



# CURRICULUM VITAE

PROFESSOR MARZUKI B. KHALID

(Last Update: 18<sup>th</sup> January 2010)

## CURRICULUM VITAE

1. **Name:** MARZUKI BIN KHALID
2. **Age:** 49 Years
3. **Date of Birth:** 19th December, 1959.
4. **Place of Birth:** Jasin, Melaka, Malaysia.
5. **Marital Status:** Married with four children.
6. **Sex:** Male
7. **Designation:** Deputy Vice Chancellor (Research and Innovation)  
Universiti Teknologi Malaysia  
  
Professor in Intelligent Control Systems  
Director  
Malaysia-Japan University Center (MJUC)/  
Center for Artificial Intelligence and Robotics (C.A.I.R.O.)  
Universiti Teknologi Malaysia  
Jalan Semarak  
Kuala Lumpur 54100  
MALAYSIA.
8. **Nationality:** Malaysian
9. **Office Address:** Malaysia-Japan University Center (MJUC)/  
Centre for Artificial Intelligence and Robotics (CAIRO),  
Universiti Teknologi Malaysia,  
City Campus,  
Jalan Semarak,  
54100 Kuala Lumpur, Malaysia.  
  
Tel: +603-26973600/26913710  
Tel: +6019-2128187 (H/P)  
Fax: +603-26910342/26970815  
  
E-mail: [marzuki@utm.my](mailto:marzuki@utm.my)
10. **Home Address:** 25, Jalan Setiawangsa 1A,  
Taman Setiawangsa,  
54200 Kuala Lumpur, Malaysia.  
Tel: +603-42516539
11. **Expertise:**  
Main-field: Artificial Intelligence with Applications to Control  
  
Sub-fields: Neural networks, fuzzy logic, genetic algorithms, control theory, adaptive and learning systems, e-learning, image processing and vision systems.
12. **Qualifications:**



(a). School level

- (1). Gurney Road School (1),  
Kuala Lumpur, Malaysia.  
Primary 1 (1966) - Primary 6 (1971)
- (2). Victoria Institution,  
Kuala Lumpur, Malaysia.  
Secondary 1 (1972) - Secondary 6 (1976)  
Obtained Lower Cert. of Education (LCE) in 1974  
Obtained Malaysian Cert. of Education (MCE) in 1976

(b). University level

- (1). Diploma in Electrical (Power) Engineering (1st Class)  
Universiti Teknologi Malaysia, Malaysia (1980)
- (2). B.Sc. (Electrical) Engineering (2nd Class Hons.)  
University of Southampton, United Kingdom (1983)
- (3). M.Sc. (Control Systems)  
Cranfield Inst. of Tech., United Kingdom (1986)
- (4). Ph.D. (Control Systems)  
University of Tokushima, Japan (1994)

13. **Awards:**

1. Best Student of Diploma in Electrical (Power) Eng., UTM  
awarded by National Electricity Board, Malaysia, 1980.
2. Japan C & C (NEC) Foundation Award (1992): Yen 150, 000.
3. International Exchange Research Award for Outstanding Research Accomplishment,  
Graduate School of Engineering, University of Tokushima (March, 1994)
4. Excellence Service Award from Public Services Dept. (Anugerah Khidmat  
Cemerlang, JPA) for 1993.
5. IEM Young Engineer Award 1994 (Institution of Engineers Malaysia).
6. Malaysian Toray Science Foundation Research Grant Award, (RM40,000) Dec.  
1995.
7. National Young Scientist Award (September, 1996), Ministry of Science,  
Technology and Environment, Malaysia.
8. Raja Tan Sri Zainal Prize for Best Paper Award 1997 (Institution of Engineers,  
Malaysia).
9. Mindex/Innotex'97 Silver Prize - Project leader for "Intelligent Post-code  
Recognition and Letter Sorting Machine"
10. Mindex/Innotex'97 Bronze Prize - Project leader for "Intelligent Chilling/Heating  
System by Fuzzy Logic"
11. Best Paper Prize – International Journal Category, Universiti Teknologi Malaysia  
Publication Award 1999.

12. INATEX 2000 Exhibition UTM  
Bronze Prize (RM1,000)  
“Automatic Data Entry System”
13. IEEE Region 10 Best Section Award 2000  
(as Chair of IEEE Malaysia Section 2000)
14. Geneva International Exhibition New Inventions and Products 2004 Award  
(Silver Medal for Intelligent Wood Recognition System)
15. INATEX 2005 Exhibition UTM  
Bronze Medal for “Signature Validation and Verification System using Neuro-Template Method” (in association with Telekom Malaysia R&D)
16. ITEX 2005 Exhibition  
Gold Medal for “Signature Validation and Verification System using Neuro-Template Method” (in association with Telekom Malaysia R&D)
17. Pameran IPTA2005  
Gold Medal for “Time Attendance System based on Signature Verification Biometric System” (in association with Telekom Malaysia R&D)
18. Pameran IPTA2005  
Silver Medal for “Intelligent Wood Recognition System”  
(with FRIM)
19. ITEX 2006 Exhibition, June 2006 (3 Awards) – in association with TMR&D Sdn. Bhd.
  - Gold Medal for “Kenal Muka – Face Recognition System”
  - Innovative Product Award
20. Hungary Exhibition, Budapest, Sept. 2006 - Face Recognition System (in association with TMR&D Sdn. Bhd.)
  - Hungary IFIA Grand Genius Award
  - Romanian Ministry of Education and Research Award

14. ***Administrative Posts:***

1. Head, Control Engineering Laboratory,  
Faculty of Electrical Engineering, U.T.M.  
(from June 1, 1987 - Oct.31, 1988).
2. Head, Dept. of Control Engineering,  
Faculty of Electrical Engineering, U.T.M.  
(from Nov. 1, 1988 - Oct.31, 1990).
3. Manager for Engineering Doctorate Programme  
Business & Advanced Technology Center  
Universiti Teknologi Malaysia.  
(from Oct.17, 1994 - Oct. 16, 1996).
4. Director  
Centre for Artificial Intelligence and Robotics (CAIRO),  
Universiti Teknologi Malaysia  
(from 1st Jan. 1997 - ~~present~~ 2009).
5. Director

15. **A. Professional Societies [Active]:**

International Level

1. Secretary for IEEE Region 10 (2007-2008)
2. Nominated for Director-Elect 2005-2006 and for 2003-2004 for IEEE Region 10 (Asia-Pacific)
3. Executive Committee Member and Past President, APFICS [Asia-Pacific Fed. of Instrumentation and Control Engineers] (since 1997)
4. Member IEEE (Control Systems Society-since 1988) and (Systems, Man and Cybernetics Society-since 2000)
5. Founding Member and Ex-Comm. member of Steering Committee, ACPA [Asian Professors Control Association] (since 1996)
6. Ex-comm. Member of Asian Control Conference (ASCC) (since 2000)
7. PRIMA Planning Committee (Wireless Communications) (since 1997)

National Level

1. Past Chairman, IEEE Malaysia (since 1997)
2. Graduate Member, Institution of Engineers, Malaysia (since 1986)

**B. Professional Societies [Past]:**

International Level

1. Chair, Students Activities Committee and Ex-comm, IEEE [Institute of Electrical and Electronic Engineers] Region 10 (Asia-Pacific) (2001-2006)
2. Committee for IEEE Kiyo Tomiyasu Award (2003-2006)
3. Executive Committee Member for IEEE Membership Development Activities (2005)
4. Member, International Neural Network Society (1990-1995)
5. Member, Instrument Society of America (ISA) (2001) Member of International Federation of Automatic Control (IFAC) Council Representative for Malaysia (1995-1997)
6. President of Asia-Pacific Fed. of Instrumentation and Control Engineers (APFICS) (2000-2002)

National Level

1. Chair, IEEE Malaysia Section, (1998 - 2000)
2. President, Instrumentation and Control Society of Malaysia [ICSM] (1994-1999).
3. Member of Standing Committee for Publication Institution of Engineers Malaysia [IEM] (1995-1999)
4. Member, Malaysian Society for Training and Development (1995- 1996)
5. Fellow (1995-1998) and Vice President (1994-1998) Artificial Intelligence Society, Malaysia.
6. Deputy President, Cognitive Science Society of Malaysia (COSMA) (1998)
7. Ex-Comm. Member of Graduate Committee (IEM) (1995-1996)
8. Vice President, AI Society of Malaysia (1994).
9. Assistant Secretary, AI Society of Malaysia (for 1989).

16. **Working Experience:**

1. Technical Assistant, General Hospital, Kuala Lumpur, Malaysia. (from Mar 21, 1980 - April 30, 1980)
2. Assistant Lecturer, Universiti Teknologi Malaysia. (from May 2, 1980 - Sept. 19, 1986)
3. Lecturer, Universiti Teknologi Malaysia. (from Sept. 20, 1986 - June 26, 1993)
4. Associate Professor, (from June 26, 1993

Universiti Teknologi Malaysia - 9th March 1996)

5. Professor (from 9th March, 1996 - present)  
Universiti Teknologi Malaysia

(also Managing Director for Augmented Innovation Sdn. Bhd. – a UTM spin-off company- since 1998)

17. ***Practical Experience:***

1. Practice on maintenance and installation of domestic electrical supply, at P.W.D., Johor Bahru, Malaysia. (from Mar 1, 1979 - April 30, 1979).
2. Practice on underground electrical transmission at N.E.B., Johor Bahru, Malaysia. (from April 1, 1981 - May 31, 1981).
3. Part-time consultant engineer involving designing of electrical layout for high-rise buildings at J&A Associates M&E consultant firm, Kuala Lumpur, Malaysia. (from Nov, 1983 - May, 1984).

18. ***Consultancy:***

1. Technical Consultant for Universiti Teknologi Petronas (UTP) – Fuzzy Logic Control Systems (melalui Utas Lambang Sdn. Bhd.) -2005
2. Technical Consultant for TMR&D (Telekom Malaysia R&D) on Handwritten Signature Verification Project (RM284,000) (Aug. 2004 - Feb. 2005) and Face Recognition System Project (RM455,000) (June 2005 – May 2006).
3. Technical Consultant for ELID MSC (M) Sdn. Bhd. on Face Recognition System Design (RM200,000) (1<sup>st</sup> Feb 2005 – 31<sup>st</sup> Jan. 2005).
4. Technical Consultant for Universitas Indonesia (February 2002).
5. Technical Consultant and Managing Director for Augmented Innovation Sdn. Bhd. (from 1998 – present) [UTSB subsidiary]
6. Consultant for Imagepac Technologies Sdn. Bhd. – AI applications (1999 – 2003)
7. Technical Consultant in AI-based Projects for Texas Instruments (M) Sdn. Bhd (from September 1995 - 1997)
8. Technical Consultant for Rollerflex (M) Sdn. Bhd. – AI Techniques (1998- present)
9. Technical Consultant for Tenaga Nasional Berhad Research (since 1997- 2001) on Dev. Of Software for Diagnosis of Power Transformers and Fault Identification.
10. Technical Consultant for Foxboro (M) Sdn. Bhd. and Pavillion Technologies (USA) in the area of neural networks and process optimization (1997- 1998).
11. Consultant engineer for a Project on Airplane Wheel Balancing Machine for Pallmilltech Sdn. Bhd., Port Klang, Malaysia.(from 1989 - 1990).
12. Consultant engineer for a Microprocessor-based project under Perwaja Trengganu Sdn. Bhd., Malaysia (from 1989 - 1990).
13. Consultant engineer for Pemborong dan Perkhidmatan Kejuruteraan (P.P.K.), Melaka, Malaysia.(Traffic Lights System) (from 1989 -1990).

14. Technical Consultant in AI-based Projects for Motorola (M) Sdn. Bhd. in AI (from July 1995 - 1999)
15. Ministry of Science and Environment Study on a Proposal for the E & E Sector for Malaysia - committee member (1988-90).

19. ***Professional /Academic Activities:***

**International Level**

**A. Editorial Board Member of Journals (Past and Present)**

1. International Journal of Engineering Applications of Artificial Intelligence, Elsevier Science, U.K. (since October, 1994).
2. Editorial Board Member/Associate Editor – Journal of Systems and Control Engineering, Institution of Mechanical Engineers, United Kingdom (since May 1998)
3. IEEE Potential Magazine [Region 10 Representative] (2001-2006)
4. Journal of Real-Time Systems, Kluwer Academics, (Nov. 1997- 2000)
5. International Journal of Simulations, Systems and Science & Technology, UK Simulations Society – (since Nov. 2006)
6. International Journal of Biomedical Soft Computing and Health Sciences, Journal of Biomedical Fuzzy Systems Association, Japan – (since April 2007).

**B. International Advisory Board/Program Committee of Conferences**

- (1) Technical Program Committee, 2009 Symposium on Computational Intelligence and Data Mining, (CIDM2009), March 30--April 2, 2009, Sheraton Music City Hotel, Nashville, USA.
- (2) Advisory committee member, International Conference on “Control Automation Communication and Energy Conservation (INCACEC-2009)”, Tamilnadu, India June 4-6, 2009.
- (3) Technical Program Committee, 11<sup>th</sup> UKSim International Conference on Computer Modelling and Simulation, Bandung, Indonesia, 2009.
- (4) International Program Committee, IEEE Congress on Evolutionary Computation (CEC2009), Trondheim, Norway, 18-21 May 2009.
- (5) International Program Committee, IASTED Conference on Artificial Intelligence Applications (AIA2008), Innsbruck, Austria, 16-18 February 2009.
- (6) Track Co-Chair and International Program Committee, IEEE International Conference on Image Technology and Internet Based Systems (SITIS2008), Bali, Indonesia, 30<sup>th</sup> Nov – 3<sup>rd</sup> Dec, 2008.
- (7) International Program Committee, IASTED International Conference on Artificial Intelligence Applications (AIA 2008), Innsbruck, Austria, Feb. 2008.
- (8) International Program Committee, IEEE Congress on Evolutionary Computation, IEEE-CEC2007, Singapore, 25-28, 2007.
- (9) Chairman, Malaysia-Japan International Symposium on Advanced Technology (MJISAT

2007), Kuala Lumpur, Nov. 12-15, 2007.

- (10) International Advisory Committee, International Symposium on Management Engineering 2007 (ISME2007), Kitakyushu, Japan, 10-12 March 2007.
- (11) International Program Committee (IPC) for the 1<sup>st</sup> Asia Modelling and Simulations Symposium (AMS2007), Phuket, Thailand, 28-31 March 2007.
- (12) International Program Committee (IPC) for the IASTED International Conference on Computational Intelligence, 2-4 July 2007, Banff, Canada.
- (13) International Program Committee (IPC) for the IASTED International Conference on AI Applications, February 2007, Innsbruck, Austria.
- (14) International Advisory Committee, International Conference on Man-Machine Systems (ICoMMS 2006), Kangar, Perlis, Malaysia, 15-16 Nov. 2006.
- (15) International Advisory Committee, First Asia International Symposium on Mechatronics, (AISM2006), Hong Kong, 12-15 Dec. 2006.
- (16) International Program Committee (IPC) for the IASTED International Conference on Computational Intelligence (CI 2006), November 20-22, 2006, San Francisco, USA.
- (17) International Advisory Committee, International Symposium on Management Engineering 2006 (ISME2006), Kitakyushu, Japan, 10-12 March 2006.
- (18) International Advisory Committee of the 3<sup>rd</sup> International Conference on AI in Engineering and Technology 2006 (ICAIET2006), Kota Kinabalu, Sabah, 22-24 Nov. 2006.
- (19) Technical Program Committee, Sixth Asian Control Conference (6<sup>th</sup> ASCC), Bali, Indonesia, 18-21 July 2006.
- (20) Technical Program Committee, IEE Mobility Conference 2005, Guangzhou, China, 15-17 November, 2005.
- (21) General Chairman, International Conference on Mechatronics Technology (ICMT2005), Kuala Lumpur, Dec. 5-8, 2005.
- (22) International Advisory Committee for IEEE TENCON 2005 International Conference, Melbourne, Australia, Nov. 2005.
- (23) Technical Program Committee, 2005 International Conference on Natural Computation (ICNC), 27-29 August, 2005, Changsha, China.
- (24) Technical Program Committee, ASEAN S&T Conference, Jakarta, Indonesia, August 5-7, 2005.
- (25) Co-Chair, Pacific RIM International Group on Multi Agents (PRIMA 2004), Auckland, New Zealand, 9-10 August, 2004.
- (26) Int. Advisory Committee, International Conference on Artificial Intelligence in Engineering and Technology (ICAIET) 2004, Universiti Malaysia Sabah, 17-18 June 2004.
- (27) General Co-Chair, IEEE Engineering Ethics Education Workshop, Langkawi, Malaysia, 13-14 January 2004.
- (28) International Advisory Committee for IEEE TENCON 2004 International Conference, Chiangmai, Thailand, November, 2004.



- (29) International Advisory Panel, Fourth International Conference on Information, Communications & Signal Processing  
Fourth IEEE Pacific-Rim Conference On Multimedia (ICICS), 15-18 December 2003, Singapore.
- (30) International Conference on Applied Artificial Intelligence (ICAAI'03), Fort Panhala, Kolhapur, India, December 15-16, 2003.
- (31) International Advisory Panel, IEEE Students Conference on Research and Development 2003 (SCoReD 2003), Putrajaya Renaissance Hotel, Putra Jaya, Malaysia, Aug. 25-26, 2003.
- (32) General Co-Chair, First Regional Malaysia-France Workshop on Image Processing in Vision Systems and Multimedia Communications, Santubong, Sarawak, Malaysia, 21-22 April, 2003.
- (33) Chair, Artificial Intelligence Applications in Industry (AIAI2003) Seminar, Kuala Lumpur, 24-25 June 2003.
- (34) International Program Committee, 3<sup>rd</sup> Int. Conference on Robotics, Vision, and Information and Signal Processing (ROVISP'03), Penang, 23-25 January 2003.
- (35) International Program Committee, 4<sup>th</sup> Asian Control Conference (4<sup>th</sup> ASCC), Singapore, 25-27 September, 2002.
- (36) International Conference on Optoelectronics and Laser Applications 2002 (ICOLA 2002), Jakarta, Indonesia, October 2-3, 2002.
- (37) Chairman of Int. Program Committee, International Conference on Artificial Intelligence in Engineering and Technology (ICAIET) 2002, Universiti Malaysia Sabah, 17-18 June 2002.
- (38) Advisory Chair, ISSPAA 2001, Sixth International Symposium on Signal Processing and its Applications, Kuala Lumpur, 13<sup>th</sup> – 16<sup>th</sup> August 2001.
- (39) International Advisory Committee, ICOM'01, 1st International Conference on Mechatronics, Kuala Lumpur, 12<sup>th</sup> -13<sup>th</sup> February, 2001.
- (40) Advisory Board, SCoReD 2001, 1<sup>st</sup> Student's Conference on R&D, IEEE, Kuala Lumpur, 20-21<sup>st</sup> February, 2001.
- (41) Chair of Organizing Committee, IEEE Technical Activities Board (TAB) Colloquia, Kuala Lumpur, Malaysia, 7-8 September, 2001.
- (42) International Program Committee, "ISCIT-2001, "International Symposium on Communication and Information Technology", Thailand, September, 2001.
- (43) International Advisory Committee for IEEE TENCON 2001 International Conference, Singapore, August 2001.
- (44) Chair of Organizing Committee, IEEE Region 10 Annual Meeting, Langkawi, 29-30 September, 2001.
- (45) Chairman, IEEE TENCON 2000 International Conference, Kuala Lumpur 24-27 September, 2000.
- (46) International Conference on Advances in Science and Technology (ICAST 2000), Putra Jaya, Malaysia, August 2000.
- (47) International Program Committee, "International Conference on Computer, Automation, Robotics, and Computer Vision" (ICARCV2000), Singapore, 2000.
- (48) International Program Committee, 3<sup>rd</sup> Asian Control Conference (3<sup>rd</sup> ASCC), Shanghai. 2000.

- (49) International Program Committee, Process Control and Instrumentation 2000, Glasgow, July 26-28, 2000.
- (50) International Program Committee, RESQUA International Conference, Penang, Malaysia, May 4-5, 2000.
- (51) International Advisory Panel – Instrument Asia Technical Symposium'99, Singapore, 1999.
- (52) International Advisory Board, "3rd International Conference on Neural Networks and Expert Systems in Medicine and Healthcare 1998", Pisa, Italy, 1998.
- (53) International Program Committee, "5th Pacific RIM International Conference on Artificial Intelligence" [PRICAI'98], Singapore, 1998.
- (54) International Program Committee, "International Conference on Computer, Automation, Robotics, and Computer Vision (ICARCV'98), Singapore, 1998.
- (55) General Chairman and Organizer of IFAC/IEEE Symposium on Artificial Intelligence for Real-Time Control, Kuala Lumpur, Malaysia, Sept. 1997
- (56) International Advisory Board, "2nd International Conference on Neural Networks and Expert Systems in Medicine and Healthcare 1997", Plymouth, United Kingdom, 1997.

### **C. Shortcourses**

- 1. Resource Person for "New results in neural networks in power systems" in Shortcourse for "Advanced Control Technologies for Power Generation and Distribution" 20-23 September 1999, University of Strathclyde, Glasgow, United Kingdom.
- 2. Main Resource Person for "A short course on Artificial Neural Networks", at Fak. Kej. Elektrik, UTM, Kuala Lumpur, 18-20th October, 1994.
- 3. Main Resource Person for "A short course on Fuzzy Logic", at BATC, UTM, Kuala Lumpur, April, 1995.
- 4. Main Resource Person for "A short course on Artificial Neural Networks", at BATC, UTM, Kuala Lumpur, May, 1996.
- 5. Main Resource Person: "A short course on Artificial Intelligence" at Universiti Indonesia, Jakarta, Aug. 1998.

### **National Level**

#### **A. Editor/Associate Editor of Journals**

- 1. Editor-in-Chief, Elektrika, (Jan. 2001- present)
- 2. Editorial Board of Malaysian Journal of Computer Science (since April 1995)
- 3. Deputy Editor-in-Chief, Elektrika, (Nov. 1998-Dec. 2000)
- 4. Editor for Jurnal IEM, Institution of Engineers Malaysia (1997-2000)

5. Editorial Board – Jurnal Kejuruteraan, Fakulti Kejuruteraan, UKM. (since August 1998).

**B. Advisory Board/Program Committee**

1. Chairman of Organising committee "Regional Conference on Control Engineering", at the Hilton, Kuala Lumpur. (July 17 -18, 1990), jointly sponsored by UTM, Petronas, Sarawak Shell, Esso, British Council & IEEE Malaysia.
2. Chairman of Organising committee "Colloquium on Recent Developments in Control Engineering" (July 24, 1990), jointly sponsored by UTM and IEEE Malaysia.
3. Chair, Symposium on Recent Trends in Instrumentation and Control, Kuantan, July 1997.

**C. Technical Committee/Expert Panels**

- (1) Secretary of organising committee "Shortcourse on Computer Control" (July18 - 20, 1990), jointly organised by UTM and British Council.
- (2) Committee member of organising committee "Colloquium on Expert Systems" (June 15, 1990), organised by IEEE Malaysia Section.
- (3) Steering Committee, AI Technology Policy for Malaysia (1994-present).
- (4) Group Chairman for Microelectronics, at the MOSTE IRPA Priority Setting Workshop, organized by MIMOS, at INTAN on 23.2.1995.
- (5) Technical Committee for Road Transport Informatics TC204 - International Organization for Standard (ISO) - (Since Feb., 1995).
- (6) Appointed Member of Technical Advisory Board of AI Systems and Development Laboratory, SIRIM (November, 1995).
- (7). Committee for DBP on Istilah for Artificial Intelligence (1998)
- (8). Chairman of organising committee "Intel's Single Chip Microcontroller, MCS 8096 Shortcourse" jointly organised by UTM and Intel Technology Malaysia (Oct 30 - Nov 1, 1990).
- (9). Might Consultation 98 – Resource Person (1998)
- (10). Advisor for MEDTECH'98 SEMINAR, Universiti Teknologi Malaysia.
- (11). External Assessor for Industrial Electronics Discipline of the German-Malaysian Institute, Kuala Lumpur (for 1995, 1997, 2000 and 2001)
- (12). Technical Committee of IRPA Strategic Research Panel (since 2004) and Chair for Optoelectronics Field.
- (13). External Examiner for Universiti Kuala Lumpur – British Malaysia Institute (2004-2005)

**20. Other Societies and Activities**

- (a). Member, Japan Club of Kuala Lumpur (1994-1996).
- (b). AntaraBudaya Malaysia, host parents for International students (1995).

- (c). Chairman, Parent-Teachers Association, SK Wangsa Maju Zon R10, K. Lumpur.  
(1995-1998)

**21. Research and Project Grants:**

1. "Development of a Computer-aided control system analysis and design package (PERISIK)", - UPP Grant, UTM, Code: 61121 (RM17,000.00) 1989-1990. [Project Leader]
2. "Development of an Expert CACSD Package using PERISIK", - IRPA Grant, Ministry of Science & Tech, Code: 62032 (RM60,000.00) 1990. [Project Leader]
3. "Development of a PC-based Transfer Function Analyzer", - UPP Grant, UTM, Code: 61094, (RM5,000.00) 1990. [Project Leader]
4. "Development of a microprocessor-based static balancing machine for aircraft tyres", - Pallmilltech Sd. Bhd. (RM7,500.00) 1990. [Project Leader]
5. "Development of a microprocessor-based traffic control system", Pemborong & Perkhidmatan Kejuruteraan Sdn. Bhd., (RM2,500.00) 1989-1990. [Project Leader]
6. "Development of a microprocessor-controlled display board", - Perwaja Trengganu Sdn. Bhd., (RM6,500.00) 1989. [Project Leader]
7. "Development of a microcomputer-controlled robotic-arm system for educational purpose", JSPS Grant (RM1,000.00) 1989.
8. "Development of Intelligent Controllers using Fuzzy Logic and Neural Networks" UPP Grant Code 61754 (RM25,000.00) 1995. [Project Leader]
9. "Development of Intelligent Traffic Lights System", UPP Grant Code 61888 (RM25,000.00) 1995. [Project Leader]
10. "Development of Intelligent Self-Tuning PID Controller", Malaysian Toray Science Foundation Grant (RM40,000.00) Code: 68044, 1995 -2001.
11. "Development of Intelligent Process Monitoring and Control System", IRPA Grant Code 72038 (RM123,000.00) 1996. [Project Leader]
12. "Intelligent Industrial Visual Inspection and Recognition System" IRPA Grant Code 72093 (RM133,000) 1996. [Project Leader]
13. "Optimization of Process Plants using Artificial Intelligence Techniques", IRPA Grant Code 72129 (RM570,000.00) Jul. 98 - Jun 2003 [Project Leader]
14. "Automation and Application of Artificial Intelligent Techniques for Water Treatment Plants" IRPA Grant Code 72121: (RM247,000) Jul. 98 - Jun 2003 [Project Leader]
15. "Design and Development of an Automated Data Entry System", IRPA Grant Code 72185 (RM192,850.00) Sep. 99 - Sep. 2003 [Project Leader]

16. "Development of an Intelligent Power Transformer Fault Diagnosis and Prediction System" IRPA Grant Code 72234 (RM401,375.00) Sep. 99- Sept. 2003 [Project Leader]
17. "Design of Intelligent Traffic Lights System" IRPA Grant Code 72305 (RM115,000.00) Nov. 99 – Dec. 2003 [Project Leader]
18. "Intelligent Database and Data Mining" IRPA Grant Code 72284 (RM115,000.00) Nov. 99 – Dec. 2003
19. "A fully artificial intelligent high-speed printing machine" Collaborator: Rollerflex Sdn. Bhd., Mac. 99 – Ogos 2000, CAIRO's approved grant: RM 90,000.00 to CAIRO. (Total grant approved by MOSTE: 2,403,840.00)
20. "Use of automation for enhancement of in vitro plant propagation" Collaborator: Tropbio (M) Sdn. Bhd., CAIRO's approved grant: RM405,000.00 Total Grant approved: RM2.7 million (Total grant approved by MOSTE: 2,724,300.00)
21. "Intelligent Power Restoration", Period of Research: April 1998- May 1999, Total grant approved to CAIRO: RM25,000 Collaborator: TNBR.
22. "Intelligent Diagnostics of Power Transformers", Period of Research: April 1998- Feb., 1999 (Phase 1) Total grant approved to CAIRO: RM50,000 Collaborator: TNBR.
23. "Intelligent Diagnostics of Power Transformers", Period of Research: Mar. 1999- Nov., 1999 (Phase 2) Total grant approved to CAIRO: RM40,000 (Phase 2) Collaborator: TNBR.
24. "Design and Development of an Intelligent Vision Software with Integrated Automated Systems and their Applications" IRPA Prioritised Research [Program Leader], RM3.6 million, 2002-2005.
25. "Design of a PC – Based Vision System Engine for multipurpose applications" IRPA Prioritised Research Project [Project Leader], RM2.06 million, 2002-2004.
26. "Design and dev. of an Intelligent License Plate Recognition System" IRPA EAR, [Project Leader], RM141,100, 2001-2004.
27. "Design of a Production Plan Optimizer and Scheduler using Algorithms" IRPA EAR, [Project Leader], RM120,000, 2001-2004.
28. "Fuzzy Modelling & Control of Nonlinear Systems: Distillation Column", IRPA EAR, RM200,000, 2003-2004.
29. "Dev. Of an Intelligent Fault Diagnosis & Isolation for Electro-mechanical system" IRPA EAR, RM195,000, 2003-2004.
30. "Automation of Bank Cheques Recognition using Artificial Intelligence techniques" IRPA EAR, RM95,000, 2003-2004.
31. "Refinement of the Vision System Development Platform (VSDP) for Commercialization and Its Applications (VSDP)"-TF0106C203, MOSTI-Technofund Grant: Total: RM3.04 million (2007-2009)
32. "Robust Multimodal Biometric Identification Systems using Secure Network Infrastructure (ROMBISUS)"-TF0106C057 , MOSTI-Technofund Grant: Total: RM1.505 million (2007-2009) – with TMR&D Sdn. Bhd. Collaborator

**22. Commercialized Products/Consultancy (Through AISB)**  
(Some Examples)

1	Automation of chemical cooling plants	Bridgestone Armstrong (M'sia Pte. Ltd.)	60,000.00
1	Design of control software for LPG Plant	ELPIJI (M) S/B	20,000.00
1	Fuzzy control of Cement Mixing Plant : ITMix	Ban Loong Ready- Mixed Concrete Products S/B	18,000.00
1	Coupled-tank Liquid-level Control Laboratory System	Universities Worldwide	438,000.00
1	Automation of Foaming Plant	Fareast Foam Industries S/B	60,000.00
1	Semi-Auto Taping Machine Design	ACA Technics S/B	20,000.00
1	X-Y Axis Measuring Machine Design	Kim Hong Metal Polishing & Trading	16,600.00
1	Design of a Foam Factory	Wansern Foam Sdn. Bhd.	400,000.00
1	Signature Verification Software Design	TMR&D	284,000.00
1	Embedded Face Recognition Access Control System	ELID MSC (M) Sdn. Bhd.	200,000.00
1	PC-based Face Recognition System	TMR&D.	455,000.00
1	Technology Provider for KKTM Beranang	MARA	5,500,000.00
<b>TOTAL:</b>			<b>6,471,600.00</b>

**23. Research Visit Grants:**

1. "A Case Study on the Cerebellar Model Articulation Controller", at Kyoto University, Automation Research Lab. counterpart: Professor T. Yoshikawa, JSPS-VCC Grant (Nov. 10, 1987 - Dec. 15, 1987).
2. "A Case Study on Expert Systems and Robotics", at Tokyo University of Agriculture & Tech., Mechanical Systems Dept., counterpart: Professor M. Hayase, JSPS-VCC Grant (July 22, 1989 - Aug. 4, 1989).
3. "Adaptive Control by Neural Networks", at Tokushima university, Dept. of Information Science and Intelligent Systems, counterpart: Professor S. Omatu, JSPS-VCC Grant (Aug. 13, 1990 - Sept. 22, 1990).
4. "Various Applications of Fuzzy Logic Control", at Osaka Prefecture University, Dept. of Computer and Systems, counterpart: Prof. S.Omatu, Asian Development Bank Grant (Oct.20, 1995-Nov.19, 1995).
5. British Council HED-CICHE Grant on "Artificial Intelligence" (University of Plymouth, U.K.:16<sup>th</sup> April – 30<sup>th</sup> April, 1997)
6. British Council HED-CICHE Grant, (University of Strathclyde, U.K.: 5<sup>th</sup> -10<sup>th</sup> Oct., 1998)
7. British Council HED-CICHE Grant (University of Strathclyde, U.K.: 12<sup>th</sup> -26<sup>th</sup> Sept., 1999)
8. French Govt. Grant for Collaborative Research (IRESTE, Universite de Nantes, France: 15<sup>th</sup> Dec – 18<sup>th</sup> Dec. 1997)
9. French Govt. Grant for Collaborative Research (IRESTE, Universite de Nantes, France: 28<sup>th</sup> – 30<sup>th</sup> October, 1998)

10. French Govt. Grant for Collaborative Research (IRESTE, Universite de Nantes, France: 15<sup>th</sup> – 19<sup>th</sup> Sept. 1999)
11. French Govt. Grant for Collaborative Research (IRESTE, Universite de Nantes, France: 7<sup>th</sup> – 11<sup>th</sup> June 2000)
12. French Govt. Grant for Collaborative Research (IRESTE, Universite de Nantes, France: 9<sup>th</sup> – 15<sup>th</sup> Nov. 2000)
13. Research Visit to Japan under SIRIM (Kyushu Institute of Technology, Japan: 21<sup>st</sup> Jan. – 1<sup>st</sup> Feb. 2001)
14. French Govt. Grant for Collaborative Research at Ecole Polytechnique Universite de Nantes, France July 9-16, 2001.
15. Visiting Professor at Kyushu Inst. of Technology, Sponsored by Kyushu Inst. Of Technology, Kitakyushu, Japan: 20<sup>th</sup> Oct. 15<sup>th</sup> Dec., 2001. (Topic: Artificial Intelligence)
16. Technical Consultant and Visiting Professor at Universitas Indonesia, Jakarta, Indonesia, Sponsored by World Bank, February 9-20, 2002. (Topic: Control Systems)
17. French Govt. Grant for Collaborative Research at Ecole Polytechnique Universite de Nantes, France June 21-29, 2002.
18. French Govt. Grant for Collaborative Research Organized by DGA, France June 14-21, 2003.
19. Visiting Professor at Ecole Polytechnique Universite de Nantes, France, Sponsored by DUO Program, Sept. 19-Oct. 17, 2003.
20. French Govt. Grant for Collaborative Research at Ecole Polytechnique Universite de Nantes, France, March 24-29, 2004.
21. Hitachi Fellowship Program Visiting Researcher to Meiji University on “DNA Computing”, Nov. 18-Dec.20, 2004.
22. French Govt. Grant for Collaborative Research at Ecole Polytechnique Universite de Nantes and Universite de La Rochelle, France, July 13-20, 2005.
23. French Govt. Grant for Collaborative Research at Ecole Polytechnique Universite de Nantes and Universite of Nice, France, Sept. 9-14, 2006.
24. French Govt. Grant for Collaborative Research at Ecole Polytechnique Universite de Nantes and Universite of Burgundy, France, Nov. 24-28, 2007.
25. French Govt. Grant for Collaborative Research at Ecole Polytechnique Universite de Nantes, Universite of Burgundy and Universite of Nice, France, Oct. 7-14, 2008.

## 24. *List of Publications*

### (a). *Books and Book Chapters*

- (1). "Neuro-Control and Its Applications", with co-authors S. Omatu and R. Yusof, **Springer-Verlag London Limited**, Editors: M. Grimble and M. A. Johnson, Industrial Control Series, Oct.1995.
- (2). "PERISIK-A Computer-Aided Control System Design and Analysis Program", with co-authors Amir Sultan Thulkarmine and M.Shukri Hamid, UTM, Dec.1990.
- (3). "Neuro-Control and Its Applications", with co-authors S. Omatu and R. Yusof, Editors: M. Grimble and M. A. Johnson, Industrial Control Series, Oct.1995. [**Russian Version**] (in print)
- (4). Zuwairie Ibrahim, Yusei Tsuboi, Osamu Ono, and Marzuki Khalid. "A Study on Lower Bound of Direct Proportional Length-Based DNA Computing for Shortest Path Problem", **Lecture Notes in Computer Science (LNCS)**, Springer-Verlag Heidelberg, Vol. 3314/2004, ISSN 0302-9743, pp. 71-76.
- (5). M. Shukri Zainal Abidin, Marzuki Khalid, Rubiyah Yusof and Mohd. Shafawi "Induction Machine Diagnostic Using Adaptive Neuro Fuzzy Inferencing System" **Lecture Notes in Computer Science (LNCS)**, Springer-Verlag Heidelberg, Vol. 3215/2004, ISSN 0302-9743, p. 380.

### (b). *Refereed Journals*

1. Zuwairie Ibrahim, Tri Basuki Kurniawan, Noor Khafifah Khalid, Shahdan Sudin, and Marzuki Khalid, "Implementation of Ant Colony System for DNA Sequence Optimization", *Artificial Life and Robotics*, Springer-Japan, Vol. 14, pp. 293-296.
2. Zuwairie Ibrahim, Osamu Ono, and Marzuki Khalid, "Experimental Implementation of Hybrid Concentration-Controlled Direct-Proportional Length-Based DNA Computing for Numerical Optimization of the Shortest Path Problem", *International Journal of Bio-Medical Soft Computing and Human Sciences*, Biomedical Fuzzy System Association, Vol. 14, No. 1, 2009, pp. 27-38.
3. Muhammad Faiz Mohamed Saaid, Zuwairie Ibrahim, Marzuki Khalid, and Nor Haniza Sarmin, "DNA Code Word Design for DNA Computing with Real-Time Polymerase Chain Reaction", *Journal of Computer Science*, Science Publication, Vol. 5, No. 1, 2009, pp. 1-10.
4. Noor Khafifah Khalid, Zuwairie Ibrahim, Tri Basuki Kurniawan, Marzuki Khalid, Nor Haniza Sarmin, and Andries P. Engelbrecht, Function Minimization in DNA Sequence Design Based on Continuous Particle Swarm Optimization, *Innovative Computing, Information and Control Express Letters (ICIC Express Letters)*, ICIC International, Vol. 3, No. 1, March 2009, pp. 27-32.
5. Siti Norul Huda Sheikh Abdullah, Marzuki Khalid, Khairuddin Omar, and Rubiyah Yusof, "Pengesanan Nombor Plat Kenderaan menggunakan Alkhwarizmi Gugusan dan Kelancaran Jarak Larian (GKJL)", *Sains Malaysiana*, Vol. 38, No. 4, UKM Publishers, pp. 577-587, Aug, 2009.
6. Azura Che Soh, Marzuki Khalid, Mohammad Hamiruce Marhaban and Rubiyah Yusof, "Modeling of a Multilane-Multiple Intersection Based on Queue Theory and Standard Approach Techniques".



*International Journal of Simulation Modelling Practice and Theory*, Elsevier, 17 (2009) pp 1081-1105, 2009. (Impact Factor=0.586)

7. Muhammad Faiz Mohamed Saaid, Zuwairie Ibrahim, Mohamad Shukri Zainal Abidin, Marzuki Khalid, and Nor Haniza Sarmin, "DNA code Word design for DNA computing with Real-time Polymerase Chain Reaction", *Journal of Computer Science* 5 (1): 1-10, 2009.
8. Hafizah Hussain, Marzuki Khalid, Rubiyah Yusuf, "Direct Model Reference Adaptive Controller Based-On Neural-Fuzzy Technique for nonlinear dynamical Systems, **American Journal of Applied Science** 2008 (pg769-776), USA
9. Zuwairie Ibrahim, Tri Basuki Kurniawan, Marzuki Khalid, and Nor Haniza Sarmin, "A DNA Sequence Design for Direct-Proportional Length-Based DNA Computing using DNASquenceGenerator", **International Journal of Simulation:Systems, Science, and Technology**, Vol. 9, No. 2, May 2008, pp. 65-72, U. Kingdom
10. Noor Khafifah Khalid, Zuwairie Ibrahim, and Mohamad Shukri Zainal Abidin, "An Algorithm to Group Defects on Printed Circuit Board for Automated Visual Inspection", **International Journal of Simulation: Systems, Science, and Technology**, Vol. 9, No. 2, May 2008, pp. 1-10 , U. Kingdom
11. Zuwairie Ibrahim, Osamu Ono, and Marzuki Khalid, "Experimental Implementation of Hybrid Concentration-Controlled Direct-Proportional Length-Based DNA Computing for Numerical Optimization of the Shortest Path Problem", **International Journal of Bio-Medical Soft Computing and HumanSciences** (accepted), Japan
12. Zuwairie Ibrahim, John A. Rose, Akira Suyama, and Marzuki Khalid, "Experimental Implementation and Analysis of a DNA Computing Readout Method Based on Real-Time PCR with TaqMan Probes", **Natural Computing Journal, Springer**, Vol. 7, No. 2, pp. 277-286, 2008, U. Kingdom
13. Marzuki Khalid, Eileen Liew, Rubiyah Yusof, and Miniappan Nadaraj, "Design of an Intelligent Wood Species Recognition System," **International Journal of Simulation, Systems, Science and Technology**, UK Simulations Society, Vol. 9, No. 3, pp. 9-19, Sept. 2008, U. Kingdom
14. Ribhan Abdul Rahman, Rubiyah Yusof, Marzuki Khalid, and Mohd. Faisal Ibrahim, "Fuzzy Modeling using Genetic Algorithm AND Recursive Least Squares for Process Control Application", **International Journal of Simulation, Systems, Science and Technology, UK Simulations Society**, Vol. 9, No. 3, pp. 34-46, Sept. 2008, U. Kingdom
15. Shahrin Azuan Nazeer, Marzuki Khalid, Telekom Research and Development Sdn. Bhd., UTM, "PCA-ANN Face Recognition System Based on Photometric Normalization Techniques", **I-Tech Education and Publishing**, Vienna, Austria, 25<sup>th</sup> December 2007.
16. Zuwairie Ibrahim, Yusei Tsuboi, Osamu Ono, and Marzuki Khalid, "Experimental Implementation of Direct-Proportional Length-Based DNA Computing for Numerical Optimization of the Shortest Path Problem", **International Journal of Unconventional Computing, Old City Publishing**, Vol. 3, pp. 15-34, (PDF), 2007
17. R. Nagarajan, S. Yaacob, P. Pandian, M. Karthigayan, S. H. Amin and M. Khalid, "A Real-time Marking Inspection Scheme for Semiconductor Industries", **The International Journal of Advanced Manufacturing Technology, Springer London, ISSN 0268-3768 (Print) 1433-3015 (online)**, Vol 34, No. 9-10, (October 2007).
18. Zuwairie Ibrahim, Yusei Tsuboi, Mohd Saufee Muhammad, Osamu Ono, Marzuki Khalid. "Parallel Overlap Assembly for Initial Pool Generation of Direct-Proportional Length-Based DNA Computing", **International Journal of Innovative Computing, Information, and Control (IJICIC), ICIC International**, Vol. 1, No. 2, pp. 261-275, June 2005.

19. Zuwairie Ibrahim, Yusei Tsuboi, Osamu Ono, Marzuki Khalid. "DNA Computing Towards Dijkstra's Algorithm", **GESTS International Transaction on Computer Science and Engineering, Sunjin Publishing Co.**, Vol. 3, No. 1, pp. 13-24, April 2005.
20. Marzuki Khalid, Eileen Lew Yi Lee, Rubiyah Yusof, Lim Chee Seng, Tan Yu Eng, and Osamu Ono, "Design of an Intelligent Wood Species Recognition System", **International Journal of Engineering Applications of Artificial Intelligence**, Elsevier Science, 2004 (Submitted).
21. Zuwairie Ibrahim, Yusei Tsuboi, Osamu Ono, and Marzuki Khalid. "Direct-Proportional Length-Based DNA Computing for Shortest Path Problem", **International Journal of Computer Science and Application (IJCSA)**, **Technomathematics Research Foundation**, Vol. 1, No. 1, July 15, 2004, pp. 46-60.
22. Zuwairie Ibrahim, Yusei Tsuboi, Osamu Ono, and Marzuki Khalid. "DNA Computing for an Absolute 1-Center Problem: An Evolutionary Approach", **International Journal of Computational Intelligence (IJCI)**, **Computational Intelligence Society**, Vol. 1, Issue 4, 2004, pp. 9-17.
23. Toyoura Y, Watada J, Khalid M, and Yusof R, "Formulation of linguistic regression model based on natural words", **Journal of Soft Computing**, Vol. 8 No.10, Nov. 2004, Springer, pp. 681-688.
24. "Adaptive general regression neural networks for modelling of dynamic plants", T. L. Seng, M. Khalid, and R. Yusof, **International Journal of Systems and Control Engineering**, Inst. of Mech. Engineers, U.K. Vol. 213, Part I, pp.275-287, 1999.
25. "Tuning of a Neuro-Fuzzy Controller by Genetic Algorithms", L.S. Teo, M. Khalid, and R. Yusof, **IEEE Trans on Systems, Man and Cybernetics**, Vol. 29, No. 2, pp.226-236, April, 1999
26. "Tuning of a Neuro-Fuzzy Controller by genetic algorithms with an Application to a Coupled-Tank Liquid-level Control System", L.S. Teo, M. Khalid, and R. Yusof, **Int. Journal on Engineering Applications of AI**, Elsevier, Vol. 11, pp 517-529, 1998.
27. "Adaptive Neuro-Fuzzy Control Systems by RBF and GRNN Neural Networks", L.S. Teo, M. Khalid, R. Yusof, and S. Omatu, **Int. Journal of Intelligent and Robotics System**, Kluwer Academics, Vol. 23 (Special Issue), pp. 267-289, December, 1998.
28. "Temperature Regulation With Neural Networks and Alternative Control Schemes", M. Khalid, S. Omatu, and R. Yusof, **IEEE Trans. on Neural Networks**, Vol. 6, No. 3, pp. 572-582, 1995.
29. "Temperature Control of a Water Bath by Self-Tuning PID Controller", R. Yusof, S. Omatu, and M. Khalid, **Int. Journal of Systems Science**, Vol. 25, No. 9 1391-1404, Taylor and Francis, U. K., 1994.
30. "Neural Networks for Self Learning Process Control Systems", M. Khalid, R. Yusof, and S. Omatu, **Journal of Artificial Neural Networks**, USA, Vol. 1, No.1, pp.23-49, 1994.
31. "Adaptive Fuzzy Control of a Water Bath Process with Neural Networks", M. Khalid, S. Omatu and R. Yusof, **Int. Journal of Engineering Applications of Artificial Intelligence**, Vol. 7, No.1, Pergamon Press, pp. 39-52, 1994.
32. "Self-tuning PID Control: A Multivariable Derivation and Application", R. Yusof, S. Omatu, and M. Khalid, **Automatica**, Pergamon Press, Vol. 30, No. 12, pp.1975-1981, 1994.
33. "MIMO Furnace Control With Neural Networks", M. Khalid, R. Yusof, and S. Omatu, **IEEE Trans. on Control Systems Technology**, Vol. 1, No. 4, pp. 238-245, Dec, 1993.
34. "Multivariable Self-Tuning PID Control", R. Yusof, S. Omatu, and M. Khalid, **Int. Journal of Control**, Taylor and Francis, 1993.

35. "A Neural Network Controller for a Temperature Control System", M. Khalid and S. Omatu, **IEEE Control Systems Magazine**, Vol. 12, No.3, pp. 58-64, June, 1992.
36. "Recognition of the Cursive Handwritten Courtesy Amounts of Malaysian Bank Cheques" Md. Nasir Sulaiman and Marzuki Khalid, **Malaysian Journal of Computer Science**, Universiti Malaya.
37. "An Offline Segmentation Technique for the Processing of the Courtesy Amount of Malaysian Bank Cheques", Md. Nasir Sulaiman and Marzuki Khalid, **Elektrika**, Vol. 4, No.1, March 2001.
38. "Intelligent Traffic Lights Control by Fuzzy Logic", K.K. Tan, M. Khalid, and R. Yusof, **Malaysian Journal of Computer Science**, Nov. 1995.
39. "Hybrid Genetic Algorithm Approach to Unit Commitment", M. F. Othman, I. Hassan, and M. Khalid, **IEM Jurnal**, Institution of Engineers Malaysia, Nov. 1995.
40. "Adaptive Fuzzy-Neural Networks Integrated Control System", M. Khalid, S. Omatu and R. Yusof, **Jurnal Teknologi**, UTM, Malaysia, 1994.
41. "Direct Inverse Model Neuro-Control of a Furnace: An Experimental Study based on Input Vectors, Hidden Neurons, and Training Patterns", M. Khalid, R. Yusof and S. Omatu, **Jurnal IEM**, Malaysia, Bil. 55, pp. 67-78, 1994.
42. "Fuzzy Control of a Water Bath Process", M. Khalid and S. Omatu, **Jurnal Institusi Jurutera Malaysia**, Malaysia, Dis. 1993.
43. "Fuzzy Logic Control", M. Khalid and S. Omatu, **Jurnal Teknologi**, UTM, Malaysia, pp. 20-38, Jun, 1993.
44. "Temperature control of a water bath process: A comparative study between a neuro-control, a self-tuning, a generalised predictive and a conventional feedback control approach", M. Khalid, R. Yusof, and S. Omatu, **Jurnal Teknologi**, UTM, Malaysia, Bil. 18, Disember, 1992.
45. "Self tuning PID Control: A multivariable approach", R. Yusof, S. Omatu, and M. Khalid, **Journal of Physical Science**, USM, Malaysia, Vol. 3, pp. 45-63, 1992.
46. "Multi-layered Neural Networks for a Multi-variable Control System", M. Khalid and S. Omatu, **Jurnal Elektrika**, Malaysia, Jld.5, Bil.2/92, UTM, 1992.
47. "Neural Networks for the Development of Intelligent Controllers", M. Khalid, **Journal of Industrial Technology**, Malaysia, Vol. 2, No. 2, pp. 1-14, Oct. 1992.
48. "A Neural Network Controller for a Temperature Control System", M. Khalid and S. Omatu, **Jurnal Elektrika**, UTM, Malaysia, Jilid 4., Bil. 2, 1991.

(c). Conferences (International)

1. Tri Basuki Kurniawan, **Zuwairie Ibrahim**, Noor Khafifah Khalid, and Marzuki Khalid, "A Population-based Ant Colony Optimization Approach for DNA Sequence Optimization", *Third Asia International Conference on Modelling & Simulation (AMS2009)*, Bandung & Bali, Indonesia, May 25-26, 29, 2009, pp. 246-251.
2. Muhammad Faiz Mohamed Saaid, **Zuwairie Ibrahim**, Marzuki Khalid, and Nor Haniza Sarmin, "Automation of DNA Computing Readout Method Implemented on LightCycler System", *Third Asia International Conference on Modelling & Simulation (AMS2009)*, Bandung & Bali, Indonesia, May 25-26, 29, 2009, pp. 252-257.
3. Noor Khafifah Khalid, **Zuwairie Ibrahim**, Tri Basuki Kurniawan, Marzuki Khalid, and Andries P. Engelbrecht, "Implementation of Binary Particle Swarm Optimization for DNA Sequence Design", *International Symposium on Distributed Computing and Artificial Intelligence (DCAI'09)*, University of Salamanca, Spain, June 10-12, 2009.
4. Tri Basuki Kurniawan, **Zuwairie Ibrahim**, Noor Khafifah Khalid, and Marzuki Khalid, "An Optimized Ant System Approach for DNA Sequence Optimization", University of Salamanca, Spain, June 10-12, 2009.
5. Muhammad Faiz Mohamed Saaid, **Zuwairie Ibrahim**, Shahdan Sudin, Marzuki Khalid, and Nor Haniza Sarmin, "DNA Computing Readout Approaches: A Review", *The Second International Conference on Control, Instrumentation and Mechatronics Engineering (CIM09)*, Malacca, Malaysia, June 2-3, 2009, pp. 378-384.
6. Noor Khafifah Khalid, **Zuwairie Ibrahim**, Tri Basuki Kurniawan, Shahdan Sudin, and Marzuki Khalid, "DNA Sequence Optimization: A Methodology Overview", *The Second International Conference on Control, Instrumentation and Mechatronics Engineering (CIM09)*, Malacca, Malaysia, June 2-3, 2009, pp. 385-391.
7. Muhammad Faiz Mohamed Saaid, **Zuwairie Ibrahim**, Marzuki Khalid, and Nor Haniza Sarmin, "K-Means Clustering for DNA Computing Readout Method Implemented on LightCycler System", *The 3rd SEATUC Symposium*, Johor Bahru, Malaysia, February 25-26, 2009, pp. 411-416.
8. **Zuwairie Ibrahim**, Tri Basuki Kurniawan, Noor Khafifah Khalid, and Marzuki Khalid, "Implementation of Ant Colony System for DNA Sequence Optimization", *The Fourteenth International Symposium on Artificial Life and Robotics 2009*, Oita, Japan, February 5-7, 2009, pp. 712-715.
9. Azura Che Soh, Marzuki Khalid, Mohammad Hamiruce Marhaban and Rubiyah Yusof, "Improving Fuzzy Traffic Controller for Multilane-Multiple Intersection". *The Seventh IEEE International Conference on Control & Automation*, Christchurch, New Zealand, 9-11 Dec 2009.
10. Marzuki Khalid, Homam Mokayyed, and Rubiyah Yusof, "Online Signature Verification with Neural Networks Classifier and Fuzzy Inference", *AMS2009*, Bandung, Indonesia, 25-27 May, 2009.

11. Muhd Ridzuan Yunus, Marzuki Khalid, and Rubiyah Yusof, "Intelligent Prediction of Consumer Behaviours based on Ordinal Structure Fuzzy Models", *ICMSAO2009*, American Sharjah University, Sharjah, UAE, 20-22 January, 2009.
12. Marzuki Khalid, Homam Mokayyed, and Rubiyah Yusof, "Robust Signature Verification based on Multiple Classifiers", *ISME2009, The 6<sup>th</sup> International Symposium on Management and Engineering*, Dalian, August 5-7, 2009.
13. Fatimah Sham Ismail and Rubiyah Yusof, "Modelling of Electrothermal Temperature Profile For IC-Based Electronic Devices", 2<sup>nd</sup> International Conference On Functional Materials and Devices (ICMD), Kuala Lumpur 16<sup>th</sup>-19<sup>th</sup> June 2008
14. Fatimah Sham Ismail, Rubiyah Yusof, Haslina Selamat, M.F.Abu Bakar and A. Hamzah, "Experimental Setup For Active Thermal Control of IC Package Electronic Devices", The 1<sup>st</sup> International Meeting on Advances in Thermo-fluid (IMAT), Kuala Lumpur, Malaysia, 26<sup>th</sup> August 2008
15. Hamam Mokayed, Marzuki Khalid and Rubiyah Yusof, "Online Signature Verification with Neural Network Classifier and Fuzzy Inference", The 4<sup>th</sup> International IEEE Conference on Signal Image Technology and Internet Based System – SITIS 2008, Bali, Indonesia, 15<sup>th</sup> July 2008
16. Babak Rezaei Rowshan, Marzuki Khalid, Rubiyah Yusof, "Multi-level Fuzzy Score Fusion for Client Specific Linear Discriminant Analysis based Face Authentication System", The 4<sup>th</sup> International IEEE Conference on Signal Image Technology and Internet Based System – SITIS 2008, Bali, Indonesia, 15<sup>th</sup> July 2008
17. Mohd Zamri Ibrahim, Marzuki Khalid, Rubiyah Yusuf, "Text dependant speaker Verification System Using Discriminative Weighting Method and Artificial Neural Networks", AIA 2008, Innsbruck, Austria, 11-13<sup>th</sup> Feb, 2008
18. Ribhan Zafira Abdul RAhman, Rubiyah Yusof, Marzuki Khalid, "Fuzzy Modeling with Genetic Algorithm for Process Control Rig", ICMSAO 09 Third International Conference on Modeling Simulation and Applied Optimization , American University of Sharjah, Sharjah, United Arab Emirates, 20 – 22<sup>nd</sup> January 2009
19. M.F.M. Saaïd, Z. Ibrahim, M. Khalid, and N.H. Sarmin, "'Fuzzy C-Means Clustering for DNA Computing Readout Method Implemented on DNA Engine Opticon 2 System", Fourth Kuala Lumpur International Conference on Biomedical Engineering, Kuala Lumpur, Malaysia, 25-28 June 2008, pp. 282-285, Kuala Lumpur, Malaysia, 25-28<sup>th</sup> June 2008
20. Zuwairie Ibrahim, Noor Khafifah Khalid, Ismail Ibrahim, Mohamad Shukri Zainal Abidin, Musa Mohd Mokji, and Syed Abdul Rahman Syed Abu Bakar, "A Noise Elimination Procedure for Printed Circuit Board Inspection System", Asia International Conference on Modelling and Simulation, Kuala Lumpur, Malaysia, 13-15 May 2008, pp.332-337 , Kuala Lumpur, Malaysia, 13-15<sup>th</sup> May 2008
21. Noor Khafifah Khalid, Tri Basuki Kurniawan, Zuwairie Ibrahim, Zulkifli MdYusof, Marzuki Khalid, and Andries P. Engelbrecht, "'A Model to Optimize DNASequences Based on Particle Swarm Optimization", Fourth Asia International Conference on Modelling and Simulation, Kuala Lumpur, Malaysia, 13-15 May 2008, pp. 34-539, Kuala Lumpur, Malaysia, 13-15<sup>th</sup> May 2008
22. Noor Khafifah Khalid, Tri Basuki Kurniawan, Zuwairie Ibrahim, Zulkifli MdYusof, Marzuki Khalid, and Andries P. Engelbrecht, "'A Model to Optimize DNASequences Based on Particle Swarm Optimization", Fourth Asia International Conference on Modelling and Simulation, Kuala Lumpur, Malaysia, 13-15 May 2008, pp. 34-539, Kuala Lumpur, Malaysia, 13-15<sup>th</sup> May 2008
23. Muhammad Faiz Mohamed Saaid, Zuwairie Ibrahim, Nor Haniza Sarmin, "An Improved In Silico Algorithm for Output Visualization of DNA Computing Based on Real-Time PCR", Asia

- International Conference on Modelling and Simulation, Kuala Lumpur, Malaysia, 13-15 May 2008, pp. 879-884 , Kuala Lumpur, Malaysia, 13-15<sup>th</sup> May 2008
24. Tri Basuki Kurniawan, Noor Khafifah Khalid, Zuwairie Ibrahim, MarzukiKhalid, Martin Middendorf, ""Evaluation of Ordering Methods for DNA Sequence Design Based on Ant Colony System", Asia International Conference on Modelling and Simulation, Kuala Lumpur, Malaysia, 13-15 May 2008, pp.905-910 , Kuala Lumpur, Malaysia, 13-15<sup>th</sup> May 2008
  25. Muhammad Faiz Mohamed Saaid, Zuwairie Ibrahim, and Nor Haniza Sarmin, "Generating DNA Code Word for DNA Computing with Real-Time PCR", The 4<sup>th</sup> IASTEAD International Conference on Advances in Computer Science and Technology (ACST 2008), 2-4 April 2008, Langkawi, Malaysia, pp. 150-155 , Langkawi, Malaysia, 2-4<sup>th</sup> April 2008
  26. Tri Basuki Kurniawan, Noor Khafifah Khalid, Zuwairie Ibrahim, Marzuki Khalid, and Martin Middendorf, "An Ant Colony System for DNA Sequence Design Based on Thermodynamics", The 4th IASTEAD International Conference on Advances in Computer Science and Technology (ACST 2008), 2-4 April 2008,Langkawi, Malaysia, pp. 144-149 , Langkawi, Malaysia, 2-4<sup>th</sup> April 2008
  27. Noor Khafifah Khalid, Zuwairie Ibrahim, Tri Basuki Kurniawan, Zulkifli Md Yusof, Marzuki Khalid, Nor Haniza Sarmin, and Andries P. Engelbrecht, "Single Objective Optimization of DNA Sequences based on Particle Swarm Optimization , Prosiding Simposium Kebangsaan Sains Matematik ke-16, Kota Bharu, Kelantan, Malaysia, 2-5<sup>th</sup> June, 2008 , Kota Bharu, Kelantan, 2-5<sup>th</sup> June 2008
  28. Ridzuan Yunus, Rubiyah Yusof, Marzuki Khalid, "Fuzzy Logic Predictor for Consumer Behaviours, ICMSAO 09 Third International Conference on Modeling Simulation and Applied Optimization, American University of Sharjah, Sharjah, United Arab Emirates, 20 – 22<sup>nd</sup> January 2009
  29. Jamikaliza Abdul Karim, Shahrin Azuan Nazeer, Nazaruddin Omar , Rubiyah Yusof, "Face Recognition Based on PCA and Fuzzy Artmap", Konferensi Nasional Sistem Informasi 2008, Yogyakarta, 2008, 14-15<sup>th</sup> January 2008
  30. Jamikaliza Abdul Karim, Rubiyah Yusof, Marzuki Khalid, "Fuzzy Artmap Approach for Face Recognition System using Malaysian Dataset", ICMSAO 09 Third International Conference on Modeling Simulation and Applied Optimization , American University of Sharjah, Sharjah, United Arab Emirates, 20 – 22<sup>nd</sup> January 2009
  31. Mohammad Zaharudin Ahmad Darus, Mat Kamil Awang, Nazaruddin Omar, Shahrin Azuan Nazeer, Marzuki Khalid , Rubiyah Yusof, "Image Projection in Face Detection Using Artificial Neural Network, 8th Asean Science and Technology Week (ASTW) Scientific and Technical Conferences, Manila, Philipphines, 3-4<sup>th</sup> July, 2008
  32. Shahrin Azuan Nazeer, Marzuki Khalid, and Rubiyah Yusof, "Face Recognition Systems based on Photometric Normalization, Linear Subspace and Artificial Neural Network Approaches", 8th Asean Science and Technology Week (ASTW) Scientific and Technical Conferences, Manila, Philipphines, 3-4<sup>th</sup> July, 2008
  33. Nazaruddin Omar, Mat Kamil Awang, Shahrin Azuan Nazeer, Norbik Bashah Idris, Marzuki Khalid , and Rubiyah Yusof, "Online Signature Verification Based On Dynamic Feature Discriminators", 8th Asean Science and Technology Week (ASTW) Scientific and Technical Conferences, Manila, Philipphines, 3-4<sup>th</sup> July, 2008

34. Zalhan Mohd. Zin, Marzuki Khalid, Rubiyah Yusof, "Feature Selections using genetic algorithm for Face Detection", 3<sup>rd</sup> International Colloquium on Signal processing and Its Applications" (CSPA'07), 9-11 March 2007.
35. Siti Norul Huda Sheikh Abdullah, Marzuki Khalid, Rubiyah Yusof, and Khairuddin Omar, "Licence Plate Recognition based on Geometry Features, Topological Analysis and Support Vector Machine", *Malaysia-Japan International Symposium on Advanced Technology* (MJISAT2007), Seri Pacific Hotel, Kuala Lumpur, Nov 12-15. 2007.
36. Haslina Md. Sarkan, Marzuki Khalid, Rubiyah Yusof, "Eyebrow Localization for EBGM-based Face Recognition", MJISAT 2007, 12<sup>th</sup> – 15<sup>th</sup> November 2007
37. Azura Che Soh, Marzuki Khalid, Rubiyah Yusof and Mohammad Hamiruce Marhaban, "Modelling and Optimisation of a Traffic Intersection Based on Queue Theory and Markov Decision Control Methods", *Asia Modelling Symposium, AMS2007*, Phuket, Thailand, 27<sup>th</sup> -30<sup>th</sup> March 2007
38. Che Soh, M.Khalid, R.Yusof and M.H. Marhaban, "Modelling of a Multilane Traffic Intersection Based on Networks of Queues and Jackson's Theorem", *Malaysia-Japan International Symposium Advanced Technology, MJISAT 2007*, Kuala Lumpur, 12<sup>th</sup> -15<sup>th</sup> Nov 2007
39. Chin Kong Hin, Azura Che Soh, Raja Mohd Kamil Raja Ahmad, Mohammad Hamiruce Marhaban and Marzuki Khalid, "Fuzzy Logic Controller for Traffic Junction", *Conference on Innovative Technologies in Intelligent Systems and Industrial Applications*, Monash University, Sunway Campus, Kuala Lumpur, Malaysia, 17<sup>th</sup> -19<sup>th</sup> Nov 2007
40. Shahrin Azuan Nazeer, Marzuki Khalid, Nazaruddin Omar (2007), "A Comparative Study Using Different Classifiers for Face Verification", *International Conference on Robotics, Vision, Information and Signal Processing (ROVISP 2007)*, Penang, Malaysia, November 28-30, 2007
41. Shahrin Azuan Nazeer, Marzuki Khalid, Nazaruddin Omar, Khairul Faisal Jumari (2007), "Face Detection Using Artificial Neural Network Approach", *Asia International Conference on Modelling and Simulation (AMS 2007)*: pp394-399, Phuket, Thailand, Mac 27-30 ,2007
42. Shahrin Azuan Nazeer, Marzuki Khalid, Nazaruddin Omar, Mat Kamil Awang (2007), "Enhancement of Neuro-eigenspace Face Recognition Using Photometric Normalization, *International Conference on Graphic, Image and Vision (CGIV 2007)*: pp370-376,
43. Shahrin Azuan Nazeer, Marzuki Khalid, Nazaruddin Omar, Mat Kamil Awang (2007), "Performance Evaluation of Face Verification: A Comparative Study on Different Classifiers", 5<sup>th</sup> *International Conference on IT in Asia (CITA 2007)*, 341-343, Kuching, Sarawak, Malaysia, July 9 -12, 2007
44. Shahrin Azuan Nazeer, Marzuki Khalid, Nazaruddin Omar, Mohammad Zaharuddin Ahmad Darus (2007), "Face Detection Using Skin Color Detection and Artificial Neural Networks Approach", *Conference on IT Research and Applications (CITRA 2007)*, Holiday Villa, Subang, Selangor, Malaysia, April 4 -5, 2007
45. Shahrin Azuan Nazeer, Marzuki Khalid, Nazaruddin Omar, Rubiyah Yusof (2007), "Face Verification and Recognition based on Learning Algorithm", 4<sup>th</sup> *International Symposium on Management Engineering (ISME 2007)*, Kitakyushu, Japan, March 10-12, 2007
46. Nazeer, S.A., Omar, N., Khalid, M. (2007), "Face Recognition System using Artificial Neural Networks Approach", *International Conference on Signal Processing, Communications and Networking (ICSCN '07)*, 420-425, 22-24 Feb. 2007

47. Shahrin Azuan Nazeer, Nazaruddin Omar, Jamikaliza Abdul Karim, Marzuki Khalid, Rubiyah Yusof (2007), "Face Recognition using EIGENFACE and Multilayer Perception Neural Network", Konferensi Nasional Sistem Informasi (KNSI 2007) STT TELEKOM, Bandung, Indonesia, Feb 14-15, 2007
48. Nazaruddin Omar, Shahrin Azuan Nazeer, Khairul Faisal Jumari, Marzuki Khalid (2007), "A Face Detection System Using Artificial Neural Network Approach", 4<sup>th</sup> International Symposium on Management Engineering (ISME 2007), Kitakyushu, Japan, 10-12<sup>th</sup> March, 2007
49. Zuwairie Ibrahim, Tri Basuki Kurniawan and Marzuki Khalid, "A DNA Sequence Design for Direct-Proportional Length-Based DNA Computing using DNA Sequence Generator", The Second International Conference on Innovative Computing, Information and Control, Kumamoto September 5-7, 2007
50. Zuwairie Ibrahim, Tri Basuki Kurniawan and Marzuki Khalid, "A DNA Sequence Design for Molecular Computation of HPP with Output Visualization Based on Real-Time PCR", IEEE Congress on Evolutionary Computation 2007, Singapore, September 25-28, 2007, pp. 1823-1828, Singapore, September 25-28, 2007
51. Zalhan Mohd Zin, Marzuki Khalid & Rubiyah Yusof, "Feature Selections for Face Detection Using Genetic Algorithm", 3<sup>rd</sup> International Colloquium on Signal Processing and Its Applications (CSPA07) (CSPA-5042), Malacca, March, 2007
52. Zalhan Mohd Zin, Marzuki Khalid & Rubiyah Yusof, "Enhanced Feature Selections of Adaboost Training for Face Detection Using Genetic Algorithm (GABOOST)", 3<sup>rd</sup> IASTED International Conference on Computational Intelligence 2007 (CI07) (CI-574-017), Banff, Alberta, Canada, July, 2007
53. Zalhan Mohd Zin, Marzuki Khalid & Rubiyah Yusof, "Application of Genetic Algorithm to Select Features for Face Detection", 1<sup>st</sup> International Conference on Engineering Technology (ICET07) (ICET-014) – Best Paper Award (CI-574-017), Kuala Lumpur, December, 2007
54. Zalhan Mohd Zin, Marzuki Khalid & Rubiyah Yusof, "Enhancing Feature Selections for Face Detection Using Genetic Algorithm", 1<sup>st</sup> Malaysia-Japan International Symposium on Advanced Technology (MJISAT07), (MJISAT-017), Kuala Lumpur, 12<sup>th</sup> -15<sup>th</sup> November 2007
55. Zalhan Mohd Zin, Marzuki Khalid & Rubiyah Yusof, "Evolutionary Feature Selections for Face Detection", International Conference on Robotics, Vision, Information and Signal Processing (ROVISP2007), Penang, 2007.
56. M. Z. Ibrahim, M. Khalid, R. Yusof, "Fuzzy C-Means Clustering On Text Dependent Speaker Verification System", Malaysia-Japan International Symposium On Advanced Technology 2007 (MJISAT2007), Kuala Lumpur, Malaysia, 12<sup>th</sup> -15<sup>th</sup> November 2007
57. Faisul Arif Ahmad, Khairulmizam Samsudin, Marzuki Khalid and Rubiyah Yusof, "Obstacle Avoidance of Mobile Robots using Ordinal Structure Model of Fuzzy Reasoning Approach", Malaysia-Japan International Symposium On Advanced Technology 2007 (MJISAT2007), Kuala Lumpur, Malaysia, 12<sup>th</sup> -15<sup>th</sup> November 2007
58. S. Chan, H. Liu, D. J. Brown, T. M. J. Hui, and Marzuki Khalid, "A Framework for Image Enhancement via Contextual Information and Epitome-based Representation", 9<sup>th</sup> International Conference on Mechatronics Technology (ICMT2005), Kuala Lumpur, Dec. 2005.
59. Aris, M. Azri, Z. Hasan, M.K Hassan, Marzuki Khalid, S.M Amin and H. A. Cyril, "Development of Software System for Detecting Detective Symbols on Integrated Circuit Chip with Adjustable Readability Level", 9<sup>th</sup> International Conference on Mechatronics Technology (ICMT2005), Kuala Lumpur, Dec. 2005.



60. Marzuki Khalid and A. D. Kumeresan, "Design of an Elevator Group Supervisory Controller using Ordinal Structure Fuzzy Logic with Context Adaptation", 9<sup>th</sup> International Conference on Mechatronics Technology (ICMT2005), Kuala Lumpur, Dec.2005
61. M. S. Muhammad, Z. Ibrahim, S. Ueda, O. Ono, and Marzuki Khalid, "Experimental Implementation of Direct-Proportional Length-Based DNA Computing for Elevator Scheduling Problem", 9<sup>th</sup> International Conference on Mechatronics Technology (ICMT2005), Kuala Lumpur, Dec.2005.
62. M. Karthigayan, R. Nagarajan, S. Yaacob, P. Pandian, M. R. Muhamed Juhairi, S. H. M. Amin, Marzuki Khalid, "Classification of the Marketing on Integrated Circuits Chips Based on Moments and Projection Profile – A Comparison", 9<sup>th</sup> International Conference on Mechatronics Technology (ICMT2005), Kuala Lumpur, Dec.2005.
63. Zuwairie Ibrahim, Mohd Saufee Muhammad, Yusei Tsuboi, Osamu Ono, and Marzuki Khalid, "Experimental Comparison of Initial Pool Generation for Direct-Proportional Length-Based DNA Computing", IEEE International Region 10 Conference (TENCON2005), Melbourne, Australia, November 21-24, 2005.
64. Mohd Saufee Muhammad, Zuwairie Ibrahim, Osamu Ono, and Marzuki Khalid, "Length-based DNA Computing Implementation for Elevator Scheduling Problem", IEEE International Region 10 Conference (TENCON2005), Melbourne, Australia, November 21-24, 2005.
65. Zuwairie Ibrahim, Yusei Tsuboi, Osamu Ono, and Marzuki Khalid. "Experimental Implementation of Direct-Proportional LengthBased DNA Computing for Numerical Optimization of the Shortest Path Problem", Workshop on Unconventional Computing - From Cellular Automata to Wetware, European Conference on Artificial Life (ECAL2005), Canterbury, UK, September 6, 2005, C. Teuscher & A. Adamatzky, Eds., Luniver Press, pp. 35-46, ISBN 978-0-9551170-0-8. (PDF)
66. Zuwairie Ibrahim, Yusei Tsuboi, Osamu Ono, and Marzuki Khalid. "DNA Implementation of k-shortest Path Computation", 2005 IEEE Congress on Evolutionary Computation (CEC2005), Edinburgh, UK, September 2-5, 2005, Vol. 1, pp. 707-713. (PDF)
67. Mohd Saufee Muhammad, Zuwairie Ibrahim, Marzuki Khalid, Satomi Ueda, and Osamu Ono. "DNA Computing for Complex Scheduling Problem", International Conference on Natural Computing (ICNC05), Changsha, China, August 27-29, 2005, ICNC2005, Lecture Notes in Computer Science (LNCS), Springer- Verlag, Vol. 3611, pp. 1177-1186. (PDF)
68. Mohd Saufee Muhammad, Zuwairie Ibrahim, Osamu Ono, Satomi Ueda, and Marzuki Khalid, "Application of Length-Based DNA Computing for Complex Scheduling Problem", International Conference on Intelligent Computing (ICIC), Hefei, China, August 23-26, 2005, pp. 2090-2099.
69. Mohd Saufee Muhammad, Satomi Ueda, Osamu Ono, Junzo Watada, and Marzuki Khalid. "Solving Elevator Scheduling Problem Using DNA Computing Approach, 4th IEEE International Workshop on Soft Computing as Transdisciplinary Science and Technology (WSTST05), Muroran, Japan, May 25-27, 2005, Advances in Soft Computing, Springer, pp. 359-370 (invited paper)
70. Zuwairie Ibrahim, Yusei Tsuboi, Osamu Ono, and Marzuki Khalid. "Improving Initial Pool Generation of Direct-Proportional Length-Based DNA Computing by Parallel Overlap Assembly", 4th IEEE International Workshop on Soft Computing as Transdisciplinary Science and Technology (WSTST05), Muroran, Japan, May 25-27, 2005, Advances in Soft Computing, Springer, pp. 349-358 (PDF)
71. Mohd Saufee Muhammad, Satomi Ueda, Osamu Ono, and Marzuki Khalid, "DNA based Computing for Solving Elevator Scheduling Problem", 3rd International Conference on Computer Applications (ICCA2005), Yangon, Myanmar, March 9-10, 2005, pp. 507-514

72. Abdul Fadlil, Marzuki Khalid, Rubiyah Yusof, Nazaruddin Omar, Sairin Salleh, and Abd. Raof Shaari, "Signature Verification based on Two Module Classifiers", International Symposium on Bio-Inspired Computing (**BICO2005**), Kuala Lumpur, Nov. 2005.
73. M. Khalid, R. Yusof, C. T. Heng, M. R. Yunus, and O. Ono, "Effective Teaching of Control Systems using an Expert System based Virtual Laboratory Systems", Seventh ASEAN Science and Technology Week Conference (**ASTW2005**), Jakarta, Indonesia, August 5-7, 2005.
74. M. S. Zainal Abidin, M. Khalid, and R. Yusof, "Fault Diagnosis of an Induction Machine using Neuro-Fuzzy Inference", Seventh ASEAN Science and Technology Week Conference, (**ASTW2005**), Jakarta, Indonesia, August 5-7, 2005.
75. M. Khalid, E. Liew, R. Yusof, S. C. Lim, Y. E. Tan, and O. Ono, "An Intelligent Recognition System for Tropical Wood Species", Seventh ASEAN Science and Technology Week Conference, (**ASTW2005**), Jakarta, Indonesia, August 5-7, 2005.
76. M. S. Muhammad, Z. Ibrahim, O. Ono, and M. Khalid, "DNA-based Computing for Solving Elevator Scheduling Problem", **ICCA2005** Conference, Yangon, Myanmar, Mar. 9-10, 2005.
77. R. Yusof, C. S. Tay, M. Khalid, and O. Ono, "Solving University Timetable Problem using Distributed Micro-Genetic Algorithm with Local Search", IASTED International Conference on Artificial Intelligence and Applications (**AIA2005**), Innsbruck, Feb. 14-16, 2005.
78. R. Yusof, M. Faisal Ibrahim, and M. Khalid, "Fuzzy Modelling of a Distillation Column", IASTED International Conference on Software Engineering (**SE2005**), Innsbruck, Feb. 15-17, 2005.
79. Z. Ibrahim, Y. Tsuboi, O. Ono, and M. Khalid, "Improving Initial Pool Generation of Direct-Proportional Based Length DNA Computing by Parallel Overlap Assembly", Fourth IEEE International Workshop on Soft Computing as Transdisciplinary Science and Technology (**WSTST05**), Muroran, Japan, May 25-27, 2005.
80. M. S. Muhammad, S. Ueda, O. Ono, J. Watada, and M. Khalid, "Solving Elevator Scheduling Problem using DNA Computing Approach", Fourth IEEE International Workshop on Soft Computing as Transdisciplinary Science and Technology, (**WSTST05**), Muroran, Japan, May 25-27, 2005.
81. Abdul Rahim Ahmad, Christian Viard-Gaudin, Marzuki Khalid and Rubiyah Yusof, "Online Handwriting Recognition using Support Vector Machine", International Conference on Artificial Intelligence in Engineering & Technology (**ICAIET 2004**), 3-5 August 2004, Kota Kinabalu, Sabah, Malaysia
82. R.Nagarajan, Sazali Yaacob, Paulraj M Pandiayan, Shamsudin Amin, Marzuki Khalid and Hema C R, "Singular Value Features Based Object Distance Measurement using Functional Link Network for Stereo Vision Systems" International Conference on Artificial Intelligence in Engineering & Technology (**ICAIET 2004**), 3-5 August 2004, Kota Kinabalu, Sabah, Malaysia
83. R.Nagarajan, Sazali Yaacob, Paulraj M Pandiyan, M.Karthigayan, Shamsudin Haji Amin, Marzuki Khalid, "Classification of IC Chip Marking Using Neuro Fuzzy", International Conference on Artificial Intelligence in Engineering & Technology (**ICAIET 2004**), 3-5 August 2004, Kota Kinabalu, Sabah, Malaysia
84. Eileen Lew Yi Lee, Marzuki Khalid, Rubiyah Yusof, "Design of a Wood Recognition System Based on Grey Level Co-occurrence Matrix (GLCM) Feature Extraction Technique and BP-Based Neural Network", International Conference on Artificial Intelligence in Engineering & Technology (**ICAIET 2004**), 3-5 August 2004, Kota Kinabalu, Sabah, Malaysia
85. Gan Teck Hui, Marzuki Khalid, Rubiyah Yusof, "Generation of an Optimal JSSP Solution Using Genetic Algorithm With Parallel Computing", International Conference on Artificial Intelligence in Engineering & Technology (**ICAIET 2004**), 3-5 August 2004, Kota Kinabalu, Sabah, Malaysia

86. Eileen Lew Yi Lee, Marzuki Khalid, Rubiyah Yusof, Lim Chee Seng and Tan Yu Eng, "Design of an Intelligent Wood Recognition System for Classification of Tropical Wood Species", Malaysian Science and Technology Congress 2004 (**MSTC 2004**), 5-7 October 2004, Palace of The Golden Horses, Sri Kembangan, Selangor, Malaysia
87. Abdul Fadlil, Marzuki Khalid and Rubiyah Yusof, "Holistic Features for Online Cursive Handwriting Cheque-Word Recognition" Malaysian Science and Technology Congress 2004 (**MSTC 2004**), 5-7 October 2004, Sri Kembangan, Selangor, Malaysia.
88. Mohd. Faisal Ibrahim, Rubiyah Yusof & Marzuki Khalid, "Fuzzy Modeling for Nonlinear System", Malaysian Science and Technology Congress 2004 (**MSTC 2004**), 5-7 October 2004, Sri Kembangan, Selangor, Malaysia.
89. Hazrul Izwan, Marzuki Khalid & Rubiyah Yusof, "Neuro-Fuzzy Control of an Inverted Pendulum", Malaysian Science and Technology Congress 2004 (**MSTC 2004**), 5-7 October 2004, Sri Kembangan, Selangor, Malaysia.
90. Rubiyah Yusof, Mohd Faisal Ibrahim and Marzuki Khalid, "Fuzzy Modeling For Reboiler System", IEEE Region 10 Conference, **TENCON 2004**, 21-25 November 2004, Chiang Mai, Thailand
91. Abdul Fadlil, Marzuki Khalid and Rubiyah Yusof, "Online Handwritten Character Recognition Based On Online-Offline Features Using BP Neural Network", National Conference On Computer Graphics & Multimedia (**CoGRAMM'04**), 8-10 December 2004, Universiti Kebangsaan Malaysia, Selangor, Malaysia.
92. Marzuki Khalid, See Chin Liang and Rubiyah Yusof, "Control of a Complex Traffic Junction using Fuzzy Inference", 5<sup>th</sup> Asian Control Conference (**ASCC 2004**), Melbourne, Australia, 20-23 August, 2004.
93. Zuwairie Ibrahim, Yusei Tsuboi, Osamu Ono, and Marzuki Khalid. "A Study on Lower Bound of Direct Proportional Length-Based DNA Computing for Shortest Path Problem", International Symposium on Computational and Information Sciences (**CIS04**), Shanghai, China, December 16-18, 2004, 71-76, 2004.
94. Zuwairie Ibrahim, Yusei Tsuboi, Osamu Ono, and Marzuki Khalid. "DNA-Based Computing Approach for Weighted Graph Problems: A Methodology Overview", 2004 International Workshop on Biological Inspired Computing (**BIC2004**), Sendai, Japan, Nov 19-20, 2004.
95. Zuwairie Ibrahim, Yusei Tsuboi, Osamu Ono, and Marzuki Khalid. "Finding all the Shortest Paths of a Graph by a DNA-Based Computing Algorithm", Joint 2nd International Conference on Soft Computing and Intelligent Systems and 5th International Symposium on Advanced Intelligent Systems (**SCIS&ISIS2004**), Yokohama, Japan, Sept 21-24, 2004.
96. Zuwairie Ibrahim, Yusei Tsuboi, Osamu Ono, and Marzuki Khalid. "Molecular Computation Approach to Compete Dijkstra's Algorithm", The 5th Asian Control Conference (**ASCC2004**), Melbourne, Australia, July 20-23, 2004, 634-641.
97. Zuwairie Ibrahim, Yusei Tsuboi, Osamu Ono, and Marzuki Khalid. "A Preliminary Study on Lower Bound of Direct Proportional Length-Based DNA Computing for Shortest Path Problem", Preliminary Proceeding of the 10th International Meeting on DNA Computing (**DNA10**), Milan, Italy, June 7-10, 2004, pp. 430.
98. Zuwairie Ibrahim, Yusei Tsuboi, Osamu Ono, and Marzuki Khalid. "Finding N-Shortest Paths of a Graph by a DNA-Based Computing Algorithm", International Workshop on Fuzzy Systems and Innovational Computing (**FIC2004**), Kitakyushu, Japan, June 2-3, 2004, pp. 144-149.

99. Zuwairie Ibrahim, Yusei Tsuboi, and Osamu Ono. "Solving Unconstraint Assignment Problem by a Molecular-Based Computing Algorithm", 2004 IEEE International Symposium on Industrial Electronics (**ISIE2004**), Ajaccio, France, May 4-7, 2004, pp. 1473-1478 (ISBN 0-7803-8305-2).
100. Zuwairie Ibrahim, Osamu Ono, Yusei Tsuboi, and Marzuki Khalid. "Length-Based DNA Computing for 1-Pair Shortest Path Problem", Proc. of the Ninth International Symposium on Artificial Life and Robotics (**AROB'04**), Beppu, Oita, Japan, Vol. 2, pp. 299-302, January 28-30, 2004.
101. Zuwairie Ibrahim, Osamu Ono, Marzuki Khalid, and Yusei Tsuboi. "DNA Computing for an Absolute 1-Center Problem: An Evolutionary Approach", Proc. of the Ninth International Symposium on Artificial Life and Robotics (**AROB'04**), Beppu, Oita, Japan, Vol. 2, pp. 241-244, January 28-30, 2004
102. Tomohiko Nukano, Minoru Fukumi and Marzuki Khalid, "Vehicle Licence Plate Recognition by Neural Networks", International Symposium on Intelligent Signal Processing and Communication Systems (**ISPACS 2004**), Seoul, Korea, 18-19 Nov. 2004.
103. "Artificial Intelligence and Its Applications in Industry", M. Khalid, Keynote Lecture, Int. Conference on Applications in Artificial Intelligence **ICAI2003**, Kolhapur, India, Dec. 15-16, 2003.
104. "Offline Cursive Handwriting Recognition based on Hidden Markov Model and Neural Networks", Marzuki Khalid, Tay Yong Haur and Rubiyah Yusof, IEEE Int. Conference on Computational Intelligence, Robotics, and Automation, **CIRA2003**, Kobe, Japan, July 16-19, 2003.
105. "An Artificial Intelligence Approach for Power Transformer Fault Diagnosis" Y.H. Wan, B.L.Chua, M.Khalid, S.F.S.Zain, and A.Talib, Japan-Malaysia Seminar on Artificial Intelligence Applications in Industry, **AIAI2003**, Kuala Lumpur, Malaysia, June 24-25, 2003.
106. "Solving Job-Shop Scheduling Problems by Micro-Genetic Algorithm", C.S. Tay, R. Yusof, and M. Khalid, Japan-Malaysia Seminar on Artificial Intelligence Applications in Industry, **AIAI2003**, Kuala Lumpur, Malaysia, June 24-25, 2003.
107. "DNA-Based Computing Algorithm for Solving an Absolute 1-Center Problem", Z. Ibrahim, O. Ono, Y. Tsuboi, and M. Khalid, Japan-Malaysia Seminar on Artificial Intelligence Applications in Industry, **AIAI2003**, Kuala Lumpur, Malaysia, June 24-25, 2003.
108. "Artificial Intelligence Applications in Industry (AIAI)", Keynote Lecture, M. Khalid, International Conference on Robotics, international conference on Robotocs, Vision, Information and Signal Processing, **ROVISP'03**, Penang, Malaysia, January 22-24, 2003.
109. "Development of Software for Detecting Defective Characters Printed on the Integrated Circuit Chip using Neural Networks Approach" Ishak Aris, Maaspaliza Azri, Zainab Hassan, Harith Alvin Cyril, Shamsudin Hj Amin and Marzuki Khalid, First Regional Malaysia-France Workshop on Image Processing for Vision Systems and Multimedia Communications, **IMAGE2003**, Santubong, Sarawak, Malaysia, April 21-22, 2003.
110. "A Review on Online Chinese handwriting recognition", Yong Haur Tay and Marzuki Khalid, First Regional Malaysia-France Workshop on Image Processing for Vision Systems and Multimedia Communications, **IMAGE2003**, Santubong, Sarawak, Malaysia, April 21-22, 2003.
111. "Design of a Computer Vision System for Rubber Stamp Inspection", Mee Chun Loo, Marzuki Khalid, Yong Haur Tay, and Rubiyah Yusof, First Regional Malaysia-France Workshop on Image Processing for Vision Systems and Multimedia Communications, **IMAGE2003**, Santubong, Sarawak, Malaysia, April 21-22, 2003.

112. "A Comparative Study of SVM Tools for Classification", Abdul Rahim Ahmad, Marzuki Khalid, Rubiyah Yusof and C. Viard Gaudin, First Regional Malaysia-France Workshop on Image Processing for Vision Systems and Multimedia Communications, **IMAGE2003**, Santubong, Sarawak, Malaysia, April 21-22, 2003.
113. "Adaptive GRNN for the Modeling of Dynamic Plants", L.S. Teo, M. Khalid, and R. Yusof, Int. Symposium on Intelligent Control, **ISIC'02**, Vancouver, 28-30 Oct. 2002.
114. "Application of Model-based Fault Diagnosis using Fuzzy Inference to a d.c. Servo-motor", M. Shukri A. Hamid, M. Khalid, R. Yusof, and S. M. Amin, Int. Symposium on Intelligent Control, **ISIC'02**, Vancouver, 28-30 Oct. 2002.
115. "Model-based Fault Detection and Diagnosis using Parameter Estimation and Fuzzy Inference", M. Shukri A. Hamid, M. Khalid, R. Yusof, and S. M. Amin, Fourth Asian Control Conference (**4<sup>th</sup> ASCC**), Singapore, 25-27 September, 2002.
116. "Nonlinear Function Approximation using Radial Basis Function Neural Networks", Hafizah Husain, M. Khalid, and R. Yusof, IEEE Int. Students Conference on R&D, **SCORED 2002** Shah Alam, 16-17 July 2002.
117. "Artificial Intelligence: From Biology to Industry", Marzuki Khalid, Keynote Paper, **ICAIET 2002**, International Conference on AI in Engineering and Technology, Kota Kinabalu, Malaysia, 17-18<sup>th</sup> June, 2002.
118. "Design of an Intelligent License Plate Recognition System: VISIONPLATE II", Sharifah Faizah Syed Husin, Marzuki Khalid, and Rubiyah Yusof, **ICAIET 2002**, International Conference on AI in Engineering and Technology, Kota Kinabalu, Malaysia, 17-18<sup>th</sup> June, 2002.
119. "Classification Of Handwritten Digits Using Geometrical and Topological Feature Extraction Technique And Neural Network", Tiagrajah Janahiraman, Yong Haur Tay, Marzuki Khalid, and Rubiyah Yusof, **ICAIET 2002**, International Conference on AI in Engineering and Technology, Kota Kinabalu, Malaysia, 17-18<sup>th</sup> June, 2002.
120. "A Neural Network Based Bank Cheque Recognition system for Malaysian Cheques", Ahmad Ridhwan Wahap, Marzuki Khalid, Abdul Rahim Ahmad and Rubiyah Yusof, **ICAIET 2002**, International Conference on AI in Engineering and Technology, Kota Kinabalu, Malaysia, 17-18<sup>th</sup> June, 2002.
121. "Diagnosis of Power Transformers using Fuzzy Logic Interpretations", Wan Yat How, Marzuki Khalid, Syed Fuad Syed Zain and Aizam Talib, **INETRMEC 2001**, Tokyo, November, 2001.
122. "A Speaker-Independent Voice-Controlled Telepresence System", Ong Yean Hoon, Marzuki Khalid and Rubiyah Yusof, Asian Control Conference, **SCORED 2001** IEEE Int. Conference, Kuala Lumpur, 20-21 Feb. 2001.
123. "Design of Automated Data Entry System", Lim Woan Ning, Marzuki Khalid, and Tay Yong Haur, **SCORED 2001** IEEE Int. Conference, Kuala Lumpur, 20-21 Feb. 2001.
124. "Design of a Recognition System for Malaysian Bank-cheques", Rojik Taito and Marzuki Khalid, **SCORED 2001** IEEE Int. Conference, Kuala Lumpur, 20-21 Feb. 2001.
125. "New Developments in Neuro-Fuzzy Control Systems", Marzuki Khalid (KEYNOTE PAPER), Teo Lian Seng, Rubiyah Yusof, 1<sup>st</sup> International Conference on Mechatronics 2001, **ICOM '01**, Kuala Lumpur, Malaysia, 14-15, Feb. 2001.
126. "Intelligent Vehicle License Plate Recognition using a Multi-Layer Self-Clustering Neural Network", Yap Keem Siah, Marzuki Khalid and Tay Yong Haur, **BICET 2001** Int. Conference, Brunei Darussalam, 2001.

127. "An Analytical Handwritten Word Recognition System with Word-Level Discriminative Training" Yong-Haur Tay, P. M. Lallican, Marzuki Khalid, S. Knerr, C. Viard-Gaudin, **ICDAR'01** Conference, France.
128. "Offline Handwritten Word Recognition using a Hybrid Neural Network and Hidden Markov Model", **ISSPAA 2001**, Kuala Lumpur, August 2001.
129. "An Offline Cursive Handwritten Word Recognition System", " Yong-Haur Tay, P. M. Lallican, Marzuki Khalid, C. Viard-Gaudin and S. Knerr, **TENCON 2001**, Singapore, Aug. 2001.
130. "Modelling of a Superheater for a Combined Cycle Power Plant", Faridah M. Idris, Rubiyah Yusof andf Marzuki Khalid, Intelligent Conference on Intelligent Systems and Technologies for the New Millennium, **TENCON 2000**, Kuala Lumpur, Malaysia, Sept. 24-27, 2000.
131. "An Enhanced Intelligent Database Engine by Neural Network and Data Mining" Chua Boon Lay, Marzuki Khalid and Rubiyah Yusof, Intelligent Conference on Intelligent Systems and Technologies for the New Millennium, **TENCON 2000**, Kuala Lumpur, Malaysia, Sept. 24-27, 2000.
132. "Design of a Virtual Laboratory Concept for E-learning", Yee Wang Ping and Marzuki Khalid, **UROP Congress 2000**, Singapore, 7-8, September 2000.
133. "A Self-Organizing Neuro-Fuzzy Controller by Genetic Algorithm", Teo Lian Seng, Marzuki Khalid and Rubiyah Yusof, Asian Control Conference, 3<sup>rd</sup> ASCC, Shanghai, China. July 5-8, 2000.
134. "A Step Towards iEducation in Control: Of Multimedia Courseware and Virtual Laboratories", Marzuki Khalid, **Second Asian Control Professors Association (ACPA) Workshop**, Shanghai, China July 4, 2000.
135. "ADAPT – An Intelligent Software for the Diagnosis of Power Transformers" Wan Yat How, Marzuki Khalid, Syed Fuad Syed Zain and Md. Aizam Talib, **ICA 2000 Conference**, Intelligent Solutions for Manufacturing Systems in the New Millennium, Mines Exhibition Center, Seri Kembangan, June 21, 2000.
136. "A Step Towards i-Education: Adaptive Learning Platforms and Virtual Laboratories", Marzuki Khalid, **Conference on Digital University**, UPM, Serdang, Malaysia, May 16-17, 2000.
137. "Application of Artificial Intelligence in Industry", Marzuki Khalid (KEYNOTE SPEAKER), **RESQUA International Conference**, Penang, Malaysia, May 4-5, 2000.
138. "A Handwritten Character Recognition System based on Geometrical and Topological Feature Extraction and the Fuzzy Artmap Neural Networks", Lim Woan Ning, Marzuki Khalid and Tay Yong Haur, **RESQUA International Conference**, Penang, Malaysia, May 4-5, 2000.
139. "Design of an Automated Data Entry System for Handwritten Forms", Lim Woan Ning, Marzuki Khalid and Rubiyah Yusof, World Engineering Congress, Sheraton Subang, Malaysia. 1999.
140. "Vehicle Licence Plate Recognition by Fuzzy Artmap Neural Network", Yap Keem Siah, Tay Yong Haur, Marzuki Khalid, Tahir Ahmad, **World Engineering Congress**, Sheraton Subang, Malaysia. 1999
141. "Adaptive Neuro-Fuzzy Control Systems", L. S. Teo, M. Khalid and R. Yusof, **PRICAI'98, 5<sup>th</sup> Pacific Rim International Conference on Artificial Intelligence**, Singapore, Nov. 1998.
142. "Self-tuning Neuro-Fuzzy Controller by Genetic Algorithm with Application to a Couple-Tank Liquid Level Control System", L. S. Teo, M. Khalid and R. Yusof, **IFAC Symposium on AI in Real-Time Control**, Kuala Lumpur, Sept. 1997.

143. "Comparison of Fuzzy ARTMAP and MLP Neural Networks for Hand-Written Character Recognition", Yong-Haur Tay and Marzuki Khalid, **IFAC Symposium on AI in Real-Time Control**, Kuala Lumpur, Sept. 1997.
144. "A Self-Organizing Fuzzy Logic Controller by Genetic Algorithms", L.S. Teo, M. Khalid, and R. Yusof, submitted to **IEEE Conference on Decision and Control**, Kobe, Japan, Dec. 1996.
145. "Intelligent Elevator Control by Ordinal Structure Fuzzy Logic Algorithm", K. K. Tan, M. Khalid, and R. Yusof, **Proc. of ICARCV 97**, Singapore, Dec. 1996.
146. "Unit Commitment and Economic Load Dispatch Solution for Power System Scheduling using G.A.", M. F. Othman, I. Hassan, and M. Khalid, **CEPSI Conference**, Kuala Lumpur, Nov. 1996.
147. "Adaptive Fuzzy Logic Control by Genetic Algorithm", L.S. Teo, M. Khalid, and R. Yusof, **Proc. of CESA'96, IMACS Multiconference: Computational Engineering in System Applications**, Lille, France, July, 1996.
148. "The Accuracy of Classical Approach Short Term Load Forecasting as compared to the proposed Artificial Neural Network Methods", H. Shaibon, A.A.M. Zin, M. Khalid, S.R.S. Baki, H. Zhaoguang and K.K. Lo, **Proc. of IEEE Int. Conf. on Electricity Sector Development and Demand Side Management'95**, Kuala Lumpur, Nov. 1995.
149. "Fuzzy Logic Control of Traffic Lights", K.K. Tan, M. Khalid, and R. Yusof, **Proc. of Conference of ASEAN Federation of Engineering Organization (CAFEO'95)**, Bandung, Indonesia, Oct. 1995.
150. "Intelligent Systems Using Neural Networks", M. Khalid, **Proc. of Conference of ASEAN Federation of Engineering Organization (CAFEO'95)**, Bandung, Indonesia, Oct. 1995.
151. "Technology Transfer in Malaysia", M. Khalid, **Proc. of Conference of ASEAN Federation of Engineering Organization (CAFEO'95)**, Bandung, Indonesia, Oct. 1995.
152. "Application of STPID to a Temperature Control Process", R. Yusof, S. Omatu, and M. Khalid, **Proc. of 3rd IEEE Conference on Control Applications (3rd CCA)**, Glasgow, Scotland, 24-27th, August, 1994.
153. "Adaptive fuzzy-neuro control with application to a waterbath process", M. Khalid, S. Omatu, and R. Yusof, **Proc. of 3rd IEEE Conference on Control Applications (3rd CCA)**, Glasgow, Scotland, 24-27th, August, 1994.
154. "Temperature Regulation with Neural Networks and Alternative Control Schemes", M. Khalid, S. Omatu, and R. Yusof, **Proc. of World Conference on Computational Intelligence** (Invited Paper), Orlando, Florida, USA, June 28th - July 1st, 1994.
155. "A Comparison Between Neuro-control and Alternative Control Schemes with application to a Water Bath Process", M. Khalid, S. Omatu, and R. Yusof, **Proc. of Int. Conf. on Robotics, Computer Vision, and Parallel Processing (ROVPIA'94)**, Ipoh, Malaysia, May 26th-28th, 1994.
156. "Neural network integrated fuzzy control system", M. Khalid, S. Omatu, and R. Yusof, **Proc. of First Asian Control Conference (1st ASCC)**, Tokyo, Japan, 28-30 July, 1994.
157. "Self-tuning PID Control: A Multivariable Derivation and Application", R. Yusof, S. Omatu, and M. Khalid, **Proc. of 12th IFAC World Congress**, July, 1993, Sydney, Australia.
158. "Self-Learning Process Control Systems by Neural Networks", M. Khalid, S. Omatu and R. Yusof, **Proc. of IEEE Conference and Decision Control Conference**, Tucson, Arizona, USA, Dec. 16-18, 1992.

159. "A Comparison between Neuro-control, Self-tuning Adaptive Control, and Conventional Feedback Control", M. Khalid, R. Yusof, and S. Omatu, **Proc. of ASME-ISCIE Japan-USA Symposium on Flexible Automation**, San Francisco, USA, July 13-15, 1992.
160. "Adaptive Control by Neural Networks With Application To Temperature Control", S. Omatu, M. Khalid, and J. Tanomaru, **Proc. of SICE-IMACS International Symposium on Robotics, Mechatronics, and Manufacturing Systems '92**, Kobe, Japan, Sept. 16-20, 1992.
161. "A Neural Network Based Control Scheme with an Adaptive Neural Model Reference Structure", M. Khalid and S. Omatu, **Proc. of IEEE-INNS Int. Joint Conf. on Neural Networks**, S'pore, Nov. 17 - Nov. 21, 1991.
162. "A PC-based Transfer Function Analyzer", M. Khalid, R. Yusof, R. Baba, N. Alias, and A.W.I. M. Hasihm, **Proc. of Int. Conf. on Instrumentation, Measurement, and Control**, Singapore, Jan. 24-25, 1991.
163. "Control of Real-time Processes Using Backpropagation Neural Networks", M. Khalid and S. Omatu, **Proc. of IEEE IECON'91**, Kobe, Japan, Oct. 28 - Nov. 1, 1991.
164. "PERISIK - An Educational Tool for Linear Control System Analysis", M. Khalid, A.S. Thulkarmine, and M.S.A. Hamid, **Proc. of CALISCE '91**, Zurich, Switzerland, Aug. 1991.
165. "An Expert System Facility to cope with complexity in a CACSD Package", R. Baba, M. Khalid, and M. R. A. Ghani, **Proc. of CALISCE '91**, Zurich, Switzerland, Aug. 1991.
166. "A Neural Network Controller for a Temperature Control System", M. Khalid and S. Omatu, **Proc. of SICE Int. Conf.**, Yonezawa, Japan, July 18 - July 24, 1991.
167. "Simulation and CACSD in Control Engineering", A.S. Thulkarmine, M.S.A. Hamid, M. Khalid, and A. Uraz, **Proc. of ICARCV'90**, Singapore, Sept. 18 - Sept. 21, 1990.
168. "Control System Design in Time and Frequency Domain - A CAD Teaching Approach", M. Khalid, R. Yusof, M.S.A. Hamid, and A. Uraz, **Proc. of Int. Conf. on Computer-aided Training in Science and Tech.**, Barcelona, Spain, July 9 - July 13, 1990.
169. M. Khalid, Z.A. Rahim, R. Mamat, M.C. Low: "A Microprocessor-based Static Wheel Balancing Machine for Aircraft Tyres", *Proc. of 4th Multinational International Instrumentation Conference*, Beijing, P.R. China, May 16-19, 1990.
170. "A Microprocessor-based Static wheel balancing machine for Aircraft tyres", M. Khalid, Z.A. Rahim, R. Mamat, M.C. Low, **Proc. of 4th Multinational International Instrumentation Conference**, Beijing, P.R. China, May 16 - May 19, 1990.
171. "The Role of CACSD in University Control Education", M. Khalid, **Proc. of AEESEAP - FEISEAP Joint Int. Conf. on Eng. Education**, Penang, Malaysia, May 22 - May 24, 1990.
172. "New Industrial Practical Training for Electrical Eng. Undergraduates of UTM", M. Khalid, N. S. Hussin, **Proc. of AEESEAP - FEISEAP Joint Int. Conf. on Eng. Education**, Penang, Malaysia, May 22 - May 24, 1990.
173. "PERISIK-A Software for the Analysis and Design of Control Systems", M. Khalid and R. Yusof, **Proc. of SICE Int. Conf.**, Matsuyama, Japan, July 25 - July 27, 1989.



(e). Conferences (Others)

- (1). "Some Interpretations of Self-Tuning PID Controllers", R.Yusof, S. Omatu, and M. Khalid, Proc. of COSTAM National Science Congress, Kuala Lumpur, 15-18th, August, 1994.
- (2). "Artificial Intelligence in Control", M. Khalid, S. Omatu, and R. Yusof, Proc. of COSTAM National Science Congress, Kuala Lumpur, 15-18th, August, 1994.
- (3). "Application of GPC to a Temperature Control Process", R.Yusof, S. Omatu, and M. Khalid, 5th JSPS-VCC Seminar on Integrated Engineering, Johore Bahru, Malaysia, pp. 358-366, Dec. 1994.
- (4). "MIMO Furnace Control Using Neural Networks" M. Khalid, R.Yusof, and S. Omatu, 5th JSPS-VCC Seminar on Integrated Engineering, Johore Bahru, Malaysia, pp. 271-286, Dec. 1994.
- (5). "A Study of Neural Network Behaviour in Direct Control Application", Z. Taha, S. Omatu, and M. Khalid, Proc. of 37th Annual Conf. on Systems, Control and Information Eng., ISCIE, May 19-21, 1993.
- (6). "Learning Fuzzy Control System Using Neural Networks", M. Khalid, S. Omatu, and R. Yusof, Proc. of Shikoku-Section Joint Convention Record of the Inst. of Elec. & Related Eng., Tokushima, Japan, pp.134, Oct. 1993.
- (7). "Rangkaian Neural dan Penggunaannya", Seminar Penggunaan Sains dan Matematik dalam Industri, UTM, Johor, Disember, 1994.
- (8). "Synthesis and Application of a Multivariable Self-Tuning PID Control", R.Yusof, S. Omatu, and M. Khalid, Proc. of SICE Symposium on Adaptive Control, Tokushima, January 28-29, 1993.
- (9). "Synthesis of Adaptive Control Systems by Neural Networks", S. Omatu and M. Khalid, Proc. of IEE Regional Conference, Matsuyama, Japan October, 1992 (in Japanese).
- (10). "Multilayered Neural Networks For a Multivariable Furnace", M. Khalid and S. Omatu, Proc. of 4th JSPS-VCC Seminar on Integrated Engineering, Kyoto, Japan, Oct., 1992.
- (11). "Incorporation of an Expert System into a CACSD Package", R. Baba, M. Khalid, and M.R.A. Ghani, Proc. of AITA'91, Kuala Lumpur, Malaysia, Aug. 13 - Aug. 14, 1991.
- (12). "Neural Network for Control Systems", S. Omatu, M. Khalid, and S. Akhyar, Proc. of Adaptive Control Symposium, Nagoya, 1991. (in Japanese).
- (13). "A Laboratory Facility for Real-time Digital Control Implementation", M. Khalid, M. Mortaza, M.Z. Zamani, S. Shahrum, and M.T.A. Hamid, Proc. of Regional Conference on Control Eng., Kuala Lumpur, Malaysia, July 17 - July 18, 1991.
- (14). "Adaptive Control by Neural Networks", M. Khalid, J. Tanomaru, and S. Omatu, Proc. of 3rd JSPS-VCC Seminar on Integrated Engineering, Kuala Lumpur, Malaysia, Dec. 18 - Dec. 19, 1990.
- (15). "Digital Control System Design - A CAD Approach", M. Khalid, R. Yusof, M.S.A. Hamid, Proc. of Regional Conf. on the Use of CAD/CAM/CAE in Industry and Education, Petaling Jaya, Malaysia, Nov. 14 - Nov. 15, 1989.
- (16). "A CACSD Software for designing Feedback Control systems with Cascaded Controllers", M. Khalid and R. Yusof, Proc. of Regional Conf. on CAD for Control and Instrumentation as Applied to Medium and Small-scaled Industries, Bangi, Malaysia, June 13 - June 14, 1989.
- (17). "A Computer-aided Instrumentation Facility to measure and display the performance of real-

time control systems", M. Khalid and R. Yusof, Proc. of First Regional Conf. on Process Control, Kuala Lumpur, Nov.25 - Nov. 27, 1988.

- (18). "The Development of a CACSD Package", M. Khalid, Proc. of National Seminar on the applications of computer in Control and Instrumentation, Kuala Lumpur, Malaysia, Oct. 21 - Oct.22, 1987.
- (19). "Hand-Written Postcode Recognition by Fuzzy ARTMAP Neural Network", Y-H, Tay, M. Khalid, K. K. Tan and R. Yusof, COSTAM National Science Congress, Genting Highlands, 1997.
- (20). "Intelligent Control and Monitoring of an Industrial Chilling-Heating System", K. K. Tan, M. Khalid, and R. Yusof, InstrumentAsia, Singapore, November, 1997.
- (21). B.L. Chua, M. Khalid, R. Yusof, "Intelligent Database using Neural networks and Data Mining", Persidangan AIAI'99, Kuala Lumpur, 20-21 Oct 1999.
- (22). Y.H. Tay, M. Khalid, S. Knerr, P.M. Lallican, C. Viard-Gaudin, "Two-cost Stroke Segment Grouping Mechanism for Off-line Hand-written Cheque-word Recognition", AIAI'99, Kuala Lumpur.
- (23). "Transformer fault diagnosis using fuzzy logic interpretations", Wan Yat How, Marzuki Khalid, dan Syed Fuad Syed Zain, Technical Symposium on Instrument Asia 1999, Singapore, 30 Nov.-1 Dec. 1999.
- (24). "Design of a Multiplayer Self-Clustering Network for Intelligent Vehicle", Yap Keem Siah and Marzuki Khalid, Malaysia Technology Science Congress, Holiday Inn, Johor Bahru, Dec. 6-8, 1999.
- (25). "An Offline Cursive Handwritten Cheque Word Recognition", Tay Yong Haur and Marzuki Khalid, Malaysia Technology Science Congress, Holiday Inn, Johor Bahru, Dec. 6-8, 1999.

(f). Research Reports

- (1). "A Study on the Cerebellar Model Articulation Controller approach to manipulator Control", JSPS-VCC Report on Integrated Eng in Robotics, Kyot University, Dec. 1987.
- (2). "A Laboratory Assignment to design and analyse a Process control system using a CSCSD Package", Notes from Shortcourse on Computer Control, UTM, July 1989.
- (3). "An approach to incorporate Expert System techniques into CACSD", JSPS-VCC Report on Integrated Eng.in Robotics, TUAT Tokyo, Japan, Oct. 1989.
- (4). "Simulation of a learning controller (CMAC) for the control of robotic manipulators", JSPS-VCC Report on Integrated Eng. in Robotics, TUAT, Tokyo, Japan, Oct. 1989.
- (5). "Buku Panduan Latihan Praktik, F.K.E., U.T.M., Malaysia (in Malay) ", 1989-1990.
- (6). "PERISIK - A CACSD Package For Linear Control Systems", User Manual.
- (7). "An Approach to designing a CACSD System", CACSD Research Group, Dept. of Control, UTM, Oct. 1988.

(g). Keynote Address, Invited Lectures and Seminars

- (1). "Cerebellar Model Articulation Controller", Automation Research Laboratory, Kyoto University, Japan, Dec. 1987.

- (2). "Neural Networks for Control", Dept. of Mechanical Engineering, Tokyo University of Agriculture and Technology, Japan, Sept. 1990.
- (3). "Expert System Techniques in CACSD", Dept. of Mechanical Engineering, Tokyo University of Agriculture and Technology, Japan, Sept. 1990.
- (4). "Incorporation of Expert System Techniques in CACSD", Dept. of Information Science and Intelligent Systems, University of Tokushima, Japan, Aug. 1990.
- (5). "Backpropagation Neural Networks", Seminar FKE, UTM, Malaysia, Oct. 1990.
- (6). "Development of a Computer-Aided Control System Design Software", Seminar FKE, UTM, Malaysia, Jan. 1987.
- (7). "Intelligent Control: Fuzzy, Neural, and What Next?", Colloquium on the Next Control Technology, (Invited Lecture) UTM, Kuala Lumpur, 14th July, 1994.
- (8). "AI Tools for the Development of Intelligent Systems", Invited Lecture at TNRD, Tenaga Nasional, Petaling Jaya, Malaysia, October, 1994.
- (9). "Artificial Intelligence Tools and their Applications", Invited Lecture at AI Workshop, Organized by Ministry of Science and Industry and SIRIM, Shah Alam, December, 1994.
- (10). "An Introductory Course for Artificial Neural Networks" - Resource Person, 18-21st October, 1995, at BATC, UTM.
- (11). "The Need for Artificial Intelligence", Seminar on Artificial Intelligence, organized by the AI Society of Malaysia, at BATC, UTM on 14th Oct. 1995.
- (12). "Artificial Intelligence", organized by Mentor, K. Lumpur, June 1995.
- (13). "An Overview of Artificial Intelligence", Invited Lecture at Texas Instruments (M) Sdn. Bhd., August, 1995.
- (14). "Recent Developments in AI Applications", Invited Lecture at SIRIM AI Seminar, Pan Pacific Glen Marie, 12th March, 1996.
- (15). "Neural Networks and Fuzzy Logic and their Applications", Invited Lecture at SME Seminar, UTM, Skudai, 16th March, 1996.
- (16). "AI Techniques and their Applications in Engineering Safety Systems", Invited Lecture at Institution of Engineers Malaysia Seminar on Engineering Management and Safety Systems, Kuala Lumpur, April, 1996.
- (17). "Genetic Algorithms Applications in Malaysia", Invited Lecture at SIRIM Seminar on Genetic Algorithms, 14th November 1996 at SIRIM, Shah Alam.
- (18). "Overview of Artificial Intelligence", Invited Lecture at ITTM, Melaka, 9th November, 1996.
- (19). "Artificial Intelligence and Its Importance for Industrial Competitiveness", Inaugural Lecture at UTM, Skudai, 19 November, 1996.
- (20). "Self-Organizing Neuro-Fuzzy Control Systems", Osaka Institute of Technology, Japan, 16 April, 1999.
- (21). "Neural Networks and Fuzzy Logic in Power Systems", Resource Person for Power Course, at Industrial Control Center, University of Strathclyde, Glasgow, U.K. (23 September 1999)
- (22). "R&D Activities at the Center for AI and Robotics", Texas Instruments Annual Technical

Conference, 2 November, 1999.

- (23). "Neuro-Fuzzy Control Systems", Faculty of Engineering, Toyama University, Japan, 12 November, 1999.
- (24). "New Developments in Neuro-Fuzzy Control Systems", Faculty of Engineering, Tokushima University, Japan, 16 November, 1999.
- (25). "New Developments in Adaptive Neuro-Fuzzy Control Systems", Special lecture at Tokyo University of Agriculture and Technology, Japan, 31<sup>st</sup> Jan., 2000.
- (26). "Artificial Intelligence and Its Applications", [Keynote Lecture] at International Conference on Research and Quality, **RESQUA 2000**, Northam Suites Hotel, Penang, May 4-5, 2000.
- (27). "R&D Activities at CAIRO", Invited Lecture at International Islamic University, Kuala Lumpur, 28<sup>th</sup> July 2000.
- (28). "Overview of Artificial Intelligence I & II", Special Lecture at IRESTE, Universite de Nantes, France, 13-14<sup>th</sup> Nov, 2000.
- (29). "Artificial Intelligence and Its Applications", Special Lecture at Kyushu Institute of Technology, Kitakyushu, Japan, 23<sup>rd</sup> January 2001.
- (30). "New Developments in Neuro-Fuzzy Control", [Keynote Lecture], Int. Conference on Mechatronics, **ICOM'01**, 12-13 Feb, 2001.
- (31). "Neuro-fuzzy Control Systems", Invited Lecture at University of Osaka Prefecture, Sakai, Japan, Dec. 14, 2002.
- (32). "AI: From Biology to Industry", Marzuki Khalid, [Keynote Lecture], Int. Conf. on Eng. Applications of on Engineering and Tehcnology, **ICAJET 2002**, Kota Kinabalu, Sabah, June 17-18, 2002.
- (33). "Emerging Technologies and Applications in Decision Support Systems", [Keynote Lecture] Seminar Cabaran Alaf Baru Pengurusan Organisasi dari segi Perspektif Teknologi Maklumat, **TEMPO 2002**, Universiti Utara Malaysia, July 14, 2002.
- (34). "AI: From Biology to Mathematics to Industry", [Keynote Lecture], Symposium Sains dan Matematik, Putri Pan Pacific Hotel, Johor Bahru, Dec. 24, 2002.
- (35). "New Developments in Neuro-Fuzzy Control Systems", Invited Lecture, at Faculty of Engineering, Meiji University, Ikuta Campus, Japan, Oct. 15, 2002.
- (36). "Higher Education in Malaysia as a Perspective Comparison", Invited Lecture at Fakultas Kejuruteraan, Universiti Indonesia, Jakarta, February 25, 2002.
- (37). "The Need for Artificial Intelligence and Its Applications in Industry", [Keynote Lecture] at IEEE Students Conference on R & D, **SCORED 2003**, Putrajaya, Aug. 25<sup>th</sup>, 2003.
- (38). "Artificial Intelligence and Its Applications in Industry", M. Khalid, [Keynote Lecture], Int. Conference on Applications in Artificial Intelligence **ICAII2003**, Kolhapur, India, Dec. 15-16, 2003.
- (39). "A New Paradigm in Computation: The DNA Computing Approach", Research Seminar at IRCCyN, Universite de Nantes, France, Oct. 16, 2003.
- (40). "Prospects and Challenges in Artificial Intelligence", Invited Lecture at UNIMAS, Faculty of Cognitive Science and Management", UNIMAS, Feb. 28, 2005.

- (41). "Artificial Intelligence Applications and Its Working Prospects in Malaysia". Invited Lecture at UNIMAS, Faculty of Cognitive Science and Management", UNIMAS, Feb. 28, 2005.
- (42). "Teaching of Control based on Virtual Laboratory E-Learning Environment", [Keynote Speaker] at International Conference on Advanced Telecommunications and Control Engineering (ATTCE2006), Nilai, 28-29 August 2006.
- (43). "Designing Biometric Systems" [Keynote Speaker], International Conference on Man-Machine Systems (ICoMMS 2006), Langkawi, 15<sup>th</sup> September 2006.
- (44). "Virtual Laboratory as an Effective E-Learning Tool", Invited Paper, EUSEA 2006, Shangri La Hotel, Singapore, 18-21 June 2006.

## 25 *Papers Reviewed*

Has reviewed over 150 papers submitted for the following journals:

- (1). IEEE Transactions on Fuzzy Systems, IEEE Publications
- (2). IEEE Transactions on Neural Networks, IEEE Publications
- (3). IEEE Transactions on Industrial Electronics, IEEE Publications
- (4). IEEE Transactions on Systems, Man and Cybernetics, IEEE Publications
- (5). Automatica, Pergamon
- (6). Int. Journal of Engineering Applications of AI, Elsevier Science
- (7). Journal of Systems and Control Eng, Inst. of Mech. Engineers, U.K.
- (8). Malaysian Journal of Computer Science, Universiti Malaya
- (9). Jurutera, IEM Publication
- (10). Asean Journal of Science and Technology
- (11). Jurnal Kejuruteraan, UKM

## 26 *Supervision and Examiners of Students*

### A. Supervision of PhD Students (Graduated):

1. Shahrizam S. Baki (Co-supervisor)
2. Teo Lian Seng (Main supervisor)
3. Tay Yong Haur (Main supervisor) [Joint PhD – Univ. de Nantes, France]
4. Abdul Fadlil (Main Supervisor)
5. Hafizah Hussain (Main supervisor)
6. Abdul Rahim Ahmad (Main supervisor) [Joint PhD – Univ. de Nantes, France]
7. Siti Norul Huda Sheikh Abdullah (Main Supervisor)
8. Shahrin Azuan Nazeer (Main Supervisor)

### B. Supervision of PhD Students (Ongoing):

1. Ribhan Zafira (Co-Supervisor)
2. Azura Che Soh (Main Supervisor)
3. Mohd. Shukri Bin Zainal Abidin (Main Supervisor) [Part-Time]
4. Haslina Md. Sarkan (Main Supervisor) [Joint PhD – Univ. de La Rochelle, France]
5. Ahmad Ridhwan Wahap (Co-Supervisor) [PhD at Waseda University, Japan]
6. Sahril Jenal (Main Supervisor) [Part-Time]
7. M. Nadaraj Miniappan (Full time)

### C. Supervision of Full-time Research Master Students (Graduated):

1. M. Osman Athiwash (Co-Supervisor)
2. Mohd. Fauzi Othman (Co-Supervisor)

3. Tan Kok Khiang (Main Supervisor)
4. Tay Yong Haur (Main Supervisor)
5. Yap Keem Siah (Main Supervisor)
6. Lim Woan Ning (Main Supervisor)
7. Wan Yat How (Main Supervisor)
8. Teow Yok Wooi (Co-Supervisor)
9. Chua Boon Lay (Co-Supervisor)
10. Ong Yean Hoon (Main Supervisor)
11. Faridah Mohd. Idris (Co-Supervisor)
12. M. Shukri Zainal Abidin (Main Supervisor)
13. Ahmad Ridhwan Wahap (Main Supervisor)
14. J. Tiagarajah (Main Supervisor)
15. Gan Teck Hui (Main Supervisor)
16. Eileen Liew (Main Supervisor)
17. Tay Cheng San (Co-Supervisor)
18. Mohd. Faisal Ibrahim (Co-Supervisor)

D. Supervision of Full-time Research Master Students (Ongoing):

1. Yap Wooi Hen (Main Supervisor)
2. Zalhan Md. Zain (Main Supervisor)
3. Mohd. Zamri (Main Supervisor)
4. Nenny Ruthfalydia Rosli (Main Supervisor)
5. Mohd. Zaharudin Ahmad Darus (Main Supervisor)
6. Jamikaliza (Co-Supervisor)
7. Nicolas Guigo (Main Supervisor)

3. Supervision of Bachelor Students: More than 200 students over 15 years

4. External Examiners (PhD): 6
  1. Yussof Shakmak (UKM) 2000 and 2002
  2. Khiauddin Omar (UKM) 2000
  3. Shaharuddin Salleh (UTM) 2000
  4. Nazar El Fadil M.A. Elgazoli (UTM) 2002
  5. Harsa Amylia Mat Sakim (2002)
  6. Loo Chu Kiong (USM) 2003
5. External Examiner (Masters by Research): 7
  1. Muralindran Kovindasamy (USM) 1997
  2. Hazem Muhamed Muhammad (UM) 1999
  3. Woo Seng Chaw (UM) 2000
  4. Sabina Abdul Aziz (USM) 2002
  5. Nazri Ahmad Zamani (USM) 2002
  6. Rudi Heryanshah (UTM) 2003
  7. Sathya Nanda Vel (UTM) 2003

6. Has taught more than 15 different subjects over 15 years.