

CURRICULUM VITAE



DR. FAKHRUL ZAMAN ROKHANI

Department of Computer and Communication Systems Engineering,
Faculty of Engineering,
Universiti Putra Malaysia,
43400 UPM Serdang, Selangor

T: 03-8946 6436
F: 03-8656 7127
E: fzr@upm.edu.my

Education

1. PhD. Electrical Engineering, 2008, University of Minnesota USA
2. MSc. Electrical Engineering, 2004, University of Minnesota USA
3. B. S. Electrical-Mechatronics Engineering, 2002, Universiti Teknologi Malaysia.

Areas of Interest

1. Intelligent Computer and Embedded systems design
2. Nano-electronics VLSI design
3. Green, Low energy/power and fault-tolerant System/Network-on-Chip design
4. Interconnect design
5. Sensors for food quality

Professional Qualification/ Membership/ Affiliation

1. Editor-in-Chief, IEEE CASS Malaysia Chapter Newsletter 2015-2017
2. Chair, IEEE Consumer Electronics Malaysia Chapter 2014
3. Treasurer, IEEE Graduate of Last Decade Malaysia Chapter 2009-2010
4. Executive Committee, IEEE Circuits and Systems Malaysia Chapter 2009-2017
5. Member, Institute of Electrical and Electronics Engineers (IEEE)
6. Member, International Association of Engineers (IAENG)
7. Member, Golden Key International Honor Society
8. Graduate Member, Board of Engineers Malaysia (BEM)

Appointments

| Position | Duration |
|--|----------------------------|
| 1. Head of Computer and Embedded Systems Lab, Dept. of Comp & Comm. Sys. Eng., Faculty of Engineering, UPM | August 2009 to date |
| 2. Coordinator for Industry and Community Relation, Dept. of Comp & Comm. Sys. Eng., Faculty of Engineering, UPM | August 2011 to August 2018 |
| 3. Research Associate, Halal Product Research Institute, UPM. | September 2011 to date |
| 4. Research Associate, Institute of Advanced Technology, UPM. | September 2009 to date |
| 5. Visiting Lecturer, Al-Neelain University, Sudan | August 2012 to Aug 2012 |
| 6. Visiting Professor, Intel Microelectronics Penang Design Center. | June 2010 to July 2011 |
| 7. Visiting Scholar, ASIC State Key Lab, Fudan University, China. | March 2010 to March 2010 |
| 8. Head of Common Software Lab, Faculty of | August 2009 to July 2011 |



Engineering, UPM

- | | |
|--|-------------------------------|
| 9. Senior Lecturer, Faculty of Engineering, UPM | December 2008 to date |
| 10. Research Assistant, VLSI System Design Group, University of Minnesota, USA | March 2005 to November 2008 |
| 11. Research Assistant, Multi-rate Signal Processing Group, University of Minnesota, USA | January 2003 to October 2004 |
| 12. Application Design Engineer Trainee, MIMOS Sdn. Bhd. | October 2001 to December 2001 |
| 13. Tutor, Faculty of Engineering, UPM | December 2001 December 2008 |
| 14. Research Assistant, Digital Signal Processing Implementation Group, Faculty of Electrical Engineering, UTM | July 2000 to October 2001 |

Publications

Journals (30 recent journals)

1. N. Alsaedi, F. hashim, A. Sali, F. Z. Rokhani, "Detecting Sybil Attacks in Clustered Wireless Sensor Networks Based on Energy Trust System (ETS)," Elsevier Computer Communications, 2017
2. S. F. Mahmood , M. H. Marhaban, **F. Z. Rokhani**, K. Shamsudin, O. A. Arigbabu, "FASTA-ELM: A fast adaptive shrinkage/thresholding algorithm for extreme learning machine and its application to gender recognition," Neurocomputing, Vol. 219, pp. 312-322, 2016
3. Wameedh N. Flayyih, K. Samsudin, S. J. Hashim, Yehea I. Ismail, **F. Z. Rokhani**, "Adaptive Multi-bit Crosstalk-Aware Error Control Coding Scheme for On-Chip Communication," "IEEE Transaction on Circuits and Systems II. Vol. 63, Issue 2, pp. 166-170, 2016
4. W. N. Flayyih, **F. Z. Rokhani**, "Shielding and Duplication for Adaptive Crosstalk-Aware Error Control Coding in On-Chip Communication." International Journal of Computing Academic Research (IJCAR), Vol. 5 (3) pp. 133-142, 2016
5. S. F. Mahmood , M. H. Marhaban, **F. Z. Rokhani**, K. Shamsudin, O. A. Arigbabu, "SVM-ELM: Pruning of Extreme Learning Machine with Support Vector Machines for Regression, Vol. 25, Issue 4, pp. 555-566, 2016
6. K. Hamdan, S. Abd Aziz, **F. Z. Rokhani**, A. Yahya and B. L. Steward. "Detection of Sludge Contamination in Crude Palm Oil Using Dielectric Spectroscopy." Transactions of ASABE, Vol. 58, Issue 2, pp. 227-232, 2015
7. A. Y. Khaled, S. Abd Aziz, **F. Z. Rokhani**. "Capacitive Sensor Probe to Assess Frying Oil Degradation." Information Processing in Agriculture, pp. 142-148, 2015
8. S. Ahmed, K. Shamsuddin, A. R. Ramli, **F. Z. Rokhani**, "Advanced Encryption Standard-XTS Implementation in Field Programmable Gate Array Hardware." Security and Communication Networks Vol. 8, Issue 3, pp. 516-522, 2015
9. A. Y. Khaled, S.A. Aziz, **F. Z. Rokhani**, "Development and Evaluation of an Impedance Spectroscopy Sensor to Assess Cooking Oil Quality." International Journal of Environmental Science and Development, Vol. 5, Issue 3, pp. 299, 2014
10. R. A. Ahmed, K. Samsudin, **F. Z. Rokhani**, "A Framework for System Dependability Validity Under The Influence of Intrinsic Parameters Fluctuation." International Journal of Software Engineering and its Application, Vol. 8, Issue 3, pp. 233-250, 2014
11. Wameedh N. Flayyih, K. Samsudin, S. J. Hashim, **F. Z. Rokhani**, Yehea I. Ismail, "Crosstalk-Aware Multiple Error Detection Scheme Based on Two-Dimensional Parities for Energy Efficient Network on Chip, " Published in IEEE Transaction on Circuits and Systems I, pp.1-14, 2014
12. R. Shokrani, M. N. Hamidon, N. A. Kamsani, **F. Z. Rokhani**, S. Shafie, "An RF Energy Harvester System using UHF Micro-power CMOS Rectifier based on a Diode Connected CMOS Transistor," Hindawi World Scientific Journal, 2014
13. S. Ahmed, K. Samsudin, A. R. Ramli, **F. Z. Rokhani**, "An Effective Storage Encryption Solution," Indian Journal of Science & Technology, Vol. 6, Issue. 4, pp. 4383-4389, 2013
14. M. H. Azmi, **F. Z. Rokhani**, R. S. A. R. Abdullah, M. I. Saripan, "Improving The Quality of Pigskin Leather Texture Images Using Enhanced Image Processing." Scientific Research and Essays, Vol. 7(12) pg 134-1311, 2012
15. J. Hossen, A. Rahman, S. Sayeed, K. Samsuddin, **F. Rokhani**, "A modified hybrid fuzzy clustering algorithm for data partitions," Australian Journal of Basic and Applied Sciences, Vol 5, Issue 8, pp.674-681, 2011

16. J. Hossen, A. Rahman, K. Shamsudin, **F. Z. Rokhani**, S. Sayeed, R. Hassan, "A Novel Modified Adaptive Fuzzy Inference Engine And Its Application To Pattern Classification." World Academy of Science, Engineering and Technology, Vol. 75, pp. 1201-1207, 2011
17. K. Hamdan, S. Abd Aziz, **F. Z. Rokhani**. "The Effect Of Temperature On Dielectric Properties of Crude Palm Oil at Radio Frequencies," International Journal of Engineering and Technologies Vol. 8, Issue 1, pp. 21-24, 2011.
18. **F.Z. Rokhani**, and G.E. Sobelman, "Bus Energy Consumption for Multilevel Signals," IEEE Trans. Circuits and Systems I, Vol. 57, No. 1, pp. 64-71, Jan. 2010
19. **F.Z. Rokhani**, W-C. Kan, J.C. Kieffer, and G.E. Sobelman, "Optimality of Bus-Invert Coding," IEEE Trans. Circuits and Systems II, Vol. 55, No. 11, pp. 1-5, Nov. 2008

Conference Proceedings (30 recent Conference Proceedings)

1. N Ahmad, MI Saripan, MH Marhaban, **FZ Rokhani**, WHM Saad. "Determining the ultrasound time of response using FPGA-based electronics read-out," IEEE EMBS Conference on Biomedical Engineering and Sciences (IECBES), pp. 769 -773, 2016.
2. H. N. M. Azami; C. H. C. Lah; M. A. Sairin; S. A. M. Zobir; **F. Z. Rokhani**; S. Abdul Rashid; A. S. M. Noor, "Fluorescence dynamics of graphene quantum dots for detecting lard substance," Proc. 2016 IEEE 6th International Conference on Photonics (ICP), pp. 1-3, 2016
3. M. A. Sairin, N. N Nizar, S. Abd Aziz, D.M. Hashim, **F. Z. Rokhani**. Potential of Dielectric Spectroscopy Measurement for Lard Detection. 9th International Conference on Sensing Technology, ICST 2015, pp. 722-727, 2016.
4. FF Zakaria, N Latif, SJ Hashim, P Ehkan, **FZ Rokhani**, "Cooperative virtual channel router for adaptive hardwired FPGA network-on-chip," 2016 IEEE Asia Pacific Conference on Circuits and Systems (APCCAS), pp. 358-361, 2016
5. F. Mohamad, M. A. Sairin, N. N. A. Nizar, S. Abd Aziz, D. M. Hashim, S. Misbahulmunir, **F. Z. Rokhani**. "Investigation on Interdigitated Electrode Design for Impedance Spectroscopy Technique Targeting Lard Detection Application." 9th International Conference on Sensing Technology, ICST 2015, pp. 739-744, 2016.
6. L. Sivaraj, N. A. M. Yunus, M. N. Mohtar, S. Abd Aziz, Z. Z. Abidin, M. I. Saripan, **F. Z. Rokhani**, "Portable Biosensor for Chronic Malaria Detection." 17th International Symposium on Quality Electronic Design, ISQED 2016, pp. 248-251, 25 May 2016
7. Tan Chee Phang; Mohammad Harris Mokhtar; Mohd Nazim Mokhtar; **Fakhrul Zaman Rokhani**, "Time-Division Multiple Access Based Intra-Body Communication for Wearable Health Tracker," Proc. 2016 17th International Symposium on Quality Electronic Design (ISQED), pp. 468-472, 2016
8. H. N. M. Azami; C. H. C. Lah; M. A. Sairin; S. A. M. Zobir; **F. Z. Rokhani**; S. Abdul Rashid; A. S. M. Noor, "Fluorescence dynamics of graphene quantum dots for detecting lard substance," Proc. 2016 IEEE 6th International Conference on Photonics (ICP), pp. 1-3, 2016
9. A. Y. Khaled, S. Abd Aziz, **F. Z. Rokhani**, W. I. W. Ismail. "Capacitive Sensing System for Frying Oil Assessment During Heating". Proceedings of 2015 IEEE International Conference on Circuit and System, pp. 137-141, 2015
10. S. Rahimpour, W. N. Flayyih, N. A. Kamsani, M. Stan, **F. Z. Rokhani**, "Investigating The Impact of On-Chip Interconnection Noise on Dynamic Thermal Management Efficiency," International Conference on Circuits and Systems (ICSYS 2015), September 2015
11. Y.W. Lim, S. J. Hashim, R. M. Sidek, N. A. Kamsani, **F. Z. Rokhani**, "Reduced Hardware Architecture for Energy Efficient IoT Healthcare Sensor Nodes," International Conference on Circuits and Systems (ICSYS 2015), September 2015
12. F. Mohammed, S. B. Daas, R. M. Sidek, **F. Z. Rokhani**, "PrimeTime Web-based Report Analyzer (PTWRA) Tool," 6th Asia Symposium on Quality Electronic Design (ASQED 2015)
13. J. K. Al-Frajat, W. N. Flayyih, R. M. Sidek, K. Samsudin, **F. Z. Rokhani**, "Area Efficient Test Circuit For Library Standard Cell Qualification," 5th Annual International Conference on Energy Aware Computing Systems and Applications (ICEAC 2015)
14. C. -L. Lee, R. M. Sidek, **F. Z. Rokhani**, N. Sulaiman, "A Low Power Bandgap Voltage Reference for Low-Dropout Regulator." RSM 2015 – 2015 IEEE Regional Symposium on Micro and Nano Electronics, Proceedings, 7354986, 2015
15. A. Y. Khaled, S.A. Aziz, **F. Z. Rokhani**, "Impedance Sensor Probe for Degradation Assessment of Cooking Oil." The European Society of Agricultural Engineering (EurArgEng), pg. 1-7, 2014
16. F. M. Jumaah, S.J. hashim, R.M. Sidek, **F. Z. Rokhani**, "Low Power GPS Baseband Receiver Design," Proc. of International Conference on Energy Aware Computing Systems & Applications (ICEAC), pp. 65-68, 2013

17. Y. Hoon, N.A. Kamsani, R.M. Sidek, N. Sulaiman, **F. Z. Rokhani**, "Energy Efficient 8-bit Microprocessor for Wireless Sensor Network Applications," Proc. of International Conference on Energy Aware Computing Systems & Applications (ICEAC), pp. 147-151, 2013
18. SF Md Ali, D Xianling, AS Muhammad Noor, **F. Z. Rokhani**, S Hashim, MI Saripan, "Modeling of light photons detection in scintillation camera," Proc. of 2013 IEEE International Conference on Signal and Image Processing Applications (ICSIPA), pp. 15-19, 2013
19. W.N. Flayyih, K. Samsudin, S.J. Hashim, **F.Z. Rokhani**, Y.I. Ismail, "Improved Undetected Error Probability Model for JTEC and JTEC-SQED Coding Schemes," Proc. of International Conference on Circuits and Systems (ICCAS), pp. 27-32, 2013
20. Abtahi Forooshani, A., **Rokhani, F. Z.**, Sidek, R. M., & Halin, I. A. "Dynamic Noise Analysis for 4-PAM Signaling Scheme," 2012 IEEE 16th International Symposium on Consumer Electronics (ISCE), pp. 1-5, 2012
21. S. Rahimipour, W.N. Flayyih, I. El-Azhary, S. Shafie, **F.Z. Rokhani**, "A Survey of On-Chip Monitors," Proc. of International Conference on Circuits and Systems, pp. 243-248, 2012
22. N. Ahmad, N.M. Ilis, W.H.M. Saad, M.I. Saripan, H. Masoumi, **F.Z. Rokhani**, M.H. Marhaban, "Preliminary study of ultrasonic transducer characteristic on the breast surface," Proc. of EMBS Conference on Biomedical Engineering and Sciences (IECBES), pp. 544-549, 2012
23. A.A. Forooshani, **F.Z. Rokhani**, "Addressing Fault Tolerance in 4-PAM Signaling by Using Block Codes for On-chip Communication," Proc. International Conference on ASIC (ASICON), 2011
24. A.A. Forooshani, **F. Z. Rokhani**, K. Samsudin, H. Behzadipour, "Power-Reliability Tradeoff in Low Power 4-PAM Signaling in On-Chip Communication," Proc. Asia Symposium of Quality Electronic Design (ASQED), pp.109-114, 2011
25. N. Nasrudin, N.M. Ilis, Tan, P.J., Tan, T.K.C., Loo, W.Z., **F.Z. Rokhani**, "Analysis of the Light Dependent Resistor Configuration for Line Tracking Robot Application," Proceedings of International Colloquium on Signal Processing (CSPA), 2011
26. A.A. Mohd. Bazir, K.F. Ramli, N.S. Ibrahim, Lim, Y.P., **F.Z. Rokhani**, "Mobile Robot Guidance using Light Dependant Resistor Device," Proceedings of International Colloquium on Signal Processing (CSPA), 2011
27. S. Sayeed, J. Hossen, A. Rahman, K. Samsudin, **F. Rokhani**, "A hybrid-based modified adaptive fuzzy inference engine for pattern classification", Proc. International Conference on Hybrid Intelligent System (HIS), pp. 295-300, 2011
28. S. Ahmed, K. Samsudin, A.R. Ramli, **F.Z. Rokhani**, "Effective implementation of AES-XTS on FPGA," Proc. Region 10 Annual International Conference (TENCON), pp. 184-186, 2011
29. M-Y. Ching, Ang T.B., Kok Y.C., **F.Z. Rokhani**, "Interconnect Area, Delay and Area-Delay Optimization for Multi-level Signaling On-Chip Bus," Proc. Asia Pacific Conference on Circuits and Systems, pp. 1274-1277, Dec. 2010
30. A. A. Forooshani, **F. Z. Rokhani**, K. Samsudin, S. Abd Aziz. "A process variation aware system-level framework to model on-chip communication system in support of fault tolerant analysis." Proceedings of IEEE Student Conference on Research and Development (SCoReD 2009), pp. 97-100, 2009

Books (If any)

1. Maryam Md Isa, **Fakhrul Zaman Rokhani**, Nurul Amziah Md Yunus and Amin Mazaheri, Proceedings of the 2015 IEEE International Circuits and Systems Symposium (ICSyS), IEEE, 2015. ISBN 978-1-4799-1731-0.
2. Nurul Amziah Mohd Yunus, **Fakhrul Zaman Rokhani**, Wameedh Nazar Fayyih, Proceedings of the 2014 IEEE International Conference on Circuits and Systems (ICCAS), IEEE, 2014. ISBN 978-1-4799-1337-4.
3. **Fakhrul Zaman Rokhani**, Maryam Mohd Isa, Nor Ain Kamsani, Wameedh Nazar Flayyih, Proceedings of the 2012 IEEE International Conference on Circuits and Systems (ICCAS), IEEE, 2012. ISBN 978-1-4673-3118-0.
4. Siti Anom Ahmad, Azura Che Soh, **Fakhrul Zaman Rokhani**, Haslina Jaafar, Proceedings of Asia-Pacific Conference on Circuits and Systems (APCCAS 2010), IEEE, 2010. ISBN 978-1-4244-7455-4.
5. Nor Kamariah Nordin, Borhanuddin Mohd Ali, M. Iqbal Saripan, **Fakhrul Zaman Rokhani**, Mohd Fadlee A. Rasid, Khairulmizam Samsudin and Syamsiah Mashohor, Proceeding of 2nd World Engineering Congress: Information and Communication Technology (ICT), Universiti Putra Malaysia, 2002. ISBN 967-960-138-

Chapter in Books (If any)

1. Masyitah Amat Sairin, Samsuzana Abd Aziz, Nina Naquiah Ahmad Nizar, Nurul Adilah Abdul Latiff, Alyani Ismail, Dzulkifly Mat Hashim, **Fakhrul Zaman Rokhani**. Lard Detection in Edible Oil Using Dielectric Spectroscopy. *Sensors for Everyday Life: Smart Sensors, Measurement and Instrumentation*, Springer International Publishing, 2017 Vol 23: 245-271

Patent (If any)

1. Masyitah Amat Sairin, Samsuzana Abd Aziz, Nina Naquiah Ahmad Nizar, Dzulkifly Mat Hashim, **Fakhrul Zaman Rokhani**. A Device for Identifying Source of Fat, A System and A Method Thereof, PI 2015702503, 2015 (patent filed)

Research Grants

| No | Project Title | Amount (RM) | Year | Source of Fund |
|-----|--|-------------|-----------|---------------------------------|
| 1. | Determination of Essential Fatty Acids (Lipids) in Plant and Animal via LCMS/MS | 200,00 | 2017-2018 | JAKIM |
| 2. | Integrated Hardware / Software Co-Design Methodology for Automotive Grade Engine Control Unit (ECU) System-on-Chip | 854,947 | 2015-2018 | CREST Sdn Bhd, FSR Tech Sdn Bhd |
| 3. | Modeling and Cross-layer Power Optimization in Standard Cell Library Design for System-on-Chip Application | 1,053,000 | 2014-2017 | CREST Sdn Bhd, Silterra Sdn Bhd |
| 4. | Spectral Permittivity Characterization targeting Fatty Acid Methyl Ester Composition for Lard Detection in Edible Oils | 153,400 | 2014-2016 | FRGS, MOHE |
| 5. | Advanced IC Design Project | 15,000 | 2012-2014 | Symmid Corp |
| 6. | Standard Cell Library Validation on Timing and Power for Silterra 130nm LP Process | 180,000 | 2012-2014 | Silterra Sdn. Bhd. |
| 7. | Implementation of Current Source Model in Statistical Static Timing Analysis | 25,000 | 2012-2014 | RUGS, UPM |
| 8. | Matching Grant UPM-Texas Instrument Malaysia | 100,000 | 2012 | RUGS, UPM |
| 9. | Effectiveness of Industry-Oriented Education (IOE) in Closing Student Competency Gap for High-Pace Electronics Industry | 20,000 | 2012-2014 | CADE, UPM |
| 10. | Development of High Speed Electronics Read Outs for Highly Sensitive Mobile Gamma Camera in Breast Cancer Imaging System | 403,000 | 2011-2013 | Sciencefund, MOSTI |
| 11. | UPM-Intel Malaysia VLSI and System-on-Chip (SoC) Research and Education | 243,750 | 2011-2013 | Intel, RUGS, UPM |
| 12. | Development and Evaluation of a Prototype Sensor for In-Situ Assessment of Cooking Oil Quality | 50,000 | 2012-2014 | PRGS, MOHE |
| 13. | Novel Coding Techniques for Power-Efficient Multilevel Signal Off-Chip Bus | 30,000 | 2009-2011 | RUGS, UPM |
| 14. | Multi-frequency Dielectric Sensing for Palm Oil Contamination Detection | 150,000 | 2009-2011 | RUGS, UPM |

Awards/Recognition (Current)

| Num | Name of awards | Title | Award Authority | Award Type | Year |
|-----|----------------|--|--------------------------------|---------------|------|
| 1. | Bronze Medal | Real-Time Early Detection of Heart Disease (Arrhythmia) by | PRPI Universiti Putra Malaysia | International | 2016 |

| | | | | | |
|-----|---|---|--|---------------|------|
| | | ECG Signals Employing a Novel Time- Frequency Technique | | | |
| 2. | 3 rd runner up | Automated Cell Library Creation for Extreme Energy Efficient IoT Devices (ExCellEnt) | Innovate Malaysia Competition (Silterra/CEDEC Track) | National | 2016 |
| 3. | FYP Innovation Award | Near-threshold Standard Cell Library design for Energy-Efficient System | IEEE Circuits and Systems Malaysia Chapter | International | 2016 |
| 4. | International Networking Travelling Grant (Taiwan) | International Networking Travelling Grant (Taiwan) | IEEE Circuits and Systems Malaysia Chapter | International | 2015 |
| 5. | International Networking Travelling Grant (Japan) | International Networking Travelling Grant (Japan) | IEEE Circuits and Systems Malaysia Chapter | International | 2015 |
| 6. | Silver Medal | Lard Detection Based on Impedance Spectroscopy | Bioinnovation Award, Malaysian Association of Research Scientist | National | 2015 |
| 7. | FYP Innovation Award (Gold) | Lard Detection Sensor System | IEEE Consumer Electronics Malaysia Chapter | International | 2015 |
| 8. | Outstanding MSc Dissertation Award | Cost-Efficient Standard Cell Library Timing and Power Validation Techniques | IEEE Circuits and Systems Malaysia Chapter | International | 2015 |
| 9. | Mevlana program | Mevlana Program Turkey | Mevlana Turkey | International | 2015 |
| 10. | International Travelling Grant (US) | Intel Embedded Research and Education Summit | Intel Corp. and UPM | International | 2015 |
| 11. | International Travelling Grant (Korea) | International Travelling Grant (Korea) | IEEE Circuits and Systems Malaysia Chapter | International | 2014 |
| 12. | International Travelling Grant (Taiwan) | Intel Asia Innovation Summit | Intel Corp. and UPM | International | 2014 |
| 13. | PhD Distinction (Supervisor) | PhD Distinction (Supervisor) | Universiti Putra Malaysia | National | 2014 |
| 14. | Outstanding PhD Dissertation Award | Crosstalk-Aware Error Control Coding Techniques for Reliable and Energy Efficient Network on Chip | IEEE Circuits and Systems Malaysia Chapter | International | 2014 |

| | | | | | |
|-----|--|--|---|---------------|------------|
| 15. | Gold Medal | Adaptation of Kirkpatrick's Return of Expectation (ROE) Framework to Improve the Effectiveness of Engineering Education for High Technology Microelectronic Industry | Innovative Practices in Higher Education Expo (i-Phex), UTM | International | 2014 |
| 16. | Gold Medal | Development of Cooking Oil Quality Sensor | EYReC recognised as Malaysia Invention & Design Society (MINDS) at International Engineering Invention and Innovation Exhibition (i-ENVEX). Intel Corp. and UPM | International | 2014 |
| 17. | International Travelling Grant (China) | Intel China Academic Forum | | International | 2013 |
| 18. | 2 nd runner up | Development of 130nm Silterra Low Power Process Standard Cell Library | Innovate Malaysia Competition (Silterra/CEDEC Track) | National | 2012 |
| 19. | International Travel Support | Young Faculty Workshop | DAC, ACM/Special Interest Group on Design Automation, IEEE/ Council on Electronic Design Automation, Semiconductor Research Corporation and the National Science Foundation | International | 2012 |
| 20. | Level-1 TRIZ Practitioner | Level-1 TRIZ Practitioner | International TRIZ Association | International | 2012 |
| 21. | SRA Award | | Intel Corp. | International | 2010, 2011 |
| 22. | Kudos Award | | Intel Corp. | International | 2010, 2011 |
| 23. | International Travelling Grant (China) | International Travelling Grant (China) | Fudan University | International | 2010 |
| 24. | Excellent Service Award | Excellent Service Award | Universiti Putra Malaysia | National | 2012-2016 |

Consultation

| No | Year | Title | Authority | Amount |
|----|------|---|--|---------|
| 1. | 2013 | Quadcopter Design | Depitome Sdn. Bhd. | RM4,500 |
| 2. | 2009 | Kajian Kesediaan Penggunaan Teknologi Sensor. | Ministry of Water, Energy, and Communication | RM2,000 |
| 3. | 2009 | Embedded Systems Design | UPM Holdings | RM1000 |

Professional Services

| No | Role | Title | Year |
|------------------------------------|--|---|------------|
| Editorial Board | | | |
| 1. | Editor-in-Chief | IEEE CASS Malaysia Chapter Newsletter | 2015-2017 |
| 2. | Associate Editor | IEEE CASS Society Newsletter | 2016-2017 |
| 3. | Editor | ICSys Conference | 2015 |
| 4. | Editor | ICCAS Conference | 2012, 2014 |
| 5. | Editor | APCCAS Conference | 2010 |
| 6. | Editor | WEC Conference | 2002 |
| Speaker/ Chairman/ Panelist | | | |
| 1. | Executive Committee | IEEE Circuits and Systems (CASS) Malaysia Chapter | 2017 |
| 2. | Executive Committee | IEEE Circuits and Systems (CASS) Malaysia Chapter | 2016 |
| 3. | Global Representative | ISQED Conference (representing Malaysia) | 2016 |
| 4. | Chair | ASQED University Committee | 2015 |
| 5. | Evaluator | Microelectronics Olympiad 2015 | 2015 |
| 6. | Conference Session Chair | ASQED'15 | 2015 |
| 7. | Conference Finance Chair | ICSys'15 | 2015 |
| 8. | Executive Committee | IEEE Circuits and Systems (CAS) Malaysia Chapter | 2015 |
| 9. | Conference Session Chair | Tensymp'14 | 2014 |
| 10. | Chairman | IEEE Consumer Electronic (CE) Malaysia Chapter | 2014 |
| 11. | Executive Committee | IEEE Circuits and Systems (CASS) Malaysia Chapter | 2014 |
| 12. | Vice-Chairman | IEEE Consumer Electronic (CE) Malaysia Chapter | 2013 |
| 13. | Conference Session Chair | ICCAS'13 | 2013 |
| 14. | Conference Technical Program Committee | ICCAS'13 | 2013 |
| 15. | Executive Committee | IEEE Circuits and Systems (CASS) Malaysia Chapter | 2013 |
| 16. | Executive Committee | IEEE Circuits and Systems (CASS) Malaysia Chapter | 2012 |
| 17. | Conference Session Chair | ICCAS'12 | 2012 |
| 18. | Conference Session Chair | RSET'11 | 2011 |
| 19. | Treasurer | IEEE Graduate of Last Decade (GOLD) Malaysia Section 2011 | 2011 |
| 20. | Executive Committee | IEEE Circuits and Systems (CASS) Malaysia Chapter | 2011 |



| | | | |
|-----|---|--|------|
| 21. | Technical Program Chairman | Intelligent Systems and Information Technology Symposium 2010 (ISITS 2010) | 2010 |
| 22. | Steering Committee | University Committee ASQED'15 | 2015 |
| 23. | Chairman | University Committee ASQED'15 | 2015 |
| 24. | Conference Publication Chairman | Asia Pacific Conference on Circuits and Systems 2010 (APCCAS 2010) | 2010 |
| 25. | Treasurer | IEEE Graduate of Last Decade (GOLD) Malaysia Section 2010 | 2010 |
| 26. | Conference Technical Program Committee | APCCAS'10 | 2010 |
| 27. | Conference Technical Program Committee | WEC'10 | 2010 |
| 28. | Conference Session Chair | IEEE GOLD Colloquium'10 | 2010 |
| 29. | Conference Local Arrangement Committee: | ASQED'10 | 2010 |
| 30. | Executive Committee | IEEE Circuits and Systems (CASS) Malaysia Chapter | 2010 |
| 31. | Executive Committee | IEEE Circuits and Systems (CASS) Malaysia Chapter | 2009 |
| 32. | Treasurer | IEEE Graduate of Last Decade (GOLD) Malaysia Section 2009 | 2009 |
| 33. | Conference Session Chair | ASQED'09 | 2009 |
| 34. | Conference Technical Program Committee | ASQED'09 | 2009 |
| 35. | Conference Technical Program Committee | ISIEA'09 | 2009 |
| 36. | Conference Local Arrangement Committee | ASQED'09 | 2009 |
| 37. | Conference Session Chair | SCORED'09 | 2009 |
| 38. | Technical Committee Secretary | IEEE Student Conference on Research and Development (SCORED) 2009. | 2009 |
| 39. | Leader | Bidding team for APCCAS'10 conference | 2008 |
| 40. | Conference Technical Program Committee | WEC'02 | 2002 |

Reviewer

| | | | |
|----|------------------|-----------------------------------|-----------|
| 1. | Journal Reviewer | Elsevier VLSI Integration Journal | 2017 |
| 2. | Journal Reviewer | IET Circuits, Devices and Systems | 2016-2017 |
| 3. | Journal Reviewer | IEEE Trans. Circuits & Systems II | 2016 |
| 4. | Journal Reviewer | UTM Journal of Technology | 2015 |



| | | | |
|-----|---------------------|-----------------------------------|------|
| 5. | Conference Reviewer | ASQED'15 | 2015 |
| 6. | Conference Reviewer | ICCAS'12 | 2012 |
| 7. | Conference Reviewer | TISC'11 | 2011 |
| 8. | Conference Reviewer | ICEDSA'11 | 2011 |
| 9. | Conference Reviewer | APCASS'10 | 2010 |
| 10. | Conference Reviewer | WEC'10 | 2010 |
| 11. | Conference Reviewer | SCORed'09 | 2009 |
| 12. | Conference Reviewer | MICC'10 | |
| 13. | Conference Reviewer | ISIEA'09 | |
| 14. | Conference Reviewer | ASQED'09 | 2009 |
| 15. | Conference Reviewer | ISCAS'06 | |
| 16. | Book Reviewer | Bentham Science Publisher (2009). | 2009 |

Student Supervision

PhD (Main Supervisor)

| No. | Name | Title | Status |
|-----|-----------------------------------|---|-----------|
| 1. | Wameedh Nazar Flayyih (GS27690) | Crosstalk Aware Error Control Coding Techniques for Reliable and Energy Efficient Network on Chip | Graduated |
| 2. | Somayah Rahimi Pour (GS32330) | Reliability of Dynamic Thermal Management and C4 Bumps in Multi-core Processor Chips | Ongoing |
| 3. | Fazrul Faiz bin Zakaria (GS38768) | Addressing Congestion and Fault-Tolerant in Network-on-Chip System | Ongoing |
| 4. | Lim Yang Wei (GS41428) | Cross-Layer Power Optimization in Standard Cell Library Design for System-on-Chip Application | Ongoing |

MS with thesis (Main Supervisor)

| No. | Name | Title | Status |
|-----|--|---|-----------|
| 1. | Arash Abtahi Forooshani (GS23168) | On-Chip Communication System Modeling Approach for Reliability Analysis Focusing on Functional Failures | Graduated |
| 2. | Fawaz Mohammed Jumaah (GS32327) | Power Management Controller for Low Power Global Positioning System Baseband Receivers | Graduated |
| 3. | Jaafar Khadair Kadam Al-Frajat (GS29342) | Cost-Efficient Standard Cell Library Timing and Power Validation Techniques | Graduated |
| 4. | Lalitha.S (GS32991) | Development of Microweir Strcture by Lithographic Fabrication Process for Malaria Cell Separation | Graduated |
| 5. | Farid Jamialahmadi (GS32288) | On the Standard Cell Library Characterization Using Non-Linear Power Models | Ongoing |
| 6. | Seyedhossein Masoumidezfouli (GS30876) | Finite State Machine Multi-partitioning for Low Power Digital Design | Ongoing |
| 7. | Tan Chee Phang (GS41431) | New Microprocessor Training Board to Teach Assembly Language Programming for Modern Computing Systems | Ongoing |
| 8. | Masyitah binti Amat Sairin (GS42354) | Dielectric Spectroscopy for Lard Detection in Halal Application | Ongoing |