To All Members, Date: 12 September 2005

CANDIDATES APPROVED TO SIT FOR PROFESSIONAL INTERVIEW

The following candidates have been approved to sit for the Professional Interview for Year 2005.

In accordance with Bylaws 3.7, the undermentioned names are published as having applied for membership of the Institution, subject to passing the year 2005 Professional Interview.

If any Corporate Member of the Institution has any reason as to why any of the candidates is not a fit and proper person for election, he should communicate in writing to the Honorary Secretary. Such communication should be lodged *a month* from the date of publication.

Ir. MC Hee
Honorary Secretary
The Institution of Engineers, Malaysia

TRANSFER APPLICANTS

Membership No	Name	Qualifications
	Civil Engineering	
21595	Chan Kan Yeong	BE (Hons) (Plymouth) (Civil, 99)
19257	Chong Kar Fatt	BE (UM) (Civil, 97)
21989	Khoo Teck Chong	BE (Hons) (UTM) (Civil, 99)
19880	Lee Peir Tien	BE (Hons) (UTM) (Civil, 2001)
24751	Lim Keh Seng	BE (Hons) (UM) (Civil, 99)
19716	Lim Yeow Chong	BE (Hons) (Warwick) (Civil, 99)
21941	Ng Sin Gee	BE (Hons) (Malaya) (Civil, 99)
20885	Poh Wei Nee	BE (Hons) (UMIST) (Civil, 99)
21551	Siauw Sze Kai	BE (Hons) (USM) (Civil, 2000)
17620	Soosaiselvanathan s/o Kilandesamy	BSc (Teeside Poly) (Civil, 84) - CNAA
23887	Tan Choon Wei	BSc (Manitoba) (Civil, 2002)
17293	Tang Lee Lee	BE (UTM) (Civil, 2000)
20585	Wan Yaw Choy	BE (Malaya) (Civil, 99)
23987	Wong Kake Keen Sherzanae Marian	BE (Hons) (Canterbury) (Civil, 2000)
	Electrical Engineering	
15657	Goh Gaik Sim, Karen	BE (Hons) (Monash) (Electrical, 92)
	Mechanical Engineering	
15470	Lee Tian Fook	PT I&II (IEM)/BEM) (Mech, 2001)
24482	Lim Vin Tze	BE (Hons) (Melbourne) (Mech, 98)
14788	Wan Mohamad Nasbi bin Wan Mohamad	BE (Hons) (Manchester) (Mech, 95)
20146	Syahrizal Abdul Talib	BE (Hons) (RMIT) (Mech, 98)
22388	Vekneswaran s/o Arasappan	BE (Hons) (UPM) (Mech, 99) MSc (Heriot-Watt) (2004)
21796	Wong Kae, Nicholas	BSc (Alberta) (Mech, 97)

NEW APPLICANTS

Name	Qualifications
Civil Engineering	
Aishah binti Othman	BSc (Aston) (Civil, 79)
Bhupinder Singh Brar s/o Kirpal Singh Brar	BE (Tech) (Hons) (Civil, 85) MSc (Brunel) (Bldg Serv, 86)
Chan Poh Choi	BE (Hons) (Birmingham) (Civil, 96)
Mohd Norazam bin Yasin	BE (Hons) (Coventry) (Civil, 98)
Mohd Yazid bin Ahmad	BE (Hons) (South Bank, London) (Civil, 94)
Salman Ullah Sheikh	BE (Hons) (UTM) (Civil, 2000) ME (UTM) (Civil & Struc, 2003)
Sharruddin bin Long	BE (Hons) (UTM) (Civil, 99)
Steven Tanggi Britius	Adv Dip (ITM) (Civil, 95)

MEMBERSHIP

NEW APPLICANTS	
Name	**Qualifications**
Civil Engineering	
Tiong Kung Yew	BE (Feng Chia, Taiwan) (Civil, 92) MSc (Illinois) (Civil, 95)
Electrical Engineering	
Ng Chun Siaw	BE (Hons) (UTM) (Elect, 93)
Suresh a/l Sankaran	BE (Mangalore) (Elect, 93)
Mechanical Engineering	
Azman bin Osman	BSc (Northeastern, USA) (Mech, 96)

ANNOUNCEMENT

ASEAN ENGINEERS' ATTACHMENT PROGRAMME IN MALAYSIA

The 20th Conference of the ASEAN Federation of Engineering Organisations (CAFEO) in 2002 concluded with a resolution, which includes:

1) AFEO member institutions to request their respective governments to offer training for engineers of the less developed member countries. The training should target areas that would alleviate poverty.

2) AFEO member institutions to arrange on-the-job industrial training and placements for engineers from less developed member countries.

3) AFEO to establish a common standard for benchmarks on engineering education and the development of professional engineers. The blueprint on benchmarks would improve engineering standards in ASEAN and also facilitate mobility of engineers and engineering services.

In line with this resolution, the following Malaysian companies are offering an attachment programme for qualified engineers particularly those from Cambodia, Laos, Myanmar and Vietnam to spur further cooperation between the countries and the possibility of joint-venture opportunities after completion of the attachment.

Engineers who go through the attachment programme will among other things study the system and gain an opportunity to understand the country and companies' practices. They will also gain knowledge and experience of the structure and system of practice in the engineering field.

PURPOSE OF ATTACHMENT PROGRAMME
Leading towards further cooperation between engineers and/or companies including possible Joint Venture opportunity upon completion of programme.

The companies offering the attachment programme are:

(A) G & P PROFESSIONALS SDN BHD

G & P Professionals Sdn Bhd consists of specialist consulting firms that provide a wide range of quality engineering services, which includes geotechnical, civil & structural, mechanical & electrical, infrastructure, maritime and project management.

The company is offering attachment in the field of geotechnical and structural consultancy experience to qualified candidates.

Qualifications
Candidates must have successfully gone through an engineering programme that is recognised by the ASEAN Engineers Register along with sufficient experience within the field. They must have at least five years' experience (must be recent) in geotechnical or structural engineering consultancy.

The Package
Duration: 3 months (extendable)
Allowance to cover living and transportation expenses of about RM2, 000/month.

Places Offered: Two

More information on G & P Professionals Sdn Bhd can be viewed via: http://www.gnpgroup.com.my

(B) AE CONSULTANT

AE Consultant is a consultancy firm providing Civil & Structural Engineering Services

The Company is offering attachment programme in the field of Structural Consultancy experience to qualified candidates.

Qualifications
Candidates must have a successful engineering programme that is recognised by The ASEAN Engineers Register along with sufficient experience within the Structural Engineering field.

They should have at least 4 years of recent experience in Structural Engineering design works and on site experience, and be able to communicate in English orally and in writing.

The Package
Duration: 3 to 6 month (extendable)
Allowance to cover living expenses and transportation of about RM 2,000/month. Accommodation can be arranged for the successful candidates upon request.

Places Offered: Two

More inquiries please email to ***aecsb@po.jaring.my*** attention to: Ir. Cheong Chee Kwong.

(C) MULTIMEDIA UNIVERSITY

Qualifications
The Multimedia University, Cyberjaya, Malaysia is offering one full time PhD scholarship to each CLMV country, covering a single return economy air ticket to home country, the tuition fees and a monthly allowance of RM 1,000.00 for accomodation and food. The Scholarship is offered for an initial period of one year, and is renewal upon excellent progress of the candidates until completion of the PhD programme (which normally takes a period of 3 years). The areas of research interest are in electrical and electronic engineering, telecommunications, information technology, robotics and automation, multimedia technologies and biometrics and bio-informatics. The candidates are expected to have a bachelor degree with a first class honours or equivalent; and a good Master's degree.

The Package
Duration: 12 months (but extended to 36 months with excellent progress)

Scholarship coverage: Tuition fees, stipend of RM 1,000.00 per month and single return economy air fare to home country.

Places Offered: One to each CLMV country

HOW TO APPLY?
Interested applicants are welcome to submit their completed official application form from MMU and the application form as attached to the registrar of their respective country for vetting. After vetting, forms of shortlisted candidates will be sent to the respective companies for selection.

The official form for postgraduate studies at MMU can be downloaded from: http://www.mmu.edu.my/~crpp/

More inquiries please email to ***sltan@mmu.edu.my***
attention to: Dr Tan Sin Leng

HOW TO APPLY?
Interested applicants are welcome to submit their completed official application form to the registrar of their respective country for vetting. After vetting, forms of shortlisted candidates will be sent to the respective companies for selection.

IEM DIARY

For further enquiries on the events below, please contact IEM Secretariat at 03-7968 4001/2 or visit IEM Homepage at http://www.iem.org.my

Information Technology Special Interest Group (ITSIG)
24 OCTOBER 2005
Time: 5.30 p.m. - 7.30 p.m.
Talk on "Artificial Intelligence"

Project Management Technical Division
15-16 NOV 2005 (SESSION 1)
17 NOV 2005 (SESSION 2)
A 3-Day Course on "Essentials of Project Management - Theory and Practice including Microsoft Project Tool"

IEM CONFERENCES FOR 2006
6 - 8 MARCH 2006
International Conference on Trenchless Technology
Sheraton Subang Hotel

20 - 25 MARCH 2006
Engineering Week

15 APRIL 2006
AGM & 47th Annual Dinner and Awards Night
IEM and Palace of the Golden Horses

7 MAY 2006
Open House
JKR Hall, Dewan Tan Sri Mahfoz Kahlid

8 - 12 MAY 2006
IEM/BEM Exam

9 - 11 MAY 2006
Conference on Concrete Engineering and Technology (CONCET)
Sheraton Subang Hotel

22 - 26 MAY 2006
11th Asian Congress on Fluid Mechanics
Berjaya Times Square Hotel and Convention Centre

27 - 30 AUGUST 2006
11th APCChE Congress
Kuala Lumpur Convention Centre (KLCC)

5 - 7 SEPTEMBER 2006
Brownfield Conference
Berjaya Times Square Hotel and Convention Centre

24 - 25 OCTOBER 2006
Conference on Current Trends in Food Engineering

6 - 10 DECEMBER 2006
24th Conference of ASEAN Federation of Engineering Organisation (CAFEO)
DoneChan Palace Hotel, Vientiane Capital, Laos

IEM CONFERENCES FOR 2007
8 - 11 MAY 2007
16th Southeast Asian Geotechnical Conference (SEAGC 2007)
Venue : Sheraton Subang Hotel & Towers, Subang Jaya
E-Mail : 16seagc@iem.org.my
Website : http://www.16seagc.com
(Call for Papers)

1 - 5 AUGUST 2007
3rd World Engineering Congress (WEC)

CONFERENCE & SEMINAR

14-15 November 2005 (Kuala Lumpur)
17-18 November 2005 (USM, Penang)
EARTHQUAKE ENGINEERING FOR PROFESSIONALS
Venue : Blok A, JKR Kuala Lumpur (14-15 Nov), USM, Penang (17-18 Nov)
Organiser : USM, JKR
Tel : 04-599 6204 / 6206
Fax : 04-594 1009
E-mail : eefp05@yahoo.com, taksiah@eng.usm.my
(Invitation to Register)

24 - 25 November 2005
7TH MMU INTERNATIONAL SYMPOSIUM ON INFORMATION AND COMMUNICATIONS TECHNOLOGIES (M^2USIC 2005)
Venue : PJ Hilton, Petaling Jaya
Organiser : Faculty of Information, Science and Technology, Multimedia University
Tel : 06-252 3111 / 03-8312 5259
Fax : 06-231 8840 / 03-8318 3029
E-mail : juraya@mmu.edu.my / azhar.matzim@mmu.edu.my
Website: http://www.mmu.edu.my/m2usic
(Invitation to Register & Call for Papers)

21 - 22 November 2005
MOVING THE NATION WITH ITS TECHNOLOGIES – SEMINAR ON INTELLIGENT TRANSPORT SYSTEM IN MALAYSIA
Venue : Conference Hall, 6th Floor, Blok A, Kompleks KeriaRaya, Jalan Sultan Salahuddin, Kuala Lumpur
Organiser : IHT, REAM, IEM
Tel : 03-5513 6521 / 5513 6522
Fax : 03-5513 6523
E-Mail: IHTMB@po.jaring.my
(Invitation to Register)

23 - 25 November 2005
11TH ASIA-PACIFIC VIBRATION CONFERENCE
Venue : The Andaman Resort, Langkawi
Organiser : APVC
Fax : 03-2693 2854
E-mail : apvc2005@gmail.com
Website : www.apvc.net
(Invitation to Register)

28 November - 1 December 2005
THE SIXTH IEEE INTERNATIONAL CONFERENCE ON POWER ELECTRONICS AND DRIVE SYSTEMS (PEDS'05)
Venue : Renaissance KL Hotel
Organiser : IEEE Power Electronics Society / UTM
Tel : 07-553 5341
Fax : 07-556 6272
E-mail : shahrin@fke.utm.my
Website : http://www.ieee.org/peds05
(Invitation to Register)

13 - 15 June 2006
INTERNATIONAL CONFERENCE IN THE BUILT ENVIRONMENT IN THE 21ST CENTURY (ICiBE 2006)
Venue : Rennaisance KL Hotel
Organiser : UiTM
Tel : 03-5544 4202 / 4306 / 4352
Website : http://www3.uitm.edu.my/faculties/faps/international_conference.htm
(Call for Papers)

27 - 31 August
17TH INTERNATIONAL CONGRESS OF CHEMICAL AND PROCESS ENGINEERING
Venue : Praha, Czech Republic
Organisers : CSCHI, EFCE, AIChE
Fax: +420 221 082 366 or +420 233 335 529
E-mail : org@chisa.cz, paper@chisa.cz
Website : www.chilsa.cz/2006
(Call for Papers)

3 - 8 September 2007
WATER RESOURCES MANAGEMENT AND IRRIGATION AND DRAINAGE SYSTEMS DEVELOPMENT IN THE EUROPEAN ENVIRONMENT
Venue : Pavia and Rome, ITALY
Organiser : ICID-CIID, ERWG
Tel : +39 06 488 4728
Fax : +39 06 488 4728
E-mail : me.scarascia@politicheagricole.it / info@italicid.it
Website: www.italicid.it
(Call for Papers)

Talk on Digital Terrestrial Television Broadcast - 9 April 2005

By: Ir. V. Jeewa, B.E. (Hons) (UTM), CEI (Part 2), MIEM, MIEE, P.Eng

INTRODUCTION

TV signals both in the studio and at the transmitter-receiver end have been in the analogue form ever since the inception of Black/White TV almost 60 years ago. Colour TV was introduced around 40 years ago but the world could not decide on a single system. This has resulted in 3 major Colour TV systems namely NTSC, PAL and SECAM.

A significant development took place in the mid 1980's, which was High Definition TV (HDTV). However, there was again no acceptance by the broadcast industries around the world to agree to a common standard. Partly due to this, HDTV never gained popular usage.

Another phase of development then took place in the 1990's. This was the transition from analogue to digital. Studio equipment such as Video Tape Recorders, Telecines and Cameras started using digital electronics and were interconnected using digital communication links. The fact that the cost of maintenance and operation of Digital equipment is less than analogue equipment contributed to the change over. In Malaysia all new TV studio centres are digital and the older ones are phasing out their analogue equipment. In addition, there is also no more analogue TV studio equipment being manufactured. In brief words, there is no turning back for Malaysia from the digital path.

Therefore, only the broadcast from the transmitter to the home remained analogue. This analogue broadcast link was prone to problems such as multipath interference, ghosting and noise. It was also in inefficient in terms of RF spectrum as more and more TV channels crowded the air waves. Analogue TV broadcast also cannot send multimedia information. In blunt terms, analogue broadcast systems i.e. NTSC, PAL SECAM cannot perform as an effective component of ICT in Malaysia.

DIFFERENT INTERNATIONAL DIGITAL TV STANDARDS

Digital technology was then developed to replace these analogue systems. However, the international community again could not agree to a common standard and 3 systems emerged namely Advanced Television Systems Committee (ATSC) from USA, Digital Video Broadcast –Terrestrial (DVB-T) from Europe and Integrated Services Digital Broadcast –Terrestrial Wideband (ISDB-Tw) from Japan.

All 3 system technical committees have approached Malaysia independently in order for their own particular system to be adopted. The DTTV chosen for Malaysia must not only be technically superior but also can become a commercial success. It must be used by as many countries as possible to ensure programme interchange. Large scale manufacture of receivers is essential to bring down their costs to the Malaysian public.

BENEFITS OF DIGITAL VIDEO BROADCAST–TERRESTRIAL (DVB-T)

DVB-T offers the best choice and can adapt to Malaysian requirements. DVB-Satellite is already in use in Malaysia. In addition DVB-T has advanced software/middleware capability which can satisfy future needs of Malaysia. The software aspect of DVB-T is an essential element in driving the IT industry.

The advanced countries in the world have already started digital terrestrial services and have announced plans to switch off analogue TV services in the next decade. These advanced countries would enjoy the new services which DVB-T would provide. This would isolate Malaysia if digitisation does not take place. The Malaysian public would be facing a digital divide. Local manufactures of analogue TV sets, VCR would find no markets for their products.

The advanced countries represent a huge market worth billions of dollars in terms of consumer electronic items such as Digital TV receivers. Malaysia can tap this huge market by manufacturing the receivers locally and exporting them. Thousands of jobs can be created and the socio-economic aspect of Malaysia can be protected.

DVB also would create new services such as IT, Multimedia and Software engineering. Software is needed for the digital receivers and other equipment. There would be a strong demand for IT workers and again new jobs in this field can be created. With its lower labour costs, Malaysia can also become a centre for producing new software and selling it to the other countries.

CONCLUSION

Analogue TV would become obsolete in the more advanced countries and this would also affect Malaysia in many ways. Digital Terrestrial TV is being introduced and three different standards have emerged but DVB-T is the best choice for Malaysia. ■

This talk was delivered in conjunction with the Electrical Engineering Technical Division and was attended by 42 participants.

ANNOUNCEMENT

Effective from **1 January 2006**, non-IEM Members attending the evening talks in IEM would be charged RM 20.00 for their attendance. IEM Members are also required to bring along their IEM Membership card failing which they will also be charged RM 20.00. Failing to attend the function upon confirmation letter already issued would be invoiced accordingly.

"Pump It Up!" One Day Pump Seminar

By: Ir. Ong Hoo Teong, MIEM

On 29 July 2005, a technical seminar on Pumping System Design, Installation and Operational Concerns for Engineers and Facility Managers was successfully organised by the Mechanical Engineering Technical Division of IEM. A total of 50 participants attended the seminar, which featured three speakers from the pump industry. The seminar aimed to provide comprehensive exposure to engineers and facility management staff to appreciate fundamentals of pump and its engineering applications as well as to highlight some modern cost effective and hassle free operational issues in pumping system.

The honorable first speaker was Mr. Chua Hee Poh, the Application/ Sales Manager of Siabex Engineering Sdn Bhd. Mr. Chua explained the construction of key components, what factors concern of pump installation, various types of pumps and design of pipes and fittings. He quoted an example how to calculate pump head in piping system. The purpose of this exercise is to ensure the pump head should not be oversized in order not to waste power energy. Mr.Chua also strongly emphasised method of operation during testing and commissioning which is important to pro-long life span of pump and motor.

During afternoon section, the second speaker Mr. Delip Singh, the Director of Eastwest Online (M) Sdn Bhd, talked about the various types of instruments for pump alignment, the construction and function of bearings. He also strongly mentioned that proper service maintenance is essential and this would help to increase the reliability of pumping system and minimise downtime and energy cost. Through a unique live demonstration kit, participants also had the opportunity to witness the proper methods.

The third speaker was Mr. Hardeep Singh, the General Manger of Mega Seal Sdn Bhd, an approved applicator and agent for Glassflake International (USA) and RAM (UK) Coating System. He continued the seminar to illustrate retrofitting works to keep and maintain impeller of pump for long lasting operation. Mr. Hardeep Singh also strongly recommended owners and designers to keep in mind that good pumping system shall take into consideration future serviceability and ease of maintenance.

The participants took this valuable opportunity during the Q&A session to share their real engineering problems with the speakers. The speakers pointed out the solutions to problems via a stimulating demonstration and lively photos.

The Organising Chairman, Ir. Ong Hoo Teong ended the seminar with his closing remarks. He then presented to the speakers, certificates and token of appreciation for the great course conducted. ■

ANNOUNCEMENT

11th Asian Pacific Confederation of Chemical Engineering (APCChE) Congress 2006 - ChemTex 2006

The Chemical Engineering Technical Division is pleased to announce that IEM would be hosting the 11th Asian Pacific Confederation of Chemical Engineering (APCChE) Congress in 2006.

Aptly themed "Innovation Sustaining Future Business", the congress is scheduled from 27 to 30 August 2006 at the latest state-of-the-art convention centre, the Kuala Lumpur Convention Centre.

In conjunction with the congress, an exhibition entitled "ChemTex 2006" (to highlight the Malaysian Chemical Industry Achievement Showcase) would also be held. The showcase is aimed at highlighting the achievements of local R&D companies, institutions and universities that have won medals or awards in innovation, research and development.

IEM members from the Chemical Engineering discipline would have received the brochure on the event by now and the Organising Committee would like to take this opportunity to announce that local participants would be getting the rebates on the registration fee as follows:

Early Bird Registration	IEM Member	RM 1,600.00
(before 15 March 2006)	Rebate	RM 750.00
	Fee after Rebate	RM 850.00
Regular Registration	IEM Member	RM 1,900.00
(on or before 15 June 2006)	Rebate	RM 600.00
	Fee after Rebate	RM 1,300.00
Full Fee	IEM Member	RM 2,300.00
(after 15 June 2006)		

The Organising Committee looks forward to the support and participation of the IEM Members to make this event a success. ■

Half Day Technical Seminar on "Quality Initiatives in Engineering Based Organisations"

Reported by: Ir. Dr Ng See Seng, B.E. (Hons) (Malaya), M. Sc. (Manchester), PhD (UM), KMN, AMN, FIEM, P.Eng

The seminar was held on the 22 July 2005 at Bangunan Ingenieur, Petaling Jaya.

The first speaker was Mr. Joseph Tan whose topic was "The De Bono Approach For Generating Quality Solutions".

Lateral thinking is about changing concepts and perceptions. Frequently, trying harder to accomplish a task in the same direction may not be as useful as changing direction. In other words, putting in great effort with the same approach may not necessarily succeed.

Sometimes, parties in a conflict tend to adopt adversarial thinking which means each side takes a different position and then seeks to prove that the other side is wrong. In a way, adversarial thinking completely lacks a constructive, creative or design element. It was intended solely to discover the 'truth', not to build anything.

To overcome an adversarial impasse, parallel thinking can be attempted when both sides are made to think in parallel in the same direction. There is co-operative and co-coordinated thinking. The direction itself can be changed in order to give a full scan of the situation. But at every moment each thinker is thinking in parallel with all the other thinkers. There need not be complete agreement. Statements or thoughts which are indeed contradictory are not argued out but laid down in parallel. In the final stage, the way forward is 'designed' from the parallel thought that have been laid out.

A practical technique of carrying out parallel thinking in generating quality solutions is by the De Bono Approach. Its Six Thinking Hats Method is being used widely around the world partly because it speeds up thinking and partly because it is so much more constructive than the traditional argumentative thinking.

The second speaker was Mr Tan G T. His topic was "Hassle Free Implementation and Maintenance of ISO 9001:2000 for Service/Consulting Business".

The eight quality management principles of the Standard are:

i. Customer-focus;
ii. Leadership;
iii. Involvement of people;
iv. Process approach;
v. System approach to management;
vi. Continual improvement;
vii. Factual approach to decision making;
viii. Mutually beneficial supplier relationship.

Product/service realisation is guided by Management Responsibility, Resource Management and Measurement, analysis, improvement.

Unlike manufacturing, engineering consultancies and service industries have intangible outputs. Thus, it can become a grave mistake if the system designer is to copy from manufacturing without considering their differences.

To ensure successful certification in the service and consultancy sectors, the following are necessary:

i. Assemble an effective team with adequate experience;
ii. Have adequate project time frame;
iii. Select quality management consultants with industrial experience;
iv. Work in a win-win partnership with management consultants to ensure customisation of the Quality Management System.

The third speaker was Ir. Lum Youk Lee. His topic was "Overview of Quality Issues of Local Manufacturing and R&D Environment".

For quality issues in manufacturing, Ir Lum coverage was very extensive. He first touched on Edward Deming's Quality Circles, 14 Points as well as Taichi Ohno's Waste Analysis. Later, he highlighted internal and external factors which affect quality. The internal factors include Design Culture and Production Culture while the external factors are Weak Consumer Culture and Product Pricing.

If the factors are not appropriately addressed, the end results could be:

i. Lack of professionalism in design and manufacturing
ii. Lack of creativity and innovation
iii. Inferior finished products

If this trend persists, Malaysia's role in international commerce and industry shall always remain as a trading nation or be involved in minor value-adding activities. It cannot be a great manufacturing hub!

As for R&D, Ir. Lum argued that quality may not be expensive if one were to think out of the "box". Further, quality in R&D can be enhanced with education, computerisation, information and inculcating the right attitude. Other measures include benchmarking identified success factors against the best practices and lastly to emulate proven strategies. ■

Talk on Accessing Hazardous Chemicals to Health in Malaysia

Summary of talk presented by Ir. Ahmad Nordeen bin Mohd. Salleh, former Chairman of Chemical Engineering Technical Division, IEM on 27 November 2004.

By: Dr Law Chung Lim

The use of chemicals in the modern world today is inevitable for the benefits of mankind and in doing so improving the quality of modern life. While residents in this world are enjoying the modern lifestyle, the workers who have to handle chemicals at their workplaces, are constantly or daily being exposed to hazardous chemicals to health. These workers must be adequately protected against the exposure of these chemicals. In Malaysia, conducting chemical health risk assessment at the workplace handling chemicals is now a compulsory, in accordance to the new regulations enacted in 2000.

It is estimated that there are 11 million known chemicals and about 10,000 commercial chemicals are hazardous to health. Out of these, 150 to 200 chemicals are carcinogenic. Today, the use of hazardous chemicals at workplaces is causing numerous health risks to the workers who are handling them. As a result, they are constantly being exposed to these chemicals. If the exposures exceed the respective Threshold Limit Values (TLV), the workers' health is at risk.

The possible adverse illnesses or diseases due to over-limit-exposure of these hazardous chemicals are:

- Allergic contact Dermatitis - skin inflammation especially the hands;
- Systematic poisoning- effects the vital organs or nervous system;
- Cancer due to carcinogenic chemicals like benzene or VCM;
- Teratogenesis (damage to unborn fetus);
- Mutagenesis (damage to genes, could affect future generation);
- Pneumoconiosis (cause lung deterioration –irreversible effects);
- Asphyxiation of gases like CO, H2S, nitrobenzene, etc.
- Scrotal cancer-produced by rubbing contact with worker's clothing impregnated with mineral oil

To protect the workers against these adverse health effects, the Malaysian Government had enacted the Regulations in April 2000. The purpose of this regulation is to provide a legal framework for the employer to control all the hazardous chemicals with respect to their use and to set workplace exposure standards so as to protect the health of affected employees handling hazardous chemicals. It stipulates the responsibility of the employer to protect its employees and other persons' health from being affected by the hazardous chemicals. Under the Occupational Safety and Health (Use and standard of Exposure of Chemicals hazardous to Health) Regulations 2000, employers are no longer permitted to use any chemical that is hazardous to health, unless a risk assessment has been conducted at the workplace.

Now, it is the responsibility of an employer to:

- Identifying chemicals hazardous to health.
- Complying with the permissible exposure limits.
- Conducting chemical heath risk assessment.
- Taking actions to control hazardous exposure.
- Labeling and re-labeling chemical containers.
- Providing information, instruction and training on chemical safety.
- Monitoring affecting employee's exposure while at work.
- Conducting health surveillance of the affected workers.
- Posting of warning signs.
- Record keeping and up dating the established Chemical Register.
- To get a qualified assessor to conduct chemical health risk assessment (CHRA);
- To control chemical exposures from being exposed to those workers handling them;
- To carry out monitoring of some chemicals; and
- To arrange for health surveillance for those affected employees.

Assessment of risk to health on the following areas will be carried out by a qualified assessor:

- The existing measures, procedures and equipment necessary to control in case of any accidental hazardous chemical leakage or spillage, due to process or container failure.
- The necessary employees' exposure monitoring program.
- The necessary health surveillance program.
- The necessary training and retraining requirements to those employees involved including management staff.

After the assessment, the assessor will determine whether the following topics are satisfactory or not;

- The existing and potential health risk of hazardous chemicals affecting those exposed employees.
- The adequacy of the current safe use of the hazardous chemicals.
- The nature of the health hazard and the degree of exposure.
- The adequacy of existing control measures.
- Total control measures requirements needed.
- The necessity for any monitoring activity needed.
- The necessity for health surveillance needed.
- The training and retraining requirements needed

A case conducted by the speaker was presented, followed by his findings and recommendations. He also reminded employer and company that those that is found guilty for not complying the regulations are subjected to pay a fine not exceeding RM10,000, or go imprisonment not exceeding 1 year or both. Whereas for continuing offences, the company will have to pay fine not exceeding RM1,000 for each offence day. He finally concluded that the conduct of CHRA by a practicing professional engineer (chemical) has served its purpose in Malaysia. The Malaysian Government is heading in the right direction in protecting workers from the adverse effects of hazardous chemicals to health in workplaces. ■

The chemical technical division of IEM thanks Ir. Ahmad Nordeen for delivering an interesting and informative talk to our members.

Talk on Control of Hazardous Chemicals

Summary of talk presented by Mr. Chong Hon Fong, from Department of Chemistry, Malaysia on 27 November 2004

Reported by: Dr Law Chung Lim

The speaker began the talk by introducing the Department of Chemistry, Malaysia; its responsibilities, its activities and etc. to the audiences.

Hazardous chemicals according to Occupational Safety and Health are substances which gives chronic or acute health effects, or causes physical injuries viz. explosive, flammable, unstable (reactive). Whereas hazardous wastes are toxic, or corrosive, or flammable, or reactive material that is unwanted and cannot be reused or is a spent chemical that must be disposed.

Under the Use and Standard of Exposure of Chemicals Hazardous to Health 2000 [USECHH 2000], company has to follow by the following requirements:

- Identification of chemicals hazardous to health
- Permissible exposure limit
- Assessment of risk to health
- Action to control exposure
- Labelling
- Information, instruction and training
- Monitoring of exposure
- Health surveillance
- Medical removal protection
- Warning sign
- Record keeping

Under Classification, Packaging and Labelling (Cpl) Regulations 1997, Substances are classified based on physicochemical properties (such as explosive, oxidising, flammable), or based on health effect (such as tToxic, harmful, corrosive, irritant). Packaging is required to prevent leakage as well as safe for handling. And information of chemicals, danger symbols, risk phrases have to be labeled.

The governing legislations are Environment Quality Act 1974, Environmental Quality (Scheduled Wastes) Regulations, 1989, Pesticide Act 1974, and etc. The Environment Quality Act, 1974 stresses on prevention, abatement, control of pollution and enhancement of the environment. Environmental Quality (Scheduled Wastes) Regulations, 1989 emphasise on notification, disposal, and treatment of schedule wastes, responsibility of waste generator, storage and inventory record, spillage and accidental discharge. Whereas the Pesticide Act, 1974 focus on control of the importation, use and manufacture of pesticides. It should be noted that import, manufacture and sale of an unregistered pesticide is prohibited.

In handling of hazardous chemical effectively, employer has to control chemicals hazardous to health through the following control measures:

- Elimination
- Substitution
- Total enclosure of the process and handling systems
- Isolation of the work to control the emission
- Modification of the process parameters
- Application of engineering control equipment
- Provision of approved personal protective equipment

Assessment of risk to health is required to be conducted by qualified assessors, where the assessment will indicates that whether monitoring of exposure, or health surveillance program is required.

The speaker finally briefed the audience on the status and progress of Chemical Weapons Convention (CWC), Basel Convention, Stockholm Convention, and Rotterdam Convention.

The chemical technical division of IEM thanks Mr. Chong Hon Fong for delivering an interesting and informative talk to our members. ■

Latest Malaysian Standards on Fire Alarm and Portable Extinguishers

By: Ir. Wong See Foong, Chairman

Under SIRIM's Industrial Standards Committee for Fire ISC (M), the Technical Committee for Dry Fire Protection Systems, TC(D), which was assigned to prepare the Malaysian Standards for Fire Alarm Systems recently completed the following standards that has now been published:

- M.S. 1745: Part 1: 2004 Fire Detection and Alarm Systems – Part 1: Introduction;
- M.S. 1745: Part 2: 2004 Fire Detection and Alarm Systems – Part 2: Control and Indicating Equipment;
- M.S. 1745: Part 3: 2004 Fire Detection and Alarm Systems – Part 3: Audible Fire Alarm Devices;
- M.S. 1745: Part 4: 2004 Fire Detection and Alarm Systems – Part 4: Power Supplies;
- M.S. 1745: Part 11: 2004 Fire Detection and Alarm Systems – Part 11: Manual Call Points.

In addition, the following standards on portable fire extinguishers have also been published:

- M.S. 1539: Part 1: 2002 Specification for Portable Fire Extinguishers Part 1: Construction and Test Methodology;
- M.S. 1539: Part 3: 2003 Specification for Portable Fire Extinguishers Part 3: Selection and Installation.

With this, the previous Malaysian Standard for portable extinguishers, M.S. 1179: 1990 is now superceded. Members should be aware that all extinguishers manufactured in accordance with M.S. 1179 are no longer approved by the Jabatan Bomba dan Penyelamat Malaysia with effect from 13 January 2005.

The above Malaysia Standards are available in the IEM Library for members to refer and can also be purchased through the Library. ■