Dr. JASMINE HAU YUAN WEN

+(60)7-5558498 hauyuanwen@biomedical.utm.my

Academic Qualifications

2010-2011 **Post Doctoral Fellowship,** Ministry of Science, Technology and Innovation and Universiti Teknologi Malaysia.
Research: Network-on-Chip (NoC) Simulation Framework for Heterogeneous Multi-Processor System-on-Chip (MPSoC)

2006-2009 **Doctor of Philosophy (Ph. D) with Merit**, Universiti Teknologi Malaysia.
Thesis: SystemC-based Design Framework for an Embedded System implemented as System-on-Chip

2003-2005 **Master of Engineering (Electrical Engineering)**. Universiti Teknologi Malaysia.
Thesis: An Embedded Cryptosystem implementing Symmetric Cipher and Public-Key Crypto Algorithms in Hardware

1999-2003 **Bachelor of Computer Engineering with Second Upper Class Honours (CPA = 3.66)**, Universiti Teknologi Malaysia.
Thesis: The VHDL Design of a 4-way VLIW Processor

1993-1998 **Sijil Pelajaran Malaysia (SPM) / 'O' Level with 8As (Aggregate = 6)**, Sekolah Menengah Ledang.

Current Position & Administrative Responsibilities

1. Academic Manager of UTMSPACE Part-Time Degree Programmes, Faculty of Biosciences and Medical Engineering, Universiti Teknologi Malaysia, since January 2013.
2. Cluster Coordinator of Cardiac Monitoring & Rehabilitation Cluster, IJN-UTM Cardiovascular Engineering Centre, Universiti Teknologi Malaysia, since December 2013.
3. Task Force Leader of HiCoE Documentation, IJN-UTM Cardiovascular Engineering Centre, Universiti Teknologi Malaysia, since March 2014.
4. Engineering Accreditation Council (EAC) Task Force Member and Chapter Leader, Faculty of Biosciences and Medical Engineering, Universiti Teknologi Malaysia, since January 2013.
5. Research core member of IJN-UTM Cardiovascular Engineering Centre, Universiti Teknologi Malaysia, since January 2013.

6. Member of Faculty Quality Committee, Universiti Teknologi Malaysia, since January 2013.

7. Member of Industrial Training Committee, Universiti Teknologi Malaysia, since January 2013.

8. Senior Lecturer, Faculty of Biosciences and Medical Engineering, Universiti Teknologi Malaysia, since March 2012.

9. Research Member of Biotechnology Research Alliance, Universiti Teknologi Malaysia, since March 2012.

10. Invited Speaker and Committee Member of How To Get Yourself Employer (HTGYE), Faculty of Biosciences and Medical Engineering, 2013.

11. Head of Quality, Faculty of Health Science and Biomedical Engineering, Universiti Teknologi Malaysia, since March 2012 until December 2012.

12. Program Coordinator of UTMSPACE Part-Time Degree Programmes, Faculty of Health Science and Biomedical Engineering, Universiti Teknologi Malaysia, since March 2012 until November 2012.

13. University Quality Assurance Task Force Member, Universiti Teknologi Malaysia, since May 2012.

14. Member of Projek Pelan Global UTM 2012-2020 - Key Focus Area (KFA): Human Capital (TPU.2), since June 2012.

Core Expertises and Skills

Biometric Image processing	• Fingerprint • Finger Vein • Palm print
Medical Imaging Processing	• Probabilistic Neural Network • Kohonen's Neural network
Data Security and Compression	• AES symmetric key cryptosystem • RSA public key cryptosystem • ECC public key cryptosystem over $GF(2^n)$ and $GF(p)$ • SHA1 and SHA2 hashing algorithm • True Random Number Generation • LZSS Data Compression
Embedded System-on-Chip (SoC) Design	• Hardware/Software Co-design • Hardware Accelerators / IP Cores design • Communication Interface design • Device Driver Programming • Application Firmware Programming
Hardware Description Languages (HDLs)	• VHDL • Verilog
Electronic System Level (ESL) Modelling	• Systematic modelling/refinement methodology • High-level HW/SW Co-design and Co-Simulation • Modelling and Verification framework development • Bus Wrapper and Interface Design • Early Design-Space Exploration technique
System-Level Design Languages (SLDLs)	• SystemC • Unified Modelling Language (UML) • GEZEL • NIRGAM • Matlab / Mathematica
Software Computer	• C procedural language

Programming	• C++ OOP language • Visual Basic 6.0
EDA Tools	• Quartus II, SOPC Builder, NiosII IDE and Nios2-Linux Embedded OS • Leonardo Spectrum, FPGA Express, ModelSim • Enterprise Architect • Eclipse IDE, cgywin, GNUPro Software development Tool • Matlab, Mathematica
Research Interest	• Electronic System Level (ESL) Modelling and Verification of Complex MPSoC architecture for medical instruments. • RTL Design for Advanced Computer Architecture (DSP processor, VLIW, superscalar, etc) for DSP or biomedical image processing applications. • Network-on-Chip (NoC)

Professional Body Memberships

1. Board of Engineering Malaysia (BEM) - Graduate Member
2. Member of IEEE

Research Projects

a. Bio-Medical:

1. A Design Framework for Multi-Processor System-on-Chip (MPSoC) Architecture Design-Space Exploration in Biomedical Application: Human Heart ECG Monitoring and Processing
   Grant Type: MOSTI ScienceFund
   Role: Project Leader
   Year: May 2013 Grant amount: RM 155,500

2. Technology Exploration of On-Line Cardiac Monitoring and Diagnostic Medical Device in Telecardiology
   Grant Type: UTM Flagship Grant
   Role: Project Leader
   Year: April 2013 Grant amount: RM 70,000

3. FPGA-based Embedded System-on-Chip Design of Ultrasound Power Measurement System
   Grant Type: Institutional GUP Grant
   Role: Project Leader
   Year: December 2012 Grant amount: RM 35,000

4. FPGA Implementation of Electrocardiogram Biomedical Signal Processing System-on-Chip Design for Portable Heart Monitoring System
   Grant Type: Institutional NAS Grant
   Role: Project Leader
   Year: August 2012 Grant amount: RM 20,000

5. Development of Biophoton Emission Measurement System using Human Saliva
   Role: Project Member
   Year: 2012 Grant amount: RM 40,000

6. Investigation of Electro-Acupuncture effects on Heart Rate Variability in Healthy Volunteers
   Role: Project Member

Year: 2012

7. Probabilistic Neural Network Embedded System Design for Medical Imaging Application – Brain Tumour Diagnosis.
   Role: Key Researcher
   Year: 2010

8. A Neural Network Microchip in a Medical Computer-Aided Diagnosis (CAD) Embedded Processor System – Pattern Classification of Blood Samples for Cancer / Disease Detection.
   Role: Key Researcher
   Year: 2005

b. Health Science

9. A Review of Health Policies and Facilities towards Enhancing Malaysias Competitiveness Index
   Role: Key Researcher
   Year: July 2012

c. Biometric Image Processing:

10. Finger Vein Biometric for Secure Access Control of Bank Safe-Deposit Boxes – Biometric Data Extraction and Image Processing.
    Project Leader: Prof. Dr. Mohamed Khalil Hani
    Year: 2010

11. Biometric Encryption Embedded System in Bank ATM without PIN Login Access- Biometric Data Extraction, Biometric Encryption and Image Processing.
    Project Leader: Prof. Dr. Mohamed Khalil Hani
    Year: 2010

d. Data Security:

12. Hardware Encryption Module Applicable to an Electronic Cheque Secure On-Line Transfer System – Data security services in web-based commercial application.
    Project Leader: Prof. Dr. Mohamed Khalil Hani
    Year: 2010

13. A PKI-enabling Hardware Security Module with Smartcard and Biometrics – Data Security services in Secure Health Care System and Telemedicine Application.
    Project Leader: Prof. Dr. Mohamed Khalil Hani
    Year: 2005

14. Smartcard Crypto-Processor & Hardware Security Module for Next-Generation IT Security.
    Project Leader: Prof. Dr. Mohamed Khalil Hani
    Year: 2005

15. Advance Cryptographic Processor IC Chip Prototype for Next-Generation Smart Cards and Security Devices.
    Project Leader: Prof. Dr. Mohamed Khalil Hani
    Year: 2004

e. Fundamental Research:

16. High-level Modelling of complex Multi-Processor System-on-Chip (MPSoC) architecture design for early system verification and design-space exploration, which the on-chip communication architecture is based on shared bus and Network-on-Chip (NoC).

Supervisory Team: Prof. Dr. Mohamed Khalil Hani
Dr. Muhammad Nadzir Marsono
Dr. Ooi Chia Yee
Year: 2011

Publications

1. Rabia Bakhteri, A.R Syafeeza, **Yuan Wen Hau**, Mohd Murtadha Mohamad.(2013). "Problem Based Lab: Issues and Challenges". National Student Development Conference (NASDEC) 2013. Johor Bahru, Malaysia. 18-20 November 2013.

2. Rabia Bakhteri, **Yuan Wen Hau**, Mohamed Khalil-Hani, Mohd Murtadha Mohamad. (2013). "Self-Learning vs Guided Learning:A Case Study". National Student Development Conference (NASDEC) 2013. Johor Bahru, Malaysia. 18-20 November 2013.

3. Yin Zhen Tei, M. N. Marsono, N. Shaikh-Husin, **Yuan Wen Hau**. (2013). "Network Partitioning and GA Heuristic Crossover for NoC Application Mapping". *The IEEE International Symposium on Circuits and Systems (ISCAS)*. Beijing, China, 19-23 May 2013. pp: 1228-1231.

4. Sieng Wong, Chia Yee Ooi, **Yuan Wen Hau**, M.N. Marsono, Nasir Shaikh-Husin. (2013). "Feasible Transition Path Generation for EFSM-based System Testing". *The IEEE International Symposium on Circuits and Systems (ISCAS)*. Beijing, China, 19-23 May 2013. pp: 1724-1727.

5. Hau Wan Leong and **Yuan Wen Hau**. (2012). "The Advantages of Chinese Traditional Medicine Treatment on Attention Deficit Hyperactivity Disorder (ADHD)". The 9th World Congress of Chinese Medicine, Kuching, Sarawak, Malaysia, 10-11 November 2012. pp: 520-522.

6. D. W. L. Yee, M. Malarvili, Y. J. Kim, and **Y. W. Hau.** (2012). "Investigation of Electroacupuncture Effects on Heart Rate Variability in Healthy Volunteers", in *The 3rd International Biotechnology and Biodiversity Conference & Exhibition (BIOJOHOR 2012)*, Johor Bahru, Johor, Malaysia, 9-11 June 2012.

7. Hau Wan Leong and **Hau Yuan Wen**. (2012). The Treatment Advancement of ADHD Predominantly Inattentive / Attention Deficit Disorder (ADHD-PI / ADD). *The Journal of World Federation of Chinese Medicine Societies: World Chinese Medicine (Malaysia Edition)*. Volume May 2012. China Health News. pp: 93-95.

8. **Y. W. Hau**, M. N. Marsono, C. Y. Ooi, and M. Khalil-Hani. A Network-on-Chip Simulation Framework for Homogeneous Multi-Processor System-on-Chip. IEEE 9th International Conference on ASIC (ASICON 2011), 25-28 October 2011, Xiamen, China.

9. **Y. W. Hau**, Mohamed Khalil-Hani, M. N. Marsono. (2011). SystemC-based Hardware/Software Co-Design of Elliptic Curve Cryptographic System for Network Mutual Authentication. *Malaysian Journal of Computer Science (MJCS) of Universiti Malaya*. Volume 24, No. 2, Universiti Malaya, pp: 111-130.

10. Mohamed Khalil Mohd Hani and **Hau Yuan Wen**. (Patent filed on 7 March 2011). Crypto System-on-Chip Architecture in a Hardware Security Module for Information Security. Filed Patent No: PI2011001031.

11. Mohamed Khalil Mohd Hani, Muhammed Mun'im Ahmad Zabidi, Vishnu Param Nambiar and **Hau Yuan Wen**. (Patent filed on 4 March 2011). Hardware-Acceleration of OpenSSL Library for SSL/TLS Protocol in Networking Security. Filed Patent No: PI2011001011

12. **Y. W. Hau**, Mohamed Khalil-Hani, M. N. Marsono. (2010). CODESL: A Framework for System Level Modelling, Co-simulating and Design-Space Exploration of Embedded Systems based on System-on-Chip. *International Conference on Intelligent Systems, Modelling and Simulation, 2010 (ISMS'2010)*, 27-29 January 2010, pp. 122-127, Liverpool, England.

13. **Y. W. Hau** and M. Khalil-Hani. (2009). SystemC-based HW/SW Co-simulation Platform for System-on-Chip (SoC) Design Space Exploration. *International journal of Information and Communication Technology, Vol. 2, Nos. 1/2, 2009*. pp: 108-119. Inderscience Publishers.

14. M. Khalil Hani, Arif Irwansyah, and **Y. W. Hau**. (2009). A Tightly-coupled Finite Field Arithmetic Hardware in an FPGA-based Embedded Processor Core for Elliptic Curve Cryptography. *International Journal of Information and Communication Technology, Vol. 2, Nos. 1/2, 2009*. pp: 60-72. Inderscience Publishers.

15. **Y. W. Hau** and M. Khalil-Hani (2009). *SystemC-based Electronic System Level Design Methodology for SoC Design-Space Exploration*. Nasir Shaikh-Husin. *Advanced Microelectronics*. pp: 1-26, Malaysia: Universiti Teknologi Malaysia.

16. M. Khalil-Hani and **Y. W. Hau**. (2008). SystemC HW/SW Co-design Methodology applied to the design of an Elliptic Curve Crypto System on Chip. *International Conference of Microelectronics (ICM'2008)*. Dec 14-16, 2008. Dubai.

17. **Y. W. Hau** and M. Khalil-Hani. (2008). SystemC-based HW/SW Co-Simulation Platform for System-on-Chip (SoC) Design Space Exploration. *International Conference on Electronic Design (ICED'2008)*. Dec 1-3, 2008. Penang, Malaysia.

18. M. Khalil-Hani, Mohd. Nazrin and **Y. W. Hau**. (2008). Implementation of SHA-512 Hash Function for a Digital Signature System-on-Chip in FPGA. *International Conference on Electronic Design (ICED'2008)*. Dec 1-3, 2008. Penang, Malaysia.

19. M. Khalil-Hani, Arif Irwansyah and **Y. W. Hau**. (2008). A Tightly-coupled Finite field Arithmetic Hardware in an FPGA-based Embedded Processor Core for Elliptic Curve Cryptography. *International Conference on Electronic Design (ICED'2008)*. Dec 1-3, 2008. Penang, Malaysia.

20. M. Khalil-Hani, **HAU Yuan-Wen** and Illiasaak Ahmad. (2007). Electronic System Level (ESL) Design Methodology for IP-based System-on-Chip (SoC). *International Conference on Robotics, Vision, Information, and Signal Processing (ROVISP'07)*, 28-30 November 2007. Penang, Malaysia.

21. M. Khalil-Hani, **Hau Yuan Wen** and A. Paniandi. (2006). Design and Implementation of a Private and Public Key Crypto Processor for Next Generation IT Security Applications. *Malaysian Journal of Computer Science (MJCS) (ISSN 0127-9084)*, Volume 19, No. 1, Universiti Malaya, pp: 29-45.

22. M. Khalil-Hani, **Hau Yuan Wen** and A. Paniandi. (2005). An Implementation of Elliptic Curve Digital Signature Algorithm in FPGA-based Embedded System for Next Generation IT Security. *Proceedings of the 2005 International Conference on Robotics, Vision, Information and Signal Processing (ROVISP'2005)*. July 20-22, 2005. Malaysia: USM, pp: 1-5.

23. M. Khalil-Hani, A. Paniandi and **Hau Yuan Wen** (2005). RSA Crypto Processor for Resource-Constrained Mobile Embedded Systems. *Proceedings of the 2005 International Conference on Robotics, vision, information and Signal processing (ROVISP'2005)*. July 20-22, 2005. Malaysia: USM, pp: 130-135.

24. M. Khalil-Hani, **Hau Yuan Wen** and K. W. Lim. (2004). Public Key Crypto Hardware for Real-Time Security Application. *Proceedings of the 2004 National Real-Time technology and Applications Symposium (RENTAS 2004)*. November 14-15, 2004. Malaysia: UPM, pp: 1-6.

Professional Workshop / Training Courses

1. **Invited Trainer** by Dream Catcher Consulting Sdn. Bhd, Quick Start to Altera FPGA Implementation Platform – Part II, 28 February & 1 March 2014, Faculty of Biosciences and Medical Engineering, Universiti Teknologi Malaysia.

2. **Invited Trainer** by Dream Catcher Consulting Sdn. Bhd, Quick Start to Altera FPGA Implementation Platform – Part I, 29-30 November & 1 December 2013, Faculty of Electrical Engineering, Universiti Teknologi Malaysia.

3. Participant, Safety and Health at Work organized by Board of Engineers Malaysia (BEM), 14-15 May 2013, Universiti Teknologi Malaysia.

4. Participant, Engineering Management Practice organized by Board of Engineers Malaysia (BEM), 22-23 April 2013, Universiti Teknologi Malaysia.

5. Participant, Peer Instruction Workshop, 28-30 March 2013, Universiti Teknologi Malaysia.

6. Participant, Workshop on Writing to High Impact Journal, 12-14 March 2013, Universiti Teknologi Malaysia.

7. Participant, Kursus Induksi Siri 2/2012 (Kumpulan Pengurusan & Professional), 26 November – 9 December 2012, Universiti Teknologi Malaysia.

8. Participant, Short Course on Open Source Hospital Info Systems Development, 23-24 October 2012, United Nations University, International Institute for Global Health (UNU-IIGH), UKM Medical Center, Cheras, Malaysia.

9. Participant, Bengkel Penilaian Outcome Based Education (OBE) UTMSpace, 19-21 October 2012, Melaka, Malaysia, organized by UTMSpace, Universiti Teknologi Malaysia.

10. Participant, UTM Peer Instruction Online Training, 17 October 2012, Universiti Teknologi Malaysia.

11. Participant, Kolokium Kursus Matematik dan Kursus-Kursus Kejuruteraan Berteraskan Matematik, 26 September 2012, Universiti Teknologi Malaysia.

12. Participant, Tapping the power of the Virtual in building the future for WorldClass Healthcare System, 11 September 2012, School of Engineering, Temasek Polytechnic, Singapore, organized by SingHealth, Temasek Polytechnic and Advent2 Labs.

13. Participant, Kursus Penasihatan Akademik untuk Penasihat Akademik (PA) Tahun 1 Sesi 2012/2013, 29-30 August 2012, Universiti Teknologi Malaysia.

14. Participant, Short Course on FPGA-based Implementation of Signal Processing Systems, 25-26 June 2012, The Royale Bintang Kuala Lumpur, Malaysia, organized by Tekbac.

15. Participant, Kursus OBE - Assessment & CQI, 5-6 June 2012, Universiti Teknologi Malaysia.

16. **Guest Lecturer**, *Design Optimization Technique of Digital Circuit Design at Register Transfer Level*, 14th March 2011, Faculty of Electrical Engineering, Universiti Teknologi Malaysia.

17. **Invited Speaker**, *Electronic System Level Modelling using SystemC*, 24th March – 9th June 2010, Faculty of Electrical Engineering, Universiti Teknologi Malaysia.

18. **Guest Lecturer**, *Introduction of Verilog Design Testbench*, 16th March 2010, Faculty of Electrical Engineering, Universiti Teknologi Malaysia.

19. **Teaching Assistant**, *MEL 1173 - Advanced Digital System Design* (Post Graduate subject), 2009/2010-Sem II, Faculty of Electrical Engineering, Universiti Teknologi Malaysia.

20. **Lab Facilitator**, *SEW 4722 – ECAD Problem Based Laboratory, HW/SW Co-design of a Nios II-based Embedded System*, 2009/2010-Sem I, Faculty of Electrical Engineering, Universiti Teknologi Malaysia.

21. Participant, *MSC Malaysia Industry Academia Collaboration: MDeC-Altera Train-the-Trainer: Digital System Design on FPGA Platform*, 15th – 19th December 2008, Faculty of Electrical Engineering, Universiti Teknologi Malaysia, organized by Multimedia Development Corporation (MDeC).

22. **Instructor**, *VLSI Digital System Design*, 3rd – 29th December 2007, Faculty of Electrical Engineering, Universiti Teknologi Malaysia, organized by MDeC's Undergraduate Skills Programme (USP).

23. Participant, *Design and Test of System-on-Chip Integrated Circuits*, 16th August 2007, Universiti Putra Malaysia, organized by Institute of Electrical & Electronic Engineers Circuits & Systems Society Malaysia Chapter.

24. **Instructor**, *VLSI Digital System Design*, 14th May – 9th June 2007, Faculty of Electrical Engineering, Universiti Teknologi Malaysia, organized by MDeC's Undergraduate Skills Programme (USP).

25. Participant, *Synthesizable Verilog HDL and Custom Design Front-End with Mentor Graphics*, 7th – 10th May 2007, Universiti Teknologi Mara Malaysia, organized by CEDEC.

26. Participant, *IC Design using Verilog HDL with Mentor Graphics*, 23th – 26th Jan 2007, Universiti Sains Malaysia, organized by CEDEC.

27. **Instructor**, *Altera Quartus II EDA Design Software Workshop*. 13th January 2006, Faculty of Electrical Engineering, Universiti Teknologi Malaysia, organized by IEEE UTM Student Branch and Altera Corporation.

28. **Instructor**, *VHDL Design of Digital System with Altera Quartus II and Prototyping SoC-based Designs with Altera Nios development System Workshop Series*, 21st – 29th July 2006, faculty of Electrical Engineering, Universiti Teknologi Malaysia, organized by IEEE UTM Student Branch and Altera Corporation.

29. **Instructor**. *Altera SOPC Builder and Nios System Workshop*,7th April 2006, faculty of Electrical Engineering, Universiti Teknologi Malaysia, organized by IEEE UTM Student Branch and Altera Corporation.

Research Honours and Awards

1. **Consolation Prize (Altera Track)**, National Design & Technology Competition, Innovate Malaysia Design Competition 2013. Hotel Equatorial Penang, 4 July 2013.
   Product: ECG Bio-Chip Design for Portable Health Care and Home Monitoring Applications Using Altera FPGA

2. **Silver Medal Winner**, University Technology Research Exhibition, 12th Industrial Art and Technology Exhibition (INATEX 2010) – UTM, Johor, Malaysia. 5-7 August 2010.
   Research Product: Hardware Encryption Module Applicable to an Electronic Cheque Secure On-Line Transfer System.

3. **Bronze Medal Winner**, University Technology Research Exhibition, 12th Industrial Art and Technology Exhibition (INATEX 2010) – UTM, Johor, Malaysia. 5-7 August 2010.

Research Product: Finger Vein Biometric for Secure Access Control of Bank Safe-Deposit Boxes.

4. **Bronze Medal Winner**, University Technology Research Exhibition, 12th Industrial Art and Technology Exhibition (INATEX 2010) – UTM, Johor, Malaysia. 5-7 August 2010.
   Research Product: Biometric Encryption Embedded System in Bank ATM without PIN Login Access.

5. **Best paper award winner**, 6th International Conference on Robotics, Vision, Information and Signal Processing (ROVISP'2007), Penang, Malaysia, 28-30 November 2007.
   Paper Title: Electronic System Level (ESL) design Methodology for IP-based System-on-Chip

6. **Gold Medal Winner**, Malaysian National Research and Development Exhibition, Public Institutions of Higher Learning research and Development (R&D) Exhibition (IPTA 2005) – Putra World trade Centre (PWTC), Kuala Lumpur.
   Research Product: Hardware Security Module with Fingerprint Biometric feature for ICT Security Applications.

7. **Silver Medal Winner**, International research and New Product invention, International Exhibition Idea-Inventions-New products (IENA 2004) – Nuremburg, Germany.
   Research Product: Hardware Security Module Application Prototype for Data Security.

8. **Gold Medal Winner (Product Category)**, University Technology Research Exhibition, Industrial Art and Technology Exhibition (INATEX 2004) – UTM, Johor, Malaysia.
   Research Product: Embedded Cryptosystem design based on Advanced Public Key and Private Key Cryptography.

Exhibition Participation

1. Participant, MiCE Exhibition 2009, 6-7 April 2009, Faculty of Electrical Engineering, Universiti Teknologi Malaysia, organized by Microelectronic and Computer Engineering (MiCE) Department, Faculty of Electrical Engineering, Universiti Teknologi Malaysia.
   Research Topic: Electronic System Level HW/SW Co-design Methodology for System-on-Chip based Embedded System

2. Exhibitor, university Technology Research Exhibition, Industrial Art and Technology Exhibition (INATEX'2005) – UTM, Johor, Malaysia
   Exhibited product: The Neuro Microchip design for Medical Diagnosis Application.

3. **Exhibitor and Seminar Speaker**, International product Innovation and Commercialization Exhibition, East Asia Business Exhibition (EABEX'2005) – Kuala Lumpur Convention Centre (KLCC), Kuala Lumpur, Malaysia.
   Exhibited Product: Hardware Security Module with Fingerprint Biometric Feature for ICT Security Applications.

4. Exhibitor, Malaysia National Product Invention and Commercialization Exhibition, Government-Linked Institute Exhibition (GLC'2004) – Cyberjaya, Malaysia.
   Exhibition Product: Hardware Security Module application Prototype for Data Security.

Research Supervision

1. Tei Yin Zhen, PhD (Electrical Engineering), Co-supervision, ongoing.
   Research Title: Network Partitiong and Genetic Algorithm Heuristic Crossover for NoC Application Mapping.

2. Chia Nyoke Goon, Master of Engineering (Bio-Medical Engineering), Main-supervision, ongoing.
   Research Title: Matlab Tool Modelling for Heart Diseases Classification

3. Muhammad Amin Hashim, Master of Engineering (Electrical Engineering), Co-supervision, ongoing.
   Research Title: HRV co-processor design for portable cardiac monitoring system

Teaching

Sem II, 2013/2014: SWB 4043 - Clinical Engineering
MMBC 1033 – Medical Informatics

Sem II, 2012/2013: SWB 2063 – Basic Electronics

Sem I, 2012/2013: SEE 4012 – Professional Engineering Practise

Non-Academic Activities

1. Silver Medal of Chess Team in Kejohanan Sukan Staf antara Universiti Malaysia kali ke-38, 2013, Universiti Kebangsaan Malaysia, Bangsar.
2. Champion of Women Single Ping Pong in UTM Staff Games (SAJ) 2013.
3. Bronze Medal of Women Double Ping Pong in UTM Staff Games (SAJ) 2013.
4. Participant of Ping Pong team in Kejohanan Sukan Staf antara Universiti Malaysia kali ke-37, 2012, Universiti Utara Malaysia, Sintok, Kedah.
5. Champion of Women Single Ping Pong in UTM Staff Games (SAJ) 2012.
6. Silver Medal of Women Chess Team in UTM Staff Games (SAJ) 2012.
7. Bronze Medal of Women Double Ping Pong in UTM Staff Games (SAJ) 2012.
8. 4th position of Women Chess Individual in UTM Staff Games (SAJ) 2012.
9. Champion of Women Single Ping Pong in UTM Games 2012.
10. Champion of Women Single Ping Pong in UTM Staff Games (SAJ) 2011.
11. Table Tennis Team Leader of Kolej Tun Razak, Universiti Teknologi Malaysia.
12. Grade 8 Pianoforte from the Associated Board of the Royal Schools of Music.
13. Grade 6 of Theory of Music from the Associated Board of the Royal Schools of Music.
14. Level 5 of Mental Arithmetic & abacus.
15. Grade 3rd of Taekwon-Do from the International Taekwon-Do Federation.