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## CURRICULUM VITAE

### PERSONAL DETAILS

**Name** Prof. Dr. Rauzah Binti Hashim  
**Designation** Professor  
**Department** Department of Chemistry  
**Faculty** Faculty of Science  
**Tel. No. (Office)** 03-79674201/ 4009  
**Fax No.** 03-79566343/ 79674193  
**E-mail Address** rauzah@um.edu.my  
**ResearcherID Link** <http://www.researcherid.com/rid/B-9566-2010>  
**Address(Office)** Department of Chemistry, Faculty of Science University of Malaya, 50603 Kuala Lumpur, MALAYSIA



### ACADEMIC QUALIFICATION (Qualification), (Institution).

Ph.D (The Computer Simulation of Model Liquid Crystals), SOUTHAMPTON UNIVERSITY, UK

B.Sc. Hon. (Chemistry with Mathematics), SOUTHAMPTON UNIVERSITY, UK

### PROFESSIONAL AFFILIATION/MEMBERSHIP (Organisation), (Role), (Year), (Level).

American Chemical Society, Member, 2010, (International)

Institute Kimia Malaysia, Member, 2009, (National)

International Liquid Crystals Society, Member, 1995, (International)

Royal Society of Chemistry, Member, 1990-2011, (International)

### ADMINISTRATIVE DUTIES (Role), (Level), (Start date),(End Date).

Chairperson, Faculty of Science Research Committee (2007-2009, Department Of Chemistry, Faculty Of Science, 01-Sep-07 - 31-Aug-09

Chairperson, Center for Ultrafast Science Initiative (2007-2008), University Malaya, 01-Jun-07 - 30-Jun-08

Deputy Dean, Postgraduate Affairs, Research and Funding, Computing Initiatives for the Faculty and Internationalisation(2007-2009), Faculty Of Science Dean's

Office, Faculty Of Science, 01-Sep-06 - 30-Sep-09

Chairperson, Faculty of Sciece Grant Evaluation Committee (2006-2009), Faculty Of Science Dean's Office, Faculty Of Science, 01-Sep-06 - 30-Sep-09

Member, Evaluation Committee for e-Science Fund- Advance Material (2006-Now), University Malaya, 01-Jun-06

Chairperson, Faculty of Science Library Committee (2006-Now), Faculty Of Science, 01-Jun-06

Chariperson, Juruteknologis Makmal Committee -responsible to upgrade lab. Assistant to Sciece Officer Assistant (2006-2010), University Malaya, 01-Jun-06 - 30-Jun-10

Chairperson, Committee of Postgraduate Affair Faculty of Science (2006-2009), University Malaya, 01-Jun-06 - 31-Aug-09

Chairperson, UM HPC and GRID Committee (2006-Now), University Malaya, 01-Mar-06 - 01-Mar-09

Committee of the International Conference on Indigenous Study (2005), University Malaya, 01-Jun-05 - 30-Jun-06

Member, University Library Committee (2004-Now), University Malaya, 01-Jun-04

Member, Postgraduate Committee (2004-2005), University Malaya, 01-Jun-04 - 30-Jun-05

Convener, Bridging Program for Lab Assistants (2004-2005), University Malaya, 01-Mar-04 - 01-Sep-10

Member, PJP/PPP Grant Committee (2004-2005), University Malaya, 01-Mar-04 - 30-Sep-09

Convener, Physical Chemistry Lab (2000-2006), Department Of Chemistry, Faculty Of Science, 01-Jun-00 - 31-May-06

## **AREAS OF EXPERTISE**

**(Area).**

Bio-Compatible Materials (Glycolipids, Liquid Crystals, Liposomes)

Theoretical Chemistry (Statistical Mechanics, Computer Simulations, Molecular Modeling)

Self-Assemblies And Self-Organised Systems (Liquid Crystals, Thermotropic, Lyotropic, Biaxial Phase)

Computational Science (Education Software, Science Courseware, Science Content)

## **RECENT SELECTED PUBLICATIONS**

**(Publication).**

## Book

### 2008

Ahmed Zewail, Beyond Science, (2008) edited by Rauzah Hashim, 978-983-44296-2-1, University of Malaya Publication. (Book)

Rauzah Hashim, 2006, Sains Untuk Pemahaman Awam (Science for Public Understanding), Dewan Bahasa dan Pustaka (Karyanet.com.my), 983-62-8204-1 (Note: Author had withdrawn the publication disputing the online mode and resubmitted the manuscript to DBP for paper publication in 2009)

### 2007

Rauzah Hashim (Ahli Sidang Reduksi: penulis, ensiklopedia dan penyemak bahan), Ensiklopedia umum Untuk Pelajar (12 jilid) Utusan Publication, Cetakan Pertama 2007. ISBN 978-967-61-1993-8(set)

## Chapter In Book

### 2010

R. Hashim, Computer Modeling of Liquid Crystals, Chapter 10, Understanding Soft Condensed Matter via Modeling and Computations, edited by Wenbing Hu (Nanjing University, China) & An-Chang Shi (McMaster University, (Canada), World Scientific 2010, 978-981- 4295-58-1  
[UNDERSTANDING SOFT CONDENSE...pdf](#)

### 2008

R. Hashim, 399 General Discussion, The Importance of Polymer Science for Biological Systems, Philip Earis (Editor) Faraday Discussion, 139, 2008, RSC Publishing, ISBN 085404-120-6

### 2003

Irwana Nainggolan, S. Radiman, Ahmad Sazali Hamzah and Rauzah Hashim, 2003. Synthesis of neoglycolipids as novel surfactants, p0 242-247 Analytical Chemistry: Applications and Current Issues Edit. By Z.B Assim, Fasihuddin Ahmad, Ismail Jusoh, Lau Seng, Murtedza Mohamed, UNIMAS 2003 ISBN 983-9257-33-1.

## Academic Journals

### 2012

Rauzah Hashim\*, Akhihiko Sugimura, Hiroyuki Minamikawa and Thorsten Heidelberg, **2011**, Nature-like synthetic alkyl branched chain glycolipids: a review on chemical structure and self-assembly properties, Liquid Crystals, 39 (1), 1 17 (ISI/SCOPUS Cited Publication)

### 2011

Rauzah Hashim\*, Seyed M. Mirzadeh, Thorsten Heidelberg, Tanaka Yoshiaki, Akhiko Sugimura and Hiroyuki Minamikawa. 2011 A Reevaluation on the Epimeric and Anomeric Relationship of Glucosides and Galactosides in Thermotropic Liquid Crystal Self-Assemblies, Carbohydrate Research, doi:10.1016/j.carres.2011.10.032 (*ISI-Cited Publication*)

Noor Idayu Mat Zahid, Osama K. Abou-Zied, Rauzah Hashim and Thorsten Heidelberg, 2011, Characterization of the Head-Group and the Hydrophobic Regions of a Glycolipid Lyotropic Hexagonal Phase Using Fluorescent Probes, 2011 Journal of Physical Chemistry C, 115 (40), pp 19805-19810 (*ISI/SCOPUS Cited Publication*)

Mehrdad Khanpour and Rauzah Hashim, 2011, Pair Correlation Function from the Barker-Henderson Perturbation Theory of Fluids: The Structure of Square-Shoulder Potentials, submitted to Journal of Chemical Physics (*ISI/SCOPUS Cited Publication*)

Vijayan Manickam Achari, Richard A. Bryce\*, Rauzah Hashim\* and Thorsten Heidelberg, 2011, Molecular Dynamics Study of Anhydrous Bilayers of Synthetic Glycolipids: Effects of Chain Branching and Disaccharide Headgroup, Soft Matter (submitted) (*ISI/SCOPUS Cited Publication*)

N. Z. B. M. Rodzi, T. Heidelberg, R. Hashim\*, A. Sugimura and H. Minamikawa, 2011, Synthesis and Liquid Crystals Properties of  $\alpha$ -Methylated Galactosides, Physics Procedia, 14: 91-95 (*SCOPUS-Cited Publication*)

Karem Sabah, Thorsten Heidelberg & Rauzah Hashim. 2011. Novel crown ethers on glucose based glycolipids. Carbohydr. Res. 346 (2011) 891-896 (*ISI-Cited Publication*)

Nicholas J. Brooks, Hairul A. A. Hamid, Rauzah Hashim\*, Thorsten Heidelberg, John M. Seddon\*, Seyed M. Mirzadeh Hussein, Noor Idayu Mat Zahid, Rusnah Syahila Duali Huessen, Thermotropic and lyotropic liquid-crystalline phases of Guerbet branched-chain beta-glucosides, (Invited Article) 2011, Liquid Crystals, 38(11-12), 1725-1734 (*ISI/SCOPUS Cited Publication*)

Noraini Ahmad, Roland Ramsch, Jordi Esquena, Conxita Solans, Hairul Anuar Tajuddin, Rauzah Hashim. 2011. Physico-Chemical Characterization of Natural-Like Branched-Chain Glycosides towards Formation of Hexosomes and Vesicles, (accepted 2011) dx.doi.org/10.1021/la203736b | Langmuir (*ISI/SCOPUS Cited Publication*)

## 2010

Mehrdad Khanpour, G. A. Parsafar, and Rauzah Hashim, 2010, A Direct Analytical Correlation Function for Hard Core Double Yukawa Potential, Journal of Non-Crystalline Solids 356 (2010) 2247-2250 (*ISI-Cited Publication*)

Wai Ling Kwong, Wee Chen Gan, Wan Haliza Abd Majid, Rauzah Hashim, Thorsten Heidelberg, Thin Solid Films (2010), 518-4412-4416 (*ISI-Cited Publication*)

N.S. Ngan, T. Heidelberg, G.J.T. Tiddy and R. Hashim, 2010, Quantitative analysis of the packing of alkyl glycosides: a comparison of linear and branched alkyl chains, Liquid Crystals, 37(9), 1205-1213. (*ISI-Cited Publication*)

N.M. Huang, H.N. Lim, S. Radiman, P.S. Khiew, W.S. Chiu, R. Hashim, C.H. Chia, (2010) Sucrose ester micellar- mediated synthesis of Ag nanoparticles and the antibacterial properties, *Colloids and Surfaces A: Physicochemical and Engineering Aspects* 35 (1): 69-76. (*ISI/SCOPUS Cited Publication*)

## 2009

Irwana Nainggolan, Shahidan Radiman, Ahmad Sazali Hamzah, Rauzah Hashim. 2009. The effect of the head group on branched-alkyl chain surfactants in glycolipid/n-octane/water ternary system. *Colloids and Surfaces B: Biointerfaces* 73: 84-91. (*ISI-Cited Publication*)

HongNgee Lim, Anuar Kassim, NayMing Huang, Rauzah Hashim, Shahidan Radiman, PoiSim Khiew, WeeSiong Chiu. 2009. Fabrication and characterization of 1D brushite nanomaterials via sucrose ester reverse microemulsion. *Ceramics International* 35: 2891-2897 (*ISI-Cited Publication*)

N.M. Huang, S. Radiman, H.N. Lim, P.S. Khiew, W.S. Chiu, K.H. Lee, A. Shahida, R. Hashim, C.H. Chia, 2009, g-ray assisted synthesis of silver nanoparticles in chitosan solution and the antibacterial properties, *Chemical Engineering Journal* 155: 499-50 (*ISI-Cited Publication*)

N.M. Huang, S. Radiman, H.N. Lim, P.S. Khiew, W.S. Chiu, R. Hashim and C.H. Chia, 2009, Synthesis and Characterization of Cobalt Sulfide Using Sucrose Ester Micelles and Application as Dye Adsorption, *Sains Malaysiana* 38 (6):863-868 (*ISI/SCOPUS Cited Publication*)

R. Hashim, M.Khanpour, 2009. A general Equation of State For Hard Hyperspheres, *Jurnal Fizik Malaysia*, 30(1-4), 1-6. (*Non-ISI/Non-SCOPUS Cited Publication*)

## 2008

Teoh T. Chong, Thorsten Heidelberg, Rauzah Hashim and Richard Bryce, 2008, Computer simulation of a Hexagonal Assembly for a Branched Chain Glycolipid. *Malaysian Journal of Science*, 27 (2), 75-82. (*SCOPUS-Cited Publication*)

Mehrdad Khanpour and Rauzah Hashim, (2008), Approximate analytical structure and thermodynamic for penetrable sphere fluids using effective hard spheres, *J. Chem. Phys.* 129, 164508, 2008. (*ISI-Cited Publication*)

## 2007

Teoh Teow Chong, Thorsten Heidelberg, Rauzah Hashim and Saadullah Gary. 2007. Computer modelling and simulation of thermotropic and lyotropic alkyl glycoside bilayers, *Liquid Crystals*, Vol. 34, No. 2: 251-265. (*ISI-Cited Publication*)

## 2006

G. Liao, S., K. Zewe, J. Hagerty, R. Hashim, S. Abeygunaratne, V. Vill and A. J. Kli. 2006. Thermotropic liquid crystalline properties of amphiphilic branched chain glycolipids. *Liquid Crystals*, 33(3): 361-366. (*ISI-Cited Publication*)

Rauzah Hashim, Hind Hassan Abdalla Hashim, Nasrul Zamani Mohd. Rodzi, Rusnah Syahila Duali Hussen, Thorsten Heidelberg. 2006. Branched chain glycosides: enhanced diversity for phase behavior of easily accessible synthetic glycolipids, *Thin Solid Films* 509: 27-35 (*ISI-Cited Publication*)

S. Abeygunaratne, R. Hashim and V. Vill. 2006. Evidence for uncorrelated tilted layer structure and electrically polarized bilayers in amphiphilic glycolipids, *Phys. Rev. E* 73: 011916 (*ISI-Cited Publication*)

Teoh Teow Chong, Rauzah Hashim and Richard A. Bryce. 2006. Molecular dynamics simulation of monoalkyl glycosides micelles in aqueous solution: Influence of carbohydrate headgroup chemistry, *J. Phys. Chem. B*, 110: 4978-4984. (*ISI-Cited Publication*)

R. Hashim et al., Glycolipids of Branched Chain Alkyl Oligosaccharides for Liquid Crystal and Related Applications, International Publication WO2006/098699 (2006), International Bureau, World Intellectual Properties Organisation, WIPO, 21 September 2006. (*Non-ISI/Non-SCOPUS Cited Publication*)

## 2005

I. Nainggolan, S. Radiman, A.S.H. Hamzah, R. Hashim. 2005. The phase and rheological behaviour of neoglycolipids, *Mal. J. Anal. Sci.* 9: 74-84. (*Non-ISI/Non-SCOPUS Cited Publication*)

Teoh Teow Chong and Rauzah Hashim, 2005, Computer Modeling and Simulation of Thermotropic Alkyl Glycoside Bilayers. *J. Physics Malaysia* (accepted) (*Non-ISI/Non-SCOPUS Cited Publication*)

## 2004

Rauzah Hashim, Teoh Teow Chong and Saadullah Gary. 2004. The effects of different sugar head groups on the formation of glycolipids n-octyl-b-D-glycosides micelles: a molecular dynamics simulation, *Malaysian Journal of Science*, 23 (2): 189-202 (*SCOPUS-Cited Publication*)

## 2003

T. C. Teoh and R. Hashim. 2003. Molecular Dynamics Simulations n-octyl-b-D-glycosides: Some structural properties of micelles. *Malaysian Journal of Science*. 22 : 95-103. (*SCOPUS-Cited Publication*)

Hashim, R., Hind Hassan, H. Ahmad Sazali, V. Vill and M. Wulf. 2003. Synthesis of Branched Chain Alkyl Glycosides and Their Liquid Crystal Behaviours. *Electronic-Liquid Crystals Communications*, e-LC, January 2003. [http://www.elc.org/Documents/R.\\_Hashim\\_2003\\_02\\_05\\_07\\_19\\_24.pdf](http://www.elc.org/Documents/R._Hashim_2003_02_05_07_19_24.pdf). (*Non-ISI/Non-SCOPUS Cited Publication*)

## 2002

Vill, V. and R. Hashim (2002). Carbohydrate liquid crystals: structure-properties relationship of thermotropic and lyotropic glycolipids, *Current Opinion in Colloid and Interface Science*. 7: 395-409 (*ISI-Cited Publication*)

## 2001

Azizah, M., R. Hashim and H.M Kamaliah. 2001. Molecular modeling of some mono- and disaccharides. Malaysian Journal of Science. 20: 77-90. (*SCOPUS-Cited Publication*)

Hashim, R. and J. Sri Ganesh. 2001. Glycolipids Chemical Informatics. Malaysian Journal of Science. 20: 113-120. (*SCOPUS-Cited Publication*)

N. Mohamed, R. Hashim, N. A. Rahman, S. M. Zain, 2001. An insight to the cleavage of carotene to vitamin A: a molecular mechanics study, Journal of Molecular Structure: THEOCHEM, 538, 245-252 (*ISI-Cited Publication*)

## 1999

Hashim, R. and S. Romano. 1999. Computer simulation study of a nematogenic lattice model based on the Nehring-Saupe interaction potential. International Journal of Modern Physics B, vol. 13, no. 32, 3879- 3902 (*ISI-Cited Publication*)

## 1998

R. Hashim and S. Romano, 1998. On a direct estimate of densities of states and partition functions. International Journal of Modern Physics B. 12(6): 697-707 (*ISI-Cited Publication*)

## 1997

Sharifuddin, M.Z., R. Hashim, Alan G. Taylor and David Phillips. 1997. Electronic structures of carbazole and its derivatives: A Semi-empirical study on the substitution effects of carbazole. Special Issue of J. Mol. Struct. Theochem, Vol. 401 (3). (*ISI-Cited Publication*)

## 1996

Shariffudin, M.Z. and R. Hashim. 1996. Structure determination of N-phenylcarbazole from semi- empirical quantum chemical calculations. Extent of twisting between the carbazole and phenyl moieties. Malaysian Journal of Science. 18B: 35-41. (*SCOPUS-Cited Publication*)

## 1995

R. Hashim, G.R. Luckhurst, and S. Romano. 1995, Computer simulation studies of anisotropic systems XXIV. Constant pressure investigations of the smectic B phase of the Gay-Berne mesogens. J. Chem. Soc. Faraday Trans. 91 (14), 2141-2148 (*ISI-Cited Publication*)

## 1993

R. Hashim, G.R. Luckhurst, F. Prata and S. Romano. 1993, Computer simulation studies of anisotropic systems XXII. An equimolar mixtures of rods and discs; a biaxial nematic. Liquid Crystals, 15, no.3, 283-309. (*ISI-Cited Publication*)

## 1992



Emerson, A.P.J., R. Hashim, G.R. Luckhurst. 1992. On the validity of the Maier-Saupe approximation for the Gay-Berne nematogen. *Molec. Physics*, 76(2): 241-250 (*ISI-Cited Publication*)

## 1990

Hashim, R., G.R. Luckhurst and S. Romano. 1990. Re-entrant phase separation in nematogenic mixtures of cylindrical and spherical particles. *Proc. R. Soc. Lond, A.*, 429: 323-339. (*ISI-Cited Publication*)

## 1986

R. Hashim, G.R. Luckhurst and S. Romano. 1986. Binary mixtures of liquid crystals. *Liquid Crystals*. 1(2): 133-146 (*ISI-Cited Publication*)

J.W. Emsley, R. Hashim, G.R. Luckhurst, and G.N. Shilstone. 1986, Solute alignment in liquid crystal solvents. The saupe ordering matrix for anthracene dissolved in uniaxial liquid crystals. *Liquid Crystals*, 1, No. 5, 437-454 (*ISI-Cited Publication*)

## 1985

R. Hashim, G.R. Luckhurst and S. Romano. Computer simulation studies of anisotropic systems. XII. The orientational ordering of biaxial particles dissolved in a nematic liquid crystal. 1985, *Molec. Physics*, 56, 1217-1234 (*ISI-Cited Publication*)

## 1984

R. Hashim, G.R. Luckhurst and S. Romano. 1984. Preliminary Communications. Computer simulation studies of anisotropic systems. XII. Mixtures of rods and plates - a biaxial nematics? *Molec. Physics*, 53, 1535-1539 (*ISI-Cited Publication*)

## 1983

J.W. Emsley, R. Hashim, G.R. Luckhurst, G.N. Rumbles and F.R. Vioria. 1983. The Saupe ordering matrices for solutes in uniaxial liquid crystals. Experiment and theory. *Molec. Physics*. 49: 1321-1335 (*ISI-Cited Publication*)

## Proceeding

## 2011

Omar Misran, Bakir A. Timmimi, Thorsten Heidelberg and Rauzah Hashim, 2011, Determination of bound water in the lamellar phase of alkyl beta-glycoside/D<sub>2</sub>O systems using the deuterium NMR technique (in preparation)

## 2006

T. Heidelberg, R. Hashim, N.Z. Mhd Rodzi, R.S. Duali Hussen, H.H. Abdalla Hashim and H. Hassan Basari, 2006, Branched Chain Glycolipids: A Novel Class Of Biofunctional Surfactants, Proceeding of 11th APPChE Congress



R. Hashim, Sri Ganesh Janarthanan and V. Vill, 2006, Liquid Crystal Properties of Monosacharride, Glycolipids, Proceeding of 11th APPChE Congress

### 2003

Hashim, R., G.R. Luckhurst and S. Romano. 2003. Re-entrant Biphasic Behaviour in Mixtures of Rods and Spheres: Theory, Experiment and Simulation. Proceedings of Conference on Liquid Crystals, Chemistry, Physics and Applications 13-17 October, 2003, Zakopane.

### 2001

J. Sri Ganseh, and R. Hashim, 2001. Development of an Integrated Chemical Information System of Natural and Chemical Resources of Malaysia. Proceeding of Asia Pacific Advanced Network (APAN) (*Non-ISI/Non-SCOPUS Cited Publication*)

### 1999

Lee Peik Feng, Fazilah Haron and Rauzah Hashim. 1999, Parallelization Strategies for Monte-Carlo Simulation with Application to Simple Liquid Crystal Model. Proceedings of the Malaysian Science and Technology Congress Symposium C, New Materials and Information Technology. (*Non-ISI/Non-SCOPUS Cited Publication*)

Rauzah Hashim, Nornisah Mohamed, Sharifuddin Mohd. Zain and Noorsaadah Abd. Rahman 1999, Molecular Modeling of  $\beta$ -Carotene: Systematic Dihedral Rotations About the Conjugated Double Bonds through a 360o Cycle. Proceeding of the Malaysian Science and Technology Congress Symposium C, New Materials and Information Technology (*Non-ISI/Non-SCOPUS Cited Publication*)

Lim Kee Choi, Fazilah Haron and Rauzah Hashim. 1999, Molecular Dynamics Simulation of the Liquid Phase on the PC Cluster using Message Passing Interface (MPI). Proceeding of the Malaysian Science and Technology Congress Symposium C, New Materials and Information Technology. (*Non-ISI/Non-SCOPUS Cited Publication*)

Azizah Mainal, Rauzah Hashim and Kamal Aziz Ketuly, 1999, Computer Aided Design And Molecular Modeling: Carbohydrate Liquid Crystals. Proceeding of the Malaysian Science and Technology Congress Symposium C, New Materials and Information Technology (*Non-ISI/Non-SCOPUS Cited Publication*)

R. Hashim and S. Romano. 1999, Comparison Between Some Dispersion Potentials For Nematogenic Lattice Models: Computer Simulation Studies. Proceeding of the Malaysian Science and Technology Congress Symposium C, New Materials and Information Technology

### 1998

R.Hashim, N.Halim, H.Hussain, Z. Jafaar, G. R. Luckhurst, S. Silvano , S.M. Zain. 1998, Computer Simulation Studies of Anisotropic Systems XXVII: Phase Diagram for a Nematic Binary Mixture. Proceeding of SPIE- The International Society For Optical Engineering, Liquid Crystals, Physics, Technology and Applications, vol.3318-32, 186. Edited by Jolanta Rutkowska, Stanislaw J. Klosowicz, Jerzy Zielinski, Jozef Zmija (*Non-ISI/Non-SCOPUS Cited Publication*)

## **Technical Report**

### **2004**

Richard A. Bryce, Teoh Chong, R. Hashim. 2004. Molecular dynamics simulations of glycolipids using high performance computing. CSAR Focus. 12: 6-7.

## **Mass Media(Newspaper,radio,tv,popular Magazine)**

### **2003**

Rauzah Hashim, Kimia pusat segala sains, Utusan Malaysia, 4 January 2003

Rauzah Hashim, Di sebalik keraguan ikan salmon, Utusan Malaysia, 18 Febuari 2003

Rauzah Hashim, Wujud ketidaksempurnaan dalam sains kimia, Utusan Malaysia, 10 Mei 2003

Rauzah Hashim, Ketaksempurnaan hukum gas unggul terdedah, Utusan Malaysia, 25 Januari 2003

Rauzah Hashim, Beriani gam dengan hukum termodinamik, Utusan Malaysia, 27 Disember 2003

### **2002**

Rauzah Hashim, Salah faham disebalik kemajuan INTERNET, Utusan Malaysia, 20 March 2002.

Rauzah Hashim, Tugas saintis mencari kebenaran, Utusan Malaysia, 4 Mei 2002.

Rauzah Hashim, Jadikan sains budaya awam, (Turning science into a public culture), Utusan Malaysia, 18 Mei 2002.

Rauzah Hashim, Kimia dalam bioteknologi, Utusan Malaysia, 27 April 2002

Rauzah Hashim, Budaya penyelidikan sains, Utusan Malaysia, 29 June 2002

Rauzah Hashim, Sahsiah saintis lebih utama daripada prasarana, Utusan Malaysia, 2 November 2002

Rauzah Hashim, Masa depan cerah bagi likuid kristal, Utusan Malaysia, 30 November 2002

### **2000**

Rauzah Hashim, Internet sebagai otak raksasa masih fantasi. Utusan Malaysia, 10 March 2000

Rauzah Hashim, Keasyikan INTERNET perlu berasaskan sains. Utusan Malaysia, 15 April 2000

Rauzah Hashim, Keunggulan Sains atasi Pascamodenisme, Utusan Malaysia, 30 Mei 2000

### **List Of Written Works That Have Not Been Published**

#### **2011**

Omar Misran, Bakir A. Timmimi, Thorsten Heidelberg, and Rauzah Hashim, 2011, Determination of bound water in the lamellar phase of alkyl beta-glycoside/D<sub>2</sub>O systems using the deuterium NMR technique (ongoing discussion)

Khairul Amri bin Mohamad, Thorsten Heidelberg, Muhamad Putra bin Abdullah, Rauzah Hashim, G.R. Luckhurst and Volkmar Vill, (2008) Effect of molecular geometry on the thermal stability of nematic liquid crystals A structure property analysis using the LiqCryst database (ongoing discussion)

W.C. Gan, B.K. Ng, W.H. Abd. Majid, R. Hashim and T. Heidelberg, 2010, Pyroelectricity in Glycolipid (C14- 10G2), (ongoing)

New Potential Energy Functions for Simulation of Liquid Crystals.

Kesenian Sains Likuid Kristal, (2004) Buku untuk DBP

Rusnah Syahila Duali Hussen, Thorsten Heidelberg and Rauzah Hashim, 2007, The lyotropic properties of branched chain cellobiosides and lactosides

Nasrul Zamani B. Mohd Rodzi, Rauzah Hashim\* , Thorsten Hiedelberg, (2007) Branched Chain Galactosides Derived from the Guebert Alcohols: Synthesis and Mesomorphic Properties (waiting for XRD data)

#### **2004**

Rauzah Hashim, Sri Ganesh Janarthanan, Volkmar Vill and Rusnah Syahila D.Hussen (2004) Liquid Crystal Properties of a Series of Galacto and Gluco Pyranosides and Pyranoses

Sri Ganesh Janarthanan, Gaja Peters, Rauzah Hashim, Volkmar Vill (2004), Structure/Property Relationship of Calamitic Liquid Crystal Using Statistical Analysis Part II: Mesomorphic comparison with different wing groups

Sri Ganesh Janarthanan, Gaja Peters, Rauzah Hashim, Volkmar Vill (2004), Structure/Property Relationship of Calamitic Liquid Crystal Using Statistical Analysis Part I: Mesomorphic comparison with different mesogenic groups

#### **2003**

Liquid Crystals (for Ullman Book), 2003

#### **2000**

Properties and Functions of Glycolipids (2000)

### **Non-Refereed Journals**

## 2004

Rauzah Hashim, Erti Kewujudan (The Meaning of Existence), Al Islam, September 2004

Rauzah Hashim, Asas Sains (Basic in Science), Pemikir, Bil. 36, 163-190, April 2004

Rauzah Hashim, Cinta matematik2 (Mathematics Love Part 2). Dewan Kosmik Ogos 2004

Rauzah Hashim, Sentuhan Suhu (Temperature Touch), Dewan Kosmik, Julai 2004

Rauzah Hashim, Cinta matematik1 (Mathematics Love Part 1), Dewan Kosmik Julai 2004

Rauzah Hashim, Pemahaman amat utama bagi seorang saintis (Understanding is more important to a scientist), Dewan Kosmik Jun 2004.

Rauzah Hashim, Ditakdirkan, saya mengikuti sebuah projek sains sekolah (I was on the science project in school), Dewan Kosmik Mei 2004.

Rauzah Hashim, Guru kimia saya tidak kurang hebat (My chemistry teacher was the best), Dewan Kosmik April 2004

Rauzah Hashim, Cita-cita saya (My ambition), Dewan Kosmik March 2004

Rauzah Hashim, Di dalam sebuah kamar yang malap (In the dimmed light bedroom), Dewan Kosmik February 2004.

Rauzah Hashim, Masa dan Kinetik (Time and Kinetics), (Dewan Kosmik Mei 2003)

## 2003

Rauzah Hashim, Pengkhususan hanyalah untuk seekor serangga (Specialization is only for insects), Dewan Kosmik March 2003.

## 2002

Rauzah Hashim dan Kamaliah Haji Mahmood, Sifat Aneh Benda (Strange behaviour of matters), Dewan Kosmik Januari 2002.

## Others

## 2006

Rauzah Hashim. 2006. Understanding the Liquid Crystal Behavior from Informatics Studies, (Keynote Address), International Conference on Modeling and Simulation, MS2006, 3-5 April 2006, Kuala Lumpur, Malaysia

## 2005

Rauzah Hashim. 2005. Novel Liquid Crystal Properties of Glycosides derived from Guebert Alcohols, (Invited Speaker) International Symposium on the Manipulation of Advanced Smart Materials, 26-27 May 2005, Nara, Japan

## 2004

Rauzah Hashim, (2004), Development of glycolipid sciences using glycolipid information system, A Chemical Physics Approach to Liquid Crystals, (Invited Speaker), 29-30 July 2004, Southampton, United Kingdom

S. Abeygunaratne, M.Y.M. Huang, G. Liao, R. Hashim, V. Vill and A. J kli. 2004. Indication of in-plane anisotropy of glycolipid bilayers due to uncorrelated tilted layer structure. 20th International Liquid Crystal Conference, Ljubljana, Slovenia, 4-9 July 2004.

## AREAS OF RESEARCH

(Project title), (Role), (From)-(Until), (Source), (Level).

Fundamental Sciences in Self-Assembly (High Impact Research Grant, Chancellory Top-Down), Principal Investigator(PI), 2011-2016, High Impact Research Grant

Understanding Guerbet glycosides self-assembly structures and dynamics for functional nano-biotechnology, Principal Investigator(PI), 2011-2016, High Impact Research Grant (Faculty of Science)

Integrating Nanomaterials in Formulations, Coordinator, 2010-2012, European Union 7th Framework Program

The Structure and Dynamic Investigations of Some Branched Chain Glycosides, Principal Investigator(PI), 2010-2010, Advanced Research Training (ATTH), HCD MOSTI

Collaborating with Imperial College ESPRC 'Membrane Biophysics Platform Grant', Coordinator, 2009-2014, EPSRC

Ultrafast Dynamics of Water in Lyotropic Liquid Crystal Phases of Branched Chain Glycolipids, Principal Investigator(PI), 2009-2011, Brain Gain Malaysia

Science Through Simulation (STS)-Applying to TechnoFund MOSTI (Rejected), Member, 2008-2009, Technofund MOSTI

Collaborating with Kent State University, Ohio 'International Liquid Crystal Materials Institute' (ILCMI) (Waiting for Approval), Coordinator, 2008, National Science Foundation

Pembelian Sebuah Tensiometer Untuk Projek Glycolipids, Project Leader, 2008-2008, University of Malaya

Palm Oil and Palm Kernel Oil Based Glycosides, Synthesis and Properties, Project Leader, 2008-2009, University of Malaya

Pendaftaran Paten Antarabangsa- Projek Glycolipds, -, 2007-2007, University of Malaya

Molecular Rationalization of the Stability of Glycolipid Bilayers, PROJECT LEADER, 2006-2008

Synthesis and characterization of palm oil and palm kernel oil derived glycolipids, Project Leader, 2006-2008

Glycolipids Science & Technology (Extension), Project Leader, 2006, University Malaya

Investigation of Glycolipids Phases Using deuterium NMR (5000 USD), Project Leader, 2006-2007, Nippon Sheet Glass

Glycolipids Science and Technology (Total grant: RM 11,237,280), Project Leader, 2002-2004, Intensification of Research in Priority Areas (IRPA)

Natural Products Information System on Malaysian Plants, PROJECT LEADER, 2002-2007, Nil

Chemical Synthesis and Informatics of Glycolipids, Principal Investigator(PI), 2002-2006, MOSTI

The e-Science Grid : The Development of Back-end Grid Engine and Grid Infrastructure, Project Leader, 2002-2003, Intensification of Research in Priority Areas (IRPA)

Computer simulation studies of nematic texture, Project Leader, 2000-2001, Intensification of Research in Priority Areas (IRPA)

Liquid Crystals, Physics and Chemistry. Synthesis of glycolipids (10,000 USD), Principal Investigator(PI), 2000-2001, Nippon Sheet Glass Foundation

Computer Simulation Studies of Biaxial Nematics, Project Leader, 1999-2000, Intensification of Research in Priority Areas (IRPA)

Feasibility Study on the Establishment of Computational Science Center (4,000 USD), Coordinator, 1999, ICS, Trieste

Workshop on Combinatorial Chemistry and Modeling (40,000 USD), Coordinator, 1997, ICS, Trieste

Molecular Dynamics Computer Simulation on a Parallel Computer with application to Liquid Crystals, Project Leader, 1996-2000, Intensification of Research in Priority Areas (IRPA)

Monte-Carlo Computer Simulation of Liquid Crystal Mixture., Project Leader, 1996-2000, Intensification of Research in Priority Areas (IRPA)

Attachment on Theoretical Study of Liquid Crystals, Associate Member, 1996-2000, ICTP, Trieste

Molecular Modeling of Small Molecules, PROJECT LEADER, 1995-1999, MOSTI

Computational Chemistry: Molecular Modeling of Small Molecules(Extension), Project Leader, 1994, Intensification of Research in Priority Areas (IRPA)

Attachment on Liquid Crystal Display Application, Visiting Academic, 1994, JSPS-VCC

Computational Chemistry: Molecular Modeling of Small Molecules, Principal Investigator(PI), 1993-1994, Intensification of Research in Priority Areas (IRPA)

Computer Simulation and Theory of Liquid Crystals, Principal Investigator(PI), 1993-1994, Royal Society of Chemistry, United Kingdom

Attachment on Computational Chemistry, Visiting Academic, 1992, Program of PPTP/ ADB

Sabbatical Leave, Academic Fellow, 1990-1991, Association of Commonwealth Universities (ACU) and British Council

Prep of Novel Metal Complexes Liquid Crystals, Principal Investigator(PI), 1988-1989

Mean Field theory of Liquid Crystals Mixture, Principal Investigator(PI), 1986-1987

#### **CONSULTATION PROJECT/CONSULTANCY** (Project title), (Role), (From)-(Until), (Organisation).

Member of the Expert Group Meeting on Combinatorial Chemistry and Related Technology of ICS UNIDO, Expert Member, 1997-2003, ISC-UNIDO, Trieste, Italy

Network for International Academic Women, Network Coordinator, 1998-2000, Association of Commonwealth University, UK

The feasibility study on the establishment of a National CAMD center, Manager, 1998-1999, ISC-UNIDO, Trieste, Italy

Nanotechnology Initiatives Expert Group, Expert Member, 2003-2009, MIGHT

UM e-science GRID Initiative, Chairman, 2006-2009, Universiti Malaya

Member, Natioanl GRID Initiative, Advisor, 2006-2009, MIMOS Berhad

UM-HPC Procumment Committee, Chairman, 2006-2009, Pusat Teknologi Maklumat, Universiti Malaya

Ahli Jawatan Kuasa Penerbitan, Advisor, 2008-2010, Dewan Bahasa dan Pustaka

Initiative to set up the Center for Ultrafast Science UM, Chairman, 2008-2008, Chancellory , University Malaya

#### **AWARDS AND RECOGNITIONS** (Name of Award), (Awarding Institution), (Year Awarded), (Level).

Fellow of the Academy of Science Malaysia (FASc) , Academy of Science Malaysia, 2009, (NATIONAL)



Excellent Service Award, University of Malaya, 2008, (UNIVERSITY)

Excellent Service Award, University of Malaya, 2007, (UNIVERSITY)

Bronze Medal (Management of Research Results and Material for Medium and Large Project Group), Universiti Malaya, 2006, (UNIVERSITY)

Gold Medal (Lamellar Assemblies of Glycolipids New Optimization Approach for Advanced Biotech-Materials), University Malaya, 2006, (UNIVERSITY)

Excellent Scientist, Ministry of Higher Education Malaysia, 2005, (NATIONAL)

Excellent Service Award, University of Malaya, 2005, (UNIVERSITY)

Special Award, The Mayor of Taipei and Taiwan Provincial Government, 2005, (INTERNATIONAL)

Gold Medal, 33rd. International Exhibition of Invention, New Techniques and Products, I.TEX Geneva, 2005, (INTERNATIONAL)

Research Award, Nippon Sheet Glass, 2005, (INTERNATIONAL)

Gold Medal (Branched Chain Glycolipids for High Technology Surfactant and Liquid Crystal Applications), IPTA R&D Expo, MOHE, 2005, (NATIONAL)

Silver, Expo of Science Technology and Innovation, MOSTI, 2004, (NATIONAL)

Silver Medal, Expo of Science, Technology and Innovation, MOSTI, 2004, (NATIONAL)

## **PRESENTATIONS**

**(Title), (Event), (Date Presented), (Organiser), (Level).**

### **Pleenary/Keynote Speaker**

Understanding the Liquid Crystal Behavior from Informatics Studies, The International Conference on Modeling and Simulation 2006, 03 Apr 2006 to 05 Apr 2006, Centre for Nanotechnology, Precision and Advanced Materials (CNPAM) and The Association of Modeling and Simulation in Enterprises (AMSE), (International)

### **Invited Speaker**

Branched chain synthetic glycolipid: chemical structure & self-assembly property, Intergrating Nanomaterial in Formulation (INFORM), 6th Monthly Meeting, 24 Jan 2011 to 26 Jan 2011, Intergrating Nanomaterial in Formulation (INFORM), (International)

The Self-Assembly Structures and Dynamics of Glycolipids, International Conference on the Hierarchical Structures in Complex Fluids, 05 Jul 2011 to 05 Aug 2011, Kavli Institute of Theoretical Physics China (KITPC), (International)

Nature-like synthetic glycolipid: chemical structure & self-assembly property, 9th International Conference on Nano-Molecular Electronics, 14 Dec 2010 to 16 Dec

2010, Sponsored by National Institute of Information and Communications Technology (Japan), (International)

Japanese (Scientific) Cultural Experience (Banquet Speech), 9th International Conference on Nano-Molecular Electronics (Invited to give a Banquet Speech), 14 Dec 2010 to 16 Dec 2010, Sponsored by National Institute of Information and Communications Technology (Japan), (International)

Self-Assembly Structures of Branched Chain D-Glycosides by Small-Angle X-Ray Diffraction, Third International Symposium on the Manipulation of Smart Advanced Material, 01 Sep 2010 to 03 Sep 2010, International Symposium on the Manipulation of Smart Advanced Material, (International)

Modelling and Simulation of Low Symmetry Nematic Phases, CSIC Institutde Quimica Avan ada de Catalunya (IQAC) CIBER-BBN, Barcelona, Spain, 3rd June 2010, (International ), 03 Jun 2010 to 03 Jun 2010, CSIC Institutde Quimica Avan ada de Catalunya, (International)

Mesophase Structure Investigation of Branched Chain Glycosides, Seminar at the School of Life Sciences and Biotechnology, Korea University, 02 Oct 2010 to 03 Oct 2010, School of Life Sciences and Biotechnology, Korea University, (International)

Structural Investigation of Self-Assemblies from Novel Materials: Theory, Simulation and Experiment, Seminar of Nanotube Research Center (NTRC), 08 Oct 2010 to 08 Oct 2010, Nanotube Research Center (NTRC), AIST, Tsukuba, Japan, (International)

Theoretical Approaches and Applications in Designing Novel Liquid Crystals, 4th Asia Pacific Conference on Theoretical and Computational Chemistry,, 21 Dec 2009 to 23 Dec 2009, National University of Singapore and University Kebangsaan Malaysia, (International)

Novel Liquid Crystal Properties of Glycosides Derived from Guebert Alcohols, International Symposium on the Manipulation of Advanced Smart Materials, 26 May 2005 to 27 May 2005, Osaka Sangyo University, (International)

### **Event Organiser**

Lipid Self-assembly and Membrane Biophysics: Lyotropic Phase Behaviour and X-ray Diffraction, Postgraduate Advanced Research Seminar (9 lectures+2 tutorial)by Prof. J.M. Seddon (Imperial College), 22 Mar 2011 to 01 Apr 2011, University of Malaya, (University)

Chairperson, Inform-Connect Seminar (European Union FP7 network consortium) Kompleks Rimba Ilmu, University fo Malaya, 13 January 2010, 1), 13 Jan 2010 to 13 Jan 2010, INFORM

6th Monthly INFORM Meeting, Inform (European Union FP7 network consortium) 6-monthly meeting, Bilik Court, University fo Malaya, 14-15th January 2010 (International), 14 Jan 2010 to 14 Jan 2010, Intergrating Nanomaterial in Formulation and University of Malaya, (International)

The Fundemantals of Molecular Dynamics and Monte Carlo Technique, Advanced Research Workshop on Molecular Computation and Its Life Sciences Implications, 19 Nov 2007 to 23 Nov 2007, Glycolipids S&T Group, (University)

Brief Introduction to Liquid Crystals Chemistry and Physics, National Workshop-Seminar Ferroelectric Liquid Crystal: Physics and Applications, 25 Apr 2005 to 26 Apr 2005, Glycolipids S&T Group, (University)

## Poster

Computer Simulation Studies of Biaxial Nematics with Orthorhombic and Monoclinic Symmetry, Recent Developments in the Analysis and Modelling of Liquid Crystals. Mathematical Institute, University of Oxford, UK, 15 Mar 2010 to 16 Mar 2010, Mathematical Institute, University of Oxford, UK

Novel Non-Ionic Sugar Based Surfactants, 11th Eurasia Conference on Chemical Sciences, Jordan, 6-10 Oct. 2010, (International), 06 Oct 2010 to 10 Oct 2010, Eurasia Conference on Chemical Sciences, (International)

Simulation Study to Determine the Stability of Lamellar Phases of Aqueous Glycolipid Surfactant, Inform-Connect Seminar (European Union FP7 network consortium) Kompleks Rimba Ilmu, University fo Malaya, 13 January 2010, 1) (International), 13 Jan 2010 to 13 Jan 2010, Intergrating Nanomaterial in Formulation (INFORM) and University of Malaya, (International)

Thermotropic and Lyotropic Phase Behaviour of Branched-Chain Glycosides: Comparison of -D-glucoside with -D-maltoside, British Biophysical Society Meeting, July 16th-18th, 2010, 16 Jul 2010 to 18 Jul 2010, British Biophysical Society, (International)

Novel type of sugar based surfactant, Inform-Connect Seminar (European Union FP7 network consortium) Kompleks Rimba Ilmu, University fo Malaya, 13 January 2010, 1) (International), 13 Jan 2010 to 13 Jan 2010, Intergrating Nanomaterial in Formulation (INFORM) and University of Malaya, (International)

Quantitative analysis of the packing of alkyl glycosides: a comparison of linear and branched alky chains, Inform-Connect Seminar (European Union FP7 network consortium) Kompleks Rimba Ilmu, University fo Malaya, 13 January 2010, (International), 13 Jan 2010 to 13 Jan 2010, Intergrating Nanomaterial in Formulation (INFORM) and University of Malaya, (International)

Branched-chain Glycoside in Ternary Water- Paraffin-Surfactant System, Inform-Connect Seminar (European Union FP7 network consortium) Kompleks Rimba Ilmu, University fo Malaya, 13 January 2010, 1) (International), 13 Jan 2010 to 13 Jan 2010, Intergrating Nanomaterial in Formulation (INFORM) and University of Malaya, (International)

Mesophase Structure Investigation of Branched Chain Glucosides, Formula VI, Aula Magna, University of Stockholm, 7-10 June 2010 ( International ), 07 Jun 2010 to 10 Jun 2010, YKI, the Institute of Surface Chemistry and the Swedish Chemical Society, (International)

Characterization of Branched-chain Glycosides for Nano-emulsion Applications, Nanoformulation 2010, Aula Magna, University of Stockholm, 9-11 June 2010, (International), 09 Jun 2010 to 11 Jun 2010, Intergrating Nanomaterial in Formulation (INFORM), (International)

Computer Simulation of Nematic Liquid Crystals formed by Monoclinic Molecules, 23rd International Liquid Crystal Conference, Krakow, 11-16 July 2010, (International), 11 Jul 2010 to 16 Jul 2010, International Liquid Crystal Society, (International)

## Presenter

Nature-like synthetic alkyl branched chain glycolipids: a review on chemical structure and self-assembly properties, Departmental Seminar, 04 Mar 2011 to 04 Apr 2011, Chemistry Department, (University)

Computer Simulation Study of The Reversed Hexagonal Phase of 2-cetyl stearyl Beta Maltoside, Faraday Discussion 139: The Importance of Polymer Science For Biological Systems, 26 Mar 2008 to 28 Mar 2008, Royal Society of Chemistry, UK, (International)

A comedy of Failures in Self-Assembly, Inaugural Lecture, 05 Jun 2008 to 05 Jun 2008, University of Malaya, (University)

Molecular Dynamics Simulation on Alkyl Glycoside Bilayers, 21st International Liquid Crystal Conference, 02 Jul 2006 to 07 Jul 2006, Kinsley & Associate, (International)

Branched Chain Glycolipids: A Novel Class Of Biofunctional Surfactants, Proceeding of 11th APPChE Congress, 27-30 August, 2006, 01 Aug 2006

Liquid Crystal Properties of Monosaccharide, Glycolipids, 11th APPChE Congress, 27-30 August, 2006, 01 Aug 2006

Indication of in-plane anisotropy of glycolipid bilayers due to uncorrelated tilted layer structure, 20th International Liquid Crystal Conference, 04 Jul 2004 to 09 Jul 2004, (International)

The Effects of Different Sugar Head Groups on the Glycolipids n-Octyl- $\beta$ -D-Glycosides Micelles Formation: A Molecular Dynamics Simulation, 2nd Saudi Science Conference, 15 Mar 2004 to 17 Jul 2004, (International)

Liquid Crystals Properties of Alkyl-Glycosides from  $\alpha$ -Methylated and Guerbet Alcohols. (April 2004), Biannual Conference on Chemistry, University of Cairo (EG), 01 Mar 2004 to 04 Mar 2004, (International)

Computer Simulations of Rods and Spheres Mixtures and the Determination of Phase Diagram, 19th International Liquid Crystal Conference, 30 Jun 2002 to 05 Jul 2002, (International)

Development of an Integrated Chemical Information System of Natural and Chemical Resources of Malaysia. Proceeding of Asia Pacific Advanced Network (APAN), Asia Pacific Advanced Network APAN, 01 Aug 2001

Parallelization Strategies for Monte-Carlo Simulation with Application to Simple Liquid Crystal Model., The Malaysian Science and Technology Congress Symposium C, New Materials and Information Technology., 01 Aug 2001

Molecular Dynamics Simulation of the Liquid Phase on the PC Cluster using Message Passing Interface (MPI), The Malaysian Science and Technology Congress Symposium C, New Materials and Information Technology, 01 Aug 1999

Computer Aided Design And Molecular Modeling: Carbohydrate Liquid Crystals., The Malaysian Science and Technology Congress Symposium C, New Materials and Information Technology, 01 Aug 1999

## Others

Invited as a Judge to the poster presentations, 9th International Conference on Nanomaterial Electronics, Kobe, 14-16 December 2010 (Invited as a Judge), 14 Dec 2010 to 16 Dec 2010, Sponsored by National Institute of Information and Communications Technology (Japan), (International)

Development of glycolipid sciences using glycolipid information system, A Chemical Physics Approach to Liquid Crystals, 29 Jul 2004 to 30 Jul 2004, Liquid Crystals Institute, Southampton University, (International)

## SUPERVISION

### First Degree/Diploma/Pre-Degree

(Course Title), (Academic Session), (No. of Candidates), (Status)

Industrial Training, 2005/2006, 4, Completed

Industrial Training, 2006/2007, 2, Completed

Industrial Training, 2007/2008, 2, Completed

Industrial Training, 2008/2009, 3, Completed

### Post Graduate Level

(Name of Degree), (Name of Candidates), (Title of Thesis), (Academic Session), (Status)

Doctoral Degree (PhD), Noraini Ahmad, Study of Glycolipid Emulsions for Entrapment and Release Applications, 2008/2009, Ongoing

Doctoral Degree (PhD), Nasrul Zamani Mohd. Rodzi, Synthesis And Reactions Of Stilbene-Glycosides, 2008/2009, Ongoing

Doctoral Degree (PhD), Vijayan A/L Manickam Achari, Computer Simulation Studies Of Self Assemblies Of Disaccharides Glycolipids, 2007/2008, Ongoing

Doctoral Degree (PhD), Seyed Mohammad Mirzadeh Hosseini, Synthesis And Systematic Phase Analysis Of Lyotropic Assembly By Deuterium Nmr For A Range Of Disaccharide Based Glycolipids, 2007/2008, Ongoing

Doctoral Degree (PhD), Karem Sabah, Synthesis Of Macrocyclic Cryptands Incorporation Carbohydrate Moieties, 2008/2009, Ongoing

Doctoral Degree (PhD), Faramarz Ali Asghari Sani, Synthesis and Physical Studies on NOvel Aromatic Glycoside, 2008/2009, Ongoing

Doctoral Degree (PhD), Hairul Amani Abdul Hamid (Uitm), Lyotropic Phase Behaviour Of Branched-Chainglycolipids, 2008/2009, Ongoing

Doctoral Degree (PhD), Hind Hassan, Synthesis And Liquid Crystal Phase Behaviour Of Branched Chain Alkyl Glycosides, 2000/2001, Completed

Doctoral Degree (PhD), Irwana Nainggolan (Ukm), Synthesis Of Novel Glycolipids And Their Possible Applications, Completed

Doctoral Degree (PhD), Teoh Teow Chong, MOLECULAR MODELLING AND DYNAMICS STUDIES OF GLYCOSIDE MICELLE, BILAYER AND HEXAGONAL PHASE SELF ASSEMBLIES, 2007/2008, Completed

Doctoral Degree (PhD), Noor Idayu Mat Zahid, Thermodynamics and Kinetics Studies of Branched Chain Glycolipids in Lyotropic Systems, 2010/2011, Ongoing

Doctoral Degree (PhD), Rusnah Syahila Duali Hussen, Preparation and Evaluation of Vesicle Based on Non-Ionic Branched Chain Glycolipids, 2010/2011, Completed

Doctoral Degree (PhD), Sara Ahmadi, Molecular Modeling and Simulation of the Hexagonal Phases, 2009/2010, Ongoing

Doctoral Degree (PhD), Nguan Hock Seng, Computer Simulation of Biaxial Systems with Lower Symmetry, 2009/2010, Ongoing

Masters Degree, Siti Puzlinda Selamat, Computer Simulation Of Liquid Crystals. Some Cooling Properties Of The Gay-Berne Mesogens, Completed

Masters Degree, Azizah Mainal, Glycolipid Chemistry: Synthesis And Computational Studies, Completed

Masters Degree, Sri Ganesh Janarthananam, Structure Properties Relationship Of Carbohydrate Liquid Crystals Using Informatic Sciences, Completed

Masters Degree, Siti Fatimah Mohd Nor, Preparation and Characterization of Low-Temperature Metallomesogens,  $[\text{Cu}_2(\text{RCOO})_3(\text{HOC}_6\text{H}_4\text{COO})]$ , 2008/2009, Completed

Masters Degree, Yanti Yana Binti Halid, Preparation and Characterization of Low-Temperature Metallomesogens.  $\{\text{Cu}_2(\text{RCOO})_3(\text{H}_2\text{NC}_6\text{H}_4\text{COO})\}$ , 2008/2009, Completed

Masters Degree, Rusnah Syahila Duali Hussen, Synthesis And Liquid Crystalline Properties Of Secondary And Branched Chain Lactosides And Cellobiosides, Completed

Masters Degree, Nurul Fadzilah Kamalul Aripin, Synthesis and Characterization of Maltosides and Lactosides based on Alcohol Mixtures obtained from Palm Oil and Palm Kernel Oil, 2009/2010, Completed

Masters Degree, Nasrul Zamani Mohd. Rodzi, Branched Chain Galactosides And Melibiosides: Synthesis And Mesomorphic Properties, Completed

Masters Degree, Yong Youk Mei (Uitm), Sintesis Dan Pencirian Beta-D-Glukopiranosil 4-Alkiloksibenzoat, 2004/2005, Completed

Masters Degree, Vijayan A/L Manickam Achari (Ukm), Permodelan Tio-Oktil-Glukosida Dan Alfa-Oktil Glukosida Dalam Air Dengan Kaedah Dinamik Molekul, Completed

**Role As Advisor At First Degree Level**  
(Academic Session), (No. of Candidates), (No. of Contact Hours Per Year)

2004/2005, 9, 3

2005/2006, 9, 3

2006/2007, 6, 3

2008/2009, 2, 3

## **INTELLECTUAL PROPERTY RIGHTS**

**(Product Name), (Type), (Reference), (Year), (Level).**

Branched Chain Glycolipids for Self-Assembly Driven Applications (MY- 138164 - A), Patent, MY- 138164 - A, 2005, (National)

Branched Chain Glycolipids for Self-Assembly Driven Applications (WO2006/098699)-2006, Patent, WO2006/098699, 2006, (International)

Glycolipids of Branched Chain Alkyl Oligosaccharides for Liquid Crystal and Related Applications (Singapore-200706665-7), Patent, 135484 [WO-2006/098699], 2006, (International)

Glycolipids of Branched Chain Alkyl Oligosaccharides for Liquid Crystal and Related Applications (China-200680008448), Patent, China-200680008448, 2006, (International)

Glycolipids of Branched Chain Alkyl Oligosaccharides for Liquid Crystal and Related Applications (United States-11/908,791), Patent, United States-11/908,791, 2006, (International)

Glycolipids of Branched Chain Alkyl Oligosaccharides for Liquid Crystal and Related Applications (Europe-EP06717158.7), Patent, Europe-EP06717158.7, 2006, (International)

Glycolipids of Branched Chain Alkyl Oligosaccharides for Liquid Crystal and Related Applications (South Africa-2007/08477), Patent, South Africa-2007/08477, 2006, (International)

KimiaSis Database for managing chemical inventory and safety/hazard information, Trademark, 04013832, 2004, (National)

Branched Chain Glycolipids for Self-Assembly Driven Applications PCT/SG/2006/000033, Patent, PCT/SG/2006/000033, 2006, (International)

GLipDat Information Database on Glycolipids Materials, Trademark, 05003385, 2005, (National)

R. Hashim et al., Glycolipids of Branched Chain Alkyl Oligosaccharides for Liquid Crystal and Related Applications, (Japan: PCT/SG/2006/000033), Patent, Japan: PCT/SG/2006/000033, 2006, (International)

Branched Chain Glycolipids for Self-Assembly Driven Applications (MY- 138164 - A) (Awarded), Patent, MY- 138164 - A, 2005, (National)

## **EXPERT LINKAGES**

**(Linkages Description), (Organisation), (Year of Involvement), (Duration), (Level).**



Professor Ou-Yang Zhong-can (Scientific Collaboration), Chinese Academy of Science, China, 2011, 36, (International)

Professor Akhihiko Sugimura (Scientific Collaboration), Osaka Sangyo University, Japan, 2010, 36, (International)

Professor Hiroyuki Minamikawa (Scientific Collaboration), Nanotube Research Center, National Institute of Advanced Science and Technology, Tsukuba, Japan, 2010, 36, (International)

Professor Conxita Solans (Scientific Collaboration), CSIC, Barcelona, Spain, 2010, 36, (International)

Professor Mitsumasa Iwamoto, Tokyo Institute of Technology, Japan, 2010, 36, (International)

Professor Wenbing Hu (Scientific Collaboration), Nanjing University, China, 2009, 24, (International)

Dr. Osama K. Abou Zeid, Sultan Qaboos University, Oman, 2008, 14, (International)

Professor Hideo Takezoe, Tokyo Institute of Technology, Japan, 2008, 60, (International)

Professor J.M. Seddon (Scientific Collaboration), Imperial College, London, UK, 2008, 36, (International)

Professor Gordon Tiddy (Scientific Collaboration), University of Manchester, UK, 2007, 60, (International)

Dr. A. Jakli, Research Collaboration, Liquid Crystals Institute, Kent State University, USA, 2005, 36, (International)

Dr. R. A. Bryce, Research Collaboration, School of Pharmacy, University of Manchester, 2004, 60, (International)

Prof. V. Vill, Research Collaboration, University of Hamburg, 2003, 36, (International)

Research Collaboration, E-science GRID Development, School of Computer Science, USM, 2003, 36, (National)

Associate Prof. Shahidan Radiman, Research Collaboration in Glycolipids Science and Technology, Department of Nuclear Science, Universiti Kebangsaan Malaysia, 2002, 60, (National)

Dr. K. Nadarajah, Research Collaboration in Glycolipids Science and Technology, SIRIM Berhad, 2002, 60, (National)

Prof. Ahmad Sazali Hamzah, Dr. Halilah Jasmani, Research Collaboration in Glycolipids Science and Technology, School of Applied Science, UiTM, 2002, 60, (National)

Prof. S. Miertus and Dr. V. Frece, Establishment of Computational Science Center, ICS-UNIDO, 2000, 12, (International)

Dr. S. Romano, Research Collaboration, Department of Physics, University of Pavia, 1997, 36, (International)

Prof. G. R. Luckhurst, Research Collaboration, Liquid Crystals Institute, University of Southampton, 1991, 60, (International)

### **EXPERT/TECHNICAL CONTRIBUTIONS**

(Activity), (Organisation), (Role), (From)-(Until), (Level).

Expert Group Meeting on Combinatorial Chemistry and Related Technologies, International Center for Science and High Technology, Trieste, Expert Advisor, 1997-2003, (International)

Network for International Academic Women, Association of Commonwealth University, UK, Technical Advisor, 1998-2000, (International)

The feasibility study on the establishment of a National CAMD center Manager 1998 1999, ISC-UNIDO, Trieste, Italy, Chairman, 1998-1999, (International)

Nanotechnology Initiatives Expert Group, MIGHT, Expert Advisor, 2003-Now, (National)

Jawatankuasa Penerbitan,, Dewan Bahasa dan Pustaka, Expert Advisor, 2009-present, (National)

Assisting the umexpert application team (unofficially), University of Malaya, user advisory, 2009-2010, (University)

Integrating Nanomaterial in Formulation (INFORM), Framework 7, European Commision, Coordinator, 2010-2012, (International)

Defining Specification to Powder XRD Tender, Chemistry Department, Technical Advisor, 2011-2011, (University)

Green Chemistry Expert Group, Ministry of Science Technology and Innovation (MOSTI), Advisor, 2011-Present, 2011, (National)

### **TEACHING**

(Course Title), (Academic Session), (No of Student), (No of Contact Hours).

#### **First Degree**

BASIC CHEMISTRY II, 2010/2011(2), 10, 15

PHYSICAL CHEMISTRY II, 2010/2011(2), 20, 42

CHEMISTRY PHYSICS I (SCEP1230)/, 2008/2009(2), 25, 12

BASIC CHEMISTRY II , 2008/2009(1), 25, 24

INDUSTRIAL CHEMISTRY II, 2008/2009(1), 3, 24

CHEMISTRY PHYSICS I (SCEP1230)/, 2008/2009(1), 100, 20

PHYSICAL CHEMISTRY III (SCEP3130)/, 2007/2008, 185, 10

CHEMISTRY PHYSICS I (Group P) , 2007/2008, 21, 24

INDUSTRIAL CHEMISTRY II, 2007/2008, 2, 24

PHYSICAL CHEMISTRY III (scep3130)/, 2006/2007, 103, 10

Liquid Crystal , 2006/2007, 54, 14

BASIC CHEMISTRY III , 2006/2007, 25, 24

BASIC CHEMISTRY III , 2006/2007, 26, 24

CHEMISTRY PHYSICS I, 2006/2007, 21, 24

PHYSICAL CHEMISTRY I (Group F), 2006/2007, 19, 24

INDUSTRIAL CHEMISTRY II, 2006/2007, 2, 24

Physical Chemistry I (SCES1230)/, 2005/2006, 122, 14

Basic Chemistry Ii (SCEs22521)/, 2005/2006, 52, 14

Liquid Crystal , 2005/2006, 62, 14

CHEMISTRY PHYSICS I, 2005/2006, 13, 24

PHYSICAL CHEMISTRY III, 2005/2006, 18, 42

PHYSICAL CHEMISTRY II, 2005/2006, 28, 42

PHYSICAL CHEMISTRY III, 2005/2006, 8, 42

INDUSTRIAL CHEMISTRY II, 2005/2006, 4, 48

PHYSICAL CHEMISTRY I (SCES1230)/, 2004/2005, 63, 14

PRINCIPLES OF CHEMISTRY, 2004/2005, 39, 9

BASIC CHEMISTRY II (SCEP2251), 2004/2005, 35, 14

LIQUID CRYSTAL, 2004/2005, 70, 14

CHEMISTRY PHYSICS I, 2004/2005, 24, 24

PHYSICAL CHEMISTRY II, 2004/2005, 25, 42

PHYSICAL CHEMISTRY III, 2004/2005, 25, 42

INDUSTRIAL CHEMISTRY II, 2004/2005, 4, 48

## **EVALUATION ACTIVITIES**

**(Description), (Evaluation Activity),(Year).**

Studies of Phases in Thin Film Antiferroelectric Liquid Crystals, M.Sc. Thesis, University Science Malaysia, Thesis , (2011-2011)

Human Capital Development for Scholarship and Training, Ministry of Science Technology and Innovation, (2010-2012), Expert Evaluation Committee, 2010-2012 , (2010-2010)

Evaluation for Fellowship in Advanced Research Oversea (ATTH), Ministry of Science, Technology and Innovation, MOSTI, Evaluation for ATTH , (2010-2010)

Characterization of the Drug-Binding Site *Sudlow I* of Human Serum Albumin Using Anthranilic Acid as a Molecular Probe: Revealing the Role of Trp-214 in the Binding Mechanism, By Badriya Yahya Saleh Al-Busaidi, Sultan Qaboos University, Thesis , (2010-2010)

"Kesan Masa Pengeraman Nanozarah Zink Oksida yang dihasilkan Menggunakan Afron Gas Koloid" Sains Malaysiana, Article In Journal , (2010-2010)

Synthesis and Mesomorphic Properties of Symmetric and Non-Symmetric Multi-Functionalised Oligomers, Ph.D. Thesis Universiti Sains Malaysia (2009), Ph.D. Thesis , (2009-2009)

Methane Adsorption Characteristics of Copper Oxide Modified NaY Zeolite Adsorbents. ASM Journal of Science, ASM Journal of Science , (2009-2009)

Dianthdrivediimide Derivative: Synthesis, gelation and sensing of Dihydroxybenzene Isomers, Journal of Molecular Structure Manuscript Number: RF2009 27 (2009), Journal of Molecular Structure , (2009-2009)

Design, synthesis and characterization of new liquid crystalline compounds containing azobenzene and bisazobenzene moieties, University Pertanian Malaysia, (2009), Ph.D. Thesis , (2009-2009)

Transitions of Smectic A to Tilted Phases in Thin Free Standing Films of Liquid Crystal, PERFIK2009 CONFERENCE PROCEEDINGS, Article In Proceeding , (2009-2009)

Synthesis and Characterization of Chiral Nematic Star-Shaped Liquid Crystals Containing Maltose as Cores, Journal of Materials Science, JM5C15623 (2009), Journal of Materials Science , (2009-2009)

Quantum Mechanics calculations: Asymmetric Phosphines for Methanol Carbonylation for publication in the Malaysian Journal of Science, 2008, Malaysian Journal of Science , (2008-2008)

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Semi-Empirical Study of Carbazole and Its Derivatives, Universiti Malaya, M.Sc. Thesis 2002., M.Sc. Thesis , (2002-2002)

### **CONTRIBUTION TO SOCIETY**

**(Contribution To Society), (Level), (Start Date), (End Date).**

What is Chemistry D114 Jabatan Kimia, 18 March 2006, To the Chemistry Olympiad Candidates , (Department), 18-Mar-06 until 18-Mar-06

From Theory to Synthesis to Theory Bilik Wawasan, 20 July 2004, Achieving Excellence in Science with the Nobel Laureate Prof. Richard Ernst , (Local), 20-Jul-04 until 20-Jul-04

Self-Assembly of Nature-Like Non-Ionic Surfactants Bilik Anggerik, IPS, 7 August 2007, Discussion With The Nobel Laureate Prof. Dr. Ahmed H. Zewail , (Local), 07-Jul-07 until 07-Jul-07

Committee Member to the ParentsTeachers Association, Sekolah Menengah Kebangsaan Sultan Salahudin, Section 2, Shah Alam (2006-2008)., (Community), 01-Mar-06 until 27-Feb-08

Committee Member to Parents Teachers Association, Sekolah Menengah Sains Kuala Selangor- SMSKS and leading the Education Section (1996-1999); also conducted INTERNET and WEB training for teachers (Jan 1997)and member of fund-raising committee for "Donation Dinner Night" (Nov. 1998) which had collected RM170,000, (Community), 01-Jan-96 until 01-Nov-98

Committee Member to Parents Teachers Association, Sekolah Rendah Raja Muda, Section 4, Shah Alam (1999-2000), (Community), 01-Mar-99 until 31-Dec-00

Dance Works 2, Kempen Mengutip Derma, Dewan Sivik, MPPJ, July 2001., (Community), 01-Jul-01 until 01-Jul-01

Committee Member of PKAUM, organize, "Malam Said Zahari", former chief editor and journalist detained for 17 years, on 3rd January 2002. (Sponsored by Utusan Publication & Distribution), (Local), 03-Jan-02 until 03-Jan-02

Dance Works dan Friends, Securities Commission, MOnt Kiara, 29-30 June 2002 for "The Lion Life Line Leukaemia", (Community), 29-Jun-02 until 30-Jun-02

## BIOGRAPHY

Prof. Rauzah Hashim set the ground for computational science research and infrastructure in Malaysia, since before 1990, it was an alien subject to the traditional science discipline. The lack of decent computational facility and recognizing the importance of internet, eventually led her to search for funding and design the internet infrastructure for the whole Chemistry Department in 1994 where every staff room was given an internet node. Since 1992, for over ten years she organized numerous awareness seminars and workshops to promote computational science to the benefit of many scientists in the country. Subsequently HPC Centers, like the one in MIMOS was established in 2003, reflecting much of her early ideas. Now she is a member of MIMOS National GRID Initiative and the chairperson of the HPC procurement committee for the University Malaya. She won numerous grants locally and abroad as well as being an Expert Group member to ICS-UNIDO for the Combinatorial Chemistry and Related Sciences (1997-2003). Her skill-set in informatics sciences (modeling, simulation and database) proved useful when in 2002, she was entrusted to lead a top-down strategic program "The Glycolipid Science and Technology", leading 4 institutions to research into glycolipids from synthesis, fundamental studies as well as development of applications for surfactants and nano-materials. This project has developed and synthesized the branched-chain glycoside family which won many awards and recognitions for its potential use in liquid crystal applications, such as the Gold Medal and [Special Award from Taiwan at the ITEX Geneva 2005](#) and in 2007 the finalist in The Prime Minister Innovation Awards. Prof. Rauzah continues to pursue the fundamentals investigations from molecular and phenomenological approaches and always relating structures to properties with the aim to understand natural processes (eg. in life sciences) and to improve new materials hence formulations. For a multitude of scientific interests, she has an extensive network of collaborators from renowned institutions worldwide (Southampton, Imperial College, Manchester, Hamburg, Pavia, Kent-State, KAAU etc...). She has many more friends across the globe. She is also a passionate writer to disseminate science and rationality for public understanding in the mass media and has produced a book on similar subject. Prof Rauzah is currently the [Deputy Dean in the Faculty of Science](#), in-charge of research and internationalization.