



## CURRICULUM VITAE

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### PROF. DR. MOHD MARSIN BIN SANAGI

***DIRECTOR***  
**IBNU SINA INSTITUTE**  
**FOR FUNDAMENTAL SCIENCE STUDIES**  
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## ACADEMIC QUALIFICATIONS

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Doctor of Philosophy (Ph.D.) (Analytical Chemistry) (1988), Loughborough University of Technology, Leicestershire, UK. Thesis: *Selectivity and Applications of Supercritical Fluid Chromatography*.

Master of Science (M.S.) (Analytical Chemistry) (1980), University of Iowa, Iowa City, Iowa, USA. Project: *Synthesis and Applications of Metal Complexes of Tetrakis-Pyridyl Pyrazine*.

Bachelor of Arts (B.A.)(Chemistry)(1979), Macalester College, St. Paul Minnesota, USA.

## PROFESSIONAL MEMBERSHIP

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Member of the Malaysian Institute of Chemistry (AMIC) (1993 – present).

Member of the Malaysian Analytical Sciences Society (ANALIS) (1993- present).

Member of the Royal Society of Chemistry, UK (Chartered Chemist, MRSC) (1986-1996)

## CURRENT POSITION

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Director, Ibnu Sina Institute for Fundamental Studies  
Faculty of Science  
Universiti Teknologi Malaysia

Professor of Analytical Chemistry  
Department of Chemistry  
Faculty of Science  
Universiti Teknologi Malaysia

## TEACHING/SUPERVISION

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### Teaching

MSK 1233: Instrumentation and Measurement for M.Sc. course, 3 semesters, 2002, 2004, 2009

SSU 2612: History of Nobel Prize Winners 2SSA/SSE/SSZ/SSB (148 Students)  
Semester 1 Session 2008/2009  
Advanced Analytical Techniques (SSK 4223) 4SSA.  
2006/2007 (Semester 2)

MSK 1213: Advanced Analytical Chemistry for M.Sc. taught course, 5 semesters, 2002, 2003, 2004, 2005, 2006

SSK 3262: Separation Methods in Chemical Analysis for B.Sc. courses, 8 semesters, 1991/92, 93, 96, 98, 2003/04, 2004/05, 2005/06, 2009(2).

Separation Techniques Lab Practical for B.Sc. courses, 3 semesters, 1991/92/93

SKM 1422: Instrumental Analysis for B.Sc. courses, 2 semesters, 1992/93

Instrumental Analysis Lab Practical for B.Sc. courses, 2 semesters, 1992/93

Analytical Chemistry I for B.Sc. courses, 4 semesters, 1991/97/ 2000/2001, (SSC2203) 2007/2008

Analytical Chemistry I Lab Practical for B.Sc. courses, 4 semesters, 1991/92/2000/2001/2002

Analytical Chemistry I for Diploma courses, 1 semester, 1998/99

SKM 4422: Instrumentation and Measurement for B.Sc. courses, 1 semester (95/96)

Organic Chemistry Lab Practical for B.Sc. course, 1 semester 1995

General Chemistry I for B.Sc. courses, 5 semesters, 1996/97/98/2000/ 2001/2002

Coordinator of the General Chemistry 1 & II, Department of Chemistry, Faculty of Science, UTM, 1999 – 2000

Coordinator/lecturer of the General Chemistry (SSK1003), Department of Chemistry, Faculty of Science, UTM, 2002 – 2003

General Chemistry I Lab Practical for B.Sc. Courses, 8 semesters, 1996/97/98/99/2000

General Chemistry II for B.Sc. courses, 5 semesters, 1996/97/99/ 2000/2001

General Chemistry Lab Practical for Diploma courses, 2 semesters 1991/93

General Chemistry I for B.Sc. courses (School of Professional and Continuing Education, SPACE), 1 semester, 1999

### **Short Courses**

Lecturer and Organizing Committee “12<sup>th</sup> Short Course on Gas Chromatography”, Department of Chemistry, Faculty of Science, UTM, 28-30 June 2007.

Facilitator, *Kursus Kaedah Penyelidikan*, Organized by the Human Resource Development, UTM, 8-19 May 2006.

Lecturer and Organizing Committee “Short Course on Gas Chromatography”, Jabatan Kimia, Fakulti Sains, UTM, 28-30 November 2005.

Lecturer and Chairman of the Organizing Committee, *Short Course on Gas Chromatography*, Universiti Teknologi Malaysia, 1–3 November 2001

Lecturer/Instructor for the *Three Day Course on Gas Chromatography*, Universiti Teknologi Malaysia, 1–3 November 1999

Lecturer and Organizing Committee, *Short Course on Analytical Techniques (SCAT '97) – Coupled Techniques in Chromatography*, 21-22 November 1997

Lecturer and Chairman of the Organizing Committee, *Short Course on Gas Chromatography*, Universiti Teknologi Malaysia, 4-6 June 1996

Lecturer and Chairman of the Organizing Committee, *Short Course on Gas*

*Chromatography*, Universiti Teknologi Malaysia, 22-24 August 1994

Instructor for the Workshop on New Development in the Field of SFE/SFC/HPLC, National University of Singapore, 18 February 1994

Facilitator for the *SLAB Course on Research Methods*, 1994

Facilitator for the *SLAB Course on Research Methods*, 1993

Lecturere/Instructor for the Introductory Course on Supercritical Fluid Extraction and Chromatography, Universiti Pertanian Malaysia, Serdang, 21 September 1993

Lecturere/Instructor for the *Introductory Course on Supercritical Fluid Extraction and Chromatography*, Universiti Teknologi Malaysia, 25 September 1993

Lecturer and Chairman of the Organizing Committee, *Short Course on Gas Chromatography*, Universiti Teknologi Malaysia, 5-7 September 1992

### **Supervision of Postgraduate Students**

#### **Ph.D:**

Yousif Jumma Abdooal Rahman, Mr. “Sub-and supercritical fluid extraction of natural products – *Callotropis procera*”. Supervisor (Dec 2008 – present)

“Development and Application of Polymer Coated Hollow Fiber Membrane Microextraction System” See Hong Heng, Dec. 2006 – present

“Studies on the Separation of Propiconazole using Micellar Electrokinetic Chromatography” Dadan Hermawan, (Co-supervisor, June 2004 – Feb 2009)

“Application of Supercritical Fluid Extraction to the Analysis of Selected *Zingiberaceae* Spesies” Umi Kalthom Ahmad, (1991 – 1994)

#### **M.Sc:**

Syairah bt Salleh, Ms. “Selective sample treatment for organophosphorus pesticides using novel molecularly imprinted polymers prior to chromatographic analysis. (2009 – present)

Siti Munirah bt Abd Wahib, Mdm. “Cyclodextrin capillary electrophoresis of selected pesticides”(co-supervisor) (July 2009 – present)

Quek Hong Keat, Mr. “Analysis of additives in glass jar seals by GC-MS”. Supervisor (July 2008 – present, part-time)

Mazidatulakmam Miskam, Ms. “Three phase liquid phase microextraction of tricyclic antidepressant drugs”, Supervisor (Jan 2008 – present)

Rabiatuladawiyah Ismail “Liquid Phase Microextraction of Pesticides”. (Jan 2008 – present)

Yanuardi Raharjo “Polymer coated hollow fiber membrane liquid phase microextraction methods for the analysis of Pesticides”, (July 2007 – present)

Hadijah Farhani “Micellar electrokinetic chromatography of pesticides”, (Co-supervisor) (July 2007 – present)

Susanti “Application of Cyclodextrin in Capillary electrophoresis of selected pesticides”, (Co-supervisor) (July 2007 – present)

Nurul Auni Binti Zainal Abidin, “Phase Equilibrium and Partition Distribution in Double and Triple-Phase Liquid Membrane Extraction” (Dec. 2006 – June 2009)

Sharain Liew Yen Ling, “On-line preconcentration of Dioxin and furan related compounds and Hydrophilic Organophosphorous Pesticides using Micellar Electrokinetic Capillary Electrophoresis” (Co-supervisor) (July 2005 – September 2007)

Norsyarizah Bt Abd Aziz, “Synthesis of PS-DVB monolithic column for micro-LC” (Co-supervisor) (July 2005 – July 2009)

Susie Lu Ling, “Styrene monomer in Polystyrene Food Contact Materials and Foods” (Dec.2004 – present)

Zalilah Bt Nasir, “Endocrine Disruptor Compound analysis in Plasticizer of Food Packages using Gas Chromatography and High Performance Liquid Chromatography” (Dec.2004 – present)

Fairul Zukry bin Ahmad Rasdy, “Studies on Micellar Electrokinetic Chromatography of Organo Phosphate Pesticides” (Co-supervisor) (July 2005 – July 2007)

Noorashikin Bt Md Saleh, “High-Temperature Liquid Chromatography and Pressurized Liquid Extraction of Polycyclic Aromatic Hydrocarbons” (2004 – 2006)

Ahmad Rasa' Arim Razali, “Applications of PS-DVB-based Adsorbents in Chromatography ” (July 2005 – 2006)

Mohd Sani Sarjadi, “Development of Zirconia - PSDVB Stationary Phases” (2003 – Dec 2005 )

Ganes Kumar, “Breakthrough volume studies on modified and unmodified PS-DVB

adsorbents” (June 2004 – May 2005)

Sri Hilma Siregar, Ms, “Development and Application of New Modified PS-DVB Adsorbents and Chromatography Stationary Phases” MS023056 (2002 – Sep 2005)

See Hong Heng, “Application of elevated-temperature HPLC to the analysis of triazole fungicides and vitamin E isomers in recovered oil from palm pressed-fibres” (July 2003 – June 2005)

Norliza binti Dzakaria, “Pembangunan dan Penggunaan Penjerap dan Fasa Pegun Kromatografi bagi Analisis Kimia” MS993038 (2000 – 2004)

Jaelyn Ann A/P Francis, “Application of high-temperature HPLC with carbon-clad zirconia column to the separation of isomeric compounds” (2002- 2003)

Salawati binti Suboh, “Development and Application of Porous Alkyl-bonded polystyrene-divinylbenzene to Chemical Analysis” MSMS0003036 (2000 – 2002)

Foong Tse cheen, Mr, “Development of High Performance Liquid Chromatographic Separation Technique using High-temperature, Low-organic-content Mobile Phases” MS003013 (2000 – 2002)

Hamizah binti Mohd Zaki, “Synthesis, Characterization and Application of Poly(styrene-Divinylbenzene) for Reversed Phase High Performance Liquid Chromatography” 4 semesters, (1997 – 1999)

## RESEARCH

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### **Research Projects**

“Enantioresolution and Enantioselectivity Studies of Vinpocetine Enantiomers and Spovincaminic Acid using Capillary Electrophoresis” FRGS. Researchers: Wan Aini Wan Ibrahim (Project Leader), Mohd Marsin Sanagi, Dadan Hermawan. (1 Nov. 2008 – 31 Oct 2010) 24 months, Project Vote Number: 78314 (RM 133,000.00)

“Polymer Coated Hollow Fiber Membrane Microextraction System” e-Science Fund (MOSTI). Researchers: Mohd Marsin Sanagi (Project Leader), Wan Aini Wan Ibrahim, Ahmedy Abu Naim. (1 Dec. 2006 – 2008), Project Number: 03-01-06-SF0098, Vote Number: 79079 (RM 295,993.00)

“Phase equilibrium and partition distribution in double and triple phase liquid membrane extracion” Fundamental Research Grant (MOHE); Researchers: Mohd Marsin Sanagi (Project Leader), Wan Aini Wan Ibrahim; (Dec.2006-2008) Project Number: 09-02-06-0145 EA 001. Vote Number: 78084 (RM71,000)

“Complex formation and enantioselectivity studies of triazole fungicide and organophosphorus pesticide enantiomers using capillary electrophoresis” Project Researchers: Wan Aini Wan Ibrahim (Project Leader), Mohd Marsin Sanagi, Razak Ali. (Dec.2006-2008) Vote Number: 78074 (RM77,000)

“Novel sol-gel crown ether coating material for solid phase microextraction of organophosphorus pesticides” e-Science Fund (MOSTI). Researchers: Wan Aini Wan Ibrahim (Project Leader), Mohd Marsin Sanagi, Ahmedy Abu Naim. (1 Dec. 2006 – 2008), Vote Number: 79085 (RM 232,000.00)

“Development and Application of High Temperature high performance liquid chromatography to the Analysis of Pesticides and Persistent Organic Pollutants” (Analytical Chemistry–Polymer Chemistry), Researchers: Mohd Marsin Sanagi (Project Leader), Wan Aini Wan Ibrahim, Ahmedy Abu Naim, (2004 – April 2007) Vote Number: 74255 IRPA Program (RM 175,000)

“Development and Application of New Modified PS-DVB Adsorbents and Chromatography Stationary Phases” ), (Analytical Chemistry–Polymer Chemistry), Researchers: Mohd Marsin Sanagi (Project Leader), Ahmedy Abu Naim, Wan Aini Wan Ibrahim, (2002 – Dec 2005). Vote number: 74091 IRPA Program (RM 238,200)

“Development and Application of Adsorbents and Chromatography Stationary Phases for Chemical Analysis” (Analytical Chemistry–Polymer Chemistry), Project Leader, (2000 – 2002) Vote number: 72298 IRPA Program (RM 72,200)

“Treatment of Water and Wastewater Using Hydroxyl Radical Oxidation” (Environmental Analytical Chemistry ), Researcher (1997–1998), Vote number: 61735, UPP-UTM (RM 25,000.00)

“Preparation and Application of PS-DVB Polymers in Chromatographic Analysis” (Analytical Chemistry–Polymer Chemistry) Project Leader (1995 – 1998), Vote number: 61881 UPP-UTM (RM 19,065)

“Design of Baffled Reactor System for Palm Oil Mill Effluent (POME) Treatment” Environmental Engineering / Analytical Chemistry) Researcher (1996 – 1997), Vote 68012 UTM-PORIM (RM 200,000)

“Supercritical Fluid Extraction Coupled to High Performance Liquid Chromatography in Environmental, Natural Products, and Petrochemical Analysis” (Analytical Chemistry) at Toyohashi University of Technology, Japan: Sponsored by the Japan Society for the Promotion of Science (JSPS-VCC) (9–31 January 1995)

“Studies on silica, polymer, and carbon-based sorbents and stationary phases” (Analytical Chemistry) at Loughborough University of Technology United Kingdom sponsored by the Asian Development Bank (PPTP/ADB) (4 Sept – 29 November 1994)

“Evaluation of Air Quality in South Johor – Analysis of Organic Compounds in Suspended Air Particulates” (Analytical Chemistry – Environmental) Project Leader (1994 – 1995) Vote 62080 IRPA Program (RM 200,000.00)

“Talian Terus SFE-HPLC: Pendekatan Baru dalam Analisis Sampel Alam Sekitar” (Analytical Chemistry-Environmental) Researcher (1994). Vote 61639 UPP-UTM (RM 15,000.00)

“Application of Supercritical Fluid Extraction and Chromatography to the Analysis of Natural Products” (Analytical Chemistry) Project Leader (1991 – 1994), Vote 62036 IRPA Program (RM 258,000.00)

## **Patents**

PI2008 4512 - Cone shaped membrane liquid phase microextraction system by Prof. Dr. Mohd. Marsin Sanagi, et al. (FS) [Filed 2008, Accepted 2009]

PI2008 4191 - Micellar capillary electrophoresis of dioxin related compound by Prof. Madya Dr. Wan Aini Wan Ibrahim, et al. (FS) [Filed 2008, Accepted 2009]

PI2008 2514 - Chiral Separation of Propiconazole Using Micellar Electrokinetic Chromatography and Its Application to Tebuconazole, Hexaconazole and Fenbuconazole by Assoc. Prof. Dr. Wan Aini Wan Ibrahim, et al. [Accepted 2008]

## **CONSULTANCY**

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“ $\alpha$ -MDEA Leaking Evaluation Project for GPPB (Complex B)”, PETRONAS, Terengganu. Aug.-Sept. 2004. Vote 63656 (RM73,220)

Non-Executive Technical Competency Base Improvement Training (NETCIT), Petronas Gas Berhad (2004). Vote 66521 (RM118,063)

Human Resource Training on the Principles of Gas Chromatography for MTBE, PETRONAS, Gebeng, Pahang. Oct. 1999–May 2000. Vote CEPP-50-69952 (RM 120,000)

“Groundwater Quality Monitoring Network in Malaysia”, Field: Environmental Engineering / Analytical Chemistry. Sponsored by the Department of Environment (DOE), Ministry of Science, Technology and Environment, 1 November 1993 – 30 April 1994. Vote 22-63090 (RM 160,000.00)

### **Books/Monographs**

Mohd Marsin Sanagi, et al. Application of supercritical fluid extraction and chromatography to the analysis of natural products and industrial products. Research Monograph No. 398. Universiti Teknologi Malaysia Vot 62036. ISBN: 978-967-353-007-6.

Mohd Marsin Sanagi, et al. Preparation and application of poly(styrene-divinylbenzene) for chromatographic analysis. Research Monograph No. 330. Universiti Teknologi Malaysia Vot 72298. ISBN: 978-967-353-028-1.

Mohd Marsin Sanagi, et al.. Preparation and application of poly(styrene-divinylbenzene) for chromatographic analysis. Research Monograph No. 330. Universiti Teknologi Malaysia Vot 71881. ISBN: 978-967-353-242-1.

Mohd Marsin Sanagi, et al. Development and application of new modified poly(styrene-divinylbenzene) adsorbents and chromatography stationary phase. Research Monograph No. 338. Universiti Teknologi Malaysia Vot 74091. ISBN: 978-967-353-322-0.

Assoc. Prof. Dr. Wan Aini Wan Ibrahim, Dr. Dadan Hermawan, Prof. Dr. Mohd Marsin Sanagi, Prof. Dr. Mohamed Noor Hasan. "Application of Micellar Electrokinetic Chromatography". Research Monograph, Department of Chemistry, Faculty of Science, Universiti Teknologi Malaysia, (Dec 2008)

Assoc. Prof. Dr. Wan Aini Wan Ibrahim, Susanti, Prof. Dr. Mohd Marsin Sanagi. "Enantioseparation of selected triazole fungicides using micellar electrokinetic chromatography: effect of cyclodextrin concentration". Research Monograph. Universiti Teknologi Malaysia (Dec 2008).

Mohd Marsin Sanagi, Lim Ying Chin. "Analisis Toluena Residu dalam Pembungkus Makanan Menggunakan Kaedah Pengekstrakan Ruang Kepala Kromatografi Gas" Monograf Penyelidikan, Universiti Teknologi Malaysia, (Dec. 2008)

Mohd Marsin Sanagi, Foong Tse Cheen, Ahmedy Abu Naim, Asiah Hussain. "Kromatografi Cecair Prestasi Tinggi dengan Turus Karbon Tergrafit pada Suhu Tinggi dan Fasa Bergerak Organik Berkomposisi Rendah". Monograf Penyelidikan, Universiti Teknologi Malaysia, (Dec. 2008)

Panel of writers: Azli Sulaiman, Jafariah Jaafar, Mohd Marsin Sanagi, Mustaffa Nawawi, Razali Ismail, Rugayah Mohammed, Umi Kalthom Ahmad, Wan Aini Wan Ibrahim, "Modul Pengajaran Kimia Analisis II" (Pra-Percetakan) Jabatan Kimia, Fakulti Sains, UTM (2005).

Mohd Marsin Sanagi, Azli Sulaiman, Wan Aini Wan Ibrahim "Principles of Chemical Analysis" (Pre-Publication) Department of Chemistry, Faculty of Science, Universiti Teknologi Malaysia (2004)

Mohd Marsin Sanagi, “*Spektrometri Jisim – Prinsip dan Teknik*”, Skudai: Universiti Teknologi Malaysia Publisher (1999)

Mohd Marsin Sanagi, “*Teknik Pemisahan Dalam Analisis Kimia*”, Skudai: Universiti Teknologi Malaysia Publisher (1998)

Azli Sulaiman (Ed), Panel of authors: Rahmalan Ahmad, Mohamed Noor Hasan, Mohd Marsin Sanagi, Mustaffa Nawawi, Umi Kalthom Ahmad, Azli Sulaiman, Hashim Baharin, Jafariah Jaafar, Razali Ismail, Rugyah Mohammed and Wan Aini Wan Ibrahim. *Analytical Chemistry-I Teaching Modules*, Department of Chemistry, Universiti Teknologi Malaysia.

- “*Kimia Analisis-I Modul 1 : Pengenalan Kepada Kimia Analisis*” (1999)
- “*Kimia Analisis-I Modul 2 : Analisis Data*” (1999)
- “*Kimia Analisis-I Modul 3 : Analisis Gravimetri*” (1999)
- “*Kimia Analisis-I Modul 4 : Analisis Volumetri*” (2000)
- “*Kimia Analisis-I Modul 5: Kromatografi*” (2000)

Mohd Marsin Sanagi (Ed). Authors: Jafariah Jaafar, Mohd Moor Hasan, Mohd Marsin Sanagi, Mohd Yusuf Othman, Umi Kalthom Ahmad, and Wan Aini Wan Ibrahim. “*A Three-Day Course on Gas Chromatography*”, CEPP–Department of Chemistry, Universiti Teknologi Malaysia (1999)

Mohd Marsin Sanagi (Ed). (Authors: Jafariah Jaafar, Mohd Moor Hasan, Mohd Marsin Sanagi, Mohd Yusuf Othman, Umi Kalthom Ahmad, and Wan Aini Wan Ibrahim. “*Short Course on Gas Chromatography - Lecture Notes and Experiments*”, Department of Chemistry, Universiti Teknologi Malaysia (1996)

Mohd Marsin Sanagi (Ed). Authors: Jafariah Jaafar, Mohd Moor Hasan, Mohd Marsin Sanagi, Mohd Yusuf Othman, Umi Kalthom Ahmad, Wan Aini Wan Ibrahim. “*Notes on Short Course on Gas Chromatography*”, Department of Chemistry, Universiti Teknologi Malaysia, 1994 and 1992.

Mohd Marsin Sanagi dan R. M. Smith, “*The Emergence and Instrumentation of SFC*” (Chapter 2) in “*Supercritical Fluid Chromatography*”, R.M. Smith (Ed.), (pp. 29–52) London: Royal Society of Chemistry (1988)

Co-author “*Istilah Kimia Pengajian Tinggi*”, Kuala Lumpur: Dewan Bahasa dan Pustaka (1987)

### **Articles in Refereed Journals**

Marsin Sanagi, Zalilah Nasir, Susie Lu Ling, Wan Aini Wan Ibrahim, Ahmedy Abu Naim, Dadan Hermawan. Determination of Plasticizers in Plastic Food Packaging by Gas Chromatography: Linearity Assessment according to the IUPAC Guidelines. *Journal of AOAC International*, Submitted for publication (19 April 2009) Ref.No. 09-0191

Mohd Marsin Sanagi, Susie Lu Ling, Zalilah Nasir, Wan Aini Wan Ibrahim, Ahmedy Abu Naim, Dadan Hermawan. Comparison of Signal-to-noise, Blank Determination, and Linear Regression Methods for the Estimation of Detection and Quantification Limits for Volatile Organic Compounds by Gas Chromatography. *Journal of AOAC International*, Accepted for publication 1 April 2009. Ref. No. 09-0005.

Wan Aini Wan Ibrahim, Susanti A. Warno, Hassan Y. Aboul-Enein, Dadan Hermawan, Mohd Marsin Sanagi. Simultaneous enantioseparation of cyproconazole, bromuconazole, and diniconazole enantiomers by CD-modified MEKC. *Electrophoresis*, Vol. 30 Issue 11, 1976–1982 (2009). WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim.

Yanuardi Raharjo<sup>1</sup>, Mohd. Marsin Sanagi<sup>1,2\*</sup>, Wan Aini Wan Ibrahim<sup>1</sup>, Ahmedy Abu Naim<sup>1</sup>, Hassan Y. Aboul-Enein<sup>3</sup>, Application of continual injection liquid-phase microextraction method coupled with liquid chromatography to the analysis of organophosphorus pesticides in drinking water. *Journal of Separation Science* 32:623-629 (2009).

Wan Aini Wan Ibrahim, Dadan Hermawan, Hassan Y. Aboul Enein and M.Marsin Sanagi, "Cyclodextrin-modified MEKC for enantioseparation of hexaconazole, penconazole and myclobutanil", *Journal of Separation Science*, 2009, 32(3), 466-471.

Elevated Temperature Reversed-Phase High Performance Liquid Chromatography of Polycyclic Aromatic Hydrocarbons on ODS-silica Phase. Noorashikin Md Saleh, M. Marsin Sanagi, Wan Aini Wan Ibrahim, Ahmedy Abu Naim. *Journal of Sustainability Science and Management*, 3(2): 30-40 (2008)

Wan Aini Wan Ibrahim, Dadan Hermawan, M Marsin Sanagi. Enantioseparation of Penconazole, Myclobutanil and Triadimefon by Cyclodextrin-Modified Micellar Electrokinetic Chromatography. *Journal of Fundamental Sciences*, Vol. 4 No. 2, pp. 445-450 (2008)

Hong Heng See\*, M. Marsin Sanagi, W. A. W. Ibrahim, A. A. Naim. Cone-shaped Membrane Liquid Phase Microextraction. *The Malaysian Journal of Analytical Sciences*, Vol 12, No 2 (2008): 468 – 472.

M. Marsin Sanagi\*, Susie Lu Ling, Zalilah Nasir, Wan Aini Wan Ibrahim, Ahmedy Abu Naim. Determination of Residual Volatile Organic Compounds Migrated from Polystyrene Food Packaging into Food Simulant by Headspace Solid Phase Microextraction. *The Malaysian Journal of Analytical Sciences*, Vol 12, No 3 (2008): 542 – 551.

Mohd Marsin Sanagi\*, Nurul Auni Zainal Abidin, See Hong Heng, Wan Aini Wan Ibrahim. Double-phase Liquid Membrane Extraction for the Analysis of Pesticides. *The Malaysian Journal of Analytical Sciences*, Vol 12, No 3 (2008): 570 – 574.

Wan Aini Wan Ibrahim\*, Dadan Hermawan, Mohamed Noor Hasan and Mohd Marsin Sanagi. Influence of Surfactant types on Correlation of Retention Factor and Hydrophobicity of selected Triazole Fungicides in Micellar Electrokinetic

Chromatography. *The Malaysian Journal of Analytical Sciences*, Vol 12, No 3 (2008): 624 – 632.

Nor Fairolzukry Ahmad Rasdy, M. Marsin Sanagi, Wan Aini Wan Ibrahim, Ahmedy Abu Naim. Determination of polycyclic aromatic hydrocarbons in palm oil mill effluent by Soxhlet extraction and gas chromatography-flame ionization detection. *The Malaysian Journal of Analytical Sciences*, Vol. 12, No:1, pp 16-21 (2008).

Lim Ying Chin and Mohd Marsin Sanagi. Analisis toluena residu dalam pembungkus makanan dengan kaedah pengekstrakan ruang kepala kromatografi gas. *The Malaysian Journal of Analytical Sciences*, Vol. 12, No:1, pp 10-15 (2008).

Wan Aini Wan Ibrahim, Dadan Hermawan, Mohamed Noor Hasan, Hassan Y. Aboul Enein, M. Marsin Sanagi. Rapid Estimation of octanol-water partition coefficient for triazole fungicides by MEKC with sodium deoxycholate as surfactant. *Chromatographia*, Vol. 68, No:5/6, p 415-419 (2008).

M. Marsin Sanagi, H. H. See, Wan Aini Wan Ibrahim, Ahmedy Abu Naim, "Determination of pesticides in water by cone-shaped membrane protected liquid phase microextraction prior to micro-liquid chromatography" *Journal of Chromatography A*, 1152, 215-219, (2007)

Wan Aini Wan Ibrahim, Sharain Liew Yen Ling, Mohd. Marsin Sanagi, "Sample Matrix Effect on the Separation of 2, 3, 7, 8-tetrachlorodibenzo-*p*-dioxin and 2, 3, 7, 8-tetrachlorodibenzo-*p*-furan using Micellar Electrokinetic Chromatography" , *ACGC Chemical Research Communications*, 2007, 21, 30-33.

Wan Aini Wan Ibrahim, Dadan Hermawan and M. Marsin Sanagi, "On-line preconcentration and chiral separation of propiconazole by cyclodextrin-modified micellar electrokinetic chromatography" *Journal of Chromatography A*, Volume 1170, Issues 1-2, 2 November 2007, Pages 107-113, (2007)

"Separation of Tocol-Derivatives by Elevated Temperature Normal-Phase Liquid Chromatography." Authors: M.Marsin Sanagi, See Hong Heng, Wan Aini Wan Ibrahim and Ahmedy Abu Naim. *Jurnal Teknologi C*, 2006 (45), 29-40.

M. Marsin Sanagi, Hong Heng See, "High Temperature Liquid Chromatography on a Poly(styrene-divinyl benzene) Stationary Phase", *Journal of Liquid Chromatography and Related Technologies*, (Publisher: Taylor & Francis), Vol. 28, 3065-3076 (2005)

M. Marsin Sanagi, H. H. See, Wan Aini Wan Ibrahim, Ahmedy Abu Naim, "High Temperature Liquid Chromatography of Tocol-Derivatives on Polybutadiene-Coated Zirconia Stationary Phases" *Chromatographia*, 61 (11/12), 567-571 (2005)

M. Marsin Sanagi, H. H. See, Wan Aini Wan Ibrahim, Ahmedy Abu Naim, "Determination of Carotene, Tocopherols and Tocotrienols in Residual Oil from Palm Pressed Fiber Using Pressurized Liquid Extraction – Normal Phase Liquid Chromatography" *Analytica Chimica Acta*, 538, 71-76 (2005)

M. Marsin Sanagi, Noorashikin Md Salleh, Hong Heng See, Wan Aini Wan Ibrahim

and Ahmedy Naim, "Elevated Temperature Reversed-Phase High Performance liquid Chromatography of Polycyclic Aromatic Hydrocarbons on ODS-Silica Phase". *Buletin Kimia*, 21 (2005) 19-26.

Mohd Marsin Sanagi, See Hong Heng and Jaclyn Francis, "Performance Study of Carbon-Clad Zirconia Stationary Phase in High Temperature Reversed-Phase high Performance Liquid Chromatography", *Jurnal Teknolgi C*, 43 (2005).

Mohd Marsin Sanagi, Ahmedy Abu Naim, Asiah Hussain, and Foo Tse Cheen, "Development and Application of High-Temperature Reversed-Phase High Performance Liquid Chromatography using Porous Graphitic Carbon Column", *Malaysian Journal of Analytical Sciences*, Vol. 8, No. 1, 44-52 (2004). (Circulated 2005)

M. Marsin Sanagi, H. H. See, Wan Aini Wan Ibrahim, Ahmedy Abu Naim, "High Temperature High Performance Liquid Chromatography of Triazole Fungicides on Polybutadiene-coated Zirconia Stationary Phase" *Journal of Chromatography A*, 1059, 95-101, (2004)

Mohd Marsin Sanagi, See Hong Heng, Wan Aini W. Ibrahim, and Ahmedy Abu Naim, "High temperature high performance liquid chromatography of triazole fungicide on carbon-clad zirconia stationary phase" *Malaysian Journal of Chemistry*, Vol. 6 (No. 1), pp. 55-66 (2004)

Mohd Marsin Sanagi and See Hong Heng, "Analytical separation: Recent trends in chromatography", *Berita IKM*, December 2003, pp. 10-12, Institut Kimia Malaysia, (December 2003)

Mohd Marsin Sanagi and See Hong Heng, Ahmedy Abu Naim and Asiah Hussain, "The World of Separation Science: A Perspective on Chromatography", in *Analytical Chemistry: Application and Current Issues*" Zaini Assim, Fasihuddin Ahmad, Ismail Jusoh, Lau Seng and Murtedza Mohamed (Eds.), (ISBN 983-9257-33-1) Sarawak: UNIMAS & ANALIS, pp.1-12 (2003)

See Hong Heng, Mohd Marsin Sanagi, Ahmedy Abu Naim and Asiah Hussain, "Applications of High Performance Liquid Chromatography with Superheated water eluent and PS-DVB stationary phase to the analysis of Barbiturates", in *Analytical Chemistry: Application and Current Issues*" Zaini Assim, Fasihuddin Ahmad, Ismail Jusoh, Lau Seng and Murtedza Mohamed (Eds.), (ISBN 983-9257-33-1) Sarawak: UNIMAS & ANALIS, pp. 31-37, (2003)

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Mohd Marsin Sanagi, "Technique in Volumetric Calibration and its Uncertainty", Seminar/ Workshop on Measurement Uncertainty in Chemical Analysis, Holiday Inn Crowne Plaza Johor Bahru, 9-10 August 1999.

M. Marsin Sanagi, Ahmedy Abu Naim and Hamizah Mohd Zaki, "Sintesis dan Penggunaan (Polistirena-divinilbenzena) bagi Analisis Kromatografi Cecair Prestasi Tinggi Fasa Terbalik", Simposium Kimia Analisis Malaysia Ke-11, UTM, Skudai, 4-5 November 1998.

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M. Marsin Sanagi, Suhaimi Md Yasir and Wong Pik Hung, "Gas chromatographic analysis of pyrazines in roasted cocoa beans: effect of pod storage period", The Twelfth Seminar on Natural Products, Hyatt Regency, Johor Bahru, 11–12 June 1996.

Mohd Marsin Sanagi, Wong Pik Hung and Suhaimi Md Yasir, "Analyte Collection Techniques in Supercritical Fluid Extraction of Malaysian Cocoa", The Ninth Malaysian Symposium on Analytical Chemistry, Universiti Sains, Pulau Pinang, 14–16 August 1996.

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M. Marsin Sanagi, Umi K. Ahmad and Hasnah M. Sirat, "Carbon Dioxide Supercritical Fluid Extraction of Natural Products: Possibilities and Limitations", The IRPA Program Assessment Seminar 1993, Hotel Selesa Pasir Gudang, 28–29 August 1993.

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“Application of Supercritical Fluid Extraction and Capillary Gas Chromatography to the Analysis of *Zingiber Zerumber*”, Malaysian Science and Technology Congress 1993, Ming Court Hotel, Kuala Lumpur, 12–14 August 1993.

Ayob Jabal and Mohd Marsin Sanagi, “Pengendalian dan Penyenggaraan Alat Canggih: Peranan Pembantu Makmal”, Seminar Kebangsaan Teknologi Makmal, Universiti Pertanian Malaysia, Serdang Selangor, 8–9 December 1993.

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“Analysis of *Zingiber zerumber* Smith using Supercritical Fluid Extraction”, Symposium on Tropical Natural Resources, Riverside Majestic Hotel, Kucing, Sarawak, 6–11 December 1993.

M. Marsin Sanagi, Umi K Ahmad, Wong P.H. and Rahmalan Ahmad  
“Analysis of Organic Compounds in Suspended Air Particulates from Industrialized Areas”, Faculty of Science Research and Development Seminar 1994, Faculty of Science, 6–11 December 1993.

M. Marsin Sanagi, Umi Kalthom Ahmad and Kamal Hassan  
“Alkilbenzena sebagai Skala Indeks penahanan dalam Kromatografi Cecair Prestasi Tinggi Fasa Terbalik”, The Sixth National Symposium on Analytical Chemistry, Institut Teknologi Mara, Shah Alam, 28–30 October 1992.

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Supercritical Fluid Extraction as a Sample Preparation Technique for the Analysis of *Alpinia galanga*”, The Sixth National Symposium on Analytical Chemistry, Institut Teknologi Mara, Shah Alam, 28–30 October 1992.

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M. Marsin Sanagi, Kamal Hassan, and Umi Kalthom Ahmad “Subcritical/supercritical Fluid Extraction and Chromatographic Analysis of Selected *Zingiberaceae* Spesies”, The IRPA Program Assessment Seminar 1991, Universiti Teknologi Malaysia, Skudai, 20–21 November 1991.

M. M. Sanagi, R. M. Smith, and J. Jaafar, “Penggunaan Pengekstrakan dan Kromatografi Bendalir Lampau Genting dalam Analisis Sebatian Semula Jadi”, *Proc.*,

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## **Reports**

Mohd Marsin Sanagi, "Preparation and Application of Poly(styrene-divinylbenzene) for Chromatographic Analysis", Final Report of UPP Vot 61881 submitted to Universiti Teknologi Malaysia, 1999.

Mohd Marsin Sanagi, "Application of Supercritical Fluid Extraction and Chromatography to the Analysis of Natural Products and Industrial Products" Final Report of IRPA Vot 62036 submitted to Universiti Teknologi Malaysia, 1996.

Mohd Marsin Sanagi, "Analysis of Organic Compounds in Suspended Air Particulates" IRPA-RM6 (Program 40707044 Vote 62080) Final Report, submitted to Universiti Teknologi Malaysia, 1996.

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Mohd Marsin Sanagi, "Study of Hypercarb Porous Graphitic Carbon Stationary Phase", Technical Report submitted to the Department of Chemistry, February 1995.

Mohd Marsin Sanagi, "Penyediaan, Pencirian dan Penggunaan Bahan Penjerap dan Fasa Pegun Berasaskan Karbon", Technical Report submitted to the Department of Chemistry, October 1995.

Mohd Marsin Sanagi, "Research Methods: Research Design" SLAB Short Course 26 July 1993.

## **Encyclopedia**

Contribution of 23 articles (entries) to the *Ensiklopedia Sains dan Teknologi, KIMIA*, Universiti Teknologi Malaysia Publisher (2002).

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## **Editor/Editorial Board Member**

Chief Editor, *Journal of Fundamental Science*, Universiti Teknologi Malaysia (2008 – present) Officially appointed by DVC(RI) UTM Start 1 April 2009 (2 years tenure)

Member of the Editorial Board of the *Malaysian Journal of Analytical Sciences*, (1994 – present)

Chief Editor, Editorial Board of Journal *Buletin Kimia*, 1999– 2001

Editorial Board Member, *Buletin Kimia*, Universiti Teknologi Malaysia, 1994–1997

Mohd Marsin Sanagi as editor of a book *Organometallic Compounds in the Environment – Principles and Reaction*. Translated by Rusmidah Ali and Wan Azelee Wan Abu Bakar, (Evaluated and Edited completed 12 April 1992) – Published by Penerbit UTM (1994).

## CO-CURRICULUM

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### **Organization**

Member of the Malaysian Institute of Chemistry (Institut Kimia Malaysia) 1993–present

Member of the Malaysian Analytical Sciences Society (ANALIS), 1994–present

Member of the Academic Staff Association of Universiti Teknologi Malaysia, 1982 – present

### **Sports**

Representative of the Administration/Dean Office to the Inter-Department Sports (Badminton, and Volleyball) Championship, Faculty of Science, Universiti Teknologi Malaysia (2006, 2007)

Representative of the Department to the Inter-Department Sports (Badminton, Ping pong, Volleyball) Championship, Universiti Teknologi Malaysia (2003, 2004, 2005)

Representative of the Faculty to the Inter-Faculty Sports (Ping pong) Championship, Universiti Teknologi Malaysia, 1998

### **Society/Community**

Organizing Committee Member of One-day Seminar on Legislatives & Control on the Use of Chemicals, organized by Institut Kimia Malaysia (Southern Branch) The Zon Regency Hotel, Johor Bahru, 11 December 2007.

Committee member, Surau Sri Putri, Skudai, Johor (2005 – present)

Honorary Committee Member of Masjid Abidin, Taman Sri Skudai, Johor, (1999–2004)

Chairman, Executive Committee of Surau Sri Putri, Skudai, Johor, (1997– 2004)

Chairman (Yang Dipertua), Parents and Teachers Association (PIBG), Sekolah Kebangsaan Sri Skudai, Johor, (1999– 2002)

Committee Member, Parents and Teachers Association (PIBG) of Sekolah Kebangsaan Sri Skudai, Johor, (1996–1998)

## AWARDS

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**Excellent Services Award 2008** (Anugerah Perkhidmatan Cemerlang) (Sijil dan Hadiah Kecemerlangan) at the Citra Karisma (Majlis Anugerah Kecemerlangan & Penghargaan UTM) 12 May 2009, Dewan Sultan Iskandar, UTM, Skudai.

**Gold Medal** at the International Exhibition Ideas-Invention-New Products (IENA) 2008), Nurnberg Exhibition Centre, Hall 12, Nurnberg, Germany. 30 Oct 2008 – 2 Nov 2008. Invention: “Cone-Shaped Membrane Liquid Phase Microextraction System For Pesticides Analysis”. Inventors: **Mohd Marsin Sanagi**, See Hong Heng, Wan Aini Wan Ibrahim, Ahmedy Abu Naim.

Universiti Teknologi Malaysia Publication Award 2007 Citra Karisma – Recognition Award for the Category of Article in International Journal.

**Recognition Award** at Majlis Pengiktirafan Penyelidikan Universiti Teknologi Malaysia (2006-2007), Puteri Pacific Hotel, Johor Bahru, 27 August 2008.

**Gold Medal** at the Malaysia Technology Expo (MTE) 2008, PWTC Kuala Lumpur, 21-23 February 2008. Invention: “Cone-Shaped Membrane Liquid Phase Microextraction System”. Inventors: **Mohd Marsin Sanagi**, See Hong Heng, Wan Aini Wan Ibrahim, Ahmedy Abu Naim.

**Institut Kimia Malaysia Citation Award 2007**. Presented at Malam Kimia 2007, “In Pursuit of Excellence in Chemistry”, The Saujana Kuala Lumpur, 14 December 2007.

**Silver Medal** at the Innova-Eureka Brussels Exhibition 2007, 22-25 November, 2007. “EcoNoMe: Economical, Novel and Green Microextraction Sol Gel Fiber” Wan Aini Wan Ibrahim, **Mohd Marsin Sanagi**.

**Silver Medal** at the Innova-Eureka Brussels Exhibition 2007, 22-25 November, 2007. “EcoNoSep: Economical, Novel Separation of Propiconazole Enantiomers Using Smart Chiral Separation Solution in Micellar Capillary Electrophoresis”. Inventors: Wan Aini Wan Ibrahim, Dadan Hermawan, **Mohd Marsin Sanagi**.

**Silver Medal** at the Industrial Art & Technology Exhibition (INATEX) 2007 held at UTM Skudai, 15-21 August 2007. Invention: “Cone-Shaped Membrane Liquid Phase Microextraction System for Pesticides”. Inventors: **Mohd Marsin Sanagi**, See Hong Heng, Wan Aini Wan Ibrahim, Ahmedy Abu Naim.

**Best Invention Award** at the Industrial Art & Technology Exhibition (INATEX) 2007 held at UTM Skudai, 15-21 August 2007. Invention: “EcoNoSep - Economical and Novel Separation of Four Triazole Fungicides using Capillary Electrophoresis”. Inventors: Wan Aini Wan Ibrahim, Dadan Hermawan, **Mohd Marsin Sanagi**.

**Gold Medal** at the Industrial Art & Technology Exhibition (INATEX) 2007 held at UTM Skudai, 15-21 August 2007. Invention: “EcoNoSep - Economical and Novel Separation of Four Triazole Fungicides using Capillary Electrophoresis”. Inventors: Wan Aini Wan Ibrahim, Dadan Hermawan, **Mohd Marsin Sanagi**.

**Silver Medal** at the International Exposition of Research and Inventions of Institutions of Higher Learning 2007, (Ekspo Penyelidikan dan Ciptaan Institusi Pengajian Tinggi Antarabangsa 2007, PECIPTA-07), KLCC, 10-12 August 2007. Invention: “EcoNoMe: Economical, Novel and Green MicroExtraction Sol Gel Fiber”. Inventors: Wan Aini Wan Ibrahim, Nor Fairol Zukry Ahmad Rasyd, **Mohd Marsin Sanagi**, Ahmedy Abu Naim.

**Gold Medal** at the Seoul International Invention Fair 2006 organized by Korea Invention Promotion Association in Seoul, Korea, 7-11 December 2006. Invention: “PLEX: Pressurized Liquid Extraction for the Monitoring of Residue Oil Content and Natural Vitamin E in Palm Pressed Fiber”. Inventors: **Mohd Marsin Sanagi**, See Hong Heng, Wan Aini Wan Ibrahim, Ahmedy Abu Naim.

**Silver Medal** at the 17<sup>th</sup> International Invention, Innovation, Industrial Design & Technology Exhibition 2006 (ITEX 2006), Kuala Lumpur Convention Centre, 19-21 May 2006. Name of invention: “PLEX: Method for Pressurized Liquid Extraction (for the monitoring of residue oil content) and Separation of Natural Vitamin E in Palm Pressed Fiber”, Inventors: **Mohd Marsin Sanagi**, See Hong Heng, Wan Aini Wan Ibrahim, Ahmedy Abu Naim.

ICTP Travel Award, for participation in the *International Workshop on Photonics and Applications*, Cantho, Vietnam 15-19 Ogos, 2006.

Anugerah Jertas Kerja dalam Jurnal Antarabangsa, (Hadiah Penghargaan 1) “*High Temperature High Performance Liquid Chromatography of Triazole Fungicides on Polybutadiene-coated Zirconia Stationary Phase*”. di Majlis Anugerah Kecemerlangan & Penghargaan UTM 2004 pada 30 November 2005, Dewan Sultan Iskandar, UTM, Skudai.

Anugerah Perkhidmatan Cemerlang Tahun 2004 (Sijil dan Hadiah Kecemerlangan) di Majlis Anugerah Kecemerlangan & Penghargaan UTM 2004 pada 30 November 2005, Dewan Sultan Iskandar, UTM, Skudai.

MAPIM-FUJI Xerox Publication Award for the category of Academic Books, 2000. *Spektrometri Jisim – Prinsip dan Teknik*.

Universiti Teknologi Malaysia Publication Award for the category of Original Books, 2000. *Spektrometri Jisim – Prinsip dan Teknik*.

Universiti Teknologi Malaysia Publication Award for the category of Original Books, 1999. *Teknik Pemisahan Dalam Analisis Kimia*.

Universiti Teknologi Malaysia Publication Award for the category of Articles in International Journals, 1998. *Supercritical Fluid Extraction of Pyrazines in Roasted*

*Cocoa Beans: Effect of Pod Storage Period.*

JASCO Travel Grant to participate as an invited speaker at the International Symposium to Commemorate the 40th Anniversary of the Kyushu Branch of Japan Society of Analytical Chemistry, Kyushu University, Japan, 14-16 November, 1996

Japan Society for the Promotion of Science (JSPS-VCC) Grant for research attachment at Yoyohashi University of Technology, Japan, 9–31 January 1995

Asian Development Bank (PPTP/ADB) Grant for research attachment at Loughborough University, UK, 4 September – 29 November 1994

UNESCO Travel Grant to participate in the The Seventh Asian Seminar on Medicinal Plants, Spices and Other Natural Products, University of Philippines, Quezon City, Philippines, 2–7 February 1992

Universiti Teknologi Malaysia Scholarship, 1985-1988

The American Chemical Society *Analytical Chemistry Award*, 1979

The MARA (SLAB) Scholarship, 1975-1979

The Johor Dato' Onn Scholarship, 1973-1974

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