi, M.Sc (Research), Development of an Optical Vision System to Inspect TCO Glass and Yield Loss Reduction System, **Main Supervisor**.

2020	Siti Zarina Md Naziri, PhD, High Performance Logarithmic Number System for Encryption Algorithm Application, Main Supervisor .
2020	Nor Asilah bt Khairi, M.Sc (Research), High Performance of Arithmetic Coding Data Compression for Internet of Things (IoT), Co-supervisor .
2020	Wang Hang Suan, M.Sc (Research), Design and Analysis of Microcontroller System Using AMBA-Lite Bus, Co-supervisor .
2019	Dayana bt Saiful Nurdin, PhD, High Speed DNA Sequencing using FPGA, Co-supervisor .
2017	Faizah Abu Bakar, PhD, Development of a Wideband CMOS Continuous-time Active Filter in Wireless Receiver, Co-supervisor .
2017	Mohd Anuar Rosli, MSc (Research), AC-DC rectifier circuit based on complementary metal-oxide semiconductor for radio frequency energy harvesting system, Co-supervisor .
2016	Baharuddin Ismail, PhD, Design and Implementation of FPGA-based Control IC for Single Phase Inverter, Co-supervisor .
2016	Anishaziela Azizan, MSc (Research), Development of Low Power Receiver for Wireless Sensor Network Application, Co-supervisor .

POSTGRADUATE (ON-GOING)

PhD	Nor Azeani Abdul Rahman, Compression of Computed Radiography Images Using Fractal , Main Supervisor .
PhD	Ahmed Jamah Ahmed Alnagrat, Development of Semiconductor Fabrication Laboratory using AR/VR for Teaching and Trainings, Main Supervisor .
MSc	Mohd Aidil Faiz b Ismail, M.Sc (Research), e-PADI Monitoring System, Co-supervisor .

KEYNOTE/INVITED SPEAKER

2020	Research Ethics and Plagiarism, Albukhary International University, 2020.
2020	Forum Zakat Kewangan Islam 2.0, Jabatan Zakat Negeri Kedah, 2020.
2019	Forum Panelist, Modernized Library in the Era of IR4.0, Universiti Teknologi MARA, Kedah, 2019.
2018	Keynote Speaker, VLSI Design Implementation in IR4.0, Universiti Tun Hussein Onn Malaysia, Batu Pahat, 2018.
2018	Forum Panelist, Public-Private Dialogue Session in conjunction with SEMICON SEA, Malaysia International Trade & Exhibition Centre, KL, 2018.
2017	Keynote speaker, Industrial Revolution 4.0 vs Higher Education 4.0 in Malaysia Perspective, IEEE Circuit & System (CAS), Hotel Seri Malaysia, Kangar, 2017.
2015	Keynote Speaker, Electronic Green Materials International Conference, Why Logarithmic Number System is Better than Floating-Point, Surabaya Indonesia.
2015	Keynote Speaker, Academic Seminar: Seminar on Entrepreneur Goes To Campus: Explore Your Potential, University Ubudiyah Indonesia Aceh.
2014	Keynote Speaker, R&D Seminar: Making High Impact and International Indexing Research for Education, University Ubudiyah Indonesia Aceh.
2014	Keynote Speaker, International Seminar: The Leader of Change, University Ubudiyah Indonesia Aceh.

- 2014 Keynote Speaker, STEM (Science, Technology, Engineering and Mathematics) Workshop for Teachers, Terengganu.
- 2014 Keynote Speaker, STEM (Science, Technology, Engineering and Mathematics) Workshop for Teachers, Kedah.
- 2013 Keynote Speaker, R&D Seminar: Publishing in Articles Jurnal, Organized by Koordinasi Perguruan Tinggi Indonesia Cawangan Medan, Medan Indonesia.
- 2013 Icon Scientist Roadshow, organized by Malaysia Nuclear Agency (MINT).

EXTERNAL EXAMINER (POSTGRADUATE)

- 2022 Muhammad Tayyab, **PhD**, “Selective Harmonic Elimination in Multilevel Inverters Using Modified Teaching Learning Based Optimization Method”, Universiti Kuala Lumpur (UniKL).
- 2021 Robbi Rahim, **PhD**, “Enhancement of Security Key Distribution using Pohlig-Hellman Algorithm in Three Pass Protocol”, Universiti Malaysia Perlis.
- 2019 Nur Naeimah Jamalullail, **M.Sc**, “Enhancement of Energy Conversion Efficiency for Natural Fruit Dyes with Zinc Oxide Photoanode Based Dye Sensitized Solar Cell”, Universiti Malaysia Perlis.
- 2017 Jesline, **PhD**, “Intelligent Routing for Visual Sensor Networks Using Multiagents”, Anna University Chennai India.
- 2017 Mohd Hafiz Sulaiman, **M.Sc**, “Design of Fault Tolerant on Soft Core UTeMRISC Microcontroller”, Universiti Teknikal Malaysia Melaka.
- 2016 Tan Beng Ghee, **M.Sc**, “ An Efficient IP Reputation Lookup for Network Intrusion Detection System using Bloom Filter with Superfast Hash in 64-bit Computer”, Universiti Sains Malaysia.
- 2016 Azlina Hassan, **M.Sc**, “Investigation on Raindrop Impacts for Energy Harvesting”, Universiti Sains Malaysia.
- 2015 Ching Chee Chow, **M.Sc**, FPGA Based Accelerator fFor the Generation of Pseudo Amino Acid Composition, Universiti Sains Malaysia.
- 2014 G. Muneeswari, **PhD**, Designing and Measuring the Performance of Agent Based Scheduling and Load Balancing for Multicore Architecture, Anna University Chennai India.
- 2014 Mohd Ridzuan Khairulzaman, **M.Sc**, Signal Integrity Validation of Transmitted Eye Height Margin Between manual Bench Setup and Automation Setup Using Minimax, Universiti Sains Malaysia.
- 2014 Chang Ling Kwai, **M.Sc**, A Post-silicon BFM Modelling Approach on Audio IP Validation Using Code for Test Scheme Reuse and Sharing with Pre-silicon, Universiti Sains Malaysia.
- 2014 Lee Chee Keng, **M.Sc**, Function Verification Test Time Reduction through Behavioural Bus Function Model, Universiti Sains Malaysia.
- 2013 Arief Effendi, **M.Sc**, Low Power Video Compression and Algorithm, Universiti Malaysia Perlis.

AWARDS

- 2017 **GOLD Medal**, Portable Room Temperature Gas Sensor Utilizing r-GO, iENA 2017 Nuremberg Germany.

- 2016 **GOLD Medal**, High Performance DNA Sequencer for Early Stage Disease Diagnostics, IPITEX, Thailand.
- 2014 **GOLD Medal**, High Speed, Cost Effective and Accurate Arithmetic Unit using Logarithmic Number System for 3D Transformation Architecture, Seoul Innovation & Invention Exhibition (SIIF), Korea.
- 2014 **GOLD Medal**, High Performance Video Graphic Architecture using Hybrid LNS Algorithm, ITEX 2014, Kuala Lumpur.
- 2014 **GOLD Medal**, High Performance Video Graphic Architecture using Hybrid LNS Algorithm, Ekspo R&D UniMAP, Perlis.
- 2013 **Anugerah Khidmat Cemerlang**, Kategori Perkhidmatan Cemerlang 2013, Universiti Malaysia Perlis.
- 2013 **GOLD Medal**, Robotic Hand for Physiotherapy, Student Green Growth Invention Contest, Korea.
- 2013 **GOLD Medal**, High Speed, Cost Effective and Accurate Arithmetic Unit using Logarithmic Number System for 3D Transformation Architecture, Malaysia Technology Expo (MTE), Kuala Lumpur.
- 2013 **GOLD Medal**, Robotic Hand for Physiotherapy, Asian Young Inventors Exhibition, Kuala Lumpur.
- 2013 **SILVER Medal**, Mobile UniMAP Smart Card Reader, International Invention, Innovation and Technology Exhibition (ITEX), Kuala Lumpur.
- 2013 **SILVER Medal**, High Speed, Cost Effective and Accurate Arithmetic Unit using Logarithmic Number System for 3D Transformation Architecture, International Innovation & Invention Expo, Taiwan.
- 2013 **SILVER Medal**, High Performance Arithmetic Unit Using Logarithmic Number System for Video Graphic Architecture, PECIPTA, Kuala Lumpur.
- 2012 **Best Paper Award**, Malaysian Technical Universities Conference on Engineering and Technology (MUCET), Perlis.
- 2007 **Anugerah Khidmat Cemerlang**, Kategori Perkhidmatan Cemerlang 2007, Universiti Malaysia Perlis.
- 2007 **BRONZE Medal**, Intelligent Night Time Alert System and Third Brake System for Automotive Application, National Research Innovation Contest (NRIC), Penang.
- 2007 **SILVER Medal**, Development of MEMS Manifold Absolute Pressure Sensor Prototype, International Invention, Innovation and Technology Exhibition (ITEX), Kuala Lumpur.
- 2006 **GOLD Medal**, Design and Fabrication of MEMS Heatuator for Automotive Application, International Invention, Innovation and Technology Exhibition (ITEX), Kuala Lumpur.
- 2006 **BRONZE Medal**, Design and Fabrication of MEMS Microswitch for RF Application, International Invention, Innovation and Technology Exhibition (ITEX), Kuala Lumpur.

CONSULTATIONS

- 2022 **Committee Member**, Malaysia Quality Evaluation System for Private Colleges (MyQUEST), Ministry of Higher Education Malaysia (MOHE).
- 2019 **General Chair**, 4th International Conference on Electronic Green Materials (EGM 2019), Ho Chi Minh Vietnam.
- 2019 **General Chair**, 2nd International Conference on Applied Photonics and Electronics (INCAPE 2019), Putrajaya KL.

- 2018 **General Chair**, 4th International Conference on Electronic Green Materials (EGM 2018), Bandung Indonesia.
- 2018 **General Chair**, 4th International Conference on Electronic Design (ICED 2018), Melaka.
- 2017 **Coordinator**, IR4.0 Application in Inari Technology Manufacturing Line, Inari Technology, Penang.
- 2017 **General Chair**, 3rd International Conference on Electronic Green Materials (EGM 2017), Krabi Thailand.
- 2017 **General Chair**, 1st International Conference on Applied Photonics and Electronics (INCAPE 2017), Port Dickson.
- 2016 **General Chair**, 2nd International Conference on Electronic Green Materials (EGM 2016), Phuket Thailand.
- 2016 **General Chair**, 3rd International Conference on Electronic Design (ICED 2016), Phuket Island Thailand.
- 2015 **General Chair**, 1st International Conference on Electronic Green Materials (EGM 2015), Surabaya Indonesia.
- 2015 **Judge**, Expo Rekaipta UniMAP (EREKA), Universiti Malaysia Perlis.
- 2015 **Technical Program Committee**, International Symposium on Social Sciences, Arts and Humanities (SYSSARM 2015), Bali Indonesia.
- 2015 **Technical Program Committee**, 1st International Joint Conference Indonesia Malaysia Bangladesh Ireland (IJCIMBI 2015), Banda Aceh Indonesia.
- 2015 **Conference Chair**, 1st Electronic & Green Material International Conference, Surabaya Indonesia.
- 2014 **General Chair**, 2nd International Conference on Electronic Design (ICED 2014), Penang Malaysia.
- 2014 **Judge**, R&D Innovation Expo, Infrastructure University Kuala Lumpur.
- 2014 **Judge**, International Engineering Invention and Innovation Exhibition (i-ENVEX 2014), Universiti Malaysia Perlis.
- 2014 **Technical Program Committee**, Second International Workshops on Advances in VLSI Circuit Design and CAD Tools (AVCDCT – 2014), Delhi India.
- 2013 **Judge**, Exposition on Islamic Innovation (i-INNOVA 2013), University Islam Malaysia.
- 2013 **Judge**, International Engineering Invention and Innovation Exhibition (i-ENVEX 2013), University Malaysia Perlis.
- 2013 **Technical Advisor** for Innovation Club, Kolej Tunku Kurshiah Seremban Negeri Sembilan.