INSTITUTE OF MATERIALS MALAYSIA

# NEWSLETTER

APRIL-JUNE 2001

ISSUE NO. 10 | WEBSITE : www.iomm.org.my | For Members Circulation Only

## 3RD MATERIALS CONFERENCE & EXHIBITIONS

Discover and exploit the Unique Opportunity enabling you to showcase your latest ideas/innovations and interact globally with industry players at:

### "FABRICATION TECHNOLOGY"
### (Incorporating CORROSION 2001)

A Prestigious World-Class Event Highlighting

### EXPERIENCES & CHALLENGES

*(*Learning Experiences *Supporting Innovations*
**Facing Challenges *Discovering Opportunities)*

*To be officiated by:*

**Y.B. Dato' Law Hieng Ding**

***Minister of Science Technology & Environment***

**30th - 31st October, 2001**

**Mandarin Oriental, Kuala Lumpur, Malaysia**

Online registration and details at:

www.materialsplanet.com

Tel: +603.2272.5002 / +6013.3213.617

e-mail :events@materialsplanet.com fax : +603.2272.5003

Event Postal Address: B-9-8, Menara Pelangi, 8 Jln Ang Seng 2, 50470 Kuala Lumpur

**A 'MUST ATTEND' EVENT FOR ALL**: **CEOs, Directors, Managers, Officers *Scientist, Metallurgists, Engineers, Consultants, Chemist, Technologists *End User Facility Managers & Specifiers *Governmental & Public Works Organisations *Construction, Architectural & Design Managers, Consultants *QA&QC Specialist *Purchasing Agents & Officers *R&D and Technical Directors & Managers* **INVOLVED IN:** *Fabrication, Materials Manufacturing, Corrosion & Coatings, Surface Preparation, Application & Inspection Technologies, Galvanizing, Materials Supplies & Distribution, Engineering, NDT & Contracting Works & Consultancies, Testing Equipment, Equipment & Tools Manufacturing, ICT Solutions, Health, Safety and Environment Control & Regulations, Education and Human Resource Training and Development, Decision Making, Oil & Gas Industries, Shipyard Engineering, Power Generations, etc...*

**REGISTER NOW! ATTRACTIVE Lucky Draws to be given away!**
**- overseas & local travel, electrical items and more...**

Use registration form on the back cover:

*Hosted by:* IMM INSTITUTE OF MATERIALS MALAYSIA

*Endorsed by:* Ministry of Science Technology & Environment, Malaysia

The Institute Of Materials, UK

*Supported by:* PETRONAS, Bank Industri, GROVE, DRESSER Flow Control

*Managed by:* HenBen International c/o HenBen Resources Sdn Bhd (492174-H)

# INSTITUTE OF MATERIALS, MALAYSIA
## *(INSTITUT BAHAN MALAYSIA)*

# "FABRICATION TECHNOLOGY"
# (Incorporating CORROSION 2001)

The **Institute of Materials, Malaysia**, brings you an exciting event for the year 2001. The many years of experiences, best practices, new ideas and innovations will be made available and shared with those who understand the need to continue learning from the world of **EXPERIENCES AND CHALLENGES**.

This year prestigious International Event and Conference will bring you proven fabrication technology covering topics on:

- Fabrication Materials – CRA materials, Polymers
- Fabrication Technology and Processes
- Trends & Development in Welding Technology
- Codes and Specification – Comparison of the various specifications, codes changes
- Health, Safety & Environment – Expectation and current practices
- Corrosion Protection & Coating
- Galvanizing Technology & Processes
- Quality and Inspection

Showcase project case studies (lessons learnt):-

- related to the above topics.
- experiences on EU standardization of practices and codes.
- future trending in fabrication technology.
- effect of costing on the use of technology.
- world market changes – effect on business.

- The importance and challenges toward Quality Assurance.
- Use of environmental friendly coatings i.e. water borne coatings.
- TSA Technology
- Use of Steel Detailing and Fabricating Computer Software
- Will the use of Technology reduce Maintenance Cost?
- Maintenance Methodology - Painting, retrofits, etc.

**REGISTER NOW! ATTRACTIVE Lucky Draws to be given away!**
**- overseas & local travel, electrical items and more...**

Use registration form on the back cover or
visit **www.materialsplanet.com** for online registration

## SECRETARIAT ADDRESS


## INSTITUTE OF MATERIALS, MALAYSIA

LOT 1908, BATU 7, JALAN BUKIT KEMUNING, **40460 SHAH ALAM, SELANGOR D.E.**, MALAYSIA.
TEL: 03-5218228, DL/FAX: 03-5226352, FAX: 03-5216116/03-5219413
E-MAIL: iomm@po.jaring.my WEBSITE: www.iomm.org.my
CONTACT PERSON: PUAN ROHAYA RAHIM (ADMIN/TRAINING EXC.) OR (MS. ELAINE TAN)





**EDITORIAL ADDRESS**
Prof. Dr. Che Husna Azhari
c/o Pusat Pembangunan Akademik
Bangunan Pentadbiran
Universiti Kebangsaan Malaysia
43600 B. B. Bangi, Selangor D.Ehsan, Malaysia
Tel: 03-89293885 Fax: 03-89264816
E-mail: mck@vlsi.eng.ukm.my

**Dr. Samad Solbai**
**IMM Immediate Past President**
c/o Superlative Material Sdn Bhd
22, USJ 17/7C, 476000 Subang Jaya,
Selangor D.E., Malaysia
Tel: 03-80245688 Fax: 03-80244464
E-mail: drsamad@pd.jaring.my

**Dato' Dr. Haji Mohd. Mansor Salleh**
**IMM ADVISOR**
c/o Hicom Die Casting Sdn Bhd
PT 5011, Jalan Pendamar (27/90)
Section 27, 40000 Shah Alam, Selangor D.E., M'sia
Tel: 03-5112589 Fax: 03-5112587
E-mail: mamabahasa@hotmail.com

**Dr. A. Rahim Bin Mohd. Nor**
**IMM President**
c/o Petronas Research & Scientific Services SB.
Lot 3288 & 3289, Off Jalan Ayer Hitam,
Kawasan Institusi Bangi,
43000 Kajang, Selangor DE, M'sia.
Tel: 03-89252731 Fax: 03-89258821
Email: rahimmn@petronas.com.my

**En. Zainuddin Ishak**
**IMM Deputy President**
c/o Haven Corrosion Engineering Sdn Bhd
1st Floor, Industrial Centrepoint,
Lot 3, Jalan Halba 16/16,
P.O. Box 7284, 40670 Shah Alam, Selangor D. E,
Tel:03-55198229 Fax:03-55198361
E-mail: hce@bumiarmada.com.my

**Ir. Mohd Suradi Yasin**
**IMM Hon Treasurer**
c/o OGP Technical Services Sdn Bhd
Petronas Twin Tower , Tower 2, Level 9,
Kuala Lumpur City Centre
50088 Kuala Lumpur, Malaysia.
Tel: 03-20517012 Fax: 03-20511634
E-mail:suradi@petronas.com.my

**Ir. Ong Chong Hup**
**IMM Hon. Secretary**
c/o MPE Lindung Sdn Bhd
Lot 1908, Batu 7, Jalan Bukit Kemuning,
40460 Shah Alam, Selangor D.E., Malaysia
Tel: 03-5218228 Fax: 03-5216116 / 5219413
E-mail: maxong@pc.jaring.my

## EDITOR'S COLUMN

I have great pleasure in announcing the second issue of the Journal Institute of Materials Malaysia. It has seen some design changes and some formatting too. The Journal will come your way soon because it will be distributed to members. I will be sending some copies to most research institutes and universities around the region. I shall of course send some copies to IoM, U.K. Please contribute your articles to the journal to keep it alive.

Thank you and I look forward to getting your contributions.

## NOTES FOR AUTHORS

### SUBMISSION

Manuscripts (two copies) should be typed using double spacing on one side of an A4 paper and submitted either in hard copy accompanied by a diskette in Word for Windows. **Alternatively authors are encouraged to submit articles to the Chief Editor at the e-mail address. Zip files are encouraged.**Authors must clearly state the section they wish to place their contributions in.The typescript should proceed in the order, title page, name of author (s) and address, abstract, text,nomenclature,references, acknowledgements and the appendices. Figures, photographs, micrographs and tables should follow after this if they are not already formatted into the text (which is highly encouraged)

### Title page

The title page should contain the name(s) of the author(s) and the establishment where the work was carried out as well as the place where the authors have since moved if they have a different permanent address.

### Abstract

All submissions must be accompanied by an abstract of not more than 150 words.

### Keywords

A list of key words of not more than 10 words must be supplied with each submission

### Text

Clear differentiation must exist between headings. Each major heading must be placed in the middle of the text and be given in capitals. Minor headings need be capitalised but be flush with the left margin. All equations should be written using Microsoft Equation 2.0 or 3.0. Equations and Tables should be numbered serially 1,2, 3 and so forth. Footnotes in the text are not encouraged. SI units should be used.
Figures and photographs , including micrographs may be scanned and submitted in diskettes or electronically. Tables should be labelled on top of the table and Figures at the bottom.

### References

The reference list should be typed single space, although separated from one another by an extra line of space. The reference cited in the text as Author(s). Year and listed in the Reference Section as
Journals: Author(s). Year. *Journal.* Vol(no): First page-last page
Books; Author (s). Year. *Title* Ciy: Publisher.

### Queries

**Any queries on the format and presentation may be addressed to the Chief Editor at the Editorial Address or at the e-mail address given**

**Prof. Dr. Che Husna Azhari**
**Executive Editor &**
**Chairman, Publications Committee**
c/o Pusat Pembangunan Akademik
Bangunan Pentadbiran. Universiti Kebangsaan Malaysia
43600 B. B. Bangi, Selangor D.Ehsan, Malaysia
Tel: 03-89293885 Fax: 03-89264816
E-mail: mek@vlsi.eng.ukm.my

## ACTIVITY ORGANIZERS FOR IMM

The following 3 Activity Organizers (A.O.) have been appointed by the IMM :-

1. **Peninsular Malaysia IMM Courses :**

   Gading Institute Sdn Bhd
   85-2 & 87-2, Changkat Thmaby Dollah
   Off Jalan Pudu
   55100 Kuala Lumpur
   Tel : 03-21416300 Fax : 03-21419053
   Email : gading99@tm.net.my
   Contact persons : Ms Chan Moi Leng/Mr . Raymond Swa

2. **Sarawak IMM Courses:**

   Telaga Management Services
   Lot 600, 2nd Floor, Block 7,
   Pelita Commercial Centre,
   98000 Miri, Sarawak
   Tel: 085-659564 Fax: 085-659564
   Email : telajan@tm.net.my
   Contact persons : Mr. Telajan Luyoh/Ms. Teresa Lipah

3. **3rd IMM Regional Materials Conference :-**

   Henben Resources Sdn Bhd
   B-9-8, Menara Pelangi, 8, Lorong Ang Seng 2,
   50470 Kuala Lumpur
   Tel : 03-22725002 Fax : 03-22725003
   Email : events@materialsplanet.com
   Contact persons : Mr. Stephen Tong/Ms. Mandy Thang

## *IMPORTANT NOTICE !!!*

Graduates of IMM Certification Schemes must now sustain their IMM membership for the duration of their certificate. IMM Certificates are usually valid for 5 years and holders of these Certificates must subscribe their IMM memberships for 5 years . ***(with immediate effect).***

The following Certification Schemes are currently affected :-
(1) IMM Coatings Inspector Certification Scheme
(2) IMM C.P. Technician Level 1,2 & 3 Certification Schemes
(3) IMM Protective Coatings (Blaster & Painter) Certification Scheme
(4) IMM Welding Inspector Certification Scheme
(5) IMM Senior Coatings Inspector Certification Scheme

## CHAIRMAN OF WORKING COMMITTEES

| | | *E-mail Addresses* |
|---|---|---|
| *Memberships Committee* | En. Zainuddin Ishak *(Haven Corrosion Engineering Sdn Bhd)* | hce@bumiarmada.com.my |
| *Publication Committee* | Dr. Che Husna Azhari *(University Kebangsaan Malaysia)* | mek@vlsi.eng.ukm.my |
| *Education & Careers Committee* | Mr. Kang Kim Ang *(VCI (M) Sdn Bhd)* | kangka@tm.net.my |
| *Fabrication Technology Committee* | Ir. Mohd. Suradi Yasin *(OGP Technical Services)* | suradi@petronas.com.my |
| *Corrosion Committee* | Mr. David Lim Chee Cheong *(Esso Production (M) Inc)* | dlcc@tm.net.my |
| *Welding Committee* | En. Zainuddin Ishak *(Haven Corrosion Engineering Sdn Bhd)* | hce@bumiarmada.com.my |
| *Ceramics Committee* | Dr. Teh Ser Kok *(University Malaya)* | tsk@fk.um.edu.my |
| *Polymers Committee* | Dato' Dr. Ong Eng Long *(Malaysian Rubber Board)* | drong@pop.jaring.my |
| *Social Activities Committee* | Ir. Chong Chien Fatt *(Ancom Berhad)* | ccf@ancom.com.my |
| *Sarawak Committee* | Puan Maimunah Ismail *(Sarawak Shell Berhad)* | maimunah.m.ismail@ssb.shell.com my |
| *Southern Region Committee* | Dr. Esah Hamzah *(UniversityTeknology Malaysia)* | esah@fkm.utm.my |
| *East Coast Region Committee* | Mr. Harry Woon *(Bredero Price (M) S/B)* | harrywoon@bredero.net.my |

## SOUTHERN REGION COMMITTEE

IMM Southern Region committee has succesfully conducted a two-day course on Advanced Metallography & Microstructural Analysis on 24 – 25 May 2001. The course which was jointly organised by IMM Southern Region, Department of Materials Engineering (UTM) and CLMO Technology Sdn Bhd. received encouraging response and only the first 30 participants were selected due to limited places.

The course was conducted by Mr. Rene Hoeg who is Buehler Asia Pacific Regional Manager based in Hong Kong. He has vast exporience in Metallography and has conducted similar courses all over the world. He was assisted by CLMO Technology, UTM academic and technical staff during the workshops.

The lecture was held at the Faculty of Mechanical Engineering Seminar Hall and the workshops were conducted in the Materials Science Laboratory UTM The laboratory was equipped with the latest specimen preparation and characterisation equipment which were fully utilised during the course. The participants were also treated to a Chinese Dinner at Pan Pacific Hotel by the sponsors and they enjoyed it very much.

The organizing committee intend to conduct a similar course next year but places will be limited to 24 only in order to allow each participant more time for the hands-on session. All enquiries can be directed to the Chairman IMM Southern Region Committee.

**Chairman**
**Assoc. Prof. Dr. Esah Hamzah**
Head Dept of Materials Eng.
Faculty of Mechanical Eng.
University Teknologi Malaysia
81300 UTM Skudai, Johor
Tel: 07-5566159
Fax:07-5504562
E-mail :esah@fkm.utm.my

**Deputy Chairman**
**Effendy Salim**
Cathodic Protection Technology
(Johor) Sdn Bhd
PLO 126, Kaw. Perindustrian Senai
81400 Senai , Johor
Tel : 07-5988000
Fax: 07-5988110
E-mail:cathodic@po.jaring.my

**Secretary/Treasurer**
**Engku Mohd Nazim Engku Abu Bakar**
Faculty of Mechanical Engineering
Universiti Teknologi Skudai
81310 UTM, Skudai, Johor

Tel: 07-5504688
Fax:07-5566159
E-mail:nazim@fkm.utm.my


The course participants and organising committee with the Dean of Faculty of Mechanical Engineering UTM, Prof. Ir. Dr. Alias Mohd Noor (centre)

The course participants during lecture in the Seminar Hall, UTM

The participants and organising committee during Chinese dinner at Puteri Pan Pacific, Johor Bahru

# IMM SARAWAK COMMITTEE

## SARAWAK COMMITTEE ACTIVITY REPORT

**17 Blasters/Painters attended IMM protective coatings technician training, organised by IMM Sarawak Committee, Miri, Sarawak**

Seventeen blasters/painters involve in the oil and gas industry has completed the protective coatings training and certification programme at Lutong , Miri on 29/6/2001.

The course was organised by the Institute of Materials, Malaysia (IMM Sarawak Committee) under the CORAL initiative. The course was conducted by IMM Trainer, Mr. Telajan Luyoh and assisted by Mr. Sela Ranggaw with the objective to upgrade the skills of workers to the industry standard.

The candidates consisting of 6 personnel from Syarikat Bersaudara Lutong and 11 from Corro-Shield Sdn Bhd were briefed by the trainers on the CORAL initiative cost reduction drive, and root cause of coatings failures/corrosion problems experienced in the oil & gas industry. The training also covered improvements to coatings application and issues on health, safety and the environment.

The course also saw the participants sitting for the theory and practical assessment which leads to the award of a level 1 and level 2 certification by IMM. They were urged to perform their task professionally, and to maintain high standard of work at all times in order to reduce the overall long term maintenance cost.

Besides the IMM blaster/painter certification program, IMM Sarawak Committee also run other technical courses such as the Coatings Inspector, Welding and Cathodic Protection (CP) certification schemes. Enquiries pertaining to IMM activities/courses can be directed to the local IMM Activity Organiser ( tel/fax no : 085-659564)

## BLASTER/PAINTER TECHNICIAN TRAINING ORGANISED BY IMM SARAWAK ON 26/6/2001

**PRACTICAL TRAINING/ASSESSMENT IN PROGRESS (BLASTING OPERATING)**

**GROUP PHOTO OF PARTICIPANTS PRIOR TO PRACTICAL ASSESSMENT**


# PROTECTIVE COATINGS TECHNICIAN

# (BLASTER & PAINTER)

# COMPETENCY CERTIFICATION SCHEME

## (Second Revision)
## with effect from

## 1st May, 2001

## PROTECTIVE COATINGS TECHNICIAN TRAINING/ASSESSMENT & CERTIFICATION INTRODUCTION

This brochure will guide you on how to go about obtaining the IMM protective coating technician assessment and certification scheme. It is designed to satisfy the Malaysian Oil & Gas Exploration & Production (EP) industry need for formally assessed and certified blasters and painters as required in the Standard Malaysian EP Oil & Gas industry blasting and painting Specification no: CORAL PO-C-07-0997-0198:Protection Coating.

The CORAL Blaster and Painter Training/Assessment & Certification Scheme was established in response to industry identifying a need to enhance the skills of blasters and painters in the EP industry. The scheme is aimed at improving the quality of workmanship thereby reducing overall costs. In the Malaysian EP industry, the total cost from rework, in-service repair and total recoating is estimated at a staggering RM45m annually. Lesson's learnt is that premature failures not matching the system's life-span capability are often encountered by all asset operators/owners. Root cause analysis by manufacturers and industry research attributed up to 70% of it to surface prep. and application weakness.

The local industry mindset needs to change and recognise the importance of painting. By default of the term "painting", it is often associated with cosmetic and not the protective function that it provides. Hence the often lower priority. Recognise that in most cases, the typically 0.325mm to 1.0mm resultant paint "skin" is the only barrier protecting against expensive environmental corrosion. Blasting and painting deserves to be recognised as a skilled task to effectively deliver this "hi-tech" protection.

Traditionally, blasters and painters acquire their trade through on-the-job trial and error experience. Unlike their more "glamorous" welder colleagues, there is very limited training nor do they undergo any assessment/certification. Hence, quality of the final protection coating may not be as optimum as it could be; sometimes requiring costly repainting works at short cycle times.

The objective of this CORAL project is to help industry design, set-up and facilitate implementation of a training/assessment & certification scheme for blasters and painters. The target result is that the industry can look forward with better confidence to higher quality coatings and lower overall cost. This aspect is in line with ISO9001 process control and also reduces micro inspection. A cross industry project team was charged with this task. A comprehensive yet fit-for-purpose programme was formulated and a suitable implementation vehicle sought.

The first avenue opened is via the Institute of Materials, Malaysia (IMM); a non-profit Malaysian professional organisation. In line with it's charter to advance this industry, it was approached and accepted the challenge of coordinating and administering this scheme. All EP and work site blasting and painting service providers are requested to contact their nearest IMM branch or directly call the K.L. HQ (tel: 03-5218228; fax: 03-5219413) to upgrade their workforce.

## THE SCHEME (HOW IT WORKS)

Graduates of the programme will be issued with a Certificate and Identification Card and be graded as " IMM Certified Protective Coatings Technician Level 1 (Blaster) " or " IMM Certified Protective Coatings Technician Level 1 (Painter)" or " IMM Certified Protective Coatings Technician Level 2 (Multi-skill) ".

The programme consists of a half-day classroom theory lesson followed by another half-day of assessment test. The assessment test comprises of 2 parts. The first part is a multiple-choice theory test. The second part is a practical test whereby the candidates are assessed on their skills in blasting and painting on a mild steel test panel. Candidates have a choice to sit for only the Blaster or Painter examinations or both. The competency certification programme will be co-ordinated by the Institute of Materials, Malaysia (IMM) who will register the candidates and issue the certificates. The theory lessons and practical tests will be conducted by IMM-certified trainers at the respective "Training Facilities" throughout Malaysia. The practical tests will be witnessed by IMM officials at the respective Training Facilities throughout Malaysia. The candidates will have to register with the IMM and a schedule of the one-day lecture plus assessment dates and the Training Facility location will be advised by the IMM.

Graduate Blasters who have acquired painting skills and wish to sit for the Painter Assessment must complete the log-book over a 12-month period prior to the examination showing proof of their experience . The same procedure applies to Graduate Painters who wish to sit for the Blaster Assessment. All Graduates must keep a record of their work in a Job Development Record Book as their certification is valid for five years only. Proof of continuous working experience without a lapse of more than 18 months will entitle the Graduates to automatic re-certification for another five years. However, Graduates must also register as an IMM member during the five-year period. Otherwise, certification period shall be based on IMM membership period.

## TYPICAL TEST PIECE (MILD STEEL) FOR PRACTICAL ASSESSMENT

Round pipe / I-Beam / Angled Plates ; preferably with welded sections/attachments

Abrasive blast to SA 2.5 and coat with 2-pack coating.

## TRADE ASSESSMENT

After the completion of the theoretical section, the candidate will be assessed through two parts :-

Part 1:

A theory assessment consisting of :-
(i) True/False & Objective Questions = 100 % (For Blasters)
(iii) True/False & Objective Questions = 100 % (For Painters)

Part 2:

A practical assessment consisting of :-
(ii) Blasting skills = 100%
(iv) Painting skills = 100%

Adding the percentage values from Part 1 & Part 2 and averaging them, the grading of candidates will be as follows:-

70% - 100% = Certified Protective Coatings Technician
Level 1 (Blaster) for Part 1(i) & Part 2(ii)
Level 1 (Painter) for Part 1(iii) & Part 2(iv)
Level 2 (Multi-skill) for Part 1(i)+(iii) & Part 2(ii)+(iv)

< 70% = FAIL

## ASSESSMENT LOGBOOK

Graduate Blasters who have acquired painting skills and wish to sit for the Painter Assessment must complete a Logbook over a 12-month period prior to the examination date showing proof of their experience. The same procedure applies to Graduate Painters who wish to sit for the Blaster assessment.

## JOB DEVELOPMENT RECORD BOOK

All Graduates will be issued a "Job Development Record Book" which will be used for re-certification purposes. Should a candidate's record book show that there has been a lapse of more than 18 months without working as a blaster or painter, the candidate will have to re-sit the one-day assessment for re-certification, while other candidates who have continuous relevant experience will be automatically re-certified after 5 years.

VALIDITY OF CERTIFICATION : 5 YEARS maximum. Graduates must register as an IMM member for the certification period.

## LOCATIONS OF TRAINING

At selected "Training Facility" throughout Malaysia. (All " Training Facility" shall be defined to include lecture room, lecture notes, audio-visual aid, test pieces for practical assessment, blasting & painting equipment, paint materials, abrasives and consumables, plus tea/refreshments and lunch for the candidates and trainers/assessors/invigilators. The IMM will provide one master set of the lecture notes for the "Training Facility" Provider to make sufficient copies for the candidates.)

## PROGRAMME

| | | | |
|---|---|---|---|
| 8:00 a.m. | - | 10:30 a.m. | Theory lectures |
| 10:30 a.m. | - | 10:45 a.m. | Tea/Coffee |
| 10:45 a.m. | - | 11:30 a.m. | Theory lectures |
| 11:30 a.m. | - | 12:30 p.m. | Theory Assessment Test |
| 12:30 p.m. | - | 1:30 p.m. | Lunch-break |
| 1:30 p.m. | - | 3:30 p.m. | Practical Assessment |
| 3:30 p.m. | - | 3:45 p.m. | Tea/Coffee |
| 3:45 p.m. | - | 6:00 p.m. | Practical Assessment |

## TRAINING SCHEDULE

The lectures and practicals will be conducted at the selected "Training Facility" throughout Malaysia. Each session will be limited to 12 candidates. Upon receipt of registrations of candidates, the IMM will inform the candidates of the trainers' names, training date and venue. All candidates are required to equip themselves with their work uniform and safety gears for the assessment.

## CANDIDATE ELIGIBILITY

Candidates should have 2 years of blasting and/or painting experience. Candidates with less than 2 years experience must submit a testimonial from employer or client to demonstrate their eligibility. The decision to accept candidates will be made by the IMM.

## LANGUAGE

The lectures and assessments will be conducted in English or Bahasa Malaysia. Where a candidate cannot read or write, the examiners shall conduct the assessment orally and record the results. Candidates must advise their preferred choice of language at the time of registration.

## COURSE SYLLABUS

1. **HOW TO READ PRODUCT TECHNICAL DATA**

The prime importance before painting is to know the nature of paint. All necessary information can be easily gathered from the product technical data. The following should be covered: generic type of product, volume solid, surface preparation required, recommended spray equipment, drying time, mixing ratio, type of thinner etc.

2. **SURFACE PREPARATION**

Mechanisms which determine the bonding / adhesion of protective coating to substrate. Only methods (STANDARD) being specified in painting specification to be discussed in term of the equipment, abrasive and achievable surface quality. In addition, site protection and setting up of wind breaker are important. How to handle sharp edges and weld seam ? How to clean oil or grease contaminant ?

3. **PAINT DRYING MECHANISM**

Candidate to be exposed to three major paint drying mechanism : OXIDATION, PHYSICAL and CHEMICAL REACTION. The common defects related to the nature of drying mechanism.

4. **USE OF VOLUME SOLID**

Definition of volume solid. Candidate should be exposed to the calculation of wet film thickness required for a particular Dry Film Thickness and the theoretical and practical coverage per litre of paint.

5. **WHAT IS MIXING RATIO**

Definition of mixing ratio. The importance of correct measured ratio in small mixing.

6. **FUNCTION OF THINNER**

Definition of Thinner. The function of thinner.

7. **WHAT AFFECT DRYING TIME**

Factors affecting the drying time in term of product nature, substrate and external environment.

8. **POT LIFE AND SHELF LIFE**

Definition and what is the difference between the two. How it affect the painting process and coating performance. Proper storage condition and handling of paint stocks.

9. **APPLICATION METHODS**

Technique used to prepare and mix paint for application to the substrate. Methods of paint application and equipment set up.

10. **HOW TO GET CORRECT WET FILM THICKNESS ??**

How to get even WFT by various application methods ? Stripe coating.

11. **WASTAGE ?? HOW TO MINIMIZE**

This issue is to look into from fi~e angles :

i) Substrate dimension
ii) Mixing of paint
iii) Application methods
iv) Equipment used
v) External condition

12. **COMMON SITE DEFECTS AND REMEDY**

The following common site defects to be discussed :

sagging, dry spray, low thickness, orange peel, wavy, not dry, pinpoint rust, delamination, mud cracking etc.

13. **QUALITY CHECK AND INSPECTION TOOLS**

The condition check before blasting and painting which include Relative Humidity, Steel Temperature, Dew point, substrate surface quality etc. QC check on paint work including visual appearance and Dry Film Thickness.

14. **SAFETY PRECAUTION**

Personal protection equipment (PPE) for surface preparation, during paint mixing, painting. Safety in confined spaces. Emergency procedure.

## REGISTRATION OF CANDIDATES

| | Registration Fee | Blaster Assessment Fee | Painter Assessment Fee |
|---|---|---|---|
| IMM Member | RM500.00 | RM50.00 | RM50.00 |
| Non-Member of IMM | RM600.00 | RM80.00 | RM80.00 |

All candidates are encouraged to join the Institute of Materials, Malaysia (IMM)

**SEND REGISTRATION TO:-**

**INSTITUTE OF MATERIALS, MALAYSIA**
**Lot 1908, Batu 7, Jalan Bukit Kemuning**
**40460 Shah Alam, Selangor Darul Ehsan. Malaysia.**

**Tel: 03-5218228 Fax: 03-5216116/5219413**
**Tel/Fax : 03-5226352(DL)**

**Attention: Mr. Frankie Chua**
**Head, IMM Coatings Subcommittee**
**(Direct Tel. Contact : 03-80604584)**
**or**
**Puan Rohaya Rahim**
**Admin. / Training Executive**

For company-sponsored candidates trained & assessed at in-house Training Facility, a rebate of RM200.00 will be reimbursed to the sponsoring company.

## IMM TRAINERS/ASSESSORS FOR PROTECTIVE COATINGS & CERTIFICATION SCHEME

### IMM TRAINERS/ASSESSORS

| ITEM | TITLE | NAME | COMPANY | TEL | FAX |
|---|---|---|---|---|---|
| 1. | MR. | TELAJAN LUYOH | TELAGA MANAGEMENT SERVICES | 085-659564 | 085-659564 |
| 2. | MR. | LOW KEH TEONG | JOTUN (M) SDN BHD | 03-55421150 | 03-55421207 |
| 3. | MR | PANNIRCHELVAM | INTERNATIONAL COATINGS S/B | 07-2541118 | 07-2514775 |
| 4. | CIK | MASHITAH BINTI YEOP | EURONAVY (M) SDN BHD | 03-61873700 | 03-61873699 |
| 5. | MR. | ALBERT LEE PHIAW SEONG | JOTUN (M) SDN BHD | 03-55421150 | 03-55421207 |
| 6. | MR | KRISHNAN SINNAPAYAM | AUTOBLAST SDN BHD | 03-7035454 | 03-7037854 |
| 7. | MR. | FRANKIE CHUA | PLC LABORATORY | 03-80604584 | 03-80604676 |
| 8. | EN . | MOHD ANIQ @C. NAGENDRAN | SIME SEMBAWANG | 07-2512901 | 07-2514267 |
| 9. | MR | CHONG CHENG YOON | VITAL INNOVATION S/BHD | 03-56249448 | 03-56371478 |
| 10. | MR | KOK WAI CHEE | DUPLEX TECHNOLOGY S/B | 03-56244924 | 03-56362227 |
| 11. | EN | AZNAN BIDIN | BREDERO PRICE (M) SDN BHD | 09-5833131 | 09-5833336 |
| 12. | EN | HAHARAI SERHOOD | MALAYSIA SHIPYARD ENG | 07-2521111 | 07-2513890 |
| 13. | EN | WAHAB | MALAYSIA SHIPYARD ENG | 07-2521111 | 07-2513890 |
| 14. | MR | MARTIN ANTHONY | MALAYSIA SHIPYARD ENG | 07-2521111 | 07-2513890 |
| 15. | EN | NAZARUDDIN B. AD. AZIZ | MALAYSIA SHIPYARD ENG | 07-2521111 | 07-2513890 |
| 16. | MR | PETER SEBASTIAN | MALAYSIA SHIPYARD ENG | 07-2521111 | 07-2513890 |
| 17. | MR | YEOH TIAN HOCK | IMET RESOUCES SDN BHD | 03-33421413 | 03-33423050 |
| 18. | MR | PETRUS LANONG | INTERNATIONAL COATINGS | 085-655650 | 085-655696 |
| 19. | MR | ROBERT LO | BERGER INTERNATIONAL S/BHD | 03-33928622 | 03-33920839 |
| 20. | MR | SELA RANGGAW | DAYANG ENTERPRISE | 085-428185 | 085-421654 |
| 21. | MR | DANA DUGAT | SARAWAK SHELL BERHAD | 086-852149 | 086-852227 |
| 22. | EN | SHARKAWI OTHMAN | AIKINMAS SDN BHD | 086-334460 | 086-311659 |
| 23 | MR | ADRIAN D'CRUZ | HEMPEL COATINGS SDN BHD | 03-7453037 | 03-7456016 |
| 24 | MR | WONG SIONG PIN | JOTUN (M) SDN BHD | 085-417211 | 085-417211 |

### IMM INVIGILATORS

| ITEM | | NAME | COMPANY | TEL | FAX |
|---|---|---|---|---|---|
| 1. | EN. | MOHD ADAHAM B. ABDULLAH | PETRONAS CARIGALI SDN BHD | 085-475630 | 085-475380 |
| 2. | MR. | ROLAND FONG | INTERNATIONAL COATINGS (M) | 03-56330125 | 03-56331270 |
| 3. | IR. | MOHD. SURADI YASIN | PETRONAS | 03-5814960 | 03-2073194 |
| 4. | MR. | DAVID LIM CHEE CHEONG | ESSO PRODUCTION (M) INC | 03-3802908 | 03-2033453 |
| 5. | MR. | GEORGE JAMES ANUNG | SARAWAK SHELL BERHAD | 085-452484 | 085-454919 |
| 6. | MR. | KANG KIM ANG | VCI(M) SDN BHD | 03-7450448 | 03-7450418 |
| 7. | DR. | ESAH HAMZAH | UNIVERSITI TEKNOLOGI MALAYSIA | 07-5504562 | 07-5566159 |
| 8. | EN. | ZAINUDDIN ISHAK | HAVEN CORROSION ENGINEERING | 03-55198229 | 03-55198361 |
| 9. | EN. | MOHD. RAZIFF EMBI | TEKNIK JANAKUASA SDN BHD | 03-2523388 | 03-2548757 |
| 10. | PN. | MAIMUNAH ISMAIL | SARAWAK SHELL BHD | 085-454686 | 085-454919 |
| 11. | EN | MOHD SULASTRY SALLEH | ESSO PRODUCTION MALAYSIA INC | 09-8654611 | 09-8654712 |
| 12. | EN | RAJA ZAHIRUDDIN | PETRONAS CARIGALI SDN BHD | 09-8640722 | 09-8640855 |
| 13. | EN | AZHAR ABDUL LATIF | MALAYSIA SHIPYARD ENG | 07-2521111 | 07-2513890 |
| 14. | DR | AHMAD MAHIR MAKHTAR | UNIVERSITI TEKNOLOGI MALAYSIA | 07-7162443 | 07-5566157 |
| 15. | MR | BARRY LOI CHEE CHIEN | MPE LINDUNG SDN BHD | 03-5218228 | 03-521616 |
| 16. | DR. | EDWIN JONG | SARAWAK SHELL BERHAD | 085-453297 | 085-454187 |
| 17. | MR | TAN CHUAN BEE | MALAYSIA LNG SDNBHD | 086-251301 | 086-252069 |
| 18. | MR. | HARRY WOON | BREDERO PRICE (M) SDN BHD | 09-5833131 | 09-5833336 |

Enquiries can be directed to anyone of the above regarding this programme.

# REGISTRATION FORM

## IMM PROTECTIVE COATINGS TECHNICIAN COMPETENCY CERTIFICATION

## REGISTRATION FEES

| | Registration Fee | Blaster Assessment Fee | Painter Assessment Fee |
|---|---|---|---|
| IMM Member | RM500.00 | RM50.00 | RM50.00 |
| Non-Member of IMM | RM600.00 | RM80.00 | RM80.00 |

*We are pleased to register the following personnel:*

| Item | Name of Candidate | Sex | I.C. / Passport No. * | Age | Blaster | Painter | Language | Fees (RM) |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

* *Photocopy of I.C./Passport to be submitted.*
*3 nos. of passport-size photographs to be submitted for each candidate.*
*IMM membership applications can be submitted together with this registration form.*
*To submit Blaster/Painter Personal & Qualification Records (see overleaf) for each candidate.*

ALL CHEQUES/BANK DRAFTS TO BE MADE PAYABLE TO THE "INSTITUTE OF MATERIALS, MALAYSIA" & INCLUDE 50 SEN FOR OUTSTATION CHEQUES

ORGANIZATION NAME: _____

IMM MEMBERSHIP NUMBER : _____

ADDRESS: _____

_____

TEL: _____ FAX: _____

CONTACT PERSON: _____

DESIGNATION: _____ SIGNATURE : _____

DATE OF REGISTRATION : _____ PROPOSING TRAINING DATE: _____

Affix Photo Here

INSTITUTE OF MATERIALS MALAYSIA

## BLASTER/PAINTER PERSONAL & QUALIFICATION RECORD

( Photocopy extra copies for each candidate )

1. Name: _____

2. I.C./ Passport No: _____

3. Academic Qualification (if any): _____

4. Nationality: _____ Race: _____

5. Sex: Male/ Female * Date of Birth: _____ Age: _____

6. Current Personal Skill: BLASTER / PAINTER * ( IMPORTANT)

7. No. of years of experience: _____ 10. Language: _____

8. Location of Work: _____

9. Familiar with Paint System such as (Pls specify): _____

10. Knowledge on Paint applications * : Airless Spray : Yes / No
    Conventional Spray : Yes / No Paint Brush : Yes / No
    Other Special Application Mode: _____

11. Familiar with Surface Preparation * : Manual Cleaning : Yes / No
    Dry Blasting : Yes / No Garnet / Slag : Yes / No

12. Employer's name: _____

13. Proposing Training Date : _____ Venue : _____

Certified by: _____ Date: _____
QA/QC Dept.

Name : _____

Designation : _____

** Delete whichever not applicable.*

**FOR OFFICIAL USE**

Verified by : Verified by :

..... .....

(Examiner) (IMM Observer)

# CATHODIC PROTECTION
## Training and Certification

## *CP TECHNICIAN LEVEL 1*

What does the training course fee cover?

- Exam fee
- Hands-on practicals
- Transport to site
- Written examination
- 12-month Logbook

What needs to be submitted before I am accepted for the course?

*You shall need to submit your registration with supporting evidence of your educational and working experience for verification.*

Send your registration & payment to the respective **Activity Organisers:**

**PENINSULAR MALAYSIA**

GADING INSTITUTE SDN BHD (428531-K)

85-2 & 87-2 , Changkat Thamby Dollah

Off Jalan Pudu. 55100 KUALA LUMPUR

Tel: 03-21416 300 Fax: 03-2141 9053

Email: gading99@tm.net.my

**SARAWAK & SABAH**

TELAGA MANAGEMENT SERVICES

Lot 600, 2nd Floor, Block 7

Petita Commercial Centre

98000 Miri. SARAWAK

Tel: 085-659564 Fax: 085-659564

### EMPHASIS AND APPLICABILITY

Upon successful completion, the certified person should be capable of going to the field and accomplishing the periodical surveys required by a cathodic protection (CP) programme. CP Level 1 technicians should have a basic understanding of corrosion fundamentals and sufficient troubleshooting skills to take care of minor problems within a CP system.

### Course Outlines

- *Corrosion Fundamentals*
- *Cathodic Protection Fundamentals*
- *Field Measurements*
- *Stray Current Identification*
- *Installing Cathodic Protection Components*
- *Troubleshooting*
- *Written Examination*
- *Practical Examination*

***Note:*** *Above contents exclude "Design of Cathodic Protection System".*

### Recommended Pre-requisites

6 months cathodic protection work experience ***PLUS*** completed SPM or its equivalent.

### Condition for Certification:

1. Participant must have successfully passed the theory & practical exams and completed the 12-month logbook exam.

2. Certification is for 5 years and successful graduates must subscribe the years IMM-membership in advance.

| Please tick (✓) | INTAKE | LOCATION |
|---|---|---|
| | 10-14 Sep 2001 | Miri |
| | 17-21 Sep 2001 | Kuala Lumpur/Petaling Jaya |
| | 17-21 Oct 2001 | Miri |
| Time | : 8.30 am – 5.00 pm | |
| Fee | : a) IMM Member : RM3,025.00 Non-Member: RM3,125.00<br>: b) Early bird fee: RM2,750.00 (for registration & fee received 20 days the before course commencement date. **Cheques shall be made payable to the "INSTITUTE OF MATERIALS, MALAYSIA".** | |

**REGISTRATION FORM**

Name:.....

Company:.....

Address:.....

.....

..... E-mail:.....

Tel:..... Fax:.....

Contact person:..... Designation:.....

Signature:..... Date:.....

# CATHODIC PROTECTION
## Training and Certification

## *CP TECHNICIAN LEVEL 2*

Pre-requisites
CP Level 1 Certificate or equivalent with 3 years cathodic protection work experience *or*
Have attended IMM Basic CP Course with 3 years CP experience

What does the training course fee cover?
- Exam fee
- Hands-on practicals
- Transport to site
- Written examination
- 5 years IMM membership

What needs to be submitted before I am accepted for the course?
*You shall need to submit your registration with supporting evidence of your educational and working experience for verification.*

Send your registration & payment to:

**The Activity Organisers:**

**PENINSULAR MALAYSIA**

Gading Institute Sdn. Bhd. (428531-K)
85-2 & 87-2
Changkat ThambyDollah
Off Jalan Pudu
55100 Kuala Lumpur
Tel: 03-2416 300 Fax: 03-2419 053
Email: gading99@tm.net.my

**SARAWAK**

TELAGA MANAGEMENT SERVICES
Lot 600, 2nd Floor, Block 7
Pelita Commercial Centre
98000 Miri, SARAWAK
Tel: 085-659564 Fax: 085-659564

### Emphasis and Applicability

Upon successful completion, the certified person should have an advanced understanding of cathodic protection (CP) principles and have sufficient trouble-shooting skills and experience to handle major problems within a CP system. CP Level 2 technicians should be capable of using the instruments required to accomplish advanced testing to include stray current interference, current requirement and close interval surveys. CP Level 2 technicians should be able to design and install simplistic forms of galvanic and impressed CP facilities.

### Course Outlines

- *Corrosion Principles*
- *Cathodic Protection Principles*
- *Basic Design of Cathodic Protection Systems*
- *Properties & Applications of Sacrificial Anodes & Impressed Current Anodes and Equipment*
- *CP Instrumentation & their Applications*
- *Stray Current and Cathodic Protection Interference*
- *Soil Resistivity Measurements. Pipe & Cable Locating & Current Requirement Testing*
- *CP Potential Measurements including Close Interval Potential Surveys (CIPS)*
- *Datalogging, Mapping with GPS & Coating Defect Surveys (DCVG/Pearson)*
- *Quality Assurance and Quality Control*
- *Safety*
- *Field Testing*
- *Record Keeping*
- *Written & Practical Examinations*

CONDITION FOR CERTIFICATION:

1. Participant must have successfully completed the course.
2. Certification is for 5 years and participant must be an IMM member for the whole duration of the certification.

| Please tick (✓) | INTAKE | LOCATION |
|---|---|---|
| ☐ | 5-9 September 2001 | Miri |
| ☐ | 5-9 November 2001 | Kuala Lumpur/Petaling Jaya |
| ☐ | 9-13 November 2001 | Miri |
| Time | : 8.30 am – 5.00 pm | |
| Fee | : a) IMM Member: RM3,695.00 Non-member: RM3,795.00<br>: b) Early bird fee: RM3,370.00 (for registration & fee received 20 days before course commencement date. Cheques shall be made payable to the "INSTITUTE OF MATERIALS, MALAYSIA". | |

**REGISTRATION FORM**

Name:.....
Company:.....
Address:.....
.....
.....
..... E-mail:.....
Tel:..... Fax:.....
Contact person:..... Designation:.....

**Institute of Materials, Malaysia**(ROS Reg no . 4186/87)
Lot 1908, Batu 7, Jalan Bukit Kemuning
40460 Shah Alam, Selangor Darul Ehsan,Malaysia.
Tel: 03-5218228 / 03-5226352 Fax: 03-5219413/5216116

**INSTITUTE OF MATERIALS, MALAYSIA**
**( Formerly the Malaysian Materials Science & Technology Society )**

The Malaysian Materials Science & Technology Society (MMS) was registered with the Registrar of Societies on 6th November, 1987. The MMS was actively promoting the awareness of Materials in Malaysia since 1988. In 1996, with a newly-elected Council, the change of name to the Institute of Materials, Malaysia (IMM) was submitted to the Registrar of Societies and approved on 16th June 1997. The new name was to be synergistic with the rest of the world. For example in the case of the United Kingdom, The Institute of Metals, The Institute of Ceramics and The Plastics & Rubber Institute were merged into a single Institute of Materials in 1992 where its Members are recognised as professionals with the status of a Chartered Engineer (C.Eng).

Membership to the IMM is open to all individuals and companies interested in developing the contribution of Materials science, technology and engineering towards industrial growth in Malaysia. The technology of Materials is advancing day-by-day throughout the world. We, in Malaysia, must keep up with the pace of technological advancement.

The objectives of the IMM include the training and development of individuals and companies in Malaysia to attain professional recognition in various fields of Materials science, technology and engineering. Materials cover a very wide field such as metals, polymers, rubber, wood, concrete, ceramics, semiconductors, advanced materials, cellulose, textiles, etc. Membership to the IMM will enable networking and exchange of knowledge from a very wide variety of specialized areas of expertise.

The longterm objective of the IMM is to attain professional status for its members in line with that which is accorded to the other disciplines of engineering.

The IMM is also committed to seeking affiliations with overseas Materials and Engineering/Scientific professional institutions to gain access to technological developments worldwide. This will ensure that we, in Malaysia, will not be left behind.

# MEMBERSHIP APPLICATION FORM
## *(Confidential)*

*AFFIX PHOTO HERE*

APPLICATION FOR COMPANY MEMBER/ORDINARY MEMBER/STUDENT MEMBER*
***(Only Ordinary Members can apply for upgrade to Associate Member/Professional Member/Fellow Member. Please request for the relevant application form from the IMM Secretariat)***

**(I) FOR ORDINARY MEMBERSHIP (STUDENT MEMBERS ALSO TO FILL UP THIS PART)**
PERSONAL PARTICULARS (photocopy of I.C./Passport to be submitted)

NAME IN FULL (MR/MS/DR/.....): _____
(BLOCKS LETTERS)

RESIDENCE/POSTAL ADDRESS : _____

TELEPHONE NO : HOUSE _____ HANDPHONE NO: _____

PLACE OF BIRTH : _____ DATE OF BIRTH : _____

NATIONALITY : _____ PASSPORT/I.C. NO : _____

---

**NAME OF EMPLOYER/COMPANY**

_____

TITLE OR POSITION : _____

ADDRESS : _____

_____

TELEPHONE NO _____ FAX NO : _____ E-mail : _____

---

(II) COMPANY MEMBERSHIP (COMPANY PARTICULARS)

COMPANY NAME: _____

COMPANY REGISTRATION NUMBER : _____

ADDRESS : _____

_____

TELEPHONE NO : _____ FAX NO: _____ E-mail NO : _____

PRINCIPAL REPRESENTATIVE (MR/MS/DR/.....) : _____

*AFFIX PHOTO HERE*

POSITION: _____

ALTERNATE REPRESENTATIVE (MR/MS/DR/....) : _____

*AFFIX PHOTO HERE*

POSITION: _____

(III) **FOR STUDENT MEMBERSHIP ONLY**

COURSE OF STUDY : _____ YEAR OF STUDY : _____

NAME OF UNIVERSITY/COLLEGE : _____

ADDRESS : _____

_____

TELELPHONE NO _____ FAX NO: _____

The above student is allowed to join the Institute

Signed : _____
Name : _____
Designation : _____

University/College Chop

Date: _____

INDICATE INDUSTRY INVOLVED OR INTERESTED IN :-

| | | | |
|---|---|---|---|
| METALLURGY | ( ) | CORROSION PROTECTION | ( ) |
| MATERIALS FAILURE | ( ) | COMPOSITE MATERIALS | ( ) |
| MATERIALS DESIGN | ( ) | CONCRETE TECHNOLOGY | ( ) |
| MATERIALS RESEARCH | ( ) | WOOD TECHNOLOGY | ( ) |
| POLYMER TECHNOLOGY | ( ) | EDUCATIONAL INSTITUTION | ( ) |
| CERAMICS TECHNOLOGY | ( ) | OTHERS (SPECIFY) | _____ |
| WELDING | ( ) | _____ | |

I/We hereby accept responsibility for the accuracy of the particulars contained in this application form.

Date : _____ Signature : _____
(and Company Stamp)

Proposer : _____ Seconder : _____
Name : _____ Name: _____

Membership Grade & No: _____ Membership Grade & No: _____

* Delete whichever not applicable.

NB : If proposer and seconder cannot be sourced, mail this form to the Secretariat for assistance.

**ENCLOSED IS MY/OUR CHEQUE/BANK DRAFT/MONEY ORDER NO:** _____
**FROM BANK** _____ **FOR THE AMOUNT OF**
**RM** _____

**Institute Bahan Malaysia**
**(Institute Of Materials, Malaysia)**
**General Rules on Memberships**

The Council shall establish a Memberships Committee which will be responsible for review of applications for transfer of membership grades. The Memberships Committee shall recommend transfers for Council approval at Council Meetings. All grades of memberships are awarded at the discretion of the Council and may be withheld or withdrawn in the event of conduct likely to prejudice the standing of the Institute. Every member shall receive a membership certificate.

The Memberships Committee shall be responsible for drafting the "Regulations Governing Admission and Transfer of Member Grades" for Council approval. Such regulations may be changed from time to time subject toCouncil approval.

Every application for membership shall be proposed and seconded according to these regulations and shall be forwarded to the Honorary Secretary who shall, at the first convenient opportunity, submit it to the Council for approval. The Council may at its discretion reject any application without assigning any reason thereof.

**Each company on admission shall be entitled to nominate one representative to exercise all rights of membership. Only representatives of Company membership, Fellows (F.I.M.M.), Professional Members (M.I.M.M.), and Ordinary members shall have the right to vote and to hold office in IMM.**

**Only Malaysian Citizens, and Blue Identity Card Holders can become Ordinary Members, Associate Members (A.M.I.M.M.), Professional Members (M.I.M.M.) and Fellow Members (F.I.M.M.) with voting rights. Foreigners and Red Identity Card Holders can join similar grades but shall have no voting rights.**

Grades

**Honorary Fellow (Hon. F.I.M.M.)**
The Council shall have the power to elect Honorary Fellows who shall be persons of eminence in science or industry. The election shall be based on a majority vote within the Council. Honorary Fellows shall enjoy such privileges as may from time to time be determined by the Council.

**Fellow (F.I.M.M.)**
A person at least 35 years of age with approved academic qualifications, training and 8 years relevant responsible experience who has made significant contributions to the science and practice of profession of Materials Science and Engineering or has given distinguished service to industry or education.

**Professional** Member (M.I.M.M.)
A person at least 25 years of age, with approved academic qualifications and training, having at least 3 years responsible experience in Materials Science and Engineering. OR A person at least 40 years of age, with at least 15 years of experience with practical responsibility, as demonstrated by thesis/dissertation or report and interview.

**Associate Member (A.M.I.M.M.)**
A person at least 25 years of age, who possesses an interest in Materials Science and Engineering but have not acquired the necessary experience or obtained the qualifications governing entry to Member grade. An Associate Member, on obtaining the necessary qualifications, may apply for transfer to Member grade.

**Company Member**
Any company that is involved or has interest in Materials Science and Engineering will be qualified to join as a company member.

**Ordinary Member**
**Any person above the age of 18 years** engaged in activities related to research, development and applications in Materials Science and Engineering shall qualify for Ordinary Membership. Only Ordinary Members who meet the necessary minimum requirements may apply for transfer to membership grades of Fellow, Member and Associate Member and may use the abbreviated titles upon transfer.

**Student Member**
A student member shall be a person not under 17 years of age who at the time of application satisfies the Council tha he has received a good general education and is studying subjects related to Materials Science or Engineering. A student member shall transfer to the grade of Ordinary Member **after graduation** provided he or she is suitably qualified and as soon as he or she is earning a full-time salary. A Student shall not become a member of the IMM without the prior approval of the Vice-Chancellor or Head of Department of the university or relevant authority concerned.

**Certificate of Membership**
Every member shall receive a membership certificate.

Every application for membership shall be proposed and seconded by two existing ordinary members and shall be forwarded to the Honorary Secretary who shall, at the first convenient opportunity, submit it to the Council for approval. The Council may at its discretion reject any application without assigning any reason thereof.

Each company on admission shall be entitled to nominate one representative to exercise all rights of membership. Only representatives of Company membership and Ordinary members shall have the right to vote and to hold office in IMM.

**SCHEDULE OF FEES**

| | Entrance Fee | Processing Fee | Transfer Fee | Annual Subscription |
|---|---|---|---|---|
| Company Member | RM50.00 | - | - | RM200.00 |
| Ordinary Member | RM20.00 | - | - | RM 20.00 |
| Fellow (F.I.M.M.) | - | RM300.00 | RM10.00 | RM 70.00 |
| Member (M.I.M.M.) | - | RM150.00 | RM10.00 | RM 50.00 |
| Associate Member (A.M.I.M.M.) | - | RM150.00 | RM10.00 | RM 30.00 |
| Student Member | RM10.00 | - | - | RM 5.00 |

NB : ALL PAYMENT TO BE MADE OUT BY CROSSED CHEQUE, BANK DRAFT, OR MONEY ORDER TO "**INSTITUTE OF MATERIALS, MALAYSIA**". ALL APPLICATIONS MUST BE ACCOMPANIED BY THE APPROPRIATE PAYMENTS. APPLICATIONS MADE BETWEEN JULY AND DECEMBER NEED TO PAY 50% OF THE ANNUAL SUBSCRIPTION.

*Annual subscriptions shall be payable in advance on 1st January of each year. Any person who is admitted into the IMM between 1st July and 31st December in any year shall pay only half the annual subscription.*

## ADVERTISING IN IMM NEWSLETTER

| | Black/ White | Full Colour |
|---|---|---|
| Inside front cover | - | **RM2,000.00** |
| Inside back cover | - | **RM1,800.00** |
| Outside back cover | - | **RM2,500.00** |
| Inside pages | **RM800.00** | **RM1,500.00** |

Special loading request : **RM300.00 (8 mm X 6 mm)**

Advertisement details are as follows :

- Printing is normally in black & white by the Offset method.
- The advertisement size will be approximately 8 1/4" x 11 ¾" or 20.7 cm x 29.5 cm.
- You need only to supply a good printed copy of the advertisement. However for better reproduction it would be best either to loan us the artwork or alternatively supply us with a good bromide print or photographic film of the advertisement. For coloured advertisement please also provide the colour separation together with a sample of the print-out.
- Two complimentary copies of the Newsletter would be despatched upon publication.

All payment to be made to " ***Institute of Materials, Malaysia***" prior to publication.

## PROGRAMME

**DAY 1**

| | |
|---|---|
| 8.00 am | Registration |
| 8.30 am | Opening Remarks |
| 8.45 am | CORROSION FUNDAMENTALS |
| 10.00 am | Tea Break |
| 10.15 am | Continuation CORROSION FUNDAMENTALS |
| 12.30 pm | Lunch Break |
| 1.30 pm | PAINT TECHNOLOGY |
| 3.00 pm | Tea Break |
| 3.15 pm | Continuation PAINT TECHNOLOGY |
| 5.00 pm | End of classroom session |

**DAY 2**

| | |
|---|---|
| 8.00 am | SURFACE PREPARATION |
| 10.00 am | Tea Break |
| 10.15 am | APPLICATION OF PAINT |
| 12.30 pm | Lunch Break |
| 1.30 pm | COATING SELECTION |
| 3.00 pm | Tea Break |
| 3.15 pm | Continuation COATING SELECTION<br>Practical exercises in presenting painting specifications |
| 5.00 pm | End of classroom session |

**DAY 3**

| | |
|---|---|
| 8.00 am | COATINGS FAILURES |
| 10.00 am | Tea Break |
| 10.15 am | COATING REPAIR AND MAINTENANCE |
| 12.30 pm | Lunch Break |
| 1.30 pm | Visit to a Blasting/Painting yard to practise the USE OF TEST AND INSPECTION EQUIPMENT<br>(Participants are requested to wear protective clothing and provide their own helmets, boots and goggles during visit to the yard.) |
| 5.00 pm | End of session |

**DAY 4**

| | |
|---|---|
| 8.00 am | SAFETY AND QUALITY ASSURANCE |
| 10.00 am | Tea break |
| 10.15 am | THE ROLE OF THE COATINGS INSPECTOR |
| 12.30 pm | Lunch break |
| 1.30 pm | INTRODUCTION OF THE LOGBOOK SCHEME |
| 2.00 pm | EXAMINATION<br>This is an examination in which the participants will have to complete multiple choice and essay type questions. Participants may use their notes, resource texts and their own textbooks to complete this examination. |
| 4.00 pm | End of Examination |
| 5.00 pm | Graduation and Closing Remarks |

IMM
INSTITUTE OF MATERIALS MALAYSIA

*presents*

# COATINGS INSPECTOR CERTIFICATION SCHEME

| AUGUST 2001 | |
|---|---|
| Date | : 16-19 Aug 2001 |
| Venue | : Miri, Sarawak |

| OCTOBER 2001 | |
|---|---|
| Date | : 23-26 Oct 2001 |
| Venue | : Paka/Kuantan |

| OCTOBER 2001 | |
|---|---|
| Date | : 18-21 Oct 2001 |
| Venue | : Miri, Sarawak |

## *Activity Organisers*

**SARAWAK**

TELAGA MANAGEMENT SERVICES
Lot 600, 2nd Floor, Block 7
Pelita Commercial Centre
98000 Miri, SARAWAK
Tel: 085-659564
Fax: 085-659564

**PENINSULAR MALAYSIA**

GADING INSTITUTE SDN BHD (428531-K)
Changkat Thamby Dollah,
Off Jalan Pudu
55100 KUALA LUMPUR
Tel: 0 3-2141 6300 (4 lines)
Fax: 03-2141 9053
Email: gading99@tm.net.my

## INTRODUCTION

The Institute of Materials, Malaysia (formerly MMS - Malaysian Materials Science and Technology Society) was established to promote Materials Science and Engineering in Malaysia and the surrounding region.

The staggering costs of the deterioration of materials by corrosion, erosion, chemicals, UV rays and the effects of the severe weather conditions prevailing in tropical countries can be drastically reduced by the use of protective coatings.

To ensure efficient and cost-effective protection, a coating has to be properly applied on adequately prepared surfaces. Here the coatings inspector plays an all important role.

To be able to resolve existing and future problems, the coatings inspector needs knowledge of the physical and chemical processes involved and must have an understanding of the practical problems he/she may face in the field. He/she must be able to use alternative techniques and materials and must therefore be well informed of the latest technological developments in the protective coating field.

There is an urgent need for a scheme adapted to the conditions in S.E. Asia and to upgrade individuals in coating inspection and quality control.

The IMM Coatings Inspector Certification Scheme fulfills this need. The Scheme will equip the candidate with the knowledge and skills to demand sufficient authority for his/her decisions to be recognised by both client and contractor.

Graduates are in demand not only as coating inspectors but as technical service personnel with paint companies and as quality controllers with oil, gas and construction organisations.

They are able to ensure that the standard and efficiency of painting projects is increased and that down-time and sub-standard work are kept to a minimum.

An investment in training in Coatings Inspection will pay rich dividends in increased productivity and profit for the company and enhance career prospects for the graduate

## THE SCHEME

The IMM Coatings Inspector Certification Scheme is held over 4 days which includes lectures (22 hours) and an open-book examination (2 hours) followed by a logbook scheme. Candidates are required to complete the logbook which consists of project assignments by which the candidates will get on-the-job experience. It is expected that the candidates complete the logbook within 6 months.

## REGISTRATION
## IMM-COATINGS INSPECTOR CERTIFICATION SCHEME

### FEES

| Fee | | | Award |
|---|---|---|---|
| *Early bird | IMM Member | Non- | IMM - Coatings Inspector Course |
| RM2,900 | RM3,190.00 | RM3,340.00 | |

*To be eligible for early bird fee, **registrations & payments** must reach the activity organiser **not less than 20 days** before course commences. Payments to be made payable to the **'INSTITUTE OF MATERIALS, MALAYSIA'** & include 0.03% commission for every outstation cheque.

### INTAKES

| No: | Date | Location | No: | Date | Location |
|---|---|---|---|---|---|
| 1 | 16-19 Aug '01 | Miri, Sarawak | 3 | 18-21 Oct 01 | Miri, Sarawak |
| 2 | 23-26 Oct '01 | Paka/Kuantan | | | |

Yes, please register the following for the course:

| Name of Candidate | Designation | Intake No: |
|---|---|---|
| | | |
| | | |
| | | |

### WITHDRAWAL FROM COURSE

- If notice is given in writing more than 2 weeks BEFORE COMMENCEMENT of the course, a full refund will be made.
- If notice is given in writing WITHIN 2 weeks preceding the commencement of the course, a 75% refund will be made.
- If notice is given in writing AFTER the commencement of the course, no refund will be made.

Organisation name:.....
Address:.....
.....
Tel:.....Fax:.....
Contact person:.....
Designation:.....Signature:.....

Send your payment or registration to the respective ***ACTIVITY ORGANISERS.***

**TELAGA MANAGEMENT SERVICES**
Lot 600, 2nd Floor, Block 7
Pelita Commercial Centre
98000 Miri, SARAWAK
Tel: 085-659564
Fax: 085-659564

**GADING INSTITUTE SDN BHD** (428531-K)
Changkat Thamby Dollah
Off Jalan Pudu
55100 KUALA LUMPUR
Tel: 0 3-2141 6300 (4 lines)
Fax: 03-2141 9053

## PRINCIPAL LECTURER

Mr. Erroy Vogelpoel is a Senior Lecturer in Coatings Technology and Coatings Inspection at the Sunraysia Institute of Technical and Further Education, Victoria, Australia. In addition, he is presently employed by TAFE International Training Services as Manager-South East Asia.

Erroy joined the paint industry in 1977 and was employed as Technical Service Manager by various paint companies in Australia, Malaysia, Singapore and Brunei.

In that period, he was in charge of quality control of the whole coating and/or re-coating processes of many large projects, the most notable ones being Brunei Shell's largest offshore platform Champion 7, the new palace of the Sultan of Brunei, the Istana Nurulizza and the giant Shell-Mitsubishi-Petronas Middle Distillation Plant in Bintulu, Sarawak.

His extensive practical experience in coating inspection was noted by the petrochemical and multinational construction companies and on many occasions he was seconded as an independent inspector/quality controller to large projects in South east Asia.

In the last 17 years, Erroy has been actively involved in the development of a number of Coatings Technology and Coatings Inspection courses for TAFE. He has personally conducted more than 50 courses in coating inspection, coating technology, corrosion control, blasting and painting in Australia, Malaysia, Singapore and Brunei. These courses were well attended by participants from Shell, Petronas, Esso, SIRIM and the large paint manufacturing companies.

To support his lectures, Erroy has written comprehensive course notes and student resources on all aspects of coating processes. He has also produced several "Inspection Manuals" for corrosion consultants and contractors to use in their in-house training courses.

| IMM COATINGS SUB-COMMITTEE | | |
|---|---|---|
| Head | Mr. Frankie Chua<br>(PLC Laboratory) | Tel : 03 - 8060 4584<br>HP : 012- 307 8328<br>E-mail: frankie@plc.com.my |
| Deputy Head | Mr. K. Krishnamurthy<br>(LCS Engineering) | Tel : 03 - 7877 1095<br>HP : 012– 283 1095<br>E-mail: lesvk@tm.net.my |
| Secretary | Mr. Alexander Gabriel<br>(Guardian Composite) | Tel : 03 - 7747 5357<br>HP : 012– 228 2645<br>E-mail: alexg@pop.jaring.my |



## CONTENTS



## ACCREDITATION & CERTIFICATION

Having successfully completed the logbook scheme, participants must then register as IMM members for 5 years to be eligible to become IMM Certified Coatings Inspectors. The IMM Coatings Inspector Certificate is recognised by industries in Malaysia.

Accreditation is for a period of five years. To renew their certification, Certified Coatings Inspectors will have to attend 5 IMM courses and maintain a job logbook during the 5 years. Format of the logbook can be obtained from the IMM Secretariat Re-accreditation is for a period of another five years.

## WHO SHOULD ATTEND

The IMM Coatings Inspector Certification Scheme has been developed to train individuals in the protection of iron and steel against atmospheric and marine corrosion by paints and paint coatings in the severe climatic conditions prevailing in Malaysia and the surrounding ASEAN countries. This certification scheme also deals with the protection of other construction materials such as concrete, brick and timber.

## COURSE AIMS

The course aims to provide the participants with the knowledge and skills to efficiently and effectively:

- specify protective paint/coating systems to variety of substrates.
- supervise the preparation of substrates prior to painting.
- supervise the application of paint coatings.
- conduct inspections and quality control to satisfy government, industry and union minimum standards.
- communicate in written form.

# WELDING INSPECTOR
# CERTIFICATION SCHEME

IMM
INSTITUTE OF MATERIALS MALAYSIA

*100% Course Fee Reimbursement from HRDF*

| **September 2001** | |
|---|---|
| Date | : 24-29 September 2001 |
| Venue | : Kuala Lumpur/Petaling Jaya |
| **November 2001** | |
| Date | : 26-30 Nov 2001 |
| Venue | : Miri, Sarawak |

**Activity Organisers**

**Sarawak**

**TELAGA MANAGEMENT SERVICES**
Lot 600, 2nd Floor,
Block 7
Pelita Commercial Centre
98000 Miri, SARAWAK
Tel: 085-659564 Fax: 085-659564
Contact person: Theresa Lipah

**Peninsular Malaysia**

**GADING INSTITUTE SDN BHD**(428531-K)
85-2 & 87-2, Changkat Thamby Dollah
Off Jalan Pudu
55100 KUALA LUMPUR
Tel: 03-2141 6300 (4 lines)
Fax: 03-2141 9053
Email: gading 99@tm.net.my
Contact persons: Chan Moi Leng &
Cdr. Ir. Raymond

## INTRODUCTION

Welding has been with us for almost a century and since the early experimental trials with bare filler rods, great advances in technology have evolved. In today's fabrication and engineering industries, welding has become a very complex subject. It has stood in its own right and highly skilled welding personnel have to meet very strict quality criteria to achieve the approval to ensure that high standards of weld integrity are met on equipment or items that are under high stresses or high operating pressures.

Not only have the artisan personnel to achieve excellence in their welding capabilities, inspection personnel also need to monitor the performance of the welding operatives. On large projects, if welders do not maintain the very high standards for the welding, severe consequences can result by means of the failure of welded connections. Disastrous results have in the past been proven on structures and high pressure piping due to weld failure. Not only are lives lost, but serious financial and environmental consequences can occur.

To maintain and ensure a client's project investment, welding inspectors play a vital role in ensuring that all parameters and welding operatives continually maintain the minimum requirements for producing sound welds. Welding Inspection is an extremely responsible facet to the fabrication and construction industries.

In Malaysia, a vacuum of qualified welding inspectors exists. It has been the norm in the past for fabrication companies to appoint "unqualified" artisan personnel to act as and fill vacant or new welding inspectors positions. This leads to an obvious decline in the quality of welding, thus adding on to the financial costs of the projects due to doubt in integrity and delays in project completion.

### IMM WELDING INSPECTOR CERTIFICATION SCHEME

The only qualified welding inspection personnel presently available in Malaysia are the products of overseas institutions from the USA, UK or other similar establishments around the world.

The IMM is now introducing a Welding Inspector Certification Scheme into its programme to achieve Malaysian excellence in the welding industry. The preceding Welding Inspector Certification Course will provide the knowledge and skills to establish a Malaysian Certified Welding Inspector Scheme which is to be at a minimum on par with those from foreign institutions.

## THE SCHEME

The Course shall equip personnel with an acceptable welding and fabrication background to acquire the knowledge and expertise. This will enable them to demand sufficient authority for their decisions to be recognized by both client and contractors.

There is a real shortage of qualified welding inspectors in the oil, gas, petrochemical and construction industries. Without doubt, the dividends to industry would be very welcomed in assuring that their plants and structures are being monitored by professional and qualified inspection personnel, thus making substantial savings and providing total integrity to timely completion of projects.

The IMM Welding Inspector Certification Course shall be held over 5 1/2 days, which includes lectures (4 days), laboratory practical ($^1/_2$ day), practical examination (2 $^1/_2$ hours) and written examination (4 hours). The passing marks shall be 70% for every topic of the exams. The candidates shall be required to complete a log book throughout their completed certification, to ensure that they have maintained on the job experience and continually meet the required IMM standards.

The certification shall be renewed after 5 years upon provision of suitable evidence, that the inspector has maintained the satisfactory standard of inspection requirements. All candidates shall be subjected to a retest of the whole course, at the discretion of the approving authority, the IMM Certification and Career Board.

## PRE-REQUISITES FOR CERTIFICATION OF WELDING INSPECTOR

a) Possess fair command of spoken and written English, **and**

b) Academic qualification and experience:
   1) Diploma in welding related or technical science subjects with not less than two (2) years working experience in welding related jobs; **or**
   2) Minimum SPM or equivalent with not less than four (4) years working experience in welding related jobs; **or**
   3) Lower academic qualification with not less than six (6) years working experience in welding related jobs; **and**

c) Have passed eye acuity test, with or without corrective lenses, as administered by a medical professional, which consists of near vision acuity test on Jaeger J1 or equivalent at 12" and colour perception tests like the Ishihara Plates. The tests must be current, within 6 months be fore commencement of course; **and**

d) Have passed IMM Welding Inspector Course or other IMM accredited course(s).

Reference : IMM Document No. WI-STD-01 **"STANDARD FOR CERTIFICATION OF WELDING INSPECTOR"**

Note : The above document may be purchased from the IMM Secretariat/Activity Organiser at RM 5.00 per set.

## COURSE AIMS

The course aims to provide the participants with the knowledge and skills to efficiently and effectively:

a) conduct inspections and quality control to satisfy government and industry standards.

b) to monitor and ensure that preparation of weld joints is to stipulated codes and standards.

c) to ensure that welding personnel meet and continually provide completed weld joints as required by the client's codes and standards.

d) to ensure that all parameters are maintained during welding operations.

e) to ensure that the correct consumables are utilized and to make sure that appropriate equipment and techniques are employed to produce weld joints of a high integrity.

h) to compile proper and concise reports for welding inspection activities.

## WHO SHOULD ATTEND

A mandatory course for all individuals who seek certification as IMM Certified Welding Inspectors.

## COURSE CONTENTS

### MODULE 1: CERTIFIED WELDING INSPECTION

This module consists of 12 lectures delivered in classroom sessions:

1. **Responsibilities and Duties of The Welding Inspector**

   The lecture shall consist of the provision to students, the roles, responsibilities, knowledge and function of the Welding Inspector in relation to weld quality involving the identification of weld discontinuities and the compilation of relevant reports.

2. **The Symbols For Welding and Filler Materials**

   This lecture shall provide students with the ability to identify welding symbols and to understand their significance on engineering and detailed drawings.

3. **The Preparation of Welded Joints**

   In this lecture, students shall be taught the theory or preparing plates and weld joints as required by codes and specifications. The lecture shall teach students to determine the correct joint preparations and weld dimensions in relation to the various welding processes.

4. **Procedures and Process for Welding**

   The students shall learn about the various types of welding and cutting processes, together with the associated equipment and power sources. The lecture shall cover MMAW, GTAW, FCAW, GMAW and SAW processes.

5. **Welding Metallurgy**

   This lecture deals with the effects on mechanical and physical properties of welded joints where the compositions of the weld and base metals interact. It will cover the topic of Hydrogen diffusion, gas/metal reactions, the heat effected zone and solidification rates during welding operations.

6. **Residual Stress and Prevention Of Distortion**

   Students will learn the aspects of distortion in weld joints which are influenced by residual stress and the causes thereof, together with the control of the weldment distortion through heat input control.

7. **Heat Treatment To Weld Joints**

   In this lecture, students will be taught the importance of preheat, maintaining weld interpass temperatures and the effects of post heat treatment, together with the ability to observe and supervise the pre and post heat treatment activities.

8. **The Welding of Alloys**

   Covering the present commonly used alloys such as Stainless Steel, Low Carbon Steels, Low Alloy Steels, High Alloy Steels, High Strength Steels and Copper and Nickle Base Alloys, the students shall be taught how to identify the factors concerned with the weldability of these ferrous and non-ferrous materials and the associated effects.

**9. Weld Quality Management and Awareness**

Students shall through the lecture gain the knowledge of the responsibilities of inspectors, in relation to the quality of the deposition of welded joints and to ensure that they understood and develop skills in identifying weld discontinuities and the prevention thereof.

**10. The Designation and Properties of Materials**

This lecture shall cover the applicable standards of materials together with highlighting the importance of destructive tests to be used on relevant weldments and their materials.

**11. Failure Modes**

The student shall be exposed to the defects in parent metals attributed to fatigue, brittle fractures, laminations (lamellar tearing), carbide precipitation and stress corrosion.

**12. Inspection And Testing of Welds**

This lecture shall provide the student with the knowledge and capabilities of performing visual inspections on welded fabrications, piping and structures in accordance to clientele's codes or stipulated specifications and the correct and proper reporting thereof.

**MODULE 2 :**

**LABORATORY PRACTICAL/DEMONSTRATION**

This module shall be conducted in a laboratory and students shall be exposed to the following tests:

- Visual Examination
- Tensile Test
- Fillet Weld Fracture
- Bend Test (Root and Face)
- Nick Break (Charpy Test)
- Macro Examination

## ACCREDITATION & CERTIFICATION

Upon successful completion of the course and achieving the minimum examination requirements (passing marks of 70% for every unit), a participant shall become an IMM Certified Welding Inspector and shall be issued with a certificate and an ID card from the IMM, with the condition that he joins as a member of the IMM.

Accreditation shall be for a period of 5 years with IMM membership fees being paid in advance for the 5 years required. To retain his/her certification, a qualified Welding Inspector shall have to provide suitable evidence that he/she has met the satisfactory standard of inspection requirements by maintaining a logbook throughout the 5 years.

The candidate may, at the discretion of the examining board, be required to re-sit the full examination should his/her logbook records fail to meet the minimum required standards.

## PRINCIPAL TRAINERS

**Dr. LIM CHING LIANG, Ph. D. Metallurgy & Materials Engineering**

Dr. Lim is a director of a group of companies dealing with metallurgical consultancy and services. With more than 20 years of hands-on experience, Dr. Lim is actively involved with failure investigations, replica tests and other metallurgy/welding related consultancy work. He also owns a Destructive Mechanical Test Laboratory.

Over the last 10 years, Dr. Lim has been an advisor to contractors of mega projects such as KLCC, KLIA, LRT, Mid Valley City, Oil & Gas projects in Paka, gas pipeline projects and Pergau Dam, just to name a few. As an advisor, he is involved in Welding Procedure Specification (WPS), Procedure Qualification Record (PQR) and Welder Qualification Test (WQT). Dr. Lim is also an active member in numerous professional bodies/associations such as the Institute of Materials Malaysia, National Vocational Training Council (MLVK) and Federation of Malaysian Manufacturers. He is also a part time lecturer for master degree in University Malaya.

**Dr. TEH SER KOK, B. Sc. Metallurgical Engineering & Ph. D. Materials Science**

Dr. Teh is the Associate Professor of Materials Engineering Department in Mechanical Engineering Faculty of University Malaya. He has been involved in the welding industry for more than 20 years. He lectures in welding related subjects, provides technical consultancy for the industry and conducts failure investigations on weld failures.

Dr Teh is active in standards and technical specification work and has been a regular member in many standards and technical committees related to metals and steels, one of which is SIRIM. He is also active in voluntary work in numerous professional bodies/associations. Currently he is a Council Member of the Institute of Materials, Malaysia (IMM) and the Deputy Chairman of the IMM Welding Committee.

**Mr. GARRY TOFT, Certified Senior Welding Inspector**

Mr. Toft has been stationed in Malaysia in the oil and gas industry for more than 15 years. Most of his experience is in the construction and fabrication sectors. Garry has vast experience in the welding industry, having been employed around the world on major projects, representing major oil and gas clientele, both onshore in refineries, crude oil terminals and petrochemical plants, and offshore in platforms and construction barges in the North Sea, the Middle East and here in Malaysia. Currently he is the IMM Welding Committee Secretary.

Being a registered European Senior Welding Inspector, his extensive knowledge in various techniques and applications of welding processes and technology makes him familiar with the necessary requirements set by the industry for the role of Welding Inspection personnel, from both the contractor's and clientele's perspective. With his years of experience in the quality control and construction fields, he has covered many aspects for the requirements and performance demanded of a welding inspector.

**DR. ABDUL AZIZ BIN MOHAMMED, Ph. D. Advanced Materials (Marine Technology)**

Dr. Abdul Aziz is the principal Research Officer of Materials Technology Department in Industrial Technology Division of Malaysian Institute of Nuclear Technology Research (MINT). He has been working in the fields of Materials Characterisation both Destructive and Non-destructive Methods for more than 17 years. Besides his research work, Dr. Abdul Aziz has been consulted by contractors involved in the applications of materials in various sectors, namely, oil and gas, power generation, automobile, road and marine. His expertise was recognised by the International Atomic Energy Agency when he has been honoured for expert mission on organising and conducting NDT Level III (ISO) training courses for NDT personnel of Myanmar. Dr. Abdul Aziz is an active member in the Malaysian Non-Destructive Testing, National Vocational Training Council (NDT Training and Personnel Certification schemes) and the Institute of Materials, Malaysia.

## PROGRAMME

| DAY 1 | | DAY 2 | |
|---|---|---|---|
| 8.30 am | Registration | 9.00 am | Lecture |
| 9.00 am | Opening Remarks | 10.00 am | Coffee Break |
| 9.15 am | Lecture | 10.15 am | Lecture |
| 10.00 am | Coffee Break | 12.30 pm | Lunch |
| 10.15 am | Lecture | 1.30 pm | Lecture |
| 12.30 pm | Lunch | 3.00 pm | Coffee Break |
| 1.30 pm | Lecture | 3.15 pm | Lecture |
| 3.00 pm | Coffee Break | 5.00 pm | End of Day 2 |
| 3.15 pm | Lecture | | |
| 5.00 pm | End of Day 1 | | |
| **DAY 3** | | **DAY 4** | |
| 9.00 am | Lecture | 9.00 am | Lecture |
| 10.00 am | Coffee Break | 10.00 am | Coffee Break |
| 10.15 am | Lecture | 10.15 am | Lecture |
| 12.30 pm | Lunch | 12.00 nn | Lunch |
| 1.30 pm | Lecture | 12.45 pm | Depart for UM |
| 3.00 pm | Coffee Break | 1.30 pm | Laboratory Practical at UM |
| 3.15 pm | Lecture | 5.30 pm | End of Day 4 |
| 5.00 pm | End of Day 3 | | |
| **DAY 5** | | **DAY 6** | |
| 9.00 am | Lecture | 8.30 am | Written Examination Part 1 |
| 10.00 am | Coffee Break | 10.30 am | Coffee Break |
| 10.15 am | Lecture | 10.45 am | Written Examination Part 2 |
| 12.00 nn | Lunch | 1.00 pm | End of Course |
| 3.00 pm | Practical Examination | | |
| 5.30 pm | End of Day 5 | | |

## IMM WELDING COMMITTEE

| | | |
|---|---|---|
| Chairman | En. Zainuddin Ishak | Tel : 03-5519 8229<br>HP : 019-230 5555<br>E-mail: hce@bumiarmada.com.my |
| Deputy Chairman | Dr. Teh Ser Kok | Tel : 03-7959 5265<br>HP : 019-6643212<br>E-mail: tsk@fk.um.edu.my |
| Secretary | Mr. Garry Toft | Tel : 03-7378660<br>HP : 019-3870104<br>E-mail: phoenixt@tm.net.my |


**INSTITUTE OF MATERIALS, MALAYSIA**
Secretariat Address :
Lot 1908, Batu 7, Jalan Bukit Kemuning
42450 Shah Alam
Selangor Darul Ehsan
Tel : 03-5218228
Contact Person : Puan Rohaya Rahim
Fax : 03-5226352

## REGISTRATION
## IMM-WELDING INSPECTOR CERTIFICATION SCHEME

| Fees (inclusive of examination) | | | Awards |
|---|---|---|---|
| *Early bird | Member | Non-member | IMM - Welding Inspector Certification |
| RM 3,500.00 | RM 3,850.00 | R3,950.00 | |

*To be eligible for early bird fee, **registration & payment** must reach the activity organiser **not less than 20 days** before course commences. Payments are to be made payable to the '**INSTITUTE OF MATERIALS, MALAYSIA**" & to include 0.03% commission for every outstation cheque.

**INTAKE**

| No. | Date | Location | No. | Date | Location |
|---|---|---|---|---|---|
| 1 | 24-29 Sep 2001 | PJ/KL | 2 | 26-30 Nov 2001 | Miri/Bintulu |

**Please register the following for the course:**

| Name of Candidate | Designation | Intake No. |
|---|---|---|
| | | |
| | | |
| | | |

**WITHDRAWAL FROM COURSE**

- If notice is given in writing more than 2 weeks **BEFORE COMMENCEMENT** of the course, a full refund will be made.
- If notice is given in writing **WITHIN** 2 weeks preceding the commencement of the course, a 75% refund will be made.
- If notice is given in writing **AFTER** the commencement of the course, no refund will be made.

Organisation Name:.....

Address:.....

.....

Tel:.....Fax:.....

Contact Person:.....

Designation:..... Signature:.....

**Important** : Each candidate shall need to submit supporting evidence of educational qualification and welding related working experience with endorsement by employer.

Send registration and payment to the respective **ACTIVITY ORGANISERS**:

Activity Organiser (Sarawak)
**INSTITUTE OF MATERIALS, MALAYSIA**
c/o TELAGA MANAGEMENT SERVICES
Lot 600, 2nd Floor,
Block 7
Pelita Commercial Centre
98000 Miri, SARAWAK
Tel: 085-659564 Fax: 085-659564
Contact person: Theresa Lipah

Activity Organiser (Peninsular Malaysia)
**INSTITUTE OF MATERIALS, MALAYSIA**
c/o GADING INSTITUTE SDN BHD(428531-K)
85-2 & 87-2, Changkat Thamby Dollah
Off Jalan Pudu
55100 KUALA LUMPUR
Tel: 03-2141 6300 (4 lines) Fax: 03-2141 9053
Email: gading 99@tm.net.my
Contact persons: Chan Moi Leng/Cdr. Ir. Raymond

# PRODUCT NEWS

## *FIBAROLL- A SEAMLESS SOLUTION TO CORROSION PREVENTION & INSULATION CLADDING*

A new corrosion prevention concept, has recently been introduced into Malaysia and the surrounding region. It is the Fibaroll System from the UK.

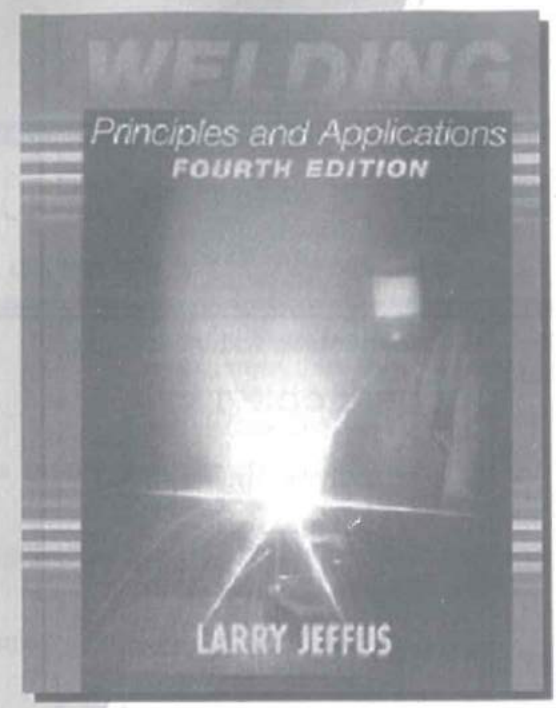
Fibaroll is a range of technically advanced, fully composed, manufactured, glass reinforced plastic laminates. It is produced, uncured, in rolls, as a flexible solid, which is easily cut and moulded to any shape. It is cured by Ultra Violet light (sunlight) and forms a seamless and impenetrable waterproof lining, with excellent strength, abrasion resistance and impact properties. It is manufactured in manageable rolls 600mm x 10m in length and of a range of thickness, from 0.8mm to 2mm. It also has grades for chemical and fire retardancy

The Fibaroll material has a unique multi-layered system, providing superior, long term protection against the harshest attacks from weathering, chemicals and corrosion. Fibaroll solves a multiplicity of industrial maintenance problems and needs. In these strict, economically controlled operations, in the oil, gas, petrochemical, water treatment, construction and other major industries, the client needs to achieve optimum maintenance costs, to remain competitive. The Fibaroll system greatly reduces the maintenance costs, due to its "fit and forget" installation. Once cured, the material can withstand 200 bars of pressure and therefore offers a quick solution to leaking pipes and actually brings the integrity back into the pipe, preventing unscheduled shutdowns, due to its coldwork application.

The material can be applied to almost any surface. Skilled manpower is not required for the application of the system, it does not require specialized training, or expensive equipment for its installation. It is quickly and easily fitted, to the most awkward of shapes. It has already been utilized by several major oil, gas and petrochemical companies, for protection of underground piping, insulated piping/vessels cladding, repairs to pitted or corroded surfaces, storage tanks, shipping, concrete structures and tanks, jetties and various, other applications throughout industry.

It has long been a problem for the maintenance cost on piping, vessels, tanks, for replacing Stainless Steel insulation cladding, insulation materials and the relevant associated blasting and painting, due to damage and water ingress, due to the sealant disbondment. The Fibaroll system provides a high strength seamless solution to the common problems. It can actually be walked on, once it has cured! Due to its impressive durability and waterproof/weatherproof structure, excellent protection is obtained from all elements and water ingress and physical damage are no longer a concern, for insulated items. It is unaffected by UV degradation and actually uses the UV to cure.

There is a website available ( www.fibaroll.com), which provides a number of case histories and technical data for the system. Contact for technical information can be made to 03-56211255 or 012-9081828 or email: phoenixt@tm.net.my




## WELDING PRINCIPLES AND APPLICATIONS, 4E

*by Larry Jeffus, Eastfield College, Mesquite, Texas*

This comprehensive welding text covers all aspects of welding, progressively guiding them from the absolute basics to AWS Certified Welder Test preparation. Experiments and practices are designed to familiarize the student with a wide range of machine settings, production of quality welds, while minimizing wasted stock and non-skilled work such as grinding and finishing. Based on standards established by the American Welding Society, the students learns to develop industry-acceptable practices for professional application.

- a new chapter in railroad welding has been added providing instruction and practices needed to further develop complex welding skills and demonstrating an important area of specialization
- the Welding Symbols Wheel provides welders with an at-a-glance guide to all symbols encountered on the job
- Study Guide/Lab Manual has been updated to correlate with all text updates
- follows the format of the American Welding Society (AWS) to familiarize and prepare the reader for testing and certification
- lab practices, with detailed instructions, are designed to develop specific welding skills applicable to industry standards
- outlined objectives, key terms, review questions, lab experiments and lab practices keep the reader focused on establishing acceptable practices

### CONTENTS

Introduction: Introduction To Welding. Safety In Welding. Shielded Metal Arc Welding: Shielded Metal Arc Equipment, Setup & Operation. Shielded Metal Arc Welding Of Plate. Shielded Metal. Cutting & Gouging. Gas Shielded Metal Cutting & Gouging. Gas Shielded Welding. Advanced Processes & Technology. Related Processes & Technology. Oxyfuel. Appendix. Glossary. Index.

## ORDER FORM

*Please return this completed order form to:*

**BOOK ONE SDN BHD** c/o MIM Bookstore
Malaysian Institute of Management, 227, Jalan Ampang, 50450 Kuala Lumpur.
Tel: 03-2161 2085 H/P: 019-327 9329 Fax: 03-2161 2090 E-mail: bookone@po.jaring.my

Name: _____

☐ I enclosed a Crossed Cheque/Money Order No. _____
(inclusive of postage) for RM _____
(made payable to 'Book One Sdn. Bhd.' only)

☐ Please charge the amount to my VISA/MASTERCARD/AMEX:

Name as on Credit Card: _____

Card Expiry Date: _____ Date of order: _____

Delivery Address: _____

_____

_____

Tel (Office): _____ (Home): _____

E-mail: _____

Signature: _____
(As per VISA/MASTERCARD/AMEX Card Account)

For enquiries into other book titles, please call
**Alwi** or **Henry** at **Tel: 03-2161 2085**

| No. | Title | Qty | Retail (RM) | MIM members 10% Discount | Regd Post Per Book (RM) | Total (RM) |
|---|---|---|---|---|---|---|
| 1. | Welding Principles and Applications, 4E | | 199.00 | 179.10 | 5.00 | |

** For Sabah & Sarawak postage charge is RM10.00 per book*

**Total (RM)**

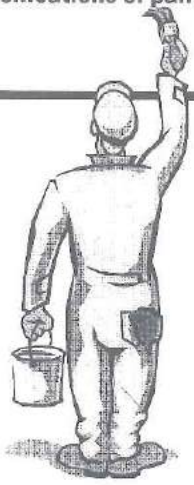
# The Institute of Materials, Malaysia

## COATING DEFECTS

*Failures, Rectification & Prevention*

**This 1-day course is a must for:**

- Engineers
- Managers
- Coatings Inspectors
- Paint Applicators and...
- All involved in maintenance, design and specifications of painting.



Recognising coating failures, understanding their causes and how to rectify them can save costs in maintenance, prevent shut-downs and costly replacements.

**Most coating failures can be avoided!**

Competent inspection and supervison during construction is very important.

Maintenance programmes should be in place to deal with failures which appear after years of exposure to the severe prevailing weather conditions.

In this short but intensive course, coating defects and failures will be discussed. Methods of prevention and rectification will be explained.

### COURSE CONTENT

- Paint faults developing during storage.
- Coating defects arising during application.
- Coating defects developing during drying and curing.
- Coating defects apparent after application.
- Coating defects due to poor adhesion.
- Coating defects developing in service.
- Metallic coatings.

| | Intake | Location | Please tick (√) |
|---|---|---|---|
| 1 | 21 August 2001 (Tue) | Miri | |
| 2 | **29 October 2001 (Mon)** | Kuala Lumpur | |

Time : 9.00 am—5.00 pm
Fee : RM 550.00 (early bird registration)
: RM 600.00 (IMM members) RM700.00 (Non-member)
*Early fee : Payments received **20 and more days** before course commencement.*
*Normal fee : Payments received **less than 20 days** before course commencement.*
*ALL CHEQUES ARE TO BE MADE IN FAVOUR OF THE "**INSTITUTE OF MATERIALS, MALAYSIA**". Add 0.03% for every outstation cheque.*

### ACTIVITY ORGANISERS:


GADING INSTITUTE SDN BHD
Company no: 428531-K
85-2 & 87-2 Changkat Thamby Dollah
Off Jalan Pudu
55100 KUALA LUMPUR
Tel: 03-2141 6300 (4 lines)
Fax: 03-2141 9053
E-mail: gading99@tm.net.my

TELAGA MANAGEMENT SERVICES
Lot 600, 2nd Floor, Block 7
Pelita Commerce Centre
98000 Miri, SARAWAK
Tel: 085-659564
Fax: 085-659564


### REGISTRATION FORM

Name:.....
Company:.....
Address:.....
.....
..... E-mail:.....
Tel:..... Fax:.....
Contact Person:..... Designation :.....
Signature :..... Date:.....
Email:.....

# Blasting & Painting Supervisor Course

INSTITUTE OF MATERIALS MALAYSIA

There is an increasing demand for trained blasters and painters qualified to undertake the additional responsibilities of Supervisor in Blasting and Painting. This course is to upgrade these blasters and painters who wish to gain advanced skills in surface preparation and paint application to qualify for the Blasting and Painting Supervisor Certificate.

ACCREDITATION

Upon successfully completing the course, participants will be presented with a Certificate from the Institute of Materials, Malaysia and an Achievement Award from TAFE, Australia.

## COURSE CONTENT

1. Corrosion
2. Corrosion Control By Protective Coatings
3. Surface Preparation
4. Application of Paints
5. Monitoring

| Please ( ✓ ) | DATES | LOCATION |
|---|---|---|
| | 23-24 Feb 2001 | KL/PJ |
| | 20-21 Apr 2001 | P. Gudang/JB |
| | 20-21 Jul 2001 | KL/PJ |
| | 27-28 Oct 2001 | Kuantan |

## COURSE DETAILS

Duration : 2 days of classroom lectures

Course Fee : RM1,250.00 (*early bird fee)

: RM1,350.00 (usual fee )

*For payment received 20 or more days before commencement of course.

| Name of Candidates | Designation | Intake |
|---|---|---|
| | | |
| | | |
| | | |

Name : _____

Address: _____

_____

Tel: _____ Fax: _____

Contact Person: _____ Signature: _____

Send your registration to :

**INSTITUTE OF MATERIALS, MALAYSIA**
c/o Gading Institute
85-2 & 87-2 Changkat Thamby Dollah
Off Jalan Pudu
55100 Kuala Lumpur
Tel: 03 - 2141 6300 Fax: 03 - 2141 9053
E-mail: gading99@tm.net.my

Please make cheques payable to "INSTITUTE OF MATERIALS, MALAYSIA".

# CORROSION CONTROL BY PROTECTIVE PAINTS

**Corrosion is the destruction of a metal by electro-chemical reaction with its environment.**

## COURSE CONTENT

| | |
|---|---|
| Corrosion Fundamentals | 3 |
| Paints & Protective Coatings | 3 |
| Surface Preparation | 3 |
| Application of Paints | 3 |
| Coating Selection | 3 |
| Coating Failures, Repair and Maintenance | 3 |

## FOR WHOM

| | |
|---|---|
| Managers | 3 |
| Engineers | 3 |
| Contractors | 3 |
| Site supervisors | 3 |
| Architects | 3 |
| Specifiers | 3 |
| Technical Paint Consultants | 3 |

## WHAT WILL PARTICIPANTS LEARN:

- What corrosion is.
- What protective coatings are and how these are used to give maximum protection in various climatic and environmental conditions.
- Economic evaluations of corrosion protection and the relative costs of protective systems for various substrates.
- Relative cost of surface preparation treatments and application methods of protective coatings.
- Coverage of coatings using roughness factors.

## COURSE OUTCOMES

**On completion of the course, participants will be able to accurately determine the extent of corrosion problems, what steps to take to prevent further deterioration, evaluate various protective coatings and choose the most cost effective coating systems to give optimum protection to the project.**

## COURSE DETAILS

Duration : 2 days
Time : 9.00 am—5.00 pm
Fee : RM1,450.00 (usual fee)
: RM1,350.00 (*early bird fee)

*For payments received **20 or more days** before course commencement dates.

| NO | DATES | LOCATION |
|---|---|---|
| 1 | 19-20 Feb 01 | KL/PJ |
| 2 | 16-17 Apr 01 | JB |
| 3 | 16-17 Jul 01 | KL/PJ |
| 4 | 23-24 Oct 01 | Kuantan |

| Name of Candidates | Designation | Intake |
|---|---|---|
| | | |
| | | |
| | | |

Name of Company: _____
Address: _____
_____
_____
_____
Tel: _____ Fax: _____
Contact Person: _____ Signature: _____

Send your registration to :

**INSTITUTE OF MATERIALS, MALAYSIA**
c/o The Activity Organiser
Gading Institute
85-2 & 87-2 Changkat Thamby Dollah
Off Jalan Pudu
55100 Kuala Lumpur
Tel: 03 - 2416 300
Fax: 03 - 2419 053
E-mail: gading99@tm.net.my

Please make cheque payable to the 'INSTITUTE OF MATERIALS , MALAYSIA'.

# PRELIMINARY CONFERENCE PROGRAMME

## Pre-Conference 'Ice-Breaker' Programme (29th October, 2001)
## "2001 IMM EXECUTIVE GOLF TOURNAMENT"
## "2001 IMM EXECUTIVE BOWLING CHAMPIONSHIP"

**DAY 1 - 30th October, 2001** ***Exhibition open from 8.00 a.m. - 6.00 p.m.***

| | |
|---|---|
| 8.00am - 8.30am | Registration of Conference delegates |
| 8.30am - 9.00am | Arrival of Minister, VIP & Guest of honour |
| 9.00am - 9.10am | Welcoming Remarks by Conference Organizing Chairman, Dr. C L Lim |
| 9.10am - 9.20am | Welcoming Remarks by IMM President , Dr. Rahim Md. Nor |
| 9.20am - 9.30am | Speech an official opening by Minister of Science Technology & Environment, The Honourable Dato' Law Hieng Ding |
| 9.30am - 10.00am | Morning Break (Networking, Press Conference & Exhibition visit by VIP) |

**PART I - TRENDS & ISSUES *(Hosted by: IMM, Fabrication Committee)***

Session Chairman: Ir. Mohd Suradi Yassin (c/o OGP Technical Services - PETRONAS subsidiary)

| | |
|---|---|
| 10.00am - 10.30am | GLOBAL OUTLOOK - KEYNOTE ADDRESS (BY IOM, UK) |
| 10.30am - 1.00pm | Technical Sessions No: 1 - Global Experiences & Challenges |
| 1.00pm - 2.00pm | Afternoon Break (Lunch) & Exhibition |

**PART II *(Hosted by: IMM, Corrosion Committee)***

Session Chairman: Mr. David Lim Chee Cheong (c/o ESSO Production Malaysia Inc)

| | |
|---|---|
| 2.00pm - 3.00pm | Technical Sessions/Workshop Series No: 2 |
| 3.00pm - 3.30pm | Afternoon Break (Coffee & Tea Refreshment) & Exhibition |
| 3.30pm - 5.00pm | Technical Sessions/Workshop Series No. 3 |

**DAY 2 - 31st October, 2001** ***Exhibition open from 8.30 a.m. - 6.00 p.m.***

**PART III *(Hosted by: IMM, East Malaysia Committee)***

Session Chairman: Puan Maimunah Ismail (c/o SHELL Sarawak Berhad)

| | |
|---|---|
| 9.00am - 10.30am | Technical Sessions/Workshop Series No: 4 |
| 10.30am - 11.00am | Morning Break & Exhibition - Special Presentation by Booth Participants |
| 11.00am - 12.00pm | Technical Sessions/Workshop Series No. 5 |
| 12.00pm - 1.00pm | Lunch Break & Exhibition - Special Presentation by Booth Participants |

**PART IV *(Hosted by: IMM, Polymer Committee)***

Session Chairman: Dato' Dr.Ong Eng Long (c/o Malaysia Rubber Board)

| | |
|---|---|
| 1.00pm - 2.30pm | Technical Sessions/Workshop Series No: 6 |
| 2.30pm - 3.00pm | Afternoon Break (Coffee & Tea Refreshment) & Exhibition |

**PART V *(Hosted by: IMM, Education & Career Committee)***

Session Chairman: Dr. Teh Ser Kok (c/o Universiti Malaya)

| | |
|---|---|
| 3.00pm - 4.00pm | Technical Sessions/Workshop Series No: 7 |

**PART VI *(Hosted by: IMM, Council)***

Session Chairman: Dr.Rahim Md.Nor (c/o PETRONAS Research & Scientific Services)

| | |
|---|---|
| 4.00pm - 5.30pm | Technical Sessions/Workshop Series No: 8 |
| 5.30pm - 6.00pm | CLOSING CEREMONY - Presentation of Certificate of Attendance |

# "FABRICATION TECHNOLOGY"
## (Incorporating CORROSION 2001)
## CONFERENCE & EXHIBITION REGISTRATION FORM
## Fax to 03.2272.5003

☐ I wish to take up exhibition booth space (3m x 3m, 3m x 2m SOLD OUT, 1m x 2mx1m LIMITED LEFT!)

☐ I wish to take up Banner Visibility pre, pot during events.

☐ I wish to advertise in the souvenir programme, please send more information.

**Conference Registration** (For all registration before 31st August, 2001 each delegate will be given a LUCKY DRAW ticket for overseas & local travel, electrical items and more..)
* *Conference Fee excluding Golf & Bowling Fee*

☐ One Delegate: **RM950 (USD250) – IMM Member /RM1330(USD350 – Non-Member**

[ ] Two Delegates: 15% [ ] Three Delegates: 20% Discount [ ] Four Delegates: 25% Discount

Name:..... Designation: .....

Name:..... Designation: .....

Name:..... Designation: .....

Organisation: .....

Tel No: ..... Fax No: .....

Email: ..... URL: .....

☐ I hereby enclosed my cheque/bank draft made payable to: *"Institute of Materials, Malaysia"*

☐ I am paying by bank transfer (copy attached) to:
**INSTITUTE OF MATERIALS, MALAYSIA**
Hong Leong Berhad, 3, Jalan Takal 15/21, Section 15, 40000 Shah Alam, Selangor
**Account no : 032-000-27316**

☐ Payment by credit cards:

**VISA/MASTER CARD NO:** ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

**AMERICAN EXPRESS CARD NO** ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

Card Expiry Date : .....

Card holder name: ..... Signature: .....

Card holder's address : .....
.....
.....

**Hotel Accommodation Booking**

**Mandarin Oriental Hotel**
Deluxe Room (RM350.00/USD93 nett)
No. of rooms [ ] x [ ] nites

**Nikko Hotel**
Premier Room (RM282.50/USD75 nett)
No. of rooms [ ] x [ ] nites

**Park Plaza International Hotel**
Deluxe Room (RM195.00/USD52 nett)
No. of rooms [ ] x [ ] nites

**Mutiara Hotel**
Deluxe Room (RM250.00/USD66 nett)
No. of rooms [ ] x [ ] nites



*Online registration available at:*
**www.materialsplanet.com**