Date: 20 June 2005

To All IEM Members,

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 these candidates is not a fit and proper person for election, he should communicate in writing to the Hon. Secretary. Such communication should be lodged a month from the date of publication.

Ir. M. C. Hee
Hon. Secretary
The Institution of Engineers, Malaysia

TRANSFER APPLICANTS

Membership No	Name	Qualifications
Civil Engineering		
24239	Lim Jee Gin	BE (Hons) (UPM) (Civil, 99) MSc (UPM) (Project Mgmt, 2003)
21801	Lim Sheau Rou	BE (Hons) (UTM) (Civil, 2000)
21806	Loi Yiaw Hui	BE (Adelaide)(Civil, 2001)
19511	Mohd Azhar Helmi Soo Abdullah @ Soo Boon Chet	BE (Hons) (UKM) (Civil, 2000)
11967	Mohd Nordzi bin Mohd Rafdzi	BSc (Hartford, USA) (Civil, 86)
19301	Sak Ei Yat, Neilson	BE (Hons) (Melbourne) (Civil, 99)
13973	Tam Eng Sun	BE (Hons) (UTM) (Civil, 92)
15955	Tan Peng Leak	BE (Hons) (USM) (Civil, 2000)
16760	Tho Sook Ling	BE (Hons) (Malaya) (Civil, 99)
14822	Yoganathan s/o Shanmugam	BE (Victoria) (Civil, 91)
Electronic Engineering		
22575	Loo Kin Leong	BE (Hons) (Wales) (E'tronic & Elect, 2001)
22393	Sim Ngee Thiam	BE (Hons) (MMU) (E'tronic, 2000) MEng. Sc (MMU) - 2003
Mechanical Engineering		
19299	Lee Chong Chiang	BE (Hons) (UTM) (Mech-Marine Tech, 98)
23229	Lee Kuan Tiong	BE (Hons) (Hertfordshire) (Mech, 2001)
13767	Sii How Sing	BE (South Australia Inst. of Tech) (Mech, 90) MEng. Sc (Malaya) – 1996 PhD (Staffordshire) - 2001

NEW APPLICANTS

Name	Qualifications
Chemical Engineering	
Mohd Sobri bin Takriff	BSc (Arkansas) (Chem.,90) MSc (Arkansas) (Chem, 93) PhD (Arkansas) - 1996
Parthiban Siwayanan	BE (Hons) (UTM) (Chem, 94)
Civil Engineering	
Anuar bin Md. Ali	BE (Hons) (UTM) (Civil, 99)
Asmaniah bt Mohd Khairi	BE (Hons) (Sheffield) (Civil, 90)
Azizah binti Disa	BSc (George Washington) (Civil, 93)
Muraliraj s/o K. Silvaraj	BE (Hons) (East London) (Civil, 93)
Syed Nasser bin Syed Abdul Hamid	BSc (Miami) (Civil, 85)
Wong Bun Hee	BSc (Utah State) (Civil, 98) ME (New York) (Civil, 2003)
Yong Deung Ming	BE (Hons) (National Uni. of S'pore) (Civil, 88) PhD (National Uni. of S'pore) - 1994
Electrical Engineering	
Cheng Kok Chen	BE (Hons) (Southampton) (Elect, 98)
Lai Fui Khee	BSc (Southern Illinois) (Elect, 89)
Mariani bt Morshidi	BSc (Houston) (Elect, 87)
Yong Hua Keh	BE (NSW) (Elect, 93)
Electromechanical Engineering	
Hasrul Misrin bin Hussain	BE (Loughborough) (Electromech, 95)
Mechanical Engineering	
Ling Ting Ngie	BE (Hons) (Teeside Poly) (Mech, 87) CNAA
Nordin bin Abdul Ghani	BE (Hons) (UTM) (Mech-Aeronautics, 89) ME (Ensica, France) (Aeronautical) – 1999

IEM DIARY

22 July 2005
1/2 DAY TECHNICAL SEMINAR ON "QUALITY INITIATIVES IN ENGINEERING BASED ORGANISATIONS"
Venue : Bangunan Ingenieur, Jalan Sultan, Petaling Jaya
Organiser : Mechanical Engineering Technical Division, IEM
E-mail : Zul@metd.org or zul@iem.org.my
(Invitation to Register)

27-28 July 2005
SEMINAR ON "TECHNICAL ISSUES IN PHARMACEUTICAL ENGINEERING"
Organiser : Faculty of Chemical Engineering, Faculty of Pharmacy
Supported : Chemical Engineering Technical Division, IEM
Tel: 603-55436320, 603-55436319
Fax: 603-55436300
(Invitation to Register)

29 July 2005
"PUMP IT UP!" 1 DAY TECHNICAL SEMINAR ON PUMPING SYSTEM DESIGN, INSTALLATION AND OPERATIONAL CONCERNS FOR ENGINEERS AND FACILITY MANAGERS
Venue : Bangunan Ingenieur, Jalan Sultan, Petaling Jaya
Organiser : Mechanical Engineering Technical Division, IEM
E-mail : Zul@metd.org or zul@iem.org.my
(Invitation to Register)

4 August 2005
"A GREAT PLACE TO WORK" ONE DAY TECHNICAL SEMINAR ON DESIGN, MAINTENANCE AND MANAGEMENT OF AIR AND WATER QUALITY FOR MODERN BUILDINGS
Venue : Bangunan Ingenieur, Jalan Sultan, Petaling Jaya
Organiser : Mechanical Engineering Technical Division, IEM
E-mail : Zul@metd.org or zul@iem.org.my
(Invitation to Register)

CONFERENCE & SEMINAR

10 - 14 July 2005
7TH WORLD CONGRESS OF CHEMICAL ENGINNERING
Venue : SECC, GLlasgow, Scotland
Organiser : Congress Secretariat, Concorde Services Limited, 42 Canham Road, London W3 7SR, United Kingdom
Tel : +44 (0) 20 8743 3106
Fax : +44 (0) 20 8743 1010
E-mail : info@chemengcongress2005.com
(Invitation to Register)

21 - 22 July 2005
CONFERENCE ON AUTOMATION AND COMPUTER NETWORKS
Venue : Kuala Lumpur Convention Centre
Organiser : ACEM
E-mail : sec@acem.po.my
Website : www.acem.com.my
(Call for Paper)

25 - 29 July 2005
"TRAFFIC ENGINEERING AND SAFETY"
Venue : Stockholm, Sweden
Organiser : Road Institute Riyadh-Saudi Arabia & Royal Institute 0f Technology Stockholm - Sweden
Tel : +966-1-2787070
Fax : +966-1-2781716
E-mail : info@roadinstitute.edu.sa
(Invitation to Register)

26 - 27 July 2005
"WATER POLICY, TECHNOLOGY AND UTILISATION FOR INDUSTRY AND PUBLIC PURPOSES"
Venue : Auditorium Binakarya Komplek Bidakara Pancoran, Jakarta
Organiser : Indonesian Institute of Chemical Engineers (BKK-PII)
Tel : 62+21+8307806
E-mail : bkkpii@gmail.com
(Invitation to Register)

9 - 11 August 2005
7TH ASIA PACIFIC ITS FORUM & EXHIBITION
Venue : Hotel Ashok, New Delhi, India
Organiser : The Association for Intelligent Transport Systems (AITS), India
E-mail : call4papers@itsindia.org
Website : www.itsindia.org
(Invitation to Register)

27 - 29 September 2005
ISG GEOSPATIAL SOLUTIONS FOR MANAGING THE BORDERLESS WORLD
Venue : Grand Plaza Park Royal Hotel, Batu Feringghi, Penang
Organiser : USM, UPM, KLIUC
Website : www.civil.eng.sum.my/isg2005
(Invitation to Register)

REPORT

Building Services Technical Division

One Day Seminar on "High Impact Business Writing for Engineers"

By: Ir. Lim Chean Fung

The abovementioned seminar was held at the IEM Conference Hall, Bangunan Ingenieur on the 7 April 2005. A total of 35 participants, many of whom from a wide range of industries keen to learn how to communicate more effectively attended the seminar. Most of the participants were particular interested to learn to communicate effectively with people who were not necessarily experts in their own fields, but whose business was affected in one way or another by engineering outcomes.

The seminar was led by the facilitator, Mr. G. Sivalingam, through a day in which he covered the basics of written business communication, with the main thrust being on who the reader was and that what he or she needed, was the key to effective communications. The speaker emphasize on five major criteria of good business writing, as listed below, in his seminar.

1) Common Aspects of Business Communications
2) Structured Writing Principles
3) Effective Writing Techniques
4) Effective Use of Visuals
5) Reports

The importance of the criteria was illustrated through examples, and more importantly, through practical exercises, which the participants had to do. The purpose and reason for these exercises was to enable the participants to experience and gained at the very least, exposure to different ways of writing business communications. For some, the very idea that there could be more that one way to communicate the cold facts and figures, perhaps with tact and diplomacy, was an eye-opener.

At the end of the day, the participants went back with different things, reflecting their diverse backgrounds and mindsets. Some went back resolved to try new ways of communicating technical material to non-technical people; some had their minds opened to the possibility of doing things in a new way, and some with ideas sparked by sharing and discussing with their fellow participants. At the end of the seminar, the speaker, Mr. G. Sivalingam, was presented with a memento and certificate as a token of appreciation. ■

Talk on Engineering Geology of Rock Slopes

By: Ir. Eddie T. S. Ng

A talk on the above subject was given by Associate Professor Tan Boon Kong on 7 September 2004 with the presence of 39 participants.

It was emphasized in this talk that rock slopes may be encountered in many projects, such as highways, housing, dams etc. and are considered to be an important component in engineering. Particularly, with their long-term stability which is of paramount concern.

This talk discusses the engineering geology of rock slopes, namely on the lithology, structures (discontinuities) and weathering. It is important that a detailed engineering geologic assessment of rock slope stability be carried out in order that recommendation on its stability is justified either with or without any stabilisation or remedial measures.

Various case studies have been highlighted in this talk that covers the problematic material known as Graphitic Schist found in various parts of Peninsular Malaysia especially at Ayer Keroh, Johor area and at Pos Slim to Lojing Highway project. It has been known in Graphitic Schist that due to its lithology, structures and weathering, shallow failures on gentle slopes (< 1v : 2h) are still common.

Assoc. Prof. Tan also recommended that a good reference on rock slope stability and mechanism of failures based on fracture planes is the book entitled `Rock Slope Engineering' by Hoek and Bray. Furthermore, he has highlighted that circular slip analysis is not applicable in rock slope analysis. He also explained the use of stereonets in rock slope stability analysis and the pros and cons of drawing stereonets manually compared to input into the computer. He also emphasized that usually the problematic zone of rock instability is found in the Grade III rock classification zone.

The following questions have been raised

1. **Can you comment about the Bukit Lanjang rock slope failure?**

   Answer : No comment but the investigation was carried out by Asbi & Associates and their findings were presented at the Malaysian Road Congress 2004.

2. **How do you distinguish Graphitic Schist?**

   Answer : By its colour, usually dark grey or black. (have to recognise schist in the first place)

3. **Why is Graphitic Schist more prone to failure?**

   Answer : This is due to chemical reactions that cause swelling that affects the soil structure which then reduces the soil strength and hence causes failure. (chemical reactions involving the oxidation and hydrolysis of pyrite, FeS2, in the schist).

4. **How do we distinguish all the `bad' soils?**

   Answer : This is the duty of the Geologist. ■

Report on "The International Conference on The Application of Stresswave Theory to Piles 2004"

By: Ir. Mun Kwai Peng, Organising Chairman of Conference

The 7th International Conference on The Application of Stresswave Theory to Piles 2004 was held in Kuala Lumpur PJ Hilton on the 9-11 August 2004. More than 100 participants from all over the world attended the conference. A total of 59 technical papers were published in the proceedings. The papers were divided into the following subjects.

1. Integrity Testing
2. Special Integrity Tests
3. Theory of Dynamic Testing
4. New Development of Dynamic Load Testing
5. Statnamic Pile Testing
6. Interface Models and Testing Behavior.
7. Case Studies
8. Experimental Dynamic Testing

The Keynote Lecture was delivered by Dr George Goble from the USA on the paper "Pile Driving Stress Wave Measurement and Evaluation-Past, Present and Future Potential" A total of 8 special lectures were delivered as follows:

1. **Samuel G Paikowsky**
   "Drop Weight Dynamic Testing of Drilled Deep Foundation".
2. **Y.K.Chow**
   "Three-Dimensional Stresswave Analysis of Pile Integrity Tests".
3. **Peter Midendorp**
   "Thirty Years of Experience with the Wave Equation Solution Based on the Method of Characteristic".
4. **Frank Rausche**
   "Application and Correlation of the Wave Equation Analysis Program GRLWEAP".
5. **Patrick Bermingham**
   "Mobilisation of Capacity During Rapid Axial Load Testing".
6. **Tatsumori Matsumoto**
   "Research on Plugging of Open-Ended Steel Pipe Piles and Practice in Japan".
7. **Garland Likins**
   "Correlation of CAPWAP with Static Load Tests".
8. **Julian Seidel**
   "Dynamic Pile Testing and Design Verification for Downdrag Evaluation of Single Piles"

The next International Conference on the Application of Stresswave Theory to Piles will be held in 2008 at Lisbon , Portugal. ■

Comments on the report *"The Role of Engineers on Hill-Site Development"* written by Ir. Tan Yean Chin, IEM Bulletin, March 2005, Blue Pages, Report, page 12

Commnet 1 by: Assoc. Prof. Tan Boon Kong, Affiliate Member, IEM

The above report (title should have been "The Role of Engineers on Hill-Site Development") by Ir. Tan Yean Chin addresses the role of engineers, in particular geotechnical engineers, in hill-site development. It also touches on the role of geologists in such works. Unfortunately, the article contains some incorrect or inaccurate statements that need to be rectified, lest it leads to misconceptions or misunderstandings by readers of the bulletin in general, and engineers at large, especially with regard to the role of geologists in hill-site development.

The corrections and comments are as follows (*in italics*):

1) …. geologists talk about millions of years ago as recent.
The youngest period in the geological time scale, namely the Quaternary Period, is divided into 2 epochs: a) Holocen (Present to 10,000 years Before Present) and b) Pleistocene (10,000 years to 2 million years Before Present). Recent is included within the Holocene.

Incidentally, while many engineers like to poke fun at the geological time scale. One must not forget that it is the geological time scale that helps to put in order the stratigraphy or sequence of rock formations at a particular site. Hence the site geology which is all - important for construction works. On a lighter note, somebody once wrote: "Geologic Time Scale - although not digital, it keeps great time!"

2) When a hill-site is located on rock or colluviums, the engineer normally calls for a geological report on the characteristics of the rock slope, its geological histories, joints of rock, etc.
The geological report would normally be in the form of an Engineering Geology report, which, among other things, contains results of detailed mapping of joints/other discontinuities for every rock slope, stereoplots/stereonet analyses of potential failure modes/mechanisms of failures, identify potential failure blocks that need stabilization, and also suggestions to assist the engineer in proposing possible remedial measures such as cutting back/regrading, rock bolting, wire nets, etc. These suggestions for stabilisation or remedial measures by the Engineering Geologist are based on Conceptual Ideas only - DETAILED ANALYSES/ CALCULATIONS, DESIGN & CONSTRUCTION OF THE REMEDIAL WORKS ARE OF COURSE THE DOMAINS OF THE ENGINEER.

While deciphering the geological history of a site is important in understanding the present site geology, and helps in predicting what can be expected at the site (and hence related engineering problems), it forms but one of several tasks of the geologist. Nevertheless, the geological history of a site is by no means less important.

3) Geologists, on the other hand, are scientists who study the formation and the structure of the Earth.
The field of Geology now includes various applied geology disciplines such as Engineering Geology, Mining Geology, Petroleum Geology, etc. where the emphasis is on the application of geology to different industry or user. Hence, Engineering Geology for Civil Engineering/Geotechnical Engineering works, which encompasses more than just the study of the formation and the structure of the Earth (see 2 above, for example).

4) ….and refrain from offering engineering solutions or making comments relating to engineering problems.
While the engineering solutions must, at the end of the day, come only from the engineer, suggestions for possible solutions, such as in the case of stabilisation measures for rock slopes, can be made by the Engineering Geologist as part of his recommendations after a detailed study on the stability of the rock slope (as in 2 above, for example).

In addition to providing the detailed site geology/characteristics, making comments relating to engineering problems is part and parcel of the Engineering Geologist's scope of works as he has to address project-specific problems which are engineering problems, such as slope instability, etc. Identifying potential engineering problems and possible causes, albeit geology-related, is very much the responsibility of the Engineering Geologist. (The Engineer provides and implements the final engineering solutions).

5) In geotechnical design, the engineer needs to plan and carry out ground investigations in relation to the structure….
Nothing wrong with this paragraph, except that it would have been better to add that in ground investigations or site investigations (S.I.), the use of geological maps and prior geological knowledge of the site and vicinities would greatly facilitate the planning of the S.I. programme, and interpretation of the S.I. results. The borehole data/soil profiles have to be consistent with the geological model or site geology.

6) The geologist from JMGM (Jabatan Mineral & Geosains Malaysia) will give their comments based on the geological point of view. It is important that the comments given by JMGM are restricted to the field of geology only.
Again, comments by JMGM must also relate to engineering geology and associated engineering problems, and suggestions for possible remedial measures, if possible.

7) *As a final comment, both Engineering Geologists and Geotechnical Engineers have their definite roles to play in construction works in general, and in hill-site development in particular. Some of the views in this regard have been presented earlier in the Malaysian Geotechnical Conference 2004 in March 2004, and it is perhaps timely to reproduce part of the views here:*

"While each group should know exactly where he stands and his domain of practice, namely the engineering GEOLOGIST versus the geotechnical ENGINEER, there exists an interactive boundary or boundary zone where input and contributions by both parties would be for the benefit of the project, and the betterment of the professions. Perhaps the statement "the geologist should concentrate on identifying the geological or geology-related problems, while the engineer provides the engineering solutions" can best sum up the roles that these two groups of practitioners play." (Tan, 2004). ■

Tan, B.K. (2004). The Practice of Engineering Geology In Malaysia. Special Lecture, Proc. Malaysian Geotechnical Conf. 2004, IEM, 16-18 March 2004, Subang Jaya, 131-148.

Comment 2 by: Dr Chow Weng Sum,
B.Sc (Honours, Applied Geology, UM.), M.Sc (Engineering Geology, UM.), PhD (Engineering Geology, UM.), Part II (Civil Engineering) Engineering Council Examination, UK. Director, Technical Services Division Minerals and Geoscience Department Malaysia

I would like to refer to the paper written by Ir. Tan Yean Chin on the Role of Engineers on Hill-Site Development, which pertained mainly to the design of foundation of civil structures and to studies on the stability of hill slopes that appeared in Jurutera Bulletin March 2005. Comments and clarification on the paper from the Department of Minerals and Geoscience are as follows:

The Department of Minerals and Geoscience Malaysia (JMG) was formed in 1999 with the merger of the Mines Department and the Geological Survey Department. The professional staff in JMG consist of geologists, mining engineers, mineral engineers, geochemists, geophysicists and researchers with vast experience and expertise. The Department is well equipped with equipment for field investigations and has a laboratory for the testing of soils, rocks, concrete and aggregates. JMG has through the years, acquired vast experience on site investigations, laboratory testing and is capable of designing stable slopes for mine faces as well as slope cuttings. JMG has also conducted laboratory tests for the private sector.

Many local authorities have requested JMG to give comments on applications for development including those on hill-sites as JMG has the knowledge, experience and expertise. It is also noteworthy to point out that whenever a large landslide had occurred, JMG would be requested to carry out investigations. These investigations had identified the geological attributes that might have affected the stability of the slope as well as the triggering factors.

In recent years, JMG has carried out studies involving geological terrain mapping for landuse planning whereby, four attributes such as slope gradient, morphology, activity conducted on the land and erosion or instability factor are studied. From this study, thematic maps such as landform maps, erosion maps, physical constraint maps, engineering geology maps, and construction suitability maps are produced. The map of interest to the local authorities is the construction suitability map, where there are four classes of land i.e. Classes I, II, III and IV.

In 2003, the Cabinet Committee on Development in Highland Areas and Islands adopted and modified the above classification, whereby a guideline has been set, permitting construction activities on Class I and Class II land *(generally with gradients less than 25°)*. Development on Class III land *(generally with gradients between 25° to 35°)* is subject to an EIA study and approval. Development on Class IV land *(generally with gradients more than 35°)* is not allowed because it will face extreme geotechnical limitations, very high engineering costs, require very intensive site investigations and most likely, the land is unsuitable for development. This guideline is set to minimise environmental degradation due to development in highland areas and to protect the surrounding ecosystems.

It is true that the time-scale in a geologist's perception may be millions of years. This scale of time frame may be what a paleontologist, a petroleum geologist or a structural geologist is involved in his study or research. However, an engineering geologist may be looking at geological processes that may be a decade, a year or even months old. To enlighten further, an engineering geologist has undergone training or has attended lectures on soil mechanics and rock mechanics.

I hope the above comments will clear any misconception on the capability and the role played by JMG on development on hill-sites. ■

Visit to New Straits Times Press (NSTP)

By : Ir. Choo Kok Beng, Chairman of Standing Committee on Corporate Affairs

The IEM President, Ir. Prof. Dr Ow Chee Sheng and Chairman, Standing Committee of Corporate Affairs, Ir. Choo Kok Beng accompanied by IEM Secretariat staff, viz. Pn. Abriza and Pn. Nurul visited NSTP at Balai Berita, 31, Jalan Riong, 59100 Kuala Lumpur on Friday, 12 May 2005. The Group of Editors from NSTP namely, Y. Bhg. Dato' Kalimullah Hassan **(Group Editor – In Chief/ Executive Director)**, Mr. Salehuddin Othman **(Group Editor & Director of English Publications)**, Mr. Brendan Pereira **(Deputy Group Editor, NSTSB)**, Mr. Azizi Othman **(Chief News Editor/ Ketua Pengarang Berita)**, Mr. Rajan Moses **(Executive Editor)** and the **News Desk Journalists** met IEM group. The objective of visit was to seek advice from Y. Bhg. Dato' Kalimullah on how IEM could get good media coverage for the engineering fraternity to support the rebranding strategy for IEM. Y. Bhg. Dato' Kalimullah Hassan briefed the IEM group on NST's operations that included list of resource personnel from Berita Harian, Harian Metro/Metro Ahad and New Straits Times for the IEM Secretariat to contact. In return IEM is to establish a contact point/person for NST. He added that NST Editors would contact IEM Special Interest Groups (i.e. Technical Division) for write-up and information for publishing a series of feature articles. The immediate topics of current interest are:

(i) Lady Engineers
(ii) Young Engineers
(iii) IEM as the centre of Engineering Excellence in the Asean Region
(iv) Engineers contribution that has make the Country proud
(v) IEM as the leadership organisation for the ASEAN Engineering Fraternity
(vi) New engineering based technology with business potential for the Business Times
(vii) Position papers on topics relevant to National Development
(viii) Achievement of IEM or members of IEM

Furthermore, NST reporters would contact IEM to obtain views on immediate issue such as floods, landslides, tsunami, and accidents at Jelapang toll and etc. The response time is **within 24 hours**. An immediate response is needed because the newspaper has their timeline or deadlines. NST can assist to highlight the position paper put up by IEM which has been submitted to the appropriate Ministry for the interest of the Community. At the end of the discussion, Y. Bhg. Dato' Kalimullah added that to have a Greater ***Media Coverage***, IEM should have similar meetings with other media organisations like Bernama, The Star, The Sun, Utusan Malaysia and Nanyang Siang Pau to get their support. The meeting ended with the presentation of IEM souvenir to Y. Bhg. Dato' Kalimullah Masheerul Hassan and other Group Editors for their advice and guidance. ■

"ENGINEER'S GREEN FRIDAY" 1/2 Day Seminar On Global Warming And Ozone Depletion Impact And The Search For Alternative Refrigerant"

By: Ir. Lum Yoke Lee

On May Friday, 13th afternoon, the seminar was held in a relaxing atmosphere at the 2nd Floor of Finnegan Irish Restaurant, Jalan Sultan Ismail, an event sponsored by DAIKIN Air Conditioning Sdn Bhd and BMTT Corporation (ARGONITE), the organiser Mechanical Engineering Technical Division had made it a comfortable afternoon to talk on a serious matter- Global Warming (GW) and Ozone Depletion (OD).

Sankey Sue (DAIKIN Singapore) being the most lively speaker of the day, started the day reminding the engineers on cause and effects of Global Warming and Ozone Depletion, which we had long forgotten since our high school days. Along with great pictures of the "nature's wonders", he reminded us not to further damage the earth and be a responsible citizen of the earth. Sankey highlighted "ignorant" is no longer an excuse as many useful web links and resources are available where engineers can obtain live readings and visual illustrations on Co_2 and ozone level for any designated country. His eye-opening prelude made participants well prepared for the next brain bashing sessions.

Second speaker, CH Tan (BMTT Corporation Sdn Bhd) presented his view on a practical approach by Engineers to reduce GW and OD effect, is to employ environmentally friendly fire extinguishing agents. Stunning reports such as plant officers suffocating in a CO_2 filled environmental and deep-sea whales found dead with evidence of cumulative residues of halogenated compounds from chemical based fire retardants are reminders to engineers that we have not done our best to endorse environmentally friendly products in our industries. A pleasant turn of events in favour of mother nature is that after years of deliberation, Kyoto Protocol is officially enforced by associated countries (including Malaysia) on 16 February 2005. The signatories of Kyoto Protocol, agrees to its master time line to reduce and eliminate Global Warming Potential (GWP) substances including fire extinguishing agents. Tan further explained that to avoid detrimental engineering decisions, we need to be alert of some confusing industrial jargons. 'Clean Agents' such as CO_2 can be inerting but causes harmful effects on human personnel. Other clean agents that are chemical based are effective in extinguishing fires but contribute to global warming in thousands fold compared to CO_2. CH Tan summarised that the rule of thumb for Engineers is simple - employ systems of ZERO Global Warming potential (GWP) and ZERO Ozone Depletion Potential (ODP) and consider the total cost of ownership in choosing fire protection systems. Knowing Kyoto Protocol is already in effect, let us not repeat the mistake of employing an extinguishing agent which will be phased out in the near future as in Montreal protocol where a fraction of global GDP was spent on replacing Halon.

The last speaker, Ir. Jack Chan started with the brief development history of refrigerant since the day of sulphuric acid and Chemogene in the 1850s to William Carrier's Methyl Choloride as refrigerants in the 1920s - but these early refrigerants are mostly flammable and toxic. That initiated the alternative development of chloro-fluorocarbons (CFCs) based refrigerants by Henne and McNary, Midgley in the 1930s, followed by hydrochloroflorocarbons (HCFCs), these became standard refrigerants until 1970s when Mario Molina identified CFCs as ODP substance and later discoveries of HFCs as a greenhouse substances. Then in the 90s Air Conditioning and Refrigeration Institute (ARI) initiated Evaluation Program (AREP) along with the industry's effort to source for alternative refrigerants to R-22, taking into consideration the 3 main criteria: Physical Consideration (Fractionalisation, flammability and toxicity), Environmental Consideration (ODP, GWP, Atmospheric Lifetime and efficiency (COP). 407C and 410A as the two out of 18 alternatives considered as leading candidates to replace HCFC-22 in refrigerant-in-tube comfort cooling applications. However these refrigerants have higher saturation curve which require higher operating pressure and because of its nature as none miscible with traditionally widely used mineral oil system, proper vacuuming and good drier is essential for the optimal operation of the system. Ir. Chan summarised that the search is ongoing, however engineer's are trying hard to strike a balance balance to the commercial and environmental impacts.

Later in the afternoon, the crowed moved on to session two of the day – hang loose dinner buffet and cocktail net working, specially arranged by Chief Chef, Mr. Jana and Operation Manager, Mr. Sam. After handing over Carlesberg sponsored door gifts to every participants, Restaurant Manager, Mr. Frank Murray whom had actively participated in all the earlier three technical seminars summarised the GREEN FRIDAY and gave his remarks: "Serious Professional Engineers gathering in an Irish Restaurant and talked about "Saving the Earth and Ozone", I call this the first in Malaysia and we should do it every Friday!" ■

IEM TRAINING CENTRE SDN. BHD. (127273-K)

1009A, 9th Floor, Block E, Kelana Parkview Tower,
No. 1, Jalan SS 6/2, Kelana Jaya, 47301 Petaling Jaya, Selangor Darul Ehsan
Telephone No. 03-78049851 Fax No. 03-78049131 E-mail: iemtc@mail.ru

JULY 2005		
COURSE TITLE	DATES	VENUE
BEM Course – Safety & Health At Work	12 & 13 July	IEM Training Centre
BEM Course – Code Of Ethics/Regulations	18 & 19 July	IEM Training Centre
BEM Course – Engineering Management Practice	25 & 26 July	IEM Training Centre
Risk Management – Nature, Concepts, Identification & Control	28 & 29 July	IEM Training Centre

AUGUST 2005		
COURSE TITLE	DATES	VENUE
Contract Administration For Site Personnel	1 & 2 August	Kota Kinabalu
BEM Course – Engineering Management Practice	3 & 4 August	Kota Kinabalu
IT Applications For Project Management	8 & 9 August	Kota Kinabalu
Turnkey Design & Build Contracts – Nature, Rights, Obligations & Duties	9 & 10 August	IEM Training Centre
BEM Course – Safety & Health At Work	11 & 12 August	IEM Training Centre
BEM Course – Code Of Ethics/Regulations	16 & 17 August	IEM Training Centre
BEM Course – Safety & Health At Work	16 & 17 August	Lumut
IT Applications For Project Management	17 & 18 August	KL
Contract Administration For Site Personnel In Engineering/Construction Contracts	23 & 24 August	Kuching
BEM – Code of Ethics/Regulations	25 & 26 August	Kuching
BEM Course – Engineering Management Practice	29 & 30 August	IEM Training Centre

***For further enquiries, request for course contents and registration form, please contact Mr. Choy/Puan Haslinda at the above address, telephone number or fax number.)*

NOTICE

IEM BY-ELECTION TO FILL CASUAL VACANCIES FOR COUNCIL SESSION 2005/2006

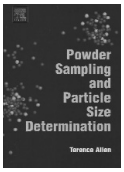
Nominations are invited from Members for the By-Election for Session 2005/2006. Notices were also posted on the IEM Notice Board and the IEM website on 30 May 2005. Nomination closed on 24 June 2005 at 12.00 noon.

It is expected to send out voting papers by post to all Corporate Members residing in Malaysia around 6 July 2005. Any other Corporate Members may in writing request to the Honorary Secretary to have the voting papers forwarded to him.

The voting paper shall be returned to the Honorary Secretary in a sealed envelope so as to reach him by **30 July 2005**.

Dato' Ir. Pang Leong Hoon
Election Officer
17 June 2005

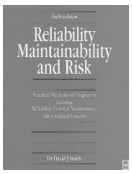
NEW BOOKS IN THE LIBRARY



POWDER SAMPLING AND PARTICLE SIZE DETERMINATION
TERENCE ALLEN / ELSERVIER
004615 / REFERENCE SECTION

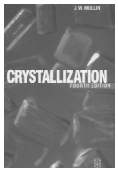
This book is the most comprehensive text on particle size measurement published to date and expresses the experience of the author gained in over fifty years of research and consulting in particle technology. Previous editions have found wide use as teaching and reference texts. For those not conversant with particle size analysis terminology, techniques and instruments, the book contains basis information form which instrument selection can be made.

For those familiar with the field, it provides and update of new instrumentation – particularly on-line or in – processes instruments – upon which the control of particle processes is based. Overall, the book continues to be the international reference text on particle size measurement and is a must for practitioners in the field.



RELIABILITY MAINTAINABILITY AND RISK :
Practical Methods for Engineers Including Reliability Centred Maintenance Safety-related Systems – 6th Edition
DR DAVID J SMITH / BUTTERWORTH HEINEMANN
620.43 / 004614

Reliability, maintainability and Risk has been updated to ensure that it remains the leading reliability textbook – cementing the book's reputation for staying one step ahead of the competition. This sixth edition incorporates brand new material on the accuracy of reliability prediction and common cause failure based on the author's PHD research work. Dr. David J Smith approaches these subjects form an entirely original and unique viewpoint, emphasising that the need to demonstrate that safety-related systems have been assessed against target integrity levels is now commonplace in most industries, and the material contained in this book addresses these growing needs.

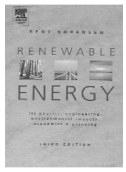


CRYSTALLISATION – 4TH EDITION
J. W. MULLIN / ELSEVIER
004616 / REFERENCE SECTION

Crystallisation is used at some stage in nearly all process industries as a method of production, purification or recovery of solid materials Crystalisation give clear accounts of the underlaying principles, a review of the past and current research themes, and guidelines for equipment and process design. This view edition introduce and enlarges upon such subjects as :

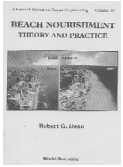
- control and separation of polymorphs and chiral crystals
- micro-and macro-mixing and the use of computer fluid dynamics
- seeding and secondary nucleation in bath crystallisation processes
- incorporation of upstream and downstream requirements into design proceduresfor crystallisation plant
- computer-aided molecular design and its use in crystal habit modifier selection

IEM Library is open from 9.00 a.m. to 6.00 p.m. on every Monday to Friday, and from 9.00 a.m. to 4.00 p.m. on every Saturday



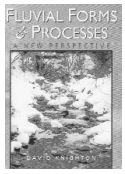
RENEWABLE ENERGY : Its Physics, Engineering, Environment Impacts, Economics & Planning – 3rd Edition
BENT SORENSEN / ELSEVIER
620.10 / 004613

- reference paths: the reader may follow the general process from source through to distribution, or concentrate on a specific type of energy
- the material is divided into undergraduate text and advanced options
- details the significant expansion of the field since the publication of previsions edition
- updated materials includes offshore wind technologies, polymer and organic solar cells, new developments in hydrogen storage, pipeline transmission, biofuel processes and wave energy devices, evaluation of biomass options, and an outlook on the renewable energy market Renewable energy is essential reading for undergraduates and graduates in Earth Sciences, Environment Sciences, and Engineering. Researchers will find it a useful reference tool. The book will also prove invaluable to consultants and planners working in both the public and private sectors of government and international agencies.



BEACH NOURISHMENT – THEORY AND PRACTICE :
Advanced Series on Ocean Engineering – Volume 18
ROBERT G. DEAN / WORLD SCIENTIFIC
551 / 004600

This book is written for engineers, students of coastal processes and laypersons interested in beach nourishment, which consists of the placement of large quantities of good quality sediment on the beach to advance the beach to advance the shoreline seaward. The improvement of project performance through proper design and the predictability of performance are emphasized. The overall longevity of a project is addressed as are local erosion areas. The roles which wave height, project length and sediment quality play in project performance are addressed quantitatively. The results are illustrated through reference to a number of monitored nourishment projects. Biological and economic aspects of beach nourishment are addressed.



FLUVIAL FORMS AND PROCESSES : A NEW PERSPECTIVE
DAVID KNIGHTON / ARNOLD
551.483 / 004606

This is a completely revised and updated edition of David Kinghton's highly-regarded book on rivers which looks at the wide range of forms developed by natural rivers and the processes responsible for that development. The book combines empirical and theoretical approaches, and provides a critical assessment of the various schools of thought which have emerged for dealing with adjustment in the fluvial system. It is illustrated throughout by a superb ranges, photographs, and tables. Starting with the network scale, the book examines the interaction of hillslopes, drainage networks and channels, and goes on the consider catchment hydrology and catchement denudation. Within-channel processes are analysed in detail, from the mechanics of flow and thresholds of erosion to sediment transport and deposition. In terms of the major morphological components of river channels, the books examines the nature of river adjustment, particularly with respect to equilibrium concepts, and concludes with an extensive enquiry into channel changes through time, as effected by flood discharges, climatic change and human activities.

BOOKS RECOMMENDATION FORM

Lib. Records : _____

With reference to the above subject, I would like to recommend the following books for your consideration with the view of purchasing them for the IEM Library.

Title of the book : _____

Author (s) : _____

Publisher : _____ Price : _____

Year published : _____ Edition : _____

Description/Content of the book: _____

_____

(attach more detail if required)

Proposer : _____ Membership No. / Grade : _____

Tel. Number :_____ Signature : _____