

Dr MOHANAD EL-HARBAWI

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PERSONAL DETAILS

Full Name:	Mohanad El-Harbawi
Passport No.:	H669525
Telephone No.(mobile):	+966556257947
Telephone No.(office):	+966014695250
Date of Birth:	24th Jun 1975
Nationality:	Jordanian
Languages:	English and Arabic
Email Address:	melharbawi@ksu.edu.sa mohanad_75@yahoo.com

QUALIFICATIONS

PhD.	Chemical and Environmental Engineering	University Putra Malaysia
MSc.	Chemical and Environmental Engineering	University Putra Malaysia
BSc.	Chemical Engineering	Nasser University (Libya)

EDUCATION

2003-2006	PhD. of Chemical and Environmental Engineering (University Putra Malaysia)	Thesis' title "Design and Development of Integrated Chemical Accident System Software for Monitoring Risk Potential of Hazard Installation".
2000-2002	Msc. of Chemical and Environmental Engineering (First class, grade 3.586) (University Putra Malaysia)	Thesis' title "Stability of Thin Liquid Film under Effect of Apolar and Electrostatic Force on a Horizontal Plane".
1993-1999	Bsc. of Chemical Engineering (Nasser University/Libya)	
1981-1993	Primary, intermediate and high secondary school (Khalid Ben Alwaleed School).	

WORK EXPERIENCE

Position	Institution/Company	Period
Assistant Prof.	King Saud University	27 th Aug. 2012 – Current
Senior Lecturer	Universiti Teknologi PETRONAS	19 th July 2008 – 22 nd Aug. 2012
Lecturer	Universiti Teknologi MARA	27 th January 2007–9 th July 2008
Technical Support Executive (TSE)	SCICOM Company: Nokia Project Supported countries: Middle East and Africa.	21 st Feb. 2005–28 th Dec. 2006

CURRENT POSITION

Final Year Design Project I & II Coordinator

AREA OF EXPERTISE

- Process Safety and Loss Prevention.
- Health, Safety and Environment.
- Risk Assessment.

- Toxicity of Ionic Liquids.
- Air and Soil Pollutions.

RESEARCH INTERESTS

- Process safety and loss prevention.
 - Risk assessment using mathematical modelling, GIS and programming language.
 - Toxicity of ionic liquids.
 - Applied thermodynamics for process safety.
 - Quantitative structure–activity relationship (QSAR).
 - Air and soil pollution.
 - Dispersion modelling and simulation.
 - Geographical Information Systems (GIS).
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COMPUTER SKILLS

- Microsoft Office: Microsoft Word, Microsoft Excel, Microsoft Power Point, Microsoft Access, Microsoft Visio, Microsoft FrontPage, HTML.
 - Visual Basic 6.0.
 - FORTRAN 90.
 - FRED (Fire, Release, Explosion and Dispersion): *Shell Global Solutions*.
 - ALOHA, CAMEO, MARPLOT.
 - SAFETI (Software for the Assessment of Flammable, Explosive and Toxic Impacts)
 - CHETAH (Computer Program for Chemical Thermodynamic and Energy Release Evaluation).
 - GIS Mapping (ArcView 3.1, ArcGIS 8.3, ArcGIS 9.0).
 - GIS Mapping (GeoMedia Professional).
 - ArcGIS Engine.
 - MATHCAD.
 - UNIFAC (thermodynamic properties).
 - Adobe Photoshop.
 - RoboHelp.
 - Tecplot.
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TEACHING EXPERIENCE

- Process Safety and Loss Prevention.
 - Process Plant Design.
 - Thermodynamics.
 - Health, Safety and Environment.
 - Chemical Reaction Engineering.
 - Petrochemical Technology.
 - Process and Instrumentation Control.
 - Heat Transfer.
 - Unit Operation.
 - Numerical Methods for Engineers.
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COORDINATION

- Final year project I coordinator
 - Final year project II coordinator
 - Final year design project I&II coordinator (current position)
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PUBLICATIONS

Journal Papers

1. Mohd Fathi Lubis Haris, Chun-Yang Yin, Zhong-Tao Jiang, Bee-Min Goh, Xi Chen, Waheed A. Al-Masry, Aziz M. Abukhalaf, **Mohanad El-Harbawi**, N.M. Huang, H.N. Lim. Crystallinity and morphological evolution of hydrothermally synthesized potassium manganese oxide nanowires. *Ceramics International*, 40, 1245–1250, 2014 (Elsevier, IF 1.789).
2. **Mohanad El-Harbawi**, Brahim Belhaouari Samir, Moulay-Rachid Babaa, M.I. Abdul Mutalib. A new QSPR model for predicting the densities of ionic liquids. *Accepted in the Arabian Journal for Science and Engineering*.

3. **Mohanad El-Harbawi**, Yasmin Syazwani bt. Yusri, M. Ismail Hossain. Toxicity Assessment of Phosphonium Based Ionic Liquids towards Female Guppy Fish. *Asian Journal of Chemistry* (in press).
4. M. Ismail Hossain, **Mohanad El-Harbawi**, Mohd Azmi Bustam. Acute Toxicity of Hydroxyl Functionalized Ionic Liquids to the Guppy Fish. *Journal of Applied Sciences* (in press).
5. **Mohanad El-Harbawi**, Sa'ari Mustapha, Zulkifli Abdul Rashid, Sherif A. A., and Yung-Tse Hung DisMS: A New Software for Evaluating the Impact of the Pollutant Threats Emerging from Industry. *International Journal of Environmental Engineering Science* (in press).
6. Mohammad Shahnor Bani, Zulkifli Abdul Rashid, Ku Halim Ku Hamid, Mohd Jindra Aris, The Development of a Decision Support System for Waste Management: A Review. **Mohanad El-Harbawi**, and Azil Bahri Alias. *International Journal of Environmental Engineering Science* (in press).
7. **El-Harbawi**. Air Quality Modelling, Simulation and Computational Methods: A Review. *Environmental Reviews*, 24, 149-179, 2013 (Canadian Science Publishing, IF 1.652).
8. Sharifah Aishah Syed Abd Kadir, Chun-Yang Yin, Muhamad Rosli Sulaiman, Xi Chen, **Mohanad El-Harbawi**. Incineration of municipal solid waste in Malaysia: Salient issues, policies and waste-to-energy initiatives. *Renewable & Sustainable Energy Reviews*, 24, 181-186, 2013 (Elsevier, IF 5.627).
9. **Mohanad El-Harbawi**, Fidatul Akmar Bt. Mat Shoib, Brahim Belhaouari Samir. A novel QSPR model for prediction of lower flammability limit of pure compounds. Submitted to *Journal of Hazardous Materials*.
10. **Mohanad El-Harbawi**, Brahim Belhaouari Samir, Moulay-Rachid Babaa, Kiki A. Kurnia, M.I. Abdul Mutalib, A new QSPR model for predicting the densities of ionic liquids. Submitted to *International Journal of Molecular Sciences*.
11. M. Ismail Hossain, **Mohanad El-Harbawi**, Noorjahan Banu Mohamed Alitheen, Youssr Abdulhadi Noaman, Jean-Marc L  v  que, Chun-Yang Yin. Synthesis, characterization and anti-microbial potency of 1-(2-hydroxyethyl)-3-alkylimidazolium chloride ionic liquids. *Ecotoxicology and Environmental Safety*, 87, 65-69, 2013 (Elsevier, IF 2.203).
12. Nawshad Muhammad, M. Ismail Hossain, Zakaria Man, **M. El-Harbawi**, M. Azmi Bustam, Youssr Abdulhadi Noaman, Noorjahan Banu Mohamed Alitheen, Mei Kee Ng, Glenn Hefter, Chun-Yang Yin. Synthesis and Physical Properties of Choline Carboxylate Ionic Liquids. *Journal of Chemical & Engineering Data*, 57 (8), 2191–2196, 2012 (ACS, IF 2.089).
13. **Mohanad El-Harbawi**, David Acellam and Yin Chun-Yang. Development of Educational Software for Designing Shell and Tube Heat Exchangers. *International Journal of Mechanical Engineering Education*, 39 (4), 291-296, 2012 (Manchester University Press).
14. **Mohanad El-Harbawi**, Siti Nurul Asikhin Bt. Shaaran, Fatimah Ahmad, Muhammad Aizat Abd Wahi1 and Adamu Abdul. Estimating the flammability of vapours above refinery wastewater laden with hydrocarbon mixtures. *Fire Safety Journal*, 51, 61–67, 2012 (Elsevier, IF 1.656).
15. Norizan Ali, **Mohanad El-Harbawi**, Ayman Abo Jabal, Chun-Yang Yin. Characteristics and oil sorption effectiveness of kapok fibre, sugarcane bagasse and rice husks: Oil removal suitability matrix. *Environmental Technology Journal*, 33 (4), 481–486, 2012 (Taylor & Francis, IF 1.406).
16. M. Ismail Hossain, Brahim Belhaouari Samir, **Mohanad El-Harbawi**, Asiah Nusaibah Masri, M.I. Abdul Mutalib, Chun-Yang Yin. Development of novel mathematical model using group contribution method for accurate prediction of ionic liquid toxicities. *Chemosphere*, 85 (1), 990-994, 2011(Elsevier, IF 3.155).
17. M. Ismail Hossain, **Mohanad El-Harbawi**, Youssr Abdul hadi Noaman, Mohd Azmi B. Bustam, Noorjahan Banu Mohamed Alitheen, Nor Azrin Affandi, Chun-Yang Yin, Glenn Hefter. Synthesis and anti-microbial activity of hydroxylammonium ionic liquids. *Chemosphere*, 84 (1), 101-104, 2011(Elsevier, IF 3.155).
18. M. Ismail Hossain, **Mohanad El-Harbawi**, Moulay-Rachid Babaa, Zakaria Man, Glenn Hefter, Chun-Yang Yin. Synthesis, Characterization and Physical Properties of Synthesis, Characterization, Physical Properties and Cytotoxicities of 1-(6-hydroxyhexyl)-3-alkylimidazolium chlorides ionic liquid. *Journal of Chemical & Engineering Data* 56 (11), 4188–4193, 2011 (ACS, IF 2.089).
19. Zulkifli Abdul Rashid, **Mohanad El-Harbawi**, K. H. K. Hamid, Sherif A. A. and A. R. Shariff. New Technique for Road Transportation of Hazardous Materials (Hazmat) in Malaysia via Quantitative Risk Analysis Approaches. *Lecture Notes in Engineering and Computer Science*, 2191 (1), 1270-1275, 2011.
20. **M. El-Harbawi**, Z. Azhani Bt. Razali, S.M. Faiz B Sy M Fuzi and S. Mustapha. Development of a Layer of Protection Analysis Tool to Determine the Safety Integrity Level in Process Industries. *Journal of Applied Sciences*, 10 (24): 3319-3324, 2010.
21. Z.A. Rashid, **M. El-Harbawi** and A.R. Shariff. Assessment on the Consequences of Liquefied Petroleum Gas Release Accident in the Road Transportation via GIS Approaches. *Journal of Applied Sciences* 10(12): 1157-1165, 2010.

22. **Mohanad El-Harbawi**, Aida Azwanabt. Sabidi, Ezzah Bt Kamarudin, Amiran b. Abd Hamid, Suhaizal ben. Harun, Ahmad b. Nazlan, Chin Xxi Yi. Design of a Portable Dual Proposes Water Filter. *Journal of Engineering Science and Technology (JESTEC)*, Vol. 5, No. 2, 130-250, 2010.
23. **El-Harbawi, M.**, Mustapha S., Zulkifli Abdul Rashid, Sherif A. A. A GIS-Based Software for Assessing the Impacts from Chemical Industrial Accidents. *Journal of Hazardous, Toxic, and Radioactive Waste* (ASCE), Volume 14, Issue 2, pp. 104-114, 2010.
24. **El-Harbawi, M.**, Mustapha S., Thomas S. Y. Choong, Abdul Rashid S., Sharifah Aishah Syed A.Kadir and Zulkifli Abdul Rashid. Rapid Analysis of Risk Assessment Using Developed Simulation of Chemical Industrial Accidents Software Package. *International Journal of Environmental Science and Technology*, Vol.5 (1), 53-64, 2007.
25. Zulkifli Abdul Rashid, Azil Bahari Alias, Mohd Jindra Aris, **Mohanad El-Harbawi**, Norazah Abd Rahman and Ayub Md Som. Hazardous waste management: Current status and future strategies in Malaysia. *International Journal of Environmental Engineering (IJEE)*, Vol. 2, No. 1/2/3, 139–158, 2010 (Inderscience).
26. Chun-Yang Yin and **Mohanad El-Harbawi**. Simulation of Liquid Argon Flow along a Nanochannel: Effect of Applied Force. *Chinese Journal of Chemical Engineering*, 17(5), pp. 734-738, 2009 (Elsevier, IF 0.901).
27. Adel Al-Kdasi, Azni Idris, Luqman Chuah Abdullah, **Mohanad El-Harbawi**, Mogeab Alzokry. Development a Decision Support Software for Real Textile Wastewater Treatment. *International Journal of Process Systems Engineering (IJPSE)*, Vol. 1, No. 1: P. 82-99, 2009 (Inderscience).
28. Zulkifli Abdul Rashid, Mohanad El-Harbawi, Abdul Rashid Shariff, Ku Halim K.H. and Sherif A.B Ali. Design and Development of a Smart Advisory System for Risk Analysis of Accidents in the Transportation of Hazardous Materials via Quantitative Risk Approaches. *J. Occu. Safety Health* 6(2): 48-67, 2009.
29. Yin Chun-Yang, Robert Mikhail Savory, Goh Bee Min, **Mohanad El-Harbawi** and Mohd Jindra Aris. Nanoporous materials for environmental applications. *Bulletin Jurutera*, January, pp. 18 – 21, 2009. The Institution of Engineers Malaysia (IEM).
30. Mustapha S., **El-Harbawi, M.**, Thomas S. Y. Choong, Abdul Rashid S. and Sharifah Aishah Syed A.Kadir. Assessment of Major Accidents in Process Industries Using SCIA Software. *Malaysian Journal of Chemical Engineering*, Vol 1, 2008.
31. **El-Harbawi M.**, Luqman Chuah A., Thomas Choong S. Y., Sa'ari M. and AzniI. (2006). Linear Stability of Thin Liquid Film on Solid Surface under Effect of Apolar and Electrostatic Forces. *Jurnal Teknologi UTM*, 2007. No. 46, ISSN 0127-9696: 41-50.
32. **Mohanad El-Harbawi**, Mustapha S. and AL-Shalabi M. Using Geographical Information Systems in Assessment of Major Hazards of Liquefied Petroleum Gas. (*Journal of Disaster Prevention and Management*, Vol. 13, No. 2: 117-129, 2004) (Emerald).
33. Sa'ari Mustapha, Tan Chye Hee, **Mohanad El-Harbawi**, Abdul Rashid Shariff, Thomas S. Y. Choong, Abdul Aziz Zakariaz and Razali Mispan. Chlorine Incident and Its Toxic Hazardous Chemical Release Impact in the Area Surrounding a Swimming Pool Using GIS. (*Journal of Disaster Prevention and Management*, Vol. 13, No. 5: 117-129, 2004) (Emerald).
34. **El-Harbawi M.**, Sa'ari Mustapha, Chuah T. G., Thomas Choong S. Y. and Abdul Rashid. Hazards Analysis of LPG Storage Installation in Universiti Putra Malaysia: A Preliminary Study. *IEM Journal*, Vol. 65, No. 1-2, 2004, pp. 44-51.
35. **El-Harbawi M.**, Mustapha S., Idris A., Jameel T. and Chuah G. A. T. Linear Stability of Thin Liquid Film on Solid Surface under Effect of Apolar and Polar Forces. *Jurnal Teknologi*, UTM, 2003. No. 39, ISSN 0127-9696: 23-34.

Conference Papers

36. **Mohanad El-Harbawi**. Toxicity Measurement of Imidazolium Ionic Liquids using Acute Toxicity Test. Will be presented at *International Conference and Workshop on Chemical Engineering UNPAR*, 4-5 December, 2013.
37. M. Ismail Hossain, **Mohanad El-Harbawi**, Chun-Yang Yin. Synthesis and Characteristics of Hydroxyl-Functionalised Alkylimidazolium Chloride Ionic Liquids. Will be presented at *CHEMECA* 2013, 30 Sept - 2 Oct 2013, Brisbane, Australia.
38. Zulkifli Abdul Rashid and **Mohanad El-Harbawi**. SMACTRA: A Smart Tool for Assessing Risk from hazardous material transportation - Zulkifli Abdul Rashid and Mohanad El Harbawi. Presented at *6th International Conference on Process Systems Engineering (PSE Asia, 25-27, June, 2013)*.
39. Nehal Farouk Mohamed, M. I., Abd Motalib, M. Azmi Bustam, **Mohanad El-Harbawi**. Ecotoxicity Study for Pyridinium Based Ionic Liquids. Presented at *Annual Postgraduate Conference (APC 2013)*, 27-29 June 2013.
40. Ouahid Ben Ghanem, M.I. Abdul Mutalib, Chong Fai Kait, **Mohanad El-Harbawi**. Biological effects of methylimidazolium chloride with varying chain length towards four different microorganisms. Presented at *Annual Postgraduate Conference (APC 2013)*, 27-29 June 2013.

41. **Mohanad El-Harbawi**, Nurul Amirah Hanim Bt. Umar, Norizan Ali, Yoshimitsu Uemura. A study on flammability of bio oil combustible vapour mixtures. Presented at *International Conference on Agricultural, Biotechnology, Biological and Biosystems Engineering*, March 12-13, 2012, Phuket, Thailand.
42. Zulkifli Abdul Rashid, **Mohanad El-Harbawi**, Sherif A. A., A. R. Shariff. Risk Analysis for the Road Transportation of Hazardous Chemicals in Malaysia: A Methodology. Presented at *National Postgraduate Conference*, 19th – 20th September 2011, Universiti Teknologi PETRONAS.
43. Zulkifli Abdul Rashid, **Mohanad El-Harbawi**, and A. R. Shariff. SACTRA-1: GIS-based computer simulation as a reliable tool in transportation consequences analysis for hazardous materials accidents. Presented at Hazards Asia Pacific Symposium, 27 - 29 September 2011, Kuala Lumpur, Malaysia.
44. **Mohanad El-Harbawi**, Siti Nurul Asikhin Bt. Shaaran, Fatimah Ahmad and Muhammad Aizat Abd Wahi. An Investigation of Fire and Explosion Accident in the Drainage System Related to Process Industries. Presented at *7th global congress on process safety*, Chicago, USA, March 13-16, 2011.
45. Zulkifli Abdul Rashid, **Mohanad El Harbawi**, A Rashid Shariff, Ku Halim Ku Hamid, Hazlina Husin. A Study on the Capabilities of Decision Support System (DSS) for Transportation of Hazardous Material (HazMat) in Performing an Effective Transportation Risk Analysis (TRA). Paper presented at *CHEMECA*, 26–29 September 2010, Australia.
46. M. Ismail Hossain, **Mohanad El-Harbawi**, Youssr Abdulhadi Noaman, Mohd Azmi B. Bustam, Noorjahan Banu Mohamed Alitheen, Nor Azrin Affandi. Synthesis, Characterization and Antimicrobial Studies of Some Ammonium Based Ionic Liquids. *International Conference on Environment (ICENV 2010)*, 13-15 March 2010, Penang, Malaysia.
47. Yin Chun Yang, Suhaimi Bin Abdul Talib, **Mohanad El-Harbawi**. Contaminated soil treatment technologies: current utilization and applicability in Malaysia. In *Proceedings of 2010 International Conference on Process Engineering and Advanced Materials (ICPEAM 2010)*.
48. Asiah Nusaibah Masri, M Ismail Hossain, **Mohanad El-Harbawi**, Modelling and Simulation of Ecotoxic Properties for Ionic Liquids Using QSAR. Presented at *UTP Research Paper Conference 2010*.
49. **Mohanad El-Harbawi**, Anthony Marc Botha. MDDSS: a New Software for Multicomponent Distillation Design and Simulation. *International Review of Chemical Engineering (IRECHE)*, Vol 2 N.1, pp. 155- 160, 2010.
50. **Mohanad El-Harbawi**, Anthony Marc Botha. MDDSS: a New Software for Multicomponent Distillation Design and Simulation. *1st International Conference on Chemical Engineering and Advanced Materials (CEAM)*, Italy, November 23rd-December 8th, 2009.
51. **Mohanad El-Harbawi**, Norizan Ali and Ayman Abu Jabal, (2009). Chemically Treated Sugarcane Bagasse for the Absorption of Oil. Presented at *Science and Technology Conference (ESTEC 2009)* Kuala Terengganu Malaysia, December 7-8, 2009.
52. M. Ismail Hossain, Mohd Azmi B Bustam, Zakaria Man, Noorjahan Banu Mohamed Alitheen, Youssr Abdulhadi Noaman, **Mohanad El-Harbawi**. An Outline of Ecotoxicological Assessment of Ionic Liquids on Marine and Freshwater organisms. *International Conference on Process Engineering and Advanced Materials (ICPEAM2010)*.
53. **Mohanad El-Harbawi** and David Acellam. Design and Development of a Shell and Tube Exchanger Software for Industrial and Educational Purpose. *ICCBPE-SOMChE*, 2009.
54. Zulkifli Abdul Rashid, **Mohanad El-Harbawi**, Ku Halim Ku Hamid and Hazlina Husin. A Retrospective Study of Smart Advisory System In The Transportation of Hazardous Material (HazMat). *ICCBPE-SOMChE*, 2009.
55. Zulkifli Abdul Rashid and **Mohanad El-Harbawi**. A Significant Trend of Accident Scenario Consequences in the Transportation of Hazardous Materials. Presented at: *TECHPOS 2009*.
56. **El-Harbawi M.** Saari Mustapha, Zulkifli Abdul Rashid, Yin Chun-Yang, Sherif A. A. and Mohammad Hatta. Development of a Windows-Based Air Dispersion Modelling Software Package. *RSCE-SOMChE*, 2008.
57. Yin, C.Y., Abdul-Talib, S. and **El-Harbawi, M.**, (2008). Environmental Quality (Scheduled Wastes) Regulations 2005: Aspects relating to issues of contaminated land in Malaysia. Proceedings of BROWNFIELD ASIA 2008, 3rd *International Conference on Remediation & Management of Contaminated Land: Focus on Asia*, 21 – 23 October 2008, Kuala Lumpur, Malaysia. pp 1 – 3.
58. Abu Bakr Saleh, Zulkifli Abdul Rashid, Azil Bahari Alias, Naim Adzha Muhammad, Mohd Jindra Aris, **Mohanad El-Harbawi**. Spray Drier Chemical and Mechanical Design Via Spreadsheet – A Study on the Instant Coffea Arabica Powder Production Process. Submitted to *RSCE-SOMChE*, 2008.
59. Zulkifli Abdul Rashid, Azil Bahari Alias, Mohd Jindra Aris, **Mohanad El-Harbawi**, Hazlina Husin, Zaki Zainudin, Mohd Fadzil Adnan and Ayub Md Som. Evaluation of Water Quality Pollution for Proposing Future Clean-up Strategies Implementation: A Case Study of Simin River Catchment Seremban. *International Conference of Environment* 2008 (ICENV 2008), Penang, 15th – 17th December 2008.

60. **El-Harbawi, M.**, Sharifah Aishah Syed A. Kadir, Mustapha S. Zulkifli Abdul Rashid. Verification, Validation, and Predictive Capability in Chemical Risk Assessment Using SCIA Software. *World Engineering Congress*, August 2007, Penang.
61. Zulkifli Abdul Rashid, Azil Bahari Alias, Mohd Jindra Aris, **Mohanad El-Harbawi**, Norazah Abd Rahman and Ayob Md. Som (2007). Illegal Dumping of Hazardous Waste in Malaysia: Assessing Based on Implementation and Compliance of Environmental Quality Act (1974) and the Regulations. *Proceedings of 3rd International World Engineering Conference 2007, Penang*.
62. Zulkifli Abdul Rashid, Azil Bahari Alias, Mohd Jindra Aris, **Mohanad El-Harbawi**, H. N. M. Ekramul and AyubMd Som. "A Mathematical Model to Predict the Composition and Generation of Scheduled Waste in Malaysia" Presented at: *ICERT/USM International conferences 2008*.
63. Zulkifli Abdul Rashid, Azil Bahari Alias, Mohd Jindra Aris, **Mohanad El-Harbawi**, Norazah Abd Rahman and Ayob Md. Som (2007). Hazardous waste management: current status and future focus in Malaysia. *Proceedings of Symposium of Malaysian Chemical Engineer (SOMChE) 2007. UPM*.
64. Mustapha, S., **El-Harbawi, M.** SMAH: A New Software Package for Evaluating Major Accident Hazard. Systems, Man and Cybernetics, 2005 *IEEE International Conference. Volume 3, Issue, 10-12 Oct. 2005 Page(s): 2260 – 2267*.
65. Mustapha S., **El-Harbawi, M.**, Thomas S. Y. Choong, Abdul Rashid S. and Sharifah Aishah Syed A. Kadir. Assessment of Major Accidents in Process Industries Using SCIA Software. (Presented at 20th Symposium of Malaysian Chemical Engineers (*SOMChE*2006) 19-21 December 2006, Universiti Teknologi MARA.
66. **El-Harbawi M.** and Mustapha S., Thomas Choong S. Y. and Abdul Rashid Sharif. Consequence Analysis for Industrial Accidents Using Knowledge of SCIA Software Package. Present at *Society of Petroleum Engineers (SPE)*, 2005.
67. **El-Harbawi M.**, Mustapha S., Thomas S. Y. Choong, Abdul Rashid S. and Sherif A. A. Chemical Hazards Analysis Using an Integrated Computer Tool. (*SOMChE*2004, University Petronas, Ipoh, Malaysia).
68. **El-Harbawi M.** and Mustapha S. Estimation of Boiling Liquid Expanding Vapour Explosion Hazards for Liquid Petroleum Gas. *The 17th Symposium of Malaysia Chemical Engineers, SOMChE, University Science Malaysia, 2003: 200-208*.
69. Mustapha S. and **El-Harbawi M.** Major Hazards Analysis in LPG. *4th International Conference on Disaster Management (Risks and Vulnerabilities Reduction, University Utara Malaysia) 2003. Vol. 1: 41-51*.
70. **El-Harbawi M.** and Mustapha S., Thomas Choong S. Y. and Abdul Rashid Sharif. Consequence Analysis for Industrial Accidents Using Knowledge of SCIA Software Package. Present at *Society of Petroleum Engineers (SPE)*, 2005.
71. **El-Harbawi M.**, Mustapha S., Thomas S. Y. Choong, Abdul Rashid S. and Sherif A. A. Chemical Hazards Analysis Using an Integrated Computer Tool. (*SOMChE*2004, University Petronas, Ipoh, Malaysia).
72. **El-Harbawi M.** and Mustapha S. Estimation of Boiling Liquid Expanding Vapour Explosion Hazards for Liquid Petroleum Gas. *The 17th Symposium of Malaysia Chemical Engineers, SOMChE, University Science Malaysia, 2003: 200-208*.
73. Mustapha S. and **El-Harbawi M.** Major Hazards Analysis in LPG. *4th International Conference on Disaster Management (Risks and Vulnerabilities Reduction, University Utara Malaysia) 2003. Vol. 1: 41-51*.

BOOKS/CHAPTER(S) IN BOOK

Publication Title	Nanoporous materials for environmental applications
Authors	Robert Michael Savory, Mohammad Jindra Bin Aris, Yin Chun Yang, Goh, B.M. and El-Harbawi, M.
Publication Type	Chapter(s) in Book
Publication Date	2009
Publisher	IEM
Publication Media	Printed Hardcopy

EDITORIAL/REVIEWER APPOINTMENT

- **Reviewer, Journal of Engineering Science and Technology (JESTEC):**
<http://jestec.taylors.edu.my/reviewers.html>
- **Chief Editor of Selected Papers for Two Special Issues of International Conference on Process Engineering and Advanced Materials 2010 (ICPEAM2010):**
 Journal of Applied Sciences Volume 10 Number 12, 2010

➤ **Guest Editors:**

Special issue on: Theoretical and Experimental Research on Air, Water and Soil Pollution
[International Journal of Environmental Engineering Science \(IJEES\)](#)

➤ **Chemical Engineering representative and reviewer, National Postgraduate Conference on Engineering, Science and Technology (NPC 2009).**

➤ **Reviewer for international congress on engineering education 2010, KL, Malaysia.**

➤ **Reviewer for 3rd International Conference on Chemical and Bioprocess Engineering (ICCBPE-2009).**

➤ **Review Activities (Papers in ISI-indexed Journals):**

- [International Journal of Environmental Science & Technology](#)

Article ref no. : 1224-IJEST

Title of article : Drafting the quantitative and comprehensive checklist for construction phase of Industries and its extension as a strong quantitative method for assessment of ongoing projects

Article ref no. : 1163-IJEST

Title of article : Risks Assessment of Boroujerd Textile Factory on workers Exposed to Noise Pollution

Article ref no. : 1813-IJEST

Title of article : The risk management model to strategic human resource management

- [International Review of Chemical Engineering \(IRECHE\) Journal](#)

Title of article: Modelling and simulation of the effects of crude oil dispersion on land

- [International Journal of Oil, Gas and Coal Technology \(IJOGCT\)](#)

Article ref no. : IJOGCT-11-42

Title of article: LOPA as a paramount PSA method for oil and gas industry

- [Journal of Environmental Informatics](#)

Article ref no. : JEI(10JM050301)

Title of article: Comparison of Decision Tree Algorithms for Predicting Potential Air Pollutant Emissions with Data Mining Models

POSTGRADUATE AND UNDERGRADUATE SUPERVISION

Master Thesis

Student name	Thesis title	Started	Ending year	Acting As
Siti Nurul Asikhin bt. Shaaran	An Investigation of Fire and Explosion Accident in the Drainage System Related to Process Industries	June 2009	Completed	Main supervisor
Farhana Sulaiman	Optimization of Scheduled Waste Transportation Route by Integrating the Results from Computerized Tool with GIS Application	Jan. 2010	On going	Main supervisor
Nehal Farouk Mohamed	Ecotoxicity Study for Pyridinium Based Ionic Liquids	Aug 2012	On going	Field supervisor

PhD. Thesis

Student name	Thesis title	Started	Ending year	Acting As
Zulkifli Abdul Rashid	Design and Development of a Smart Advisory System for Hazardous Materials Transportation Risk Analysis (TRA) via Quantitative Approaches	June 2008	Completed	Main supervisor
Mohammad Ismail Hossain	Synthesis, Physical Properties, and Toxicity Studies of Ionic Liquids to Predict the Hazard Potential for Human and Environment	Jan. 2009	Completed	Main supervisor
Wahid Ben Ghanem	Investigation of Structure Vs. Toxicity Relationship of Ionic Liquids Towards Aquatic Organism	June 2012	On going	Field supervisor

Undergraduate Thesis

No	Student name	Thesis title	Beginning year	Ending year
1	Areej Farah Hassan	Cytotoxicity prediction of ionic liquids using QSAR approach	January 2012	September 2012
2	Nora ziela Binti Abdul Rahman	A Novel QSPR Model for the Prediction of the Ionic Liquid Toxicities towards Green Algae (<i>Pseudokirchneriella Subcapitata</i>)	January 2012	September 2012
3	Azuani Binti Kasiran	Development of a Novel QSAR Model for Estimating the Toxicity of Ionic Liquids Towards <i>Acetylcholinesterase</i>	January 2012	September 2012
4	Nazeerah Binti Mohd Puaat	Development of QSAR Model for Estimating the Toxicity of Ionic Liquids towards <i>Vibrio Fischeri</i> Marine Bacteria	January 2012	September 2012
5	Katrina Amani binti Mat Zin	Toxicity Measurement of Imidazolium Ionic Liquids using Acute Toxicity Test	January 2012	September 2012
6	Debbie Aloysius Sitiol	Flammability Limits Study of Vapour Mixtures above Crude Oil at Low Temperatures	January 2012	September 2012
7	Qurratuaini binti Muhamad Nazori	A Study on Effect of Temperatures on the Flammability of Biodiesel Vapour Mixtures for Accident Prevention	January 2012	September 2012
8	Nur Amirah Hanim Bt. Umar	Development of a computerized tool to estimate the flammability of combustion mixtures	January 2011	December 2011
9	Rufaidah Bt. Mokhtar	Determining Contact Angles for Agricultural materials using Liquid Penetration Method	January 2011	December 2011
10	Nur Izzati Binti Boher@Bujang Amri	A Study of the Evaporation Rates and Ignition of Liquid Hydrocarbons Contaminated in the Refinery's drains	January 2011	December 2011
11	Trang Phung	Development of a Quantitative Method to Estimate Occupational Exposure Limit Values	January 2011	September 2011
12	Nur Fatimah Bt Ahamad@Ahmad	Inherently Safer Design for Hazardous Waste Contamination in the Industrial Drains	July 2010	September 2011
13	Fidatul Akmar	Prediction of Thermochemical Properties and Flammability Hazards of Chemical Mixtures using Computerized Tool	July 2010	September 2011
14	Aira Amira Abd Raman	Development of A Chemical Health Risk Assessment Tool to Assess the Risk to Health from Exposure to Hazardous Chemicals at Work Place	July 2010	September 2011
15	Ahmad Syafiq b. Zahid	Development of Chemical Reactivity Hazard tool for Process Safety System	July 2010	September 2011
16	Munawar Bin Ab Hamid	Biodegradability Studies of Some functionalized Imidazolium Ionic Liquids	July 2010	September 2011
17	Mohd Faizal bin	Adsorption of toxic materials from industrial waste using	July 2010	September

	Ahmad	an activated carbon derived from corn cob		2011
18	Muhammad Syuwari bin Mohd Hussain	Development of Chemical Reactivity Matrix Databases for Industrial Applications	Jan. 2010	Dec. 2010
19	Wan Mohd Fakhirin Bin Mohamed Hassan	Utilizing Layer of Protection Analysis (LOPA) in Verification of Safety Integrity Level (SIL) of Instrumentation System	Jan. 2010	Dec. 2010
20	Nik NurIntan Izura bt. Nik Zunoh	Assessment of Flammability and Explosion Potential of Waste generated from Industries	Jan. 2010	Dec. 2010
21	Asiah Nusaibah Bt Masri	Modelling and Simulation of Ecotoxic Properties for Ionic Liquids using QSAR	Jan. 2010	Dec. 2010
22	Yasmin Syazwani Bt Yusri	Behavior and Toxicity of Phosphonium Based Ionic Liquids	Jan. 2010	Dec. 2010
23	Muhammad Nabil bin Nasaruddin	The effects of cation-anion interaction on the toxic properties of ionic liquids	Jan. 2010	Dec. 2010
24	Izzati Zahidah Binti Othman	Fate and Effect of Hydroxyl Functionalized Imidazolium Ionic Liquids on Biological Systems	Jan. 2010	Dec. 2010
25	Siti Nurain Roseli	Treatment of Soil Contaminated with Ionic Liquids	Jan. 2010	Dec. 2010
26	Razak Bin Mohd Sapiiah	Thermal Treatment of Marine Soil Contaminated With Hydrocarbons	Jan. 2010	Dec. 2010
27	Zatil Azhani bt Razali	Using Layer of Protection Analysis (LOPA) to Determine Safety Integrity Level (SIL) for Hazardous Installation	July 2009	June 2010
28	Nor Farhani Bt Mohd Farid	Development of a GIS-Based Application for Fire Modelling in the Process Industries	July 2009	June 2010
29	Muhammad Aizat bin Abd Wahi,	Investigation of Fire and Explosion Accidents in the Drainage Systems Related to Process Industries	July 2009	June 2010
30	Norizan Bt Ali	Oil Spills Cleanup using Natural Recyclable Absorbents	July 2009	June 2010
31	Ahmad Azmi Bin Ab Rani	Treatment of Soil Contaminated by Crude Oil and its Product	July 2009	June 2010
32	Abdul Shukur bin Mohamad	Theoretical Study and Evaluation of Environmental Aspects and Inherent Risks Related to Ionic Liquids	July 2009	June 2010
33	Anthony Marc Botha	Design and Development of Multicomponent Design and Simulation Software	June 2008	May 2009
34	David Acellam Okeny	Design and Development of a Shell and Tube Exchanger Software for Industries	June 2008	May 2009
35	Syahenaz Bin Kamaroll Zaman	Determination and Assessment of Suspended Particulate Matters In Relation To Health and Environment	June 2008	May 2009
36	Wan Rausyanfikir	Using Geographical Information System (GIS) to Study the Impact of Chemical Pollutants Emerging from Industries.	June 2008	May 2009
37	Nur Farhana bt Ghazali	Modelling and Simulation of CO emission using Point Source Model	June 2008	May 2009
38	Nur Farhana Binti Dzulkafli	NOx Emission Modelling and Simulation Using Point Source Dispersion Model	June 2008	May 2009
39	The Seng Hien	Modeling and Simulation of Sulfur Dioxide Dispersion from Industrial Stacks using Point Source Model	June 2008	May 2009
40	Mai Azura Meor Kamarul Zaman	Modelling and Simulation of Air Pollution Emission using Line Source Dispersion Model	June 2008	May 2009
41	Norzalila Razali	Modelling and Simulation of Air Pollution Emission Using Area Source Model	June 2008	May 2009
42	Siti Fairuz Bt. Dalim	Design and Development of A Dense Gas Modeling Software to Predict the Hazard from Pollutant Emerging from Industries	June 2008	May 2009
43	Zuhaidah bt. Shafudin	Particulate Matter Pollutant Monitoring and Analyzing	June 2008	May 2009

SOFTWARE PROJECT DEVELOPMENT

Software name	Application
SCIA: Simulation of Chemical Industrial Accidents	To estimate the consequences of fire and explosion in process industries.
DisMS: Dispersion Modelling Software	A steady-state Gaussian dispersion model to determine pollution concentrations emitted from stacks.
MDSS: Multicomponent Distillation Simulation Software	To perform product prediction and column design of a multicomponent distillation system
DEGAS: Dense Gas Modeling Software	To estimate pollutant concentrations downwind from an accidental chemical release that is heavier than air.
LiSDSS: Line Source Dispersion Simulation Software	Dispersion of pollutants emitted from different vehicles
ASMSS: Area Source Modelling and Simulation Software	To estimate the concentration of particulate matter.
HEDASS: Heat Exchanger Design and Analysis Simulation Software	Heat Exchangers design and analysis
FiST: Fire Simulation Tool	A GIS based simulation model to estimate the consequences of fire and explosion in process industries.

PATENT

- ✚ Mohanad El-Harbawi, Sa'ari Mustapha, 2009. Methods for Analyzing Consequences. Malaysian Patent (Filing number: PI 20091309).
- ✚ Zulkifli Abd Rashid, Mohanad El-Harbawi, Mohammad Shahnor Bani, Ku Halim Ku Hamid, Mohd Jindra Aris, Azil Bahari Alias, 2009. SWSPPro-1: Sustainable Tools for Future Waste Management, (pending).

ACHIEVEMENTS/AWARDS

- ✚ **5QPs Practitioner Award, 2010:** Universiti Teknologi PETRONAS.
- ✚ **Silver Medal:** Science and Engineering Design Exhibition (*SEDeX UTP*), 2012.
Poster title: Toxicity Measurement of Imidazolium Ionic Liquids using Acute Toxicity Test
- ✚ **Bronze Medal:** Science and Engineering Design Exhibition (*SEDeX UTP*), 2012.
Poster title: Flammability Limits Study of Vapour Mixtures above Crude Oil at Low Temperatures
- ✚ **Bronze Medal:** Malaysia Technology Expo (MTE) 2011. Kuala Lumpur Convention Centre Malaysia, 17-19 February 2011.
- ✚ **Silver Medal:** Science and Engineering Design Exhibition (*SEDeX UTP*), 2011.
Poster title: inherently safer design for hazardous waste contaminated in industrial drains
- ✚ **Gold Medal:** IID (Inventions, Innovation and Designs) AN R&D Competition: 12-14 October 2010. University Technology MARA.
Poster title: A Smart Advisory System for Hazardous Transportation Risk Analysis (TRA)
- ✚ **Gold Medal:** IID (Inventions, Innovation and Designs) AN R&D Competition: 14-17 January 2009.
Poster title: SWSPPro-1 Software: Sustainable Tools for Future Waste Management.
- ✚ **Silver Medal:** British Invention Show - BIS2009.
Poster title: SWSPPro-1 Software: Sustainable Tools for Future Waste Management.
- ✚ **Silver Medal:** Design, Research and Innovation Exhibition (PRPI 2008): 4 AUGUST 2008.

University Putra Malaysia.

Poster title: DispergCAL: Chemical Dispersion, Data Base and Simulation Software

- ✚ **Gold Medal:** IID (Inventions, Innovation and Designs) AN R&D Competition: 25-27 MARCH 2008. University Technology MARA.

Poster title: Chemical Industrial Risk Assessment Predicted by SCIA Software

- ✚ **Silver Medal:** IID (Inventions, Innovation and Designs) AN R&D Competition: 25-27 MARCH 2008. University Technology MARA.

Poster title: Development of Mathematical Model to Predict the Composition and Generation of Scheduled Waste in Malaysia

- ✚ **Bronze Medal:** Invention Innovation & Technology Exhibition (ITEX). Kuala Lumpur Convention Centre Malaysia, 9-11 May 2008.

- ✚ **Silver Medal:** Research, Innovation & Commercialization Exhibition, Faculty of Engineering, University Putra Malaysia, 16-17 March 2006.

Poster title: A Tool for Assessing Consequences of Chemical Industrial Accidents [SCIA (Simulation of Chemical Industrial Accidents) Software]

- ✚ **Bronze Medal:** Design, Research and Innovation Exhibition (PRPI), University Putra Malaysia, 22-24 August 2006.

Poster title: A Tool for Assessing Consequences of Chemical Industrial Accidents [SCIA (Simulation of Chemical Industrial Accidents) Software]

GRANT

- ✚ **Toxicology and environmental impact assessment of ionic liquids**

Funding Organization: Deanship of Scientific Research at King Saud University

Amount : SR 150,000 (~40,000 US\$)

Duration : 2013 – 2014

Project leader : Dr. Mohanad El-Harbawi

Co-researchers : Abdelbasset Bessadok-Jemai

- ✚ **Development of Novel Quantitative Structure Activity Relationship Models to Predict the Toxicity of Ionic Liquids**

Funding Organization: Research Center of the Faculty of Engineering – King Saud University

Amount : SR 29,000 (~7700 US\$)

Duration : 23 February 2013 – 22 November 2013

Project leader : Dr. Mohanad El-Harbawi

- ✚ **Development of Ecotoxicity Relationships to Enhance Ionic Liquids Commercialization using Green Chemistry Approach**

Funding Organization: YUTP Fundamental Research Grant (YUTP-FRG), PETRONAS

Amount : RM 202,400 (~65,000 US\$)

Duration : 11 November 2011 – 11 November 2013

Project leader : Dr. Mohanad El-Harbawi

Co-researchers : Dr. Mohd Ibrahim B Abd Mutalib

: Dr. Noorjahan Banu bt Mohamed Alitheen

- ✚ **Flammability characteristics of combustible vapor mixtures from biofuel products**

Funding Organization: Universiti Teknologi PETRONAS (STIRF No. 62/2011)

Amount : RM 25,000

Duration : 7 December 2011 – 7 December 2012

Project leader : Dr. Mohanad El-Harbawi

Co-researchers : Prof. Dr. Yoshimitsu Uemura

✚ Development of a Quantitative Method to Assist the Fire and Explosion Positional Caused by the Hazardous Waste in the Drainage System Related to Process Industries

Funding Organization: Universiti Teknologi PETRONAS (STIRF No. 18/10.11)

Amount : RM 15,825

Duration : 2 June 2010 – 2 June 2011

Project leader : Dr. Mohanad El-Harbawi

✚ Design and Development of a PC-Software to Predict Chemical Pollutant Threats Emerging from Industries

Funding Organization: Universiti Teknologi PETRONAS (STIRF No. 36/08.09)

Amount : RM 6000

Duration : 5 January 2009 – 5 January 2010

Project leader : Dr. Mohanad El-Harbawi

Co-researchers : Dr. Azmi Bustam

✚ Establishment of Malaysian Ionic Liquids Laboratory (MILL-UTP)

Funding Organization: PETRONAS Research Funding (PRF)

Amount : RM 6,000,000

Duration : January 2009 – January 2014

Project leader : Dr. Mohd Ibrahim B. Abd Mutalib

Co-researchers : Dr. Azmi Bustam, Dr. Chong Fai Kait, Dr. Mohanad El-Harbawi

COURSES/WORKSHOPS

1. Renewable Energy: Generation, Delivery Utilization and Planning of Hydrogen Energy System. One Day Workshop on Top Down Strategic Research. 20 August 2002. Marriott Hotel Putra Jaya. Organized by: Faculty of Engineering, Universiti Putra Malaysia
2. Hydrogen as Future Fuel for Malaysia. Two Days Workshop. 11-12 March 2003. Equatorial Hotel Bangi. Organized by: Malaysia Energy Centre, Pusat Tenaga Malaysia and Universiti Kebangsaan Malaysia.
3. Major Hazards and Emergency Planning. Workshop 2003. 7-9 October, 2003. Course Lecturers Given by: Marc McBide, Centrica Energy Management Group, UK. Organized by: Faculty of Engineering, Universiti Putra Malaysia.
4. Seminar Dan Dialog Bersama OYK/OYB Kesihatan Industri. 13 January 2004, Putra Jaya. ArcGIS 9.0 Rollout seminar. 2 September, 2004. Sheraton Subang, Hotel & Towers, Subang Jaya, Selangor.
5. 15th. ERP seminar: Networking towards public security. 23 October 2004. Faculty of Engineering, Universiti Putra Malaysia. Program Lecturing in English (LiE) UITM Se Malaysia, Pahang 11-14 Jun 2007
6. Kursus 'English For Effective Teaching' ILQAM 12-13 April 2007.
7. Regional Process Safety Seminar, IChemE, UK 27 June 2007, Swiss, Hotel, Kuantan, Pahang
8. Workshop on PhD. Supervision. Organize by iLQaM; 16-17 April 2007.
9. Team Building Workshop. 05th until 09th JANUARY 2009 at Damai Laut Swiss Garden Golf Resort & Spa.
10. Testing and Evaluation Workshop. 15th January 2009 at Universiti Teknologi PETRONAS.

PROFESSIONAL MEMBERSHIP

- ✚ **IChemE** (Institution of Chemical Engineers).
- ✚ Jordanian Engineers Association.
- ✚ **IAENG** (International Association of Engineers).
- ✚ **APCBEES** (Asia-Pacific Chemical, Biological & Environmental Engineering Society).

CONSULTANCY / PROJECTS

1. Angsi-Aquatic Toxicity Test of ASP Chemicals: **PETRONAS Research Sdn. Bhd.** 2011.
2. Quantitative Risk Assessment (QRA) for Process Industries: **Consultation for PETRONAS PENAPISAN (Melaka) Sdn. Bhd** (Part 1: Consequences Modeling) [2009].
3. Control of Industrial Major Accident Hazard (CIMA) Report 2004. **Lambir Water Treatment Plant (MIRI).**
4. Control of Industrial Major Accident Hazard (CIMA) Report 2004. **Nyabau Water Treatment Plant (BINTULU).**
5. Estimation the Hazards from Explosive material (CIMA) Report 2005. **EDI Training and Consultancy Sdn Bhd. (BINTULU).**

REFERENCES

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