CURRICULUM VITAE

Brief Description

Personal Particulars

Name	:	**DOMINIC CHWAN YEE FOO**
Date of Birth	:	12 March 1977
Gender	:	Male
Nationality	:	Malaysian
NRIC	:	770312-05-5539 (A3614222)
Marital Status	:	Married

Dr. Dominic Foo is an Assistant Professor at the University of Nottingham Malaysia. Prior to this position, he served as a Research Associate at Chemical Engineering Pilot Plant, Universiti Teknologi Malaysia (CEPP, UTM). His specialises in material reuse and recycle using process integration through pinch analysis techniques; process synthesis and design involving chemical, environmental and biochemical processes. He establishes international collaboration with researchers from United State, Greece, the Philippines and Egypt, and served as a Visiting Scholar in the research group of Prof Mahmoud M. El-Halwagi in Texas A&M University in Texas (USA) from November 2003 to January 2004. Dominic Foo is an author of more than seventy scientific papers and actively involve in conducting professional training courses for practising engineers.

Contact Address and Area of Specialisation

School of Chemical and Environmental Engineering
University of Nottingham
Broga Road, 43500 Semenyih, Selangor, Malaysia.
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Chemical Engineering Pilot Plant (CEPP)
Universiti Teknologi Malaysia (UTM)
81310 Skudai, Johor, Malaysia.
Tel: +60(7)553-1662 (Off) ; +60(12)709-1414 (Mobile) ;   Fax: +60(07)556-9706
Email: cyfoo@cepp.utm.my ; foodominic@yahoo.com   URL :   www.cepp.utm.my/foo/index.htm

Area of specialisations:
1. Resource conservation via process integration techniques – pinch analysis and mathematical optimisation (water minimisation, hydrogen network, property integration)
2. Computer-aided steady-state process simulation for batch (SuperPro Designer) and continuous processes (DESIGN II for Windows)
3. Process synthesis & design
4. Life cycle analysis (LCA)

Educational Background

Postgraduate

Degree	: PhD (Chemical)	Completion Date	:	May 2006
Name of Institution	: Universiti Teknologi Malaysia (UTM)			
Thesis title	: Synthesis of Process Systems for Resource Conservation and Recovery			

Degree	: M Eng (Chemical)	Graduation Date	:	March 2003
Name of Institution	: Universiti Teknologi Malaysia (UTM)			
Thesis title	: Synthesis of Mass Exchange Network for Batch Process Systems			

Undergraduate

Degree	: B Eng (Chemical) (HONS)	Graduation Date	:	August 2000
Class	: Second Class (Upper)	CGPA	:	3.35
Name of Institution	: Universiti Teknologi Malaysia (UTM)			
Thesis title	: Re-refining of Used Lubricant Oil: The Effect of Potassium Hydroxide Addition			

Temporary Teacher **SM Batu Kikir, Bahau, N. S.** *(March – May 1997)*	Subject taught: Biology (Form 4 and Form 5) Science (Form 5)
Temporary Teacher **SM Bahau, Bahau, N. S.** *(September – October 1997)*	Subject taught: English (Form 2)
Trainee **Jeram Padang Palm Oil Mill** 72100 Bahau, N. Sembilan. *(March – May 1998)*	Trainee in milling process Project undertaken: Operation and training for pressure gauge for steriliser

Trainee
Shell Refining Company
(Federation of Malaya)
Batu 1, Jalan Pantai, 71000
Port Dickson, N. Sembilan.
(March – May 1999)
	Industrial attachment - project undertaken:
	  i. ISO 14000 EMS Documentation
	  ii. Waste Management System
	  iii. Waste recycling
	  iv. Cooling tower heat exchanger monitoring program
	  v. Process safeguarding memorandum for existing utilities

Technical Service Engineer **Sinct-Lab Sdn. Bhd.** 35, Jalan Besi, Tmn Sri Putri 81300 Skudai, Johor *(August – October 2000)*	Industrial wastewater treatment and testing
Research Officer **CEPP, UTM** *(October – December 2000)* *(Dec 2002 – February 2003)*	Used lubricant oil re-refining project Water and wastewater minimisation in chemical process plants
Teaching Assistant **Malaysia University of** **Science and Technology** Kelana Jaya, Petaling Jaya *(May – June 2003)*	Teaching Assistant for postgraduate subjects: Chemical and Biological Reaction Engineering (MBT 504)

Visiting Scholar
Chemical Engineering Dept
Texas A&M University
College Station, Texas, US
(Nov 2003 – Jan 2004)
	Visiting Scholar for research group of Prof Mahmoud M. El-Halwagi, task undertaken:
	  i. Development of targeting tool for property-based network
	  ii. Process Design Project evaluation

Teaching assistant
FKKKSA, UTM
(December 2000 – 2003)
	Teaching Assistant for undergraduate subjects:
	  i. Membrane Separation Technology (tutorial session)
	  ii. Process Design and Synthesis (process simulation)
	  iii. Process Integration (heat and mass exchange network)
	  iv. Computer Aided Process Simulation Project (Lecturer)

Research Associate
Course tutor
Technical support
CEPP, UTM
(December 2000 – 2005)
	Technical support for SuperPro Designer
	Course tutor for professional courses organised in CEPP:
	  i. Chemical Processes & Equipment (IPPMS)
	  ii. Batch Process Modelling and Optimisation
	  iii. Batch/Bioprocess Modelling, Scheduling and Optimisation
	  iv. Wastewater Treatment Plant Design, Operation and Troubleshooting

Publications

Refereed journal (published/in review)

1. Aziz, R. A., Sarmidi, M. R., Kumaresan, S., Taher, Z. M. and **Foo, C. Y.** (2003). Phytochemical Processing: The Next Emerging Field in Chemical Engineering - Aspects and Opportunities, *Jurnal Kejuruteraan Kimia Malaysia*, 3: 45-60.
2. **Foo, C. Y.**, Manan, Z. A., Yunus, R. M. and Aziz, R. A., (2004). Synthesis of Mass Exchange Network for Batch Processes – Part I: Utility Targeting, *Chemical Engineering Science*, 59(5): 1009-1026.
3. Manan, Z. A., Tan, Y. L. and **Foo, D. C. Y.** (2004). Targeting the Minimum Water Flow Rate Using Water Cascade Analysis Technique, *AIChE Journal*, 50(12): 3169-3183.
4. **Foo, C. Y.**, Manan, Z. A., Yunus, R. M. and Aziz, R. A., (2005). Synthesis of Mass Exchange Network for Batch Processes – Part II: Minimum Units Target and Batch Network Design, *Chemical Engineering Science*, 60(5): 1349-1362.
5. **Foo, D. C. Y.**, Manan, Z. A. and Tan, Y. L. (2005). Synthesis of Maximum Water Recovery Network for Batch Process Systems, *Journal of Cleaner Production*, 13(15): 1381-1394.
6. **Foo, D. C. Y.**, Kazantzi, V., El-Halwagi, M. M. and Manan, Z. A. (2006). Cascade Analysis for Targeting Property-based Material Reuse Networks, *Chemical Engineering Science*, 61(8): 2626-2642.
7. **Foo, D. C. Y.**, Manan, Z. A. and El-Halwagi, M. M. (2006). Correct Identification of Limiting Water Data for Water Network Synthesis, *Clean Technologies and Environmental Policy*, 8(2): 96-104.
8. Athimulam, A., Kumaresan, S., **Foo, D. C. Y.**, Sarmidi, M. R. and Aziz, R. A. (2006). Modelling and Optimisation of Eurycoma longifolia Water Extract Production, *Food and Bioproduct Processing*, 84(C2):139-149.
9. **Foo, D. C. Y.** and Manan, Z. A. (2006). Setting the Minimum Flowrate Targets for Utility Gases Using Cascade Analysis Technique, *Industrial and Engineering Chemistry Research*, 45(17): 5986-5995.
10. Ng, D. K. S. and **Foo, D. C. Y.** (2006). Evolution of Water Network with Improved Source Shift Algorithm and Water Path Analysis, *Industrial and Engineering Chemistry Research*, 45, 8095-8104.
11. Hul, S., Tan, R. R., Auresenia, J., Fuchino, T. and **Foo, D. C. Y.** (2006). Synthesis of Near-Optimal Topologically-Constrained Property-Based Water Network Using Swarm Intelligence, *Clean Technologies and Environmental Policy* (in press).
12. Tan, R. R. and **Foo, D. C. Y.** (2006). Pinch Analysis Approach to Carbon-Constrained Energy Sector Planning. *Energy* (in press).
13. Tan, R. R., **Foo, D. C. Y.** and Manan, Z. A. (2006). Assessing the Sensitivity of Water Reuse Network to Noisy Mass Loads Using Monte Carlo Simulation. *Computers and Chemical Engineering* (in press).
14. Tan, Y. L., Manan, Z. A. and **Foo, D. C. Y.** (2006). Retrofit of Water Network with Optimisation of Existing Regeneration Units, *Industrial and Engineering Chemistry Research* (in press).
15. Manan, Z. A., Tan, Y. L., **Foo, D. C. Y.** and Tea, S. Y. (2006). Application of Water Cascade Analysis Technique for Water Minimisation in a Paper Mill Plant, *International Journal of Environment and Pollution* (in press).
16. Tan, Y. L., Manan, Z. A. and **Foo, D. C. Y.** (2006). Retrofit of Water Network with Regeneration Using Water Pinch Analysis, *Process Safety and Environmental Protection* (in review).
17. **Foo, D. C. Y.**, Ooi, M. B. L., Tan, R. and Tan, J. S. (2006). Extended Process Integration Technique for Production Planning in Supply Chain, *Computers and Chemical Engineering* (in review).
18. Kuan, C. K., **Foo, D. C. Y.**, Kumaresan, S., Aziz, R. A. and Tan, R. R. (2006, Streamlined Life Cycle Assessment of Residue Utilization Options in Tongkat Ali (*Eurycoma longifolia*) Water Extract Manufacturing Process, *Clean Technologies and Environmental Policy* (in review).
19. **Foo, D. C. Y.** (2006). Water Cascade Analysis Technique for Threshold Problems and Inter-process Integration, *Computers & Chemical Engineering* (in review).
20. **Foo, D. C. Y.** (2006). Cascade Analysis for Impure Fresh Feed and Multiple External Water Sources. *Chemical Engineering Research and Design* (in review).
21. Shoaib, A. M., Aly, S. M., Awad, M. E., **Foo, D. C. Y.** and El-Halwagi, M. M. (2006) Combined Pinch and Mathematical Programming Approaches for the Synthesis of Batch Water Network, *Computers & Chemical Engineering* (in review).
22. Tan, R. R., Col-long, K. J., **Foo, D. C. Y.**, Hul, S. and Ng, D. K. S. (2006). A Methodology for The Design of Efficient Resource Conservation Networks Using Adaptive Swarm Intelligence, *Journal of Cleaner Production* (in review).
23. Ng, D. K. S., **Foo, D. C. Y.** Tan, R. R. and Tan, Y. L. (2006). Ultimate Flowrate Targeting with Regeneration Placement, *Chemical Engineering Science* (in review).
24. Hul, S., Tan, R. R., Auresenia, J., Fuchino, T. and **Foo, D. C. Y.** (2006). Water Network Synthesis Using Mutation-Enhanced PSO. *Process Safety and Environmental Protection* (in review).

25. Hul, S., Ng, D. K. S., Tan, R. R., Chiang, C. L. and **Foo, D. C. Y.** (2006). *A Simple Mathematical Optimisation Approach to Retrofit an Existing Water Network*, Chemical Product and Process Modeling (in review).

26. Tan, J., **Foo, D. C. Y.**, Sivakumar, K. and Ramlan, A. A. (2006). Simulation and Optimisation of an Eye Drop Medicine Manufacturing, Institution of Engineers, Malaysia (IEM) Journal (in review).

Refereed journal (in preparation)
27. **Foo, D. C. Y.** and Ooi, M. B. L. (2006). Water Cascade Analysis Technique for Complex Problems, Computers & Chemical Engineering (in review).

28. **Foo, D. C. Y.**, Chew, Y. H., Lee, C. T. and Aziz, R. A. (2005). Evaluation of Heat Integration Scheme for Batch Manufacturing of Oleic Acid. Applied Thermal Engineering, manuscript in preparation.

Magazines
29. **Foo, D. C. Y.**, Manan, Z. A., Selvan, M., and McGuire, M. L. (2005). *Process Synthesis by Onion Model and Process Simulation*, Chemical Engineering Progress, 101(10): 25-29 (October 2005).

30. Aziz, R. A., Sarmidi, M. R., Kumaresan, S., and **Foo, D. C. Y.** (2005). *Engineering Aspects of Herbal and Phytochemical Processing: A Malaysian Perspective*, Bulletin of Institution of Engineers, Malaysia (IEM), 2005(12): 10-19 (December 2005).

31. **Foo, D. C. Y.** (2006). *Use Process Integration to Set Reuse and Recycling Targets*, Bulletin of Institution of Engineers, Malaysia (IEM), 2006(4): 8-14 (April 2006).

32. **Foo, D. C. Y.**, Manan, Z. A. and Tan, Y. L. (2006), *Use Cascade Analysis to Optimize Water Networks*, Chemical Engineering Progress, 102(7): 45-52 (July 2006).

33. Tan, J., **Foo, D. C. Y.**, Sivakumar, K. and Aziz, R. A. (2006). Debottlenecking of a Batch Pharmaceutical Cream Production, *Pharmaceutical Engineering*, July/August 2006, 72-84.

Plenary/keynote Speech
34. Aziz, R. A., Kumaresan, S., Taher, Z. M. and **Foo, D. C. Y.**, (2003). *Phytochemical Processing: The Next Emerging Field in Chemical Engineering: Aspects and Opportunities*, paper presented in International Conference on Chemical and Bioprocess Engineering (ICCBPE 2003), Sabah.

35. **Foo, D. C. Y.** (2006). *Targeting the Minimum Number of Units and Network Evolution Techniques for a Batch Heat Exchanger Network*, paper presented in the 9th Conference on Process Integration, Modeling and Optimisation for Energy Saving and Pollution Reduction (PRES 2006) in conjunction with 17th International Congress of Chemical and Process Engineering (CHISA), Praha, Czech Republic.

International Conferences
36. Lim, L. P., Ripin, A., Yunus, R. M. and **Foo, D. C. Y.**, (2000). *Re-refining of Base Oil from Used Lubricant Oil: A Method to Formulate Efficient Potassium Hydroxide (KOH) Effect*, paper presented in Regional Symposium on Chemical Engineering (RSCE 2000), National University of Singapore.

37. Tan, Y. L., Manan, Z. A. and **Foo, D. C. Y.**, (2002) *Water Minimisation by Pinch Technology – Water Cascade Table for Minimum Water and Wastewater Targeting*, paper presented in 9th Asian Pacific Confederation of Chemical Engineering (APCChE 2002), New Zealand (Best Working Paper from Malaysia).

38. **Foo, D. C. Y.**, Manan, Z. A., Yunus, R. M., Aziz, R. A. and Tan, Y. L., (2002) *Water Minimisation for Batch Process Systems – A Pinch Technology Approach*, paper presented in 2nd World Engineering Congress (WEC 2002), Sarawak.

39. **Foo C. Y.**, Yunus, R. M., Tea, S. S., (2002). *Modeling and Simulation of Used Lubricant Oil Re-refining Process*, paper presented in 2nd World Engineering Congress (WEC 2002), Sarawak.

40. Chow, A. W., **Foo C. Y.**, Yunus, R. M., Aziz, R. A. and Manan, Z. A., (2002). *Pilot Scale Rectification Column Modelling and Design for The Separation of Fatty Acid Mixture*, paper presented in Regional Symposium on Chemical Engineering (RSCE 2002), Kuala Lumpur.

41. **Foo, D. C. Y.**, Manan, Z. A., Yunus, R. M. and Aziz, R. A., (2002). *Synthesis of Mass Exchange Network for Batch Process Systems. Part 1: Calculation of Utility Targets*, paper presented in Regional Symposium on Chemical Engineering (RSCE 2002), Kuala Lumpur.

42. **Foo, D. C. Y.**, Manan, Z. A., Yunus, R. M. and Aziz, R. A. (2003). S*ynthesis of Mass Exchange Network for Batch Processes. Part 2: Batch Network Design*, paper presented in International Conference on Chemical and Bioprocess Engineering (ICCBPE 2003), Sabah.

43. **Foo, D. C. Y.**, Manan, Z. A. and Aziz, R. A. (2003). *Water Cascade Analysis Technique for Minimum Flowrate Targeting: Tabular and Numerical Approach*, paper presented in International Conference on Chemical and Bioprocess Engineering (ICCBPE 2003), Sabah.

44. **Foo, D. C. Y.**, Manan, Z. A. and Aziz, R. A. (2003). *Synthesis of Maximum Water Recovery Network for Batch Process Systems*, paper presented in 6th Conference on Process Integration, Modeling and Optimisation for Energy Saving and Pollution Reduction (PRES 2003) in conjunction with 53rd Canadian Chemical Engineering Conference, Hamilton, Canada.

45. **Foo, D. C. Y.**, Manan, Z. A., Yunus, R. M. and Aziz, R. A. (2003). *Synthesis of Mass Exchange Network for Batch Process Systems. Part 3: Targeting and Design for Network with Mass Storage System*, paper presented in AIChE Annual Meeting 2003, San Francisco.

46. Manan, Z. A. and **Foo, D. C. Y.** (2003). *Setting Targets for Water and Hydrogen Networks Using Cascade Analysis*, paper presented in AIChE Annual Meeting 2003, San Francisco.

47. **Foo, D. C. Y.**, Manan, Z. A., Yunus, R. M. and Aziz, R. A. (2003). *Synthesis of Mass Exchange Network for Batch Process Systems. Part 4: Minimum Units Targeting and Network Evolution*, paper presented in to Regional Symposium on Chemical Engineering (RSCE 2003), Manila.

48. **Foo, D. C. Y.**, Manan, Z. A., Kazantzi, V., Almutlaq, A. M. and El-Halwagi, M. M. (2004). *Material-Reuse Targeting Using Property-Based Surplus Technique*, paper presented in 4th International Symposium on Process Integration in conjunction with 54th Canadian Chemical Engineering Conference, Calgary, Canada.

49. Kazantzi, V., **Foo, D. C. Y.**, Manan, Z. A., Almutlaq, A. M. and El-Halwagi, M. M. (2004). *Resource Conservation and Waste Minimization for Property Networks Using Cascade Analysis*, paper presented in AIChE Annual Meeting 2004, Austin, Texas.

50. Tan, J., **Foo, D. C. Y.**, Kumaresan, S., Aziz, R. A., Koulouris, A. (2004). *Evaluation of Debottlenecking Strategies for A Liquid Medicine Production Utilising Batch Process Simulation*, paper presented in International Conference of Computational Methods in Sciences and Engineering 2004 (ICCMSE 2004), Attica, Greece.

51. Athimulam, A., Kumaresan, S., **Foo, D. C. Y.**, Sarmidi, M. R. and Aziz, R. A. (2005). *Modelling and Optimisation of Tongkat Ali Water Extract Production Utilising A Batch Process Simulator*, paper presented in 2nd International Conference on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment, and Management (HNICEM 2005), Manila, Philippines.

52. **Foo, D. C. Y.** and Manan, Z. A. (2005), *Setting Right Targets for Water Recovery Network Using Water Cascade Analysis Technique*, paper presented in 2nd International Conference on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment, and Management (HNICEM 2005), Manila, Philippines.

53. Tan, J., **Foo, D. C. Y.**, Kumaresan, S., Aziz, R. A., (2005). *Evaluation of Pharmaceutical Cream Production Debottlenecking Schemes*, paper presented in Process System Engineering (PSEAsia 2005), Seoul, Korea.

54. Kazantzi, V., Qin, X., **Foo, D. C. Y.** and El-Halwagi, M. M. (2005). *Pollution Prevention through Property-Based Design*, paper presented in AIChE Annual Meeting 2005, Cincinnati, Ohio.

55. **Foo, D. C. Y.** and Manan, Z. A. (2005), *Optimisation of Regeneration Unit to Achieve Zero Discharge in A Paper* Mill, paper presented in the 2nd International Conference on Chemical and Bioprocess Engineering (ICCBPE 2005), Sabah.

56. Chan, J. H., **Foo, D. C. Y.**, Kumaresan, S., Aziz, R. A. and Hassan, M. A. A. (2005), *Process Modelling of A PVC Production Plant*, paper presented in the 2nd International Conference on Chemical and Bioprocess Engineering (ICCBPE 2005), Sabah.

57. Kuan, C. K., **Foo, D. C. Y.**, Kumaresan, S., Aziz, R. A. and Tan, R. R. (2005), *Life Cycle Analysis of Tongkat Ali (Eurycoma Longifolia) Extract Manufacturing Process*, poster presented in the 2nd International Conference on Chemical and Bioprocess Engineering (ICCBPE 2005), Sabah.

58. **Foo, D. C. Y.**, Kumaresan, S., Aziz, R. A. and Sarmidi, M. R. (2005), *The Use of Computer-Aided Process Design and Simulation Tools in Undergraduate Research Projects*, paper presented in Regional Conference on Engineering Education (RCEE 2005), Johor Bahru.

59. **Foo, D. C. Y.** (2006). *Water Cascade Analysis Technique for Targeting Minimum Water Flowrates in Threshold Problems*, paper presented in the 9th Conference on Process Integration, Modeling and Optimisation for Energy Saving and Pollution Reduction (PRES 2006) in conjunction with 17th International Congress of Chemical and Process Engineering (CHISA), Praha, Czech Republic.

60. Tan, J., **Foo, D. C. Y.**, Sivakumar, K. and Aziz, R. A. (2006). *Debottlenecking of a Batch Pharmaceutical Eye Drop Production*, paper presented in the 9th Conference on Process Integration, Modeling and Optimisation for Energy Saving and Pollution Reduction (PRES 2006) in conjunction with 17th International Congress of Chemical and Process Engineering (CHISA), Praha, Czech Republic.

61. **Foo, D. C. Y.** and Manan, Z. A. (2006). *Targeting for Utility Gases Reuse/Recycle via Process Integration*, International Conference on Environment (ICENV2006), manuscript submitted.

62. Chiang, C. L. and **Foo, D. C. Y.** (2006). *Application of Source Shifts Algorithm in Retrofitting Existing Water Network in a Paper Mill*, paper presented in International Conference on Environment (ICENV2006).
63. Ng, D. K. S., **Foo, D. C. Y.**, Kazantzi, V. and El-Halwagi, M. M. (2006). *Cascade Analysis Technique for Targeting Property-Based Material Reuse/Recycle Network*, paper presented in AIChE Annual Meeting 2006, San Francisco.
64. Ng, D. K. S., **Foo, D. C. Y.**, Tan, R. R. and Tan, Y. L. (2006). *Targeting for Total Water Network Based on Pinch Analysis*, paper presented in AIChE Annual Meeting 2006, San Francisco.
65. Hul, S., Tan, R. R., Auresenia, J., Fuchino, T. and **Foo, D. C. Y.** (2006). *Application of Particle Swarm Optimization in Material Reuse/Recycle Network Topology*, paper presented in Regional Symposium on Chemical Engineering (RSCE 2006), Singapore.
66. Ng, D. K. S. and **Foo, D. C. Y.** (2006). *A Systematic Approach for Water Network Evolution by Improved Source Shift Algorithm*, paper presented in 2006 Symposium on Process System Engineering, Taiwan.
67. Chiang, C. L., Hul, S., Ng, D. K. S., Tan, R. R. and **Foo, D. C. Y.** (2006). *A Linear Programming Model for Retrofit A Paper Mill Plant*, paper presented in 2006 Symposium on Process System Engineering, Taiwan.
68. Rabie, A., El-Halwagi, M. M., Ng, D. K. S. and **Foo, D. C. Y.** (2007). Simultaneous Synthesis of Water Reuse/Recycle and Interception Networks for Batch Processes Incorporating Process Dynamic, abstract submitted to the 10th Conference on Process Integration, Modeling and Optimisation for Energy Saving and Pollution Reduction (PRES 2007).
69. Ng, D. K. S., **Foo, D. C. Y.** and Tan, R. R. (2007). Simultaneous Targeting for Regeneration and Waste Treatment for Total Water Network, abstract submitted to the 10th Conference on Process Integration, Modeling and Optimisation for Energy Saving and Pollution Reduction (PRES 2007).
70. **Foo, D. C. Y.** and Tan, R. R. (2007). Targeting for Minimum Low and Zero-Carbon Energy Resources in Carbon-Constrained Energy Sector Planning, abstract submitted to the 10th Conference on Process Integration, Modeling and Optimisation for Energy Saving and Pollution Reduction (PRES 2007).

National Conferences

71. **Foo, D. C. Y.**, Lee, L. E. and Manan, Z. A., (2000). *Application of Extractive Distillation for the Separation of Benzene and Cyclohexane Mixture*, paper presented in 14th Symposium of Malaysian Chemical Engineers (SOMChE 2000), Bangi, Selangor.
72. Hishamuddin, E., **Foo, D. C. Y.**, Yunus, R. M., Lim, L. P. and Ripin, A., (2001) *Decolourization of recovered Base Oil from Used Lubricant Oil: A Study of Composite Adsorbent*, paper presented in 15th Symposium of Malaysian Chemical Engineers (SOMChE 2001), Johor Bahru.
73. **Foo, D. C. Y.**, Manan, Z. A., Yunus, R. M. and Aziz, R. A., (2002). *Synthesis of Mass Exchange Network for Batch Process Systems: Calculation of Utility Targets*, paper presented in National Science Fellowship (NSF) Annual Workshop 2002, Kuala Lumpur (Silver Award for Best Presenter).
74. **Foo, D. C. Y.** (2003). *A New Targeting Tool in Water Pinch Technology – The Water Cascade Table*, paper presented in SHELL Student Paper Presentation Contest (SSPEC 2003), UTM.
75. **Foo, D. C. Y.**, Manan, Z. A., Yunus, R. M. and Aziz, R. A., (2003). *Maximising Water Recovery through Water Pinch Technology – The Use of Water Cascade Table*, paper presented in Environment 2003, Batu Feringghi, Penang.
76. **Foo, D. C. Y.**, Manan, Z. A., Yunus, R. M. and Aziz, R. A., (2003). *A Review on the State-of-the-art of Water Minimisation Techniques Based on Pinch Technology*, paper presented in Environment 2003, Batu Feringghi, Penang.
77. Manan, Z. A. and **Foo, D. C. Y.**, (2003). *Assessing Options for Process Changes via Water Cascade Analysis*, paper presented in 17th Symposium of Malaysian Chemical Engineers (SOMChE 2003), Pulau Pinang.
78. Awang, M. R., Mutaat, H. H., Kumeresan, S., **Foo, D. C. Y.**, Aziz, R. A., (2004). *Economic Assessment of Sterifeed Process*, paper presented in R&D Seminar, Malaysian Institute for Nuclear Technology Research (MINT).
79. Tan, J., **Foo, D. C. Y.**, Kumaresan, S., Aziz, R. A., (2004). *Modelling, Optimisation and Debottlenecking of a Pharmaceutical Production Process Utilising a Batch Process Simulator*, paper presented in The Malaysian Society for Molecular Biology and Biotechnology Scientific Meeting (MSMBB 2004), Melaka.
80. Athimulam, A., Kumaresan, S., **Foo, D. C. Y.**, Sarmidi, M. R., (2004). *Modelling and Optimisation of Tongkat Ali Water Extract Production Utilising a Batch Process Simulator*, paper presented in The Malaysian Society for Molecular Biology and Biotechnology Scientific Meeting (MSMBB 2004), Melaka.

81. **Foo, D. C. Y.**, Kazantzi, V., El-Halwagi, M. M. and Manan, Z. A., (2004). *Graphical Targeting Technique for Property-based Material Reuse Networks*, paper presented in 18th Symposium of Malaysian Chemical Engineers (SOMChE 2004), Universiti Teknologi Petronas, Tronoh, Perak.
82. Tan, R. R., **Foo, D. C. Y.** and Manan, Z. A. (2004). *Assessing the Sensitivity of Water Reuse Networks to Noisy Mass Loads Using Monte Carlo Simulation*, paper presented in 18th Symposium of Malaysian Chemical Engineers (SOMChE 2004), Universiti Teknologi Petronas, Tronoh, Perak.
83. Chew, Y. H., **Foo, D. C. Y.** and Lee, C. T. (2005). *Evaluating Heat Integration Scheme for Batch Production of Oleic Acid*, paper presented in Malaysian Science and Technology Congress (MSTC 2005), Kuala Lumpur.
84. **Foo, D. C. Y.**, Manan, Z. A., Selvan, M. and McGuire, M. L. (2005). *Flowsheet Synthesis by Process Synthesis and Simulation Tools*, paper presented in Malaysian Science and Technology Congress (MSTC 2005), Kuala Lumpur.
85. **Foo, D. C. Y.** (2006). *Flowrate Targeting for Multiple Fresh Water Sources using Water Cascade Analysis*, paper presented in the 20th Symposium of Malaysian Chemical Engineers (SOMChE 2006), Kuala Lumpur.
86. Tan, Y. L., **Foo, D. C. Y.** and Tan, R. R. (2006). *Minimum Flowrates Targeting for Multiple Contaminants Water Network*, paper presented in the 20th Symposium of Malaysian Chemical Engineers (SOMChE 2006), Kuala Lumpur.

Research Projects Involved

1. Re-refining of Base Oil from Used Lubricant Oil

Research votes	:	IRPA 72379, UTM Research Vote 71400
Duration	:	November 1999 – September 2001
Project leader	:	Assoc. Prof. Dr Rosli Mohd Yunus
Co-researchers	:	Assoc. Prof. Adnan Ripin, Lim Lee Ping, Dominic Foo Chwan Yee, Elina Hishamuddin, Kumeran Balachandran, Tea Swee Sin, Tea Swee Yin
Achievements	:	Undergraduate Research Project report (5), international conferences (publication # 36, 39), national conference (publication # 6), patent pending (1)

2. Synthesis of Mass Exchange Network for Batch Process Systems (MSc research project)

Duration	:	December 2000 – December 2002
Project leader	:	Assoc. Prof. Dr Zainuddin Abdul Manan
Co-researchers	:	Dominic Foo Chwan Yee, Assoc. Prof. Dr Rosli Mohd Yunus, Prof Ramlan Abd Aziz
Achievements	:	MSc thesis (1), referred journal (publication #**Error! Reference source not found.**, **Error! Reference source not found.**), international conferences (publication # 41, 42, 45, 47), national conference (publication # 73)

3. Synthesis of Resource Conservation Network (PhD research project)

Duration	:	February 2003 – Present
Project leader	:	Assoc. Prof. Dr Zainuddin Abdul Manan
Co-researchers	:	Dominic Foo Chwan Yee, Tan Yin Ling, Tan Pue Yoke, Tan Chia Li
Achievements	:	PhD thesis (1 - in progress), Undergraduate Research Project report (3), referred journal (publication **Error! Reference source not found.**, **Error! Reference source not found.**, 30, **Error! Reference source not found.**, **Error! Reference source not found.**, **Error! Reference source not found.**, 30), international conferences (publication #21, 22, 27, 29, 31, 37, 55), national conferences (publication #0-77), software (1).

4. Targeting for Property-Based Material Reuse Network

Remark	:	International collaboration project with Texas A&M University, US
Duration	:	November 2003 – June 2004
Project leader	:	Prof Mahmoud M. El-Halwagi (Texas A&M University, US)
Co-researchers	:	Dominic Foo Chwan Yee, Vasiliki Kazantzi, Abdulaziz M. Almutlaq
Achievements	:	Referred journal (publication #**Error! Reference source not found.**), international conferences (publication #48, 48, 54), national conferences (publication #81).

5. Design and Optimisation of Herbal and Phytochemical Processing

Duration	:	October 2003 – September 2005

Project leader   : Prof Ramlan Abdul Aziz
Co-researchers : Sivakumar Kumaresan, Arunasalam Athimulam, Prof Roji Sarmidi, Luqman Hakim
Achievements   : Referred journal (publication # 1, 8, 30), international conference (publication # 34, 51, 58), national conference (publication # 78, 80), Undergraduate Research Project reports (2)

6. Assessing the Sensitivity of Water Reuse Networks to Noisy Mass Loads

Remark   : International collaboration project with De La Salle University, Philippines
Duration   : April – July 2004
Project leader   : Assoc. Prof. Dr Raymond Tan (De La Salle University, Philippines)
Co-researchers : Dominic Foo Chwan Yee, Assoc. Prof. Dr Zainuddin Abdul Manan
Achievements   : Referred journal (publication # **Error! Reference source not found.**), national conference (publication # 82).

7. Retrofit of Water Network with Water Regeneration Units

Duration   : April – December 2004
Project leader   : Assoc. Prof. Dr Zainuddin Abdul Manan
Co-researchers : Tan Yin Ling, Dominic Foo Chwan Yee
Achievements   : Referred journal (publication # **Error! Reference source not found.**, **Error! Reference source not found.**)

8. Modelling, Optimisation and Debottlenecking of Pharmaceutical Production

Remark   : International collaboration project with Intelligen, Inc., US
                    Industrial collaboration (local pharmaceutical production firm)
Duration   : October 2003 – November 2004
Project leader   : Dominic Foo Chwan Yee
Co-researchers : Tan Jully, Sivakumar Kumaresan, Prof Ramlan Abdul Aziz
                    Dr Alexandros Koulouris (Intelligen, Inc.)
Achievements   : Undergraduate Research Project report (1), Referred journal (publication # **Error! Reference source not found.**, **Error! Reference source not found.**), international conference (publication # 47, 47), national conference (publication #**Error! Reference source not found.**).

9. Steady-state Process Simulation and Optimisation

Remark   : International collaboration project with WinSim, Inc., US
Duration   : October 2003 – March 2004
Project leader   : Dominic Foo Chwan Yee
Co-researchers : Assoc. Prof. Dr Zainuddin Abdul Manan
                    Dr Murugan Selvan, Michael Lynn McGuire (WinSim, Inc.)
Achievements   : International magazine (publication #29), national conference (publication #83)

10. Modelling and optimisation of Pilot Scale Rectification Column

Remark   : International collaboration project with Sulzer ChemTech, Singapore
Duration   : November 2001 – February 2002
Project leader   : Assoc. Prof. Dr Rosli Mohd Yunus
Co-researchers : Chow Ai Wei, Dominic Foo Chwan Yee
Achievements   : Undergraduate Research Project report (1), international conference (publication 40)

11. Synthesis of Water Network or Batch Processes (on-going)

Remark   : International collaboration project with Suez Canal University, Egypt and Texas A&M University, US
Duration   : September 2004 – Present
Project leader   : Eng Abeer Shoaib (Suez Canal University, Egypt)
Co-researchers : Dominic Foo Chwan Yee, Prof Mahmoud M. El-Halwagi (Texas A&M University, US)
Achievements   : Referred journal (publication # 5, 21)

12. Synthesis of Heat Exchanger Network for Batch Processes

Remark   : Collaboration project with Bioprocess Engineering Dept., UTM
Duration   : August 2004 – May 2005

Project leader	:	Dominic Foo Chwan Yee
Co-researchers	:	Chew Yin Hoon, Dr Lee Chew Tin (Bioprocess Engineering Dept., UTM)
Achievements	:	International conference (publication # 34), national conference (publication # 83)

13. Wastewater Minimisation of A Polymer Manufacturing Process
Remark	:	Industrial collaboration (local industrial resin plant)
Duration	:	October 2004 – December 2005
Project leader	:	Dominic Foo Chwan Yee
Co-researchers	:	Chan Jun Hoa, Sivakumar Kumaresan, Dr Ariffin Abu Hassan (Chemical Engineering Dept., UTM), Prof Ramlan Abdul Aziz
Achievements	:	Undergraduate Research Project report (1), international conference (publication # 56)

14. Life Cycle Analysis for Chemical Processes
Remark	:	International collaboration project with De La Salle University, Philippines
Duration	:	November 2004 – June 2006
Project leader	:	Dominic Foo Chwan Yee
Co-researchers	:	Assoc. Prof. Dr Raymond Tan (De La Salle University, Philippines) Kuan Choon Keat, Sivakumar Kumaresan, Prof Ramlan Abdul Aziz
Achievements	:	Referred journal (publication # 18), undergraduate Research Project report (1)

15. Targeting for Water Regeneration for a Water Network (on-going)
Remark	:	National collaboration project with Curtin University of Technology, Sarawak
Duration	:	May 2006 – present
Project leader	:	Dominic Foo Chwan Yee
Co-researchers	:	Ng Kok Sum, Tan Yin Ling (Curtin University of Technology, Sarawak)
Achievements	:	Referred journal (publication # 10)

16. Optimum Production Planning in Supply Chain Using Pinch Analysis Technique (on-going)
Remark	:	International collaboration project with De La Salle University Philippines and Philippine Institute of Supply Chain Management
Duration	:	June 2004 – present
Project leader	:	Dominic Foo Chwan Yee
Co-researchers	:	Ooi Boon Lee (Fraser Worley) Assoc. Prof. Dr Raymond Tan (De La Salle University, Philippines) Jenny S. Tan (Philippine Institute of Supply Chain Management)
Achievements	:	Referred journal (publication # 17), national conference (publication #**Error! Reference source not found.**)

17. Carbon-Constrained Energy Sector Planning Using Pinch Analysis (on-going)
Remark	:	International collaboration project with De La Salle University Philippines
Duration	:	December 2005 – present
Project leader	:	Assoc. Prof. Dr Raymond Tan (De La Salle University, Philippines)
Co-researchers	:	Nil
Achievements	:	Referred journal (publication # 12)

Patent filed
Method for Obtaining Base Oil from Spent Lubricant (Malaysian Patent Registration Number PI 20022454)

Talk / Seminar Organised
1. Luncheon Talk "Application of Mass Exchange Network Synthesis"
| Speaker | : | Assoc. Prof. Dr. Duncan Fraser (University of Cape Town, South Africa) |
| Date | : | 31 January 2001 | Venue | : | CEPP, UTM |

2. Three Day Hands-on Course on "Energy and Waste Reductions in the Process Industries: A Pinch Technology Approach"
| Course tutors | : | Assoc. Prof. Dr. Duncan Fraser (University of Cape Town, South Africa) Dr Zainuddin Abdul Manan (UTM) |

Date **:** 29 – 31 January 2002   Venue **:** BATC UTM KL

3. Two Day Hands-on Course on "Batch Process Modeling and Optimisation"
Course tutor **:** Dr Alexandros Koulouris (Intelligen, Inc., Greece)
Date **:** 10 – 11 March 2003   Venue **:** BATC UTM KL

4. Public Talk "Global Biotech Business and Investment Today"
Speaker **:** Dr Mou Duen Gang (Professor, Malaysian University of Science & Technology)
Date **:** 7 October 2003   Venue **:** CEPP, UTM

5. SuperPro Designer User Conference
Speakers **:** Dr Alexandros Koulouris (Intelligen, Inc., Greece); Dr Mat Rasol Awang (MINT),
    Sivakumar Kumaresan (CEPP, UTM), Dr Lee Chew Tin (FKKKSA, UTM)
Date **:** 27 April 2005   Venue **:** UTM KL

6. Career Guidelines Training
Speakers **:** Karl Kolmetz (KLM Technology Group)
Date **:** 2 December 2005   Venue **:** UMNC

7. Herbal Product Development from Seed to Shelf
Speakers **:** Prof Ramlan Abdul Aziz (CEPP, UTM)
Date **:** 10 April 2006   Venue **:** UMNC

Professional Courses Taught

1. Workshop on Computer Aided Process Simulation by Design II for Windows
Organiser **:** Process System Engineering Group, Chem Eng Dept., UTM
Date **:** 24 – 25 August 2000 Venue **:** Process Design Lab, Chem Eng Dept.
Participants **:** Lecturers & researchers from FKKKSA, UTM

2. Workshop on Computer Aided Process Simulation by Design II for Windows
Organiser **:** Process System Engineering Group, Chem Eng Dept., UTM
Date **:** 16 – 17 May 2001 Venue **:** Process Design Lab, Chem Eng Dept.
Participants **:** Lecturers & researchers from FKKKSA, UTM

3. Hands-on Introduction to Process Simulation Modelling for Continuous and Batch Processes
Organiser **:** Process System Engineering Group, Chem Eng Dept., UTM
Date **:** 12 – 13 May 2003 Venue **:** Process Design Lab, Chem Eng Dept.
Participants **:** Lecturers & researchers from FKKKSA, UTM

4. A Two-day Hands-on Course on Batch Process Modelling and Optimisation
Organiser **:** Chem Eng Pilot Plant (CEPP), UTM
Date **:** 27 – 28 May 2003 Venue **:** Computer Room, CEPP UTM
Participants **:** Industrial participants, researchers and lecturers from academic institution

5. A Two-day Hands-on Course on Batch Process Modelling and Optimisation
Organiser **:** ACHEMA Pte Ltd, Singapore
Date **:** 3 & 5 September 2003
Venue **:** School of Chemical and Life Sciences, Singapore Polytechnic
Participants **:** Lecturers & researchers from Singapore Polytechnic, Singapore

6. A Two-day Hands-on Course on Batch Process Modelling and Optimisation
Organiser **:** Chem Eng Pilot Plant (CEPP), UTM
Date **:** 31 March & 1 April 2004 Venue **:** UTM City Campus, KL
Participants **:** Industrial participants, researchers and lecturers from academic institutions

7. Hands-on Introduction to Process Simulation Modelling for Continuous and Batch Processes
Organiser **:** Process Synthesis and Design Group, Chem Eng Dept., UTM
Date **:** 23 – 24 June 2004 Venue **:** Process Design Lab, Chem Eng Dept.
Participants **:** Lecturers & researchers from FKKKSA, UTM

8. **A Four Day Course on Wastewater Treatment Plant Operation and Troubleshooting**
    Organiser   :   Chem Eng Pilot Plant (CEPP), UTM
    Date   :   2 – 5 August 2004   Venue :   UTM City Campus, KL
    Participants   :   Industrial participants, researchers and lecturers from academic institutions

9. **A Three and a Half Day Course on Maximising Energy and Water Savings in Process Industry Using Pinch Analysis**
    Organiser   :   Process Synthesis and Design Group, Chem Eng Dept., UTM
    Date   :   10 – 13 August 2004   Venue :   UTM City Campus, KL
    Participants   :   Industrial participants

10. **A Four Day Course on Wastewater Treatment Plant Operation and Troubleshooting**
    Organiser   :   Chem Eng Pilot Plant (CEPP), UTM
    Date   :   4 – 7 October 2004   Venue :   EMSB/PEMSB Training Centre, Kerteh
    Participants   :   Industrial participants

11. **A Four Day Course on Wastewater Treatment Plant Operation and Troubleshooting**
    Organiser   :   Chem Eng Pilot Plant (CEPP), UTM
    Date   :   17 – 20 January 2005   Venue :   UTM City Campus, KL
    Participants   :   Industrial participants, researchers and lecturers from academic institutions

12. **Maximising Energy and Water Savings in Process Industry Using Pinch Analysis**
    Organiser   :   De La Salle University, Manila (workshop for HNICEM 2005)
    Date   :   24 March 2005   Venue :   De La Salle University, Manila
    Participants   :   Industrial participants, researchers and lecturers from academic institutions

13. **A Two-day Hands-on Course on Batch/Bioprocess Modelling Scheduling and Optimisation**
    Organiser   :   Chem Eng Pilot Plant (CEPP), UTM
    Date   :   25 – 26 March 2005   Venue :   UTM City Campus, KL
    Participants   :   Industrial participants, researchers and lecturers from research/academic institutions

14. **A Four Day Course on Wastewater Treatment Plant Operation and Troubleshooting**
    Organiser   :   Chem Eng Pilot Plant (CEPP), UTM
    Date   :   4 – 7 July 2005   Venue :   UTM City Campus, KL
    Participants   :   Industrial participants

15. **Maximising Energy and Water Savings in Process Industry Using Pinch Analysis**
    Organiser   :   Process Synthesis and Design Group, Chem Eng Dept., UTM
    Date   :   19 – 22 September 2005   Venue :   UTM City Campus, KL
    Participants   :   Industrial participants, researchers and lecturers from academic institutions

16. **Computer Aided Design for Wastewater Treatment Plant (in house training)**
    Organiser   :   Chem Eng Pilot Plant (CEPP), UTM
    Date   :   21 November 2005   Venue :   Civil Engineering Dept, UKM
    Participants   :   Researchers and lecturers from environmental, civil and chemical engineering

17. **A Two-day Hands-on Course on Batch/Bioprocess Modelling Scheduling and Optimisation (in house training)**
    Organiser   :   Chem Eng Pilot Plant (CEPP), UTM
    Date   :   September 2006   Venue :   University Kuala Lumpur
    Participants   :   Researchers/lecturers

Undergraduate / Postgraduate Courses Taught / Facilitated

1. Computer Aided Process Simulation Project (SKC 4821)
    Level   :   Chemical engineering undergraduate (year 4 – final year)
    Format   :   Lecture and workshop
    Duration   :   June – October 2004

Affiliation   :   Chemical Engineering Dept, UTM

2. Membrane Separation Technology (SKC 4363)
Level   :   Chemical engineering undergraduate (year 4 – final year)
Format   :   Tutorial
Duration   :   2000 – 2003
Affiliation   :   Chemical Engineering Dept, UTM

3. Chemical and Biological Reaction Engineering (MBT 504)
Level   :   Biotechnology MSc program (MIT syllabus)
Format   :   Lecture and workshop
Duration   :   May – June 2003
Affiliation   :   Malaysia University of Science and Technology (MUST)

4. Process Engineering Fundamentals (PEF H81)
Level   :   Chemical engineering undergraduate (year 1)
Format   :   Lecture
Duration   :   September – December 2005, 2006
Affiliation   :   University of Nottingham Malaysia

5. Plant Design (PLD H82)
Level   :   Chemical engineering undergraduate (year 2)
Format   :   Lecture
Duration   :   February – May 2006
Affiliation   :   University of Nottingham Malaysia

6. Chemical Product Design (CPD H83)
Level   :   Chemical engineering undergraduate (year 3)
Format   :   Lecture
Duration   :   February – May 2006
Affiliation   :   University of Nottingham Malaysia

7. Process Simulation 1 (H8CPS1)
Level   :   Chemical engineering undergraduate (year 3)
Format   :   Lecture/workshop
Duration   :   September – December 2006
Affiliation   :   University of Nottingham Malaysia

Course Monographs Prepared
1. Aziz, R. A. and **Foo, D. C. Y.**, *Global and Local Outlook of Chemical Process Industry*, Course Monograph on "Chemical Engineering for Non-Chemical Engineers (CENCE)", Chemical Engineering Pilot Plant, UTM (2000).
2. Aziz, R. A. and **Foo, D. C. Y.**, *Membrane Separation Technology*, Undergraduate Subject Monograph, Dept. of Chemical Engineering, UTM (2000).
3. Aziz, R. A. and **Foo, D. C. Y.**, *Global and Local Outlook of Chemical Process Industry*, Module Monograph on "Integrated Process Plant Management Scheme (IPPMS)", Chemical Engineering Pilot Plant, UTM (2000).
4. Yunus, R. A., Manan, Z. A. and **Foo, D. C. Y.**, *Mass and Energy Balances*, Course Monograph on "Chemical Engineering for Non-Chemical Engineers (CENCE)", Chemical Engineering Pilot Plant, UTM (2000).
5. Aziz, R. A. and **Foo, D. C. Y.**, *Global and Local Outlook of Chemical Process Industry*, Course Monograph on "Chemical Engineering for Non-Chemical Engineers (CENCE)", Chemical Engineering Pilot Plant, UTM (2000).
6. Aziz, R. A. and **Foo, D. C. Y.**, *Membrane Separation Technology*, Undergraduate Subject Monograph, Dept. of Chemical Engineering, UTM (2000).
7. Aziz, R. A. and **Foo, D. C. Y.**, *Global and Local Outlook of Chemical Process Industry*, Module Monograph on "Integrated Process Plant Management Scheme (IPPMS)", Chemical Engineering Pilot Plant, UTM (2000).

8. Yunus, R. A., Manan, Z. A. and **Foo, D. C. Y.**, *Mass and Energy Balances*, Course Monograph on "Chemical Engineering for Non-Chemical Engineers (CENCE)", Chemical Engineering Pilot Plant, UTM (2000).

9. Aziz, R. A. and **Foo, D. C. Y.**, *Downstream Processing*, Course Monograph on "Bioreactor Operation and Troubleshooting", Chemical Engineering Pilot Plant, UTM (2000).

10. Manan, Z. A., **Foo, D. C. Y.**, Lee, L. E., Ooi, B. L., Tan, E. F., Lim, F. Y. and Tee, S. T., *Computer Aided Process Simulation by Design II for Windows*, Workshop Monograph on "Computer Aided Process Simulation by Design II for Windows", Dept. of Chemical Engineering, UTM (2000).

11. Manan, Z. A., **Foo, D. C. Y.**, Lee, L. E. and Ooi, B. L., *Chemical Process Design Achieve*, Process Plant Design Project Compilation, Dept. of Chemical Engineering, UTM (2000).

12. Yunus, R. A. and **Foo, D. C. Y.**, *Separation Processes*, Module Monograph on "Integrated Process Plant Management Scheme (IPPMS)" and "Chemical Engineering for Non-Chemical Engineers (CENCE)", Chemical Engineering Pilot Plant, UTM (2001).

13. **Foo, D. C. Y.**, Lim, F. Y. and Manan, Z. A., *Computer Aided Process Simulation by Design II for Windows*, Workshop Monograph on "Computer Aided Process Simulation by Design II for Windows", Dept. of Chemical Engineering, UTM (2001).

14. Yunus, R. A. and **Foo, D. C. Y.**, *Membrane Separation Processes and Cleaning*, Course Monograph on "A 2-day Hands-on Course on Membrane Separation Processes and Cleaning", Chemical Engineering Pilot Plant, UTM (2001).

15. Aziz, R. A. and **Foo, D. C. Y.**, *Global and Local Outlook of Chemical Process Industry*, Petronas Operator Training Monograph, Chemical Engineering Pilot Plant, UTM (2000).

16. **Foo, D. C. Y.**, and Manan, Z. A., *Computer Aided Process Simulation for Continuous and Batch Processes*, Workshop Monograph on "Hands-on Introduction to Process Simulation Modelling for Continuous and Batch Processes", Dept. of Chemical Engineering, UTM (2001).

17. **Foo, D. C. Y.** and Kumaresan, S., *Batch Process Modelling and Optimisation*, Course Monograph on "A Two-day Hands-on Course on Batch Process Modelling and Optimisation", Chemical Engineering Pilot Plant, UTM (2003).

18. **Foo, D. C. Y.**, *Computer Aided Process Simulation Project* (SKC 4821), Course Monograph, Dept. of Chemical Engineering, UTM (2004).

19. **Foo, D. C. Y.** and Kumaresan, S., *Wastewater Treatment Plant Design via SuperPro Designer*, Course Monograph on "A Four Day Course on Wastewater Treatment Plant Operation and Troubleshooting", Chemical Engineering Pilot Plant, UTM (2004).

20. Manan, Z. A. and **Foo, D. C. Y.** *Water Minimisation by Pinch Technology*, Course Monograph on "A Three and a Half Day Course on Maximising Energy and Water Savings in Process Industry Using Pinch Analysis", Chemical Engineering Department, UTM (2004).

21. **Foo, D. C. Y.** *Process Engineering Fundamentals*, PEF H81 Course Monograph, University of Nottingham (Malaysia Campus) (2005).

22. **Foo, D. C. Y.** *Plant Design*, PLD H82 Course Monograph, University of Nottingham (Malaysia Campus) (2005).

23. **Foo, D. C. Y.** *Chemical Product Design*, CPD H83 Course Monograph, University of Nottingham (Malaysia Campus) (2005).

Chemical Engineering Design Project Supervision, Chemical Engineering Dept, UTM

1. Crude oil refining – 14100 Barrel per day of gasoline production

Term / session	**:**	2003 / 2004 Session I
Duration	**:**	July – October 2003
Innovation	**:**	Hydrogen distribution network synthesis using hydrogen pinch analysis
Co-supervisor	**:**	Dr Amer Mohammed
Students	**:**	Chang Siu Hua (leader), Chan Hoey Yen, Fatimah Rubaizah bt Mohd Rasdi, Sham Zahyra bt. Abdul Rahman, Nor Adha bin Omar

2. Production of 2000 MTA of Oleic Acid from Palm Olein Using Immobilized Lipase

Term / session	**:**	2004 / 2005 Session I
Duration	**:**	August – October 2003
Innovation	**:**	i. Batch process simulation using SuperPro Designer
		ii. Batch heat integration by pinch analysis
Co-supervisors	**:**	Dr Lee Chew Tin, Liza Salleh (Bioprocess Engineering Dept, UTM)
Students	**:**	Chew Yin Hoon (Leader), Noor Diyana bt Salleh, Norhayati bt Moslan,

Rosmaria bt Abu Darim, Vinosh A/L Sinnappu

3. Production of 50,000 MTA of Formic Acid
Term / session	**:**	2004 / 2005 Session II
Duration	**:**	November 2004 – March 2005
Innovation	**:**	i. Process flowsheet synthesis using Douglas' hierarchical approach
		ii. Supertargeting for heat exchanger network synthesis (threshold problem)
Co-supervisors	**:**	Mohd Johari Kamarudin
Students	**:**	Tan Jully (Leader), Loh Kah Fang, Lidyayatty bt Abdul Malik, Nor Hafiziah bt Abdul Hamid, Rodiffa bt Nasir

4. Production of 10,000 MTA of Animal Feed Additives
Term / session	**:**	2005 / 2006 Session I
Duration	**:**	July – November 2005
Innovation	**:**	
Co-supervisors	**:**	Dr Lee Chew Tin (Bioprocess Engineering Dept, UTM)
Students	**:**	Cheng Shu Ian, Siti Marsilawati bt Mohamed Esivan, Mohd Irham bin Idris, Ilyanis bt Firdaus Jean Francois, Pua Hock Meng

Professional Involvement
1. Graduate Member, Institution of Engineers, Malaysia (co-opt member for Chem Eng Technical Division).
2. Member, Institution of Chemical Engineers Malaysia, IChEM.
3. Affiliate Member, Institution of Chemical Engineers UK, IChemE.
4. Member, Chinese American Chemical Society, US.

Major Symposiums / Courses / Workshops Attended
1. Attended Safety, Health and Environmental Seminar (SAFHENS '98), UTM (1998)
2. Safety Induction Course on "Hydrogen Sulphide" (H_2S), Shell Refining (FOM) Berhad (20 April 1999).
3. One-day course on "Understanding Natural Gas Hydrates and Acid Gas Compression and Injection" organised by CEPP, UTM (15 November 1999).
4. Attended and presented a paper in 14th Symposium of Malaysian Chemical Engineers (SOMChE 2000), Bangi, Selangor (30-31October 2000).
5. Attended and presented a paper in Regional Symposium on Chemical Engineering, (RSCE) 2000, National University of Singapore (11 – 13 November 2000).
6. Organised and attended a luncheon talk by Assoc. Prof. Dr. Duncan Fraser (University of Cape Town, South Africa) "Application of Mass Exchange Network Synthesis", CEPP, UTM (31 January 2001).
7. Attended and presented a paper at the 15th Symposium of Malaysian Chemical Engineers (SOMChE 2001), Johor Bahru, Johor (11-12 September 2001).
8. Organised and attended a Three Day Hands-on Course on "Energy and Waste Reductions in the Process Industries: A Pinch Technology Approach", BATC UTM KL (29 – 31 January 2002).
9. Attended/presented papers in 2nd World Engineering Congress(WEC2002), Sarawak (22-25 July 2002).
10. Attended and presented papers in Regional Symposium on Chemical Engineering (RSCE 2002), Kuala Lumpur (28 – 30 October 2002).
11. Attended and presented papers in National Science Fellowship (NSF) Annual Workshop 2002, Kuala Lumpur (17 – 18 December 2002).
12. Attended and presented paper in SHELL Student Paper Presentation Contest (SSPEC 2003), UTM (15 – 16 February 2003).
13. Attended and presented papers in Environment 2003, Batu Feringghi, Penang (18 – 19 February 2003).
14. Organised and attended a Two Day Hands-on Course on "Batch Process Modeling and Optimisation", BATC UTM KL (10 – 11 March 2003).
15. Attended National Symposium on Science & Technology "Strategic Research and Innovation towards Economic Development", Kuala Lumpur (28 – 30 July 2003).
16. Attended and presented papers in International Conference on Chemical and Bioprocess Engineering (ICCBPE 2003), Kota Kinabalu, Sabah (27 – 29 August 2003).
17. Attended and presented papers in 6th Conference on Process Integration, Modelling and Optimisation for Energy Saving and Pollution Prevention (PRES'03), Hamilton, Canada (26 – 29 October 2003).

Attended and presented papers in American Institute of Chemical Engineers (AIChE) Annual Meeting, San Francisco, United State (16 – 21 November 2003).

18. Panel for forum "Problem Solving in R&D" in Academic Excellence Motivation Program for Postgraduate Student in FKKKSA 2004.
19. Master of Ceremony for Conference on Best Practises for Process Plant Management, Kuala Lumpur (29 – 30 March 2004).
20. Presenter, FKKKSA Postgraduate Student Society May Workshop, "Advancement in your career – How professional network can help" (6 May 2004).
21. Presenter and exhibitor in The Malaysian Society for Molecular Biology and Biotechnology Scientific Meeting (MSMBB 2004), Melaka (19 – 22 July 2004).
22. Attended and presented papers at the 18th Symposium of Malaysian Chemical Engineers (SOMChE 2004), Universiti Teknologi Petronas, Tronoh, Perak (13 – 14 December 2004).
23. Master of Ceremony for Conference on 2nd Best Practises for Process Plant Management, Kuala Lumpur (14 – 15 March 2005).
24. Attended, presented papers and conducted workshop at 2nd International Conference on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment, and Management (HNICEM 2005), Manila, Philippines (17 – 20 March 2005).Attended and presented papers at the 2nd International Conference on Chemical and Bioprocess Engineering (ICCBPE 2005) in conjunction with the 19th Symposium of Malaysian Chemical Engineers (SOMChE 2005), Kota Kinabalu, Sabah (8 – 10 December 2005).
25. Attended and presented papers at the Regional Conference on Engineering Education (RCEE 2005), Johor Bahru (12 – 13 December 2005).

Major Symposiums / Courses / Workshops Attended

1. Attended Safety, Health and Environmental Seminar (SAFHENS '98), UTM (1998)
2. Safety Induction Course on "Hydrogen Sulphide" (H_2S), Shell Refining (FOM) Berhad (20 April 1999).
3. One-day course on "Understanding Natural Gas Hydrates and Acid Gas Compression and Injection" organised by CEPP, UTM (15 November 1999).
4. Attended and presented a paper in 14th Symposium of Malaysian Chemical Engineers (SOMChE 2000), Bangi, Selangor (30-31October 2000).
5. Attended and presented a paper in Regional Symposium on Chemical Engineering, (RSCE) 2000, National University of Singapore (11 – 13 November 2000).
6. Organised and attended a luncheon talk by Assoc. Prof. Dr. Duncan Fraser (University of Cape Town, South Africa) "Application of Mass Exchange Network Synthesis", CEPP, UTM (31 January 2001).
7. Attended and presented a paper at the 15th Symposium of Malaysian Chemical Engineers (SOMChE 2001), Johor Bahru, Johor (11-12 September 2001).
8. Organised and attended a Three Day Hands-on Course on "Energy and Waste Reductions in the Process Industries: A Pinch Technology Approach", BATC UTM KL (29 – 31 January 2002).
9. Attended/presented papers in 2nd World Engineering Congress(WEC2002), Sarawak (22-25 July 2002).
10. Attended and presented papers in Regional Symposium on Chemical Engineering (RSCE 2002), Kuala Lumpur (28 – 30 October 2002).
11. Attended and presented papers in National Science Fellowship (NSF) Annual Workshop 2002, Kuala Lumpur (17 – 18 December 2002).
12. Attended and presented paper in SHELL Student Paper Presentation Contest (SSPEC 2003), UTM (15 – 16 February 2003).
13. Attended and presented papers in Environment 2003, Batu Feringghi, Penang (18 – 19 February 2003).
14. Organised and attended a Two Day Hands-on Course on "Batch Process Modeling and Optimisation", BATC UTM KL (10 – 11 March 2003).
15. Attended National Symposium on Science & Technology "Strategic Research and Innovation towards Economic Development", Kuala Lumpur (28 – 30 July 2003).
16. Attended and presented papers in International Conference on Chemical and Bioprocess Engineering (ICCBPE 2003), Kota Kinabalu, Sabah (27 – 29 August 2003).
17. Attended and presented papers in 6th Conference on Process Integration, Modelling and Optimisation for Energy Saving and Pollution Prevention (PRES'03), Hamilton, Canada (26 – 29 October 2003). Attended and presented papers in American Institute of Chemical Engineers (AIChE) Annual Meeting, San Francisco, United State (16 – 21 November 2003).

18. Panel for forum "Problem Solving in R&D" in Academic Excellence Motivation Program for Postgraduate Student in FKKKSA 2004.
19. Master of Ceremony for Conference on Best Practises for Process Plant Management, Kuala Lumpur (29 – 30 March 2004).
20. Presenter, FKKKSA Postgraduate Student Society May Workshop, "Advancement in your career – How professional network can help" (6 May 2004).
21. Presenter and exhibitor in The Malaysian Society for Molecular Biology and Biotechnology Scientific Meeting (MSMBB 2004), Melaka (19 – 22 July 2004).
22. Attended and presented papers at the 18th Symposium of Malaysian Chemical Engineers (SOMChE 2004), Universiti Teknologi Petronas, Tronoh, Perak (13 – 14 December 2004).
23. Master of Ceremony for Conference on 2nd Best Practises for Process Plant Management, Kuala Lumpur (14 – 15 March 2005).
24. Attended, presented papers and conducted workshop at 2nd International Conference on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment, and Management (HNICEM 2005), Manila, Philippines (17 – 20 March 2005).Attended and presented papers at the 2nd International Conference on Chemical and Bioprocess Engineering (ICCBPE 2005) in conjunction with the 19th Symposium of Malaysian Chemical Engineers (SOMChE 2005), Kota Kinabalu, Sabah (8 – 10 December 2005).
25. Attended and presented papers at the Regional Conference on Engineering Education (RCEE 2005), Johor Bahru (12 – 13 December 2005).