A quarterly magazine PP18691/01/2018(034114)/ISSN2289-9030

MATERIALS MIND

Issue 33

January 2022

www.iomm.org.my

Institute of Materials, Malaysia

HIGHLIGHTS

- IMM YEARBOOK
- IMM Training and Certification Schemes
- Mid- to far-FTIR region for conformity analysis of inorganic raw materials and paints with inorganic components

ISSN 2289-9030

TABLE OF CONTENTS

INSTITUTE OF MATERIALS, MALAYSIA

Suite 1006, Level 10, Block A, Kelana Centre Point,
No. 3 Jalan SS 7/19, 47301 Petaling Jaya, Selangor.
Tel: 03-76611591
03-76611592

secretariat@iomm.org.my
www.iomm.org.my
+60 18-911 3480
Institute of Materials, Malaysia

JANUARY 2022 Issue 33

TO ALL IMM MEMBERS,

NOTICE OF 32ND ANNUAL GENERAL MEETING

Notice is hereby given that the 32nd Annual General Meeting of the IMM will be held as follows:

Format : Virtual Live Event
Date : 18th March 2022 (Friday)
Time : 3.00 pm – 6.00 pm

AGENDA

1. Adoption of the agenda
2. President's address
3. To approve the minutes of the 31st Annual General Meeting (*)
4. To receive and adopt the 2021 report of the council presented by the Honorary Secretary of IMM (*)
5. To receive and adopt the 2021 statement of accounts presented by the Honorary Treasurer of IMM (*)
6. Election of 10 Council Members for 2022-2024 term
7. Proposed amendment to IMM Constitution (*)
8. Tabling the appointment of auditor(s) for 2022 by the Honorary Treasurer of IMM
9. Any other matters

(*) can be accessed electronically on IMM website (www.iomm.org.my) after 11th Feb 2022.

By order of the Council,
Prof. Ts. ChM. Dr. Melissa Chan Chin Han
Honorary Secretary, IMM

Date: 2nd January 2022

REPLY SLIP

I hereby confirm that I will be able / not be able* to attend the AGM above.

SIGNATURE: _____
NAME: _____
ORGANIZATION NAME: _____
MEMBERSHIP NO.: _____
DATE: _____

Please indicate confirmation *via* email to secretariat@iomm.org.my before 12:00 pm, 12th March 2022.
**Delete whichever not applicable.*

ANNUAL GENERAL MEETING PROXY VOTING FORM

I _____(please print name in full) and IMM Membership no. _____wish to record my apologies for absence and hereby appoint_____(please print name in full) and IMM Membership no. _____(or, failing him/her, the Chairman of the Meeting) to act as my proxy at the 30th Annual General Meeting of the IMM.

Signature: _____ Date:_____

This Proxy Voting Form should be returned to the IMM office via email (secretariat@iomm.org.my) before 12:00 pm, 12th March 2022.

NOTICE FOR RENEWAL OF ANNUAL MEMBERSHIP AND SUBSCRIPTION FEES 2022

APPLICATION FOR RENEWAL OF MEMBERSHIP						
PARTICULARS OF MEMBER (*update where necessary*)						
PERSONAL INFORMATION						
FULL NAME	:					
TITLE	:		IC/PASSPORT NO.	:		
DATE OF BIRTH	:		AGE	:		
CORRESPONDENCE ADDRESS	:					
MOBILE PHONE NO.	:		HOUSE PHONE NO.	:		
EMAIL ADDRESS	:					
IMM MEMBERSHIP NO.	:					
CURRENT JOB INFORMATION						
NAME OF COMPANY	:					
DESIGNATION/POSITION	:					
ADDRESS OF COMPANY	:					
OFFICE PHONE NO.	:		OFFICE FAX NO.	:		

MEMBERSHIP SUBSCRIPTION AND PAYMENT						
GRADE (Thick the appropriate box)		SUBSCRIPTION PERIOD				
	Fellow (F.I.M.M)		1-year			
	Professional (M.I.M.M)		More than 1-year, please state	:		years
	Associate (A.M.I.M.M)		Amount paid	:		
	Company					
	Ordinary					

MEMBERSHIP ANNUAL SUBSCRIPTION FEES SCHEDULE

Description	Amount (RM)				
	Fellow (F.I.M.M.)	Professional (M.I.M.M.)	Associate (A.M.I.M.M.)	Company	Ordinary
Annual Subscription	150.00	100.00	80.00	200.00	40.00

PAYMENT

Payment can be made by cheque, telegraphic transfer, bank draft, cash deposit machine or via online/internet banking as follows:

Account Name	:	Institute of Materials, Malaysia
Account	:	8009055156
Bank	:	CIMB
Swift Code	:	CIBBMYKL

SUBMISSION OF DOCUMENTS

Send your completed form together with the proof of payment either via email to **secretariatoffice.imm@gmail.com** or WhatsApp to **018- 9113480** or send by courier/post to:

The Secretariat
Institute of Materials, Malaysia
Suite 1006, Block A, Kelana Centre Point
No.3, Jalan SS3/17, Kelana Jaya
47301 Petaling Jaya, Selangor

The membership renewal online form can be accessed through IMM website at this link

https://www.iomm.org.my/membership-renewal/

Brought to you by

Polymer Seminar

Theme:

Insight into Polymer Processing and Analysis

March 18, 2022

10 A.M. - 12 P.M.

Venue: TARUC&Virtual Meeting

Time	Agenda
9:30 am – 10:00 am	Registration
10:00 am – 10:10 am	Welcome speech by Organiser
10:10 am – 10:40 am	Topic: The processing of natural rubber: a preliminary insight Speaker: Mr. Mohd Ikram Mohammad, Lembaga Getah Malaysia
10:40 am – 11:20 am	Topic: Tips for Defect-Free Injection Moulding Process Speaker: Ts. William Lee Kin Weng, founder of Metalloy Consultant Services
11:20 am – 12:00 pm	Topic: Mechanical Testing for Polymer - The Devils is in the Details Speaker: Mr. Ng Phooi Sang, CEO of GT Instruments Sdn Bhd.
12:00 pm – 12: 10 pm	Group Photo Session
12:10 pm – 1 pm	Lunch

Our Speakers

Ts. William K.W. Lee
Technical Training Director of Metalloy Consultant Services

Ng Phooi Sang
Founder of GT Instruments Sdn. Bhd.

Mohd Ikram Mohammad
Engineering & Technology Division
Malaysian Rubber Board

COVER STORY

IMM TRAINING AND CERTIFICATION SERVICES

Prepared By:
Secretariat of Institute of Materials, Malaysia

BACKGROUND

The Institute of Materials, Malaysia (IMM) [formerly known as the Malaysian Materials Science & Technology Society (MMS)] has associated with Training and Certification of Technical Practitioners over the past three decades. To date, the 30-Member Council administered IMM has certified more than 9000 skilled practitioners for the Oil & Gas Industry in Malaysia through its competency development and certification programs.

Over the years, these IMM trained and certified competent persons in the Oil & Gas Industry has made IMM perceived as a reliable Training and Certification Body. IMM certification programs are widely recognized by PETRONAS and all Oil & Gas operators in Malaysia. Since January 2011, more than 200 Welding Engineers and 30 Coating Fingerprint Quality Controllers were trained and certified by IMM.

On 29th March 2021, another historically memorable day for the Institute of Materials, Malaysia (IMM) as it has been accredited as a Persons Certification Body (ISO/IEC 17024) by Standard Malaysia. To be the FORERUNNER among all domestic certification bodies, IMM is currently making inroads into the Construction, Energy and Transport industries.

BENEFITS OF IMM CERTIFICATION

IMM-approved training courses and the related certification programs are dedicatedly designed to equip practitioners with the relevant skills and knowledge for entry into the specific industrial sector. The IMM certification provides proof and assurance to prospective employers that the certified persons have achieved the level of proficiency in a particular field. The focus is not only on developing competencies and skills from fresh talents but also on upskilling their existing competencies to complement their work experience as it provides a huge jumping-off point for career advancements in the industry. Such skills enhancement through formal certification programs will expose the workforce to be well-prepared for the industrial new technologies for operation efficiency. This in turn leads the existing workforce towards enhancing national productivity and making our industries more competitive.

IMM certification will increase the value of the competency of the tested workers to their respective organizations. It opens more doors as many positions work out better with certified hired in place as industry work specifications increasingly demand certified personnel for contract jobs. Employers are more inclined towards the certified candidate over the uncertified one. In addition, IMM's certification programs provide certified person access to additional resources and better networking opportunities with peers and industry leaders. IMM certification will provide various opportunities for business and career advancements for the certified practitioner. Figure 1 shows all the benefits of IMM Training and Certification

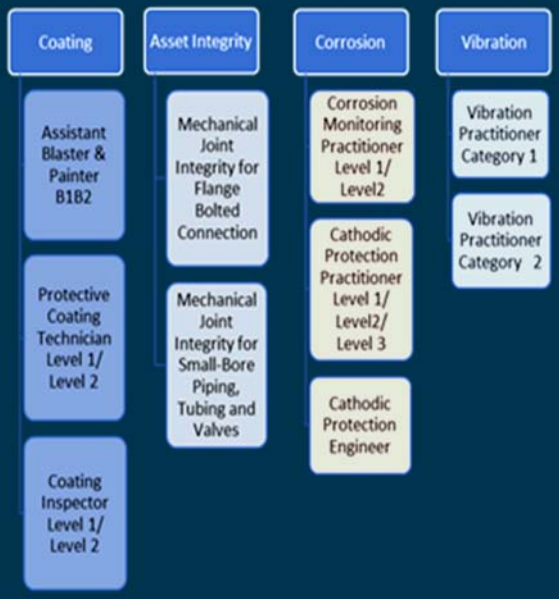


Figure 2 *List of IMM Certifi*

DEVELOPMENT OF CERTIFICATION SCHEMES

As a FORERUNNER certification body that is well recognized domestically in Oil & Gas industries for skilled practitioners in the Materials Science and Technology fields, IMM is capable to assess and certify a person for his/her competency to standards established and required by the industry in various sub-fields. Competence-based certification means that IMM is expected to examine a candidate for his knowledge, skill, personal attribute and qualification specifically to the program and/or scope of certification.

IMM's certification schemes have been developed over the years along with the competence criteria. The Technical Committees comprising Subject Matter Experts continue to play a crucial role in developing new certification schemes or upgrading existing schemes and ensuring standards of competence meet the industry requirements. The Development or Review of the Certification Schemes are coordinated by Program Custodians nominated by the respective Technical Committees. The Program Custodian acts as the liaison between the Technical Committee and the IMM Secretariat which works closely with the Examination and Certification Panel.

The Examination and Certification Panel is the approving authority for all matters relating to examination and certification and includes examination sets, examiners, examination results, certification schemes, quality manuals, standard operating procedure (SOP) and all other relevant documents.

IMM's certification schemes for each category of competency cover the following elements in line with ISO requirements:

- Scope – Job and Certification Title
- Job and Task Description – Description of the tasks required to perform the audit
- Required Competence – Knowledge and Skills
- Prerequisites – Qualifications, Work Experience and Training
- Assessment Methods – Written, Oral, Practical and Observation
- Examination Structure and Duration
- Criteria for Certification - Assessments/Examination Pass Scores
- Criteria for Re-Certification – Confirmation of Continuing Satisfactory Work, Work Experience, Examination/Interview, Continuous Professional Development

To ensure continued competency of the certified personnel, IMM has stipulated re-certification requirements which requires renewal of certification at the end of 3 years or 5 years depending on the respective schemes. The process of re-certification involves assessment of the manager or supervisor with endorsed work experience during the certification cycle, compliance to continuing professional development requirements and may include the need for a refresher course followed by an examination. Figure 2 shows a list of popular IMM certification schemes including newly introduced schemes such as Mechanical Joint integrity, Thermit Welding and Coating Fingerprinting.

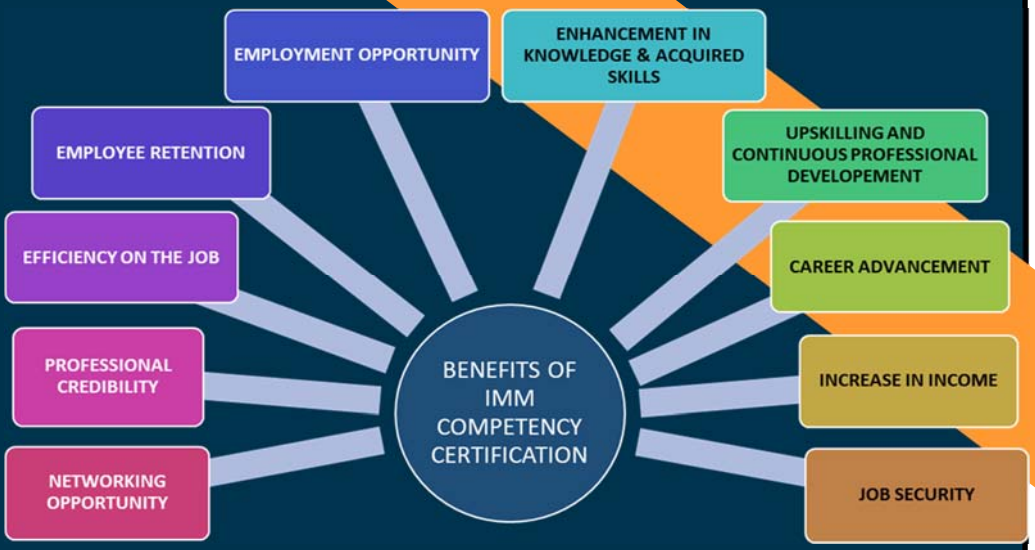
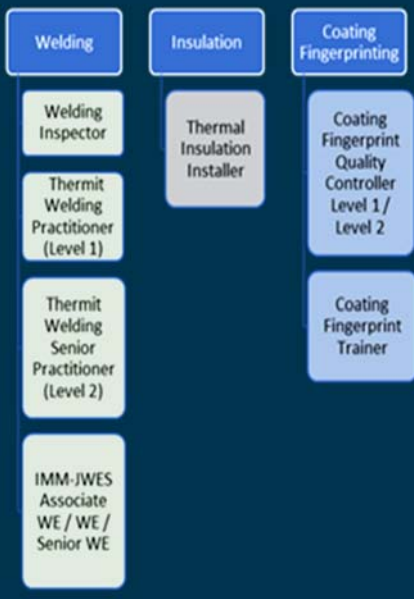


Figure 1 *Benefits for Persons Certified to IMM Certification Schemes*



cation Schemes

MAINTAINING THE STANDARDS, IMPARTIALITY AND CREDIBILITY OF IMM CERTIFICATION SCHEMES

To add further credence to its certification operations, IMM has put in place a system in accordance with the requirements of ISO/IEC 17024, *Conformity Assessment – General Requirements for Bodies Operating Certification of Persons.* After all the hard works for almost a year, on 29th March 2021, the Institute of Materials, Malaysia (IMM) has been accredited as a Persons Certification Body (ISO/IEC 17024) by Standard Malaysia. The structure in place at IMM ensures impartiality which is a major requirement under ISO/IEC 17024 as Training and Certification Activities are segregated. Pre-Requisite Training is outsourced to IMM Associate Training Partner (ATP) & Authorized Training Bodies (ATBs) who manage the training while IMM takes responsibility for the conduct of the certification examinations, independent of the training. However, generally, for the convenience of the candidates, the examinations are scheduled back-to-back with the training while ensuring that the examiner assigned is not the trainer.

The synergy between the industry and academia puts IMM in a strong position as a Leading Certification Body and enables IMM to not only develop the training and certification programs but also to assess and certify if a candidate complies with the skill sets required to work in the industry according to established requirements/specifications. Thus, IMM Certification Programs developed jointly by the industry and academia have been proven to improve confidence on the job to both employer and employee and the user of services of the certified persons.

CONCLUSION

Being backed by Technical Resources, IMM's competency training and certification programs are well recognized by Multi-National Companies (MNC), Small and Medium Enterprises (SME) and Domestic Authorities in Malaysia as well as beyond its borders. IMM will continue to further excel and lead the domestic training and certification bodies in Malaysia.

IMM TRAINING AND CERTIFICATION PROGRAM OVERVIEW

The Institute of Materials, Malaysia (IMM) offers engineering & technical professionals and practitioners a range of Certification Schemes and technical training courses to meet the requirements of the oil & gas, refining, petrochemical, transport, construction and other industries. Our programs have been developed together with the industry, academia and relevant stakeholders to ensure that the technical training and certification provided meet the relevant industry standards and requirements.

PROGRAM: COATING

IMM Certification Schemes and Courses	Technical Training Courses (Non-certification)
• Certified Protective Coating Technician (Blaster and/or Painter) Level 1 and Level 2 • Certified IMM-B1/B2 Assistant Blaster & Painter • Certified Coating Inspector Level 1 • Certified Coating Inspector Level 2 • Certified Blasting and Painting Supervisor • Certified Thermal Spray Coating Applicator • Certified Coating Quality Control Technician	• Refresher Course of Certified Protective Coating Technician (Blaster and/or Painter) Level 1 and Level 2 • Refresher Course of Certified Coating Inspector • Basic Knowledge on Corrosion Protection for Technicians and Engineers • Corrosion Control by Protective Coating • Basic Corrosion & Coating Course

PROGRAM: COATING FINGERPRINTING

IMM Certification Schemes and Courses	Technical Training Courses (Non-certification)
• Certified Coating Fingerprint Quality Controller Level 1 • Certified Coating Fingerprint Quality Controller Level 2 • Certified Coating Fingerprint Trainer	• Coating Fingerprint Foundation Course • Refresher Course of Certified Coating Fingerprint Quality Controller Level 1/Level 2

PROGRAM: CORROSION

IMM Certification Schemes and Courses	Technical Training Courses (Non-certification)
• Certified Corrosion Monitoring Practitioner Level 1 • Certified Corrosion Monitoring Practitioner Level 2 • Certified Corrosion Monitoring Practitioner Level 3 • Certified Cathodic Protection Practitioner Level 1 • Certified Cathodic Protection Practitioner Level 2 • Certified Cathodic Protection Practitioner Level 3 • Certified Cathodic Protection Engineer	• Corrosion Control by Cathodic Protection

PROGRAM: VIBRATION

IMM Certification Schemes and Courses	Technical Training Courses (Non-certification)
• Certified Vibration Practitioner Category 1 • Certified Vibration Practitioner Category 2 • Certified Vibration Specialist Category 3 • Certified Vibration Specialist Category 4	-

PROGRAM: MECHANICAL JOINT INTEGRITY (MJI)

IMM Certification Schemes and Courses	Technical Training Courses (Non-certification)
• Certified Technician in Mechanical Joint Integrity (MJI) for Flange Bolted Connection • Certified Technician in Mechanical Joint Integrity (MJI) for Small Bore – Piping, Tubing, Valves	• Mechanical Joint Integrity • Pressure Safety Valve • Small Bore Tubing

PROGRAM: THERMAL INSULATION

IMM Certification Schemes and Courses	Technical Training Courses (Non-certification)
• Certified Thermal Insulation Installer	• Introduction to Thermal Insulation

PROGRAM: WELDING

IMM Certification Schemes and Courses	Technical Training Courses (Non-certification)
• Certified Welding Inspector • IMM-JWES Certified Associate Welding Engineer • IMM-JWES Certified Welding Engineer • IMM-JWES Certified Senior Welding Engineer	• Repair Welding of Pressure Equipment in Refineries & Chemical Plants • Welding & Joining Technology for Non-Welding Personnel • Steel Technology for Non-Technical Personnel

MISCELLANEOUS MATERIALS SCIENCE AND TECHNOLOGY (NON-CERTIFICATION) COURSES

Technical Training Courses	Technical Training Courses
• Materials Selection & Corrosion • Metallurgical Failure Investigation • Basic Course on Operation of Mobile Air Compressor • Competent Mobile Industrial Compressor Operator • Competent Mobile Industrial Equipment Inspector • Practical Approach to Inspection and Maintenance of Steam Turbine	• Practical Approach to Precision Alignment Methods • Practical Approach to Precision Balancing Methods • Reciprocating Compressors: Operations, Maintenance, Inspection and Troubleshooting • Troubleshooting Techniques for Rotating Equipment • Valve Operations, Maintenance and Inspection Including Flange Breaking

Note: A certifcate of attendance will be issued to all participants of non-certifcation professional development training courses while candidates who pass the assessment/examination of IMM-certification schemes will be certified with the issue of IMM competency certificate and IMM certification ID card in addition to the certificate of attendance.

More information on training and certification is available on IMM's website at www.iomm.org.my.

For further enquiries:

Call : +603 7661 1591
Email : secretariat@iomm.org.my
WhatsApp : +6018 911 3480

INSTITUTE OF MATERIALS, MALAYSIA
Suite 1006, Level 10, Block A, Kelana Centre Point, No. 3 Jalan SS 7/19,
47301 Petaling Jaya, Selangor.

IMM AUTHORIZED TRAINING BODY (ATB)/ AUT
TRAINING PARTNER (ATP) FOR I

AUTHORISED TRAINING BODIES (ATBs)

(Offer IMM Certification Training Programs and Courses)

ATBs	Training Programs & Courses
Seacademy Sdn. Bhd. (Sarawak) **Topfields Borneo Sdn. Bhd.** (Sarawak) **Sabah Skills & Technology Centre** (Sabah) **SRC Global Resources Sdn. Bhd.** (Peninsular Malaysia) **Advance Multiskills Training Centre Sdn. Bhd.** [Excludes courses marked with *] (Sarawak)	**Coating** Certified Assistant Blaster & Painter Level 1 & Level 2 Certified Protective Coating Technician (Blaster and/or Painter) Level 1 & Level 2 Certified Blasting and Painting Supervisor Certified Coating Inspector Level 1 & Level 2 Certified Quality Control Technician* Certified Thermal Spray Coating Applicator* Basic Knowledge on Corrosion Protection for Technicians and Engineers* Corrosion Control by Protective Paints* Corrosion Control by Protective Coating*
Sabah Skills & Technology Center (Sabah) **SRC Global Resources Sdn. Bhd.** (Peninsular Malaysia)	**Mechanical Joint Integrity** Certified Mechanical Joint Integrity for Small-bore Piping, Tubing and Valves Certified Mechanical Joint Integrity for Flange Bolted Connections
Prasarana Malaysia Berhad (Malaysia)	**Thermit Welding** Certified Thermit Welding Practitioner (Level 1) Certified Thermit Welding Senior Practitioner (Level 2)

Note: The respective coverage area is indicated in brackets.

AUTHORISED TESTING CENTRE (ATC)

(Offers IMM Examination and Assessments)

ATC: JOTAC Academy Sdn. Bhd.
(Peninsular Malaysia)

Certification Examination/Assessments

- Certified Protective Coating Technician (Blaster and/or Painter) Level 1 & Level 2
- Certified Coating Inspector Level 1 & Level 2
- Certified Corrosion Monitoring Practitioner Level 1
- Certified Cathodic Protection Practitioner Level 1

HORIZED TESTING CENTRE (ATC)/ AUTHORIZED IMM COURSES & CERTIFICATION

ASSOCIATE TRAINING PARTNER (ATP)

(Offers IMM Certification Training Programs and Courses)

ATP: Materials Technology Education Sdn Bhd
(Malaysia and Overseas)

IMM Training Programs & Courses

Coating

- Certified Protective Coating Technician (Blaster and/or Painter) Level 1 & Level 2
- Refresher Course for Certified Protective Coating Technician (Blaster and/or Painter) Level 1 and Level 2
- Certified Assistant Blaster & Painter Level 1 & Level 2
- Certified Blasting and Painting Supervisor
- Certified Coating Inspector Level 1 & Level 2
- Refresher Course for Certified Coating Inspector Level 1 and Level 2
- Certified Coating Quality Control Technician
- Certified Thermal Spray Coating Applicator
- Basic Knowledge on Corrosion Protection for Technicians and Engineers
- Corrosion Control by Protective Paints
- Corrosion Control by Protective Coating

Coating Fingerprinting

- Coating Fingerprint Foundation Course
- Certified Coating Fingerprint Quality Controller Level 1
- Certified Coating Fingerprint Quality Controller Level 2
- Refresher Course of Certified Coating Fingerprint Quality Controller Level 1/Level 2

Train-the-Trainer

- Certified Trainer

Corrosion

- Certified Corrosion Monitoring Practitioner Level 1
- Certified Corrosion Monitoring Practitioner Level 2
- Certified Corrosion Monitoring Practitioner Level 3
- Certified Cathodic Protection Practitioner Level 1
- Certified Cathodic Protection Practitioner Level 2
- Certified Cathodic Protection Practitioner Level 3
- Certified Cathodic Protection Engineer
- Corrosion Control by Cathodic Protection

Thermal Insulation

- Introduction to Thermal Insulation
- Certified Thermal Insulation Installer

Vibration

- Certified Vibration Practitioner Category 1
- Certified Vibration Practitioner Category 2
- Certified Vibration Specialist Category 3
- Certified Vibration Specialist Category 4

Welding

- Certified Welding Inspector
- Repair Welding of Pressure Equipment in Refineries & Chemical Plants
- Welding & Joining Technology for Non-Welding Personnel
- Steel Technology for Non-Technical Personnel

IMM-JWES Courses

- Certified Associate Welding Engineer (AWE)
- Certified Welding Engineer (WE)
- Certified Senior Welding Engineer (SWE)

Mechanical Joint Integrity

- Certified Mechanical Joint Integrity for Small-bore Piping, Tubing and Valves
- Certified Mechanical Joint Integrity for Flange Bolted Connections
- Valve Operations, Maintenance & Inspection Including Flange Breaking

Loss of Primary Containment

- Mechanical Joint Integrity
- Pressure Safety Valve
- Small Bore Tubing

Rotating Equipment

- Competent Mobile Industrial Compressor Operator
- Competent Mobile Industrial Equipment Inspector
- Inspection & Maintenance of Pumps
- Practical Approach to Inspection and Maintenance of Stream Turbine
- Practical Approach to Precision Alignment Methods
- Practical Approach to Precision Balancing Methods
- Reciprocating Compressors: Operations, Maintenance, Inspection & Troubleshooting
- Troubleshooting Techniques for Rotating Equipment

Other Materials Courses

- Materials Selection & Corrosion
- Metallurgical Failure Investigation
- Basic Course on Operation of Mobile Air Compressor

INSTITUTE OF MATERIALS, MALAYSIA
COATING INSPECTOR LEVEL1/LEVEL2
COMPETENCY CERTIFICATION SCHEME

09th December 2021

1. INTRODUCTION

This brochure serves as a guide for obtaining the Institute of Materials, Malaysia (IMM) Coating Inspector Assessment and Certification. It is designed to satisfy the need of the Malaysian Oil & Gas Exploration & Production (EP) industry and other industries for formally assessed and certified coating inspector as per requirement in the Standard Malaysian EP Oil & Gas industry blasting and painting Specification no: PETRONAS Technical Standard PTS 15.20.03 (2019) - Protective Coatings and Lining and Shell Technical Specification SES 47.1 (2017) – Protective Coatings, Encapsulation and Wrapping Specification.

Coatings still predominate as the most important technology for protecting steel structures against corrosion. At the same time our technology faces a steadily growing demand for making corrosion protection lasts even longer. This demand is met partly by improved coatings, partly by improved methods for surface preparation and the use of advanced application equipment. At the end of the day new technology and quality workmanship only combine to attain the desired result when every step of the process is properly controlled.

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 use of protective coatings.

To ensure efficient and cost-effective protection, a coating had to be properly applied on adequately prepared surfaces. Here the coating inspector plays an important role. The coating inspector needs knowledge of the physical and chemical processes involved and must have an understanding of the practical problems that he may face in the field. He 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.

The local industry has recognized the importance of coating inspectors as a skilled task to effectively deliver “high tech” protection against expensive environmental corrosion.

With the help of the industry, IMM has designed, set up and implemented an assessment and certification scheme for coating inspectors. To date IMM has assessed and certified more than 1000 coating inspectors over a period of 22 years and has been constantly reviewing and upgrading the Coating Inspector assessment scheme.

To further improve the quality of the personnel to be certified and for the industry to look forward with better confidence for coating inspection carried out by such personnel, IMM has recently revised the assessment topics to upgrade its certification program to be on par with international standards such as those of AMPP (merger of NACE & SSPC).

Reference standards (reference used shall refer to the latest published document) for Coating Inspector Level 1:

- ASTM D 1186-87: Non Destructive Measurement of Dry Film Thickness of Non Magnetic Coatings Applied to a Ferrous Base
- ASTM D 610: Evaluation Degree of Rusting on Painted Steel Surfaces
- IMM FP01: Coating Fingerprinting Overall Procedures for Paints Using FTIR and Other Related Methods
- ISO 8501-1: Preparation of Steel Substrates Before Application of Paint and Related Products – Visual Assessment of Surface Cleanliness
- ISO 8509: Tests for the Assessment of Surface Cleanliness

Reference standards (reference used shall refer to the latest published document) for Coating Inspector Level 2:

- ASTM D 1186-87: Non Destructive Measurement of Dry Film Thickness of Non Magnetic Coatings Applied to a Ferrous Base
- ASTM D 3359-87: Measuring Adhesion by Tape Test
- ASTM D 4541-95: Pull-Off Strenght of Coatings by Portable Adhesion Testers
- ASTM D 5162-91: Discontinuity (holiday) Testing of Non Conductive protective Coating on Metallic Substrates
- ASTM D 610: Evaluation Degree of Rusting on Painted Steel Surfaces
- ASTM D 6677: Standard Test Method for Evaluating Adhesion by Knife
- IMM FP01: Coating Fingerprinting Overall Procedures for Paints Using FTIR and Other Related Methods
- ISO 8501-1: Preparation of Steel Substrates Before Application of Paint and Related Products – Visual Assessment of Surface Cleanliness
- ISO 8509: Tests for the Assessment of Surface Cleanliness

2. THE COATING INSPECTOR CERTIFICATION SCHEME

The Institute of Material, Malaysia’s Coating Inspector (CI) Certification Scheme will equip graduates with the knowledge and skills to demand sufficient authority for their decisions to be recognized by both clients and contractors. They are able to work as not only as coating inspectors but as technical service personnel with paint companies and corrosion controllers in the oil & gas, construction, and other industries, ensuring that the standard and efficiency of painting projects is maintained and that down-time and sub-standard work are kept to a minimum.

There are two levels of CI certification:

Level 1

Coating Inspector Level 1 focuses on the basics about paint technology, the influence of climate, surface preparation and application methods, quality control and inspection skills.

Level 1 personnel are qualified to carry out operations according to written instructions *under the supervision of Level 2 Coating Inspector*. Level 1 certified personnel have demonstrated the competence to:

- Set up and calibrate specific inspection or test equipment;
- Carry out tests and perform inspections against established criteria;
- Record and classify the results of tests and inspections against established criteria;
- Report the results.

After successful completion of CI Level 1, the basic inspector has "entry level" knowledge of all referenced competencies. They can perform basic non-destructive inspections of liquid coatings applied by brush, roller or spray to steel surfaces *under the supervision of a Level 2 inspector.*

Level 2

Coating Inspector Level 2 focuses on advanced inspection techniques and specialized application methods for both steel and non-steel substrates, using both non-destructive and destructive techniques. Surface preparation, coating types, inspection criteria, lab testing, and failure modes for various coatings, including specialized coatings and linings are also covered.

Level 2 personnel are qualified to perform and direct inspection or testing operations according to established or recognised procedures and they have demonstrated competence to:

- Choose the extent of inspection or testing to be used
- Choose the inspection and test methods to be used
- Set up and calibrate inspection or test equipment
- Perform and supervise inspection or testing tasks
- Interpret and evaluate results according to applicable normative documents;
- Define the limitations of application for common test methods;
- Prepare written test instructions, organise and report the results of inspections or tests

The Level 1 and Level 2 certification schemes will assess the candidate both in the theory and practical aspects, which will determine their competency in accordance with the terms and conditions of IMM Coating Certification Scheme.

Graduates of the program will be issued with a Competency Certificate and Identification Card and be graded as "IMM Certified Coating Inspector Level 1" or "IMM Certified Coating Inspector Level 2".

The assessment program includes a two-hour pre-assessment briefing covering a quick 'run through' of all the topics to be covered in the assessment, the examination format, the duration allocated and followed by the examination.

i. For Level 1, it will be a written examination comprising 100 - 120 multiple choice questions including the assessment of understanding the practical aspects on the use of inspection tools and visual inspection.
ii. For Level 2, the examination consists of 3 sections:
    - Paper 1 consists of 6 subjective questions (10 marks each).
    - Paper 2 consists of 4 practical questions (10 marks each)
    - Paper 3 is the oral exam (25 marks) whereby each candidate will be interviewed individually.

Tools or equipment needed for practical assessment

i. Magnetic steel thermometer
ii. Whirling hygrometer
iii. Dew point & relative humidity calculator / dew point & relative humidity table
iv. Replica tape
v. Thickness gauge
vi. Wet film thickness gauge
vii. Dry film thickness gauge
viii. Adhesion tester
ix. Wet sponge pinhole detector

The competency certification program is coordinated by IMM. Candidate is strongly encouraged to attend IMM approved/recognized training courses or any other equivalent courses prior to sitting for the assessments. The IMM approved training courses are conducted by IMM certified trainers through IMM Authorised Training Body (ATB) or Associate Training Partner (ATP). Nevertheless, prior training program for the experienced coating inspector is not compulsory.

3. BENEFITS OF HAVING A IMM CERTIFIED COATING INSPECTION CERTIFICATE

Inspection is an essential part of the coating industry and inspectors have an increased responsibility on their job sites. It is crucial that they are thoroughly trained to handle jobs in their respective specialties, whether that be concrete or steel structures. Becoming a certified inspector is an important step in advancing one's career in the coating industry.

IMM is one of the industry leaders in Malaysia in providing excellent and qualified industrial coating inspectors. Obtaining a certification in coating inspection can reward the certified person with potentially a higher salary, stronger employment demand, and overall better job quality.

Hiring certified and experienced inspectors in the coating industry is often the difference when it comes to the overall cost of a project. Coating Inspectors are trained on edge feathering, runs and sags, paint color, product mixes, solvent types, and many other crucial details on a job site. Their expertise aids in getting jobs done to the correct specifications, saving companies from expensive repairs later on.

If coating jobs are not preformed to the paint manufactures' requirements, then they are not responsible for any necessary repairs in the event of coating failure. Having a certified coating inspector on the job site provides proper quality assurance, which could save a company thousands of dollars in the event of a coating failure.

The objective of this certification scheme is to ensure individuals involved have been thoroughly trained in the proper methods of inspecting surface preparation and installation of industrial and marine protective coatings and lining systems on an array of industrial structures and facilities. The protection of iron and steel against atmospheric and marine corrosion by coatings is comprehensively covered in the training course. The protection of other construction materials is also dealt with.

An investment in training a Coating Inspector will pay rich dividends in increased productivity and profit for the company and enhanced career prospects for the graduate.

The IMM Coating Inspector Certification Scheme has the support of PETRONAS, SHELL, ESSO and other local and multinational companies.

4. WHO SHOULD ATTEND

Although specifically designed for coating inspector trainees who wish to begin a career in this field but have little or no experience, the related training course benefits anyone interested in gaining a better understanding of coating application and inspection. This includes program/ project managers and engineers, quality assurance/control managers, coating manufacturers, fabricators, painting supervisors, paint applicators and blasters and maintenance personnel.

The Coating Inspector Certification Scheme skills requirements are covered by the following syllabus. The certification examinations will be based on the topics listed in the syllabus. There are 4-day training course (Level 1) or 1-day refresher course (Level 2) consisting of online or classroom lectures. The training course or refresher course is optional for candidate with experience.

5. TRAINING AND ASSESSMENT TOPICS

The topics for assessment in terms of the knowledge and skills needed by candidate include the following:

COATING INSPECTOR LEVEL 1

- Introduction to corrosion
- Composition & manufacture of paints; and paint fingerprinting
- Types of paints and their uses
- Surface preparation
- Application and storage of paints
- Paint faults and coating defects
- Test and measurement instrumentation
- Safety, health and environment
- The role of the coating inspector
- Coating project specifications
- Codes and standards

COATING INSPECTOR LEVEL 2

- Corrosion theory and terminology
- Advance surface preparation
- Advance paint faults and coating defects test
- Measuring instrument/inspection – Diagnose failure
- Composition & manufacture of paints
- Application & storage of paints
- The role of a coating inspector/inspection test plan
- Painting specification
- Calculation/mathematics'
- Safety and health

6. EXAMINATION AND ASSESSMENT

The candidates will be assessed by IMM on their competency as follows:

Coating inspector Level 1

The written examination consists of 100 – 120 multiple choice questions (2.5 to 3 hours) including the assessment of understanding the practical aspects on the use of inspection tools and visual inspection.

The criteria for competency is that the candidate must pass the examination with a minimum total mark of 70%.

Coating Inspector Level 2

The examination/assessment consists of 3 sections to be conducted over 1 full day.

- Paper 1 consists of 10 multiple choice questions (1 mark each) and 6 subjective questions (10 marks each) – 3 hours
- Paper 2 consists of 4 practical questions (10 marks each) – 2 hours
- Paper 3 is the oral exam (25 marks) whereby each candidate will be interviewed individually – 30 minutes.

The criteria for competency is that the candidate must pass the examination with a minimum mark of 70% for each paper.

Assessment schedule for Level 2

8.00AM-10.00AM	Pre-assessment briefing
10.00AM-10.15AM	Tea break
10.15AM-1.15AM	Theory assessment test
1.15PM-2.30PM	Lunch break
2.30PM-4.30PM	Practical assessment
4.30PM-4.45PM	Tea break
4.45PM-6.00PM	Interview

The above assessments may be held at an Authorized Testing Centre (ATC) or immediately following the related training course conducted by ATP/ATB.

7. LANGUAGE

The lectures and assessments will be conducted in English or Bahasa Malaysia or local dialects (where possible) for Level 1 and mainly in English for Level 2.

8. CERTIFICATE OF COMPETENCY AWARDED

i. IMM Certified Coating Inspector Level 1 OR
ii. IMM Certified Coating Inspector Level 2

9. VALIDITY OF CERTIFICATION

5 years; qualified candidates must register as an IMM member for the certification period of 5 years.

10. CANDIDATES CRITERIA

Certified Coating Inspector Level 1

a. Pass in SPM with at least 2 years relevant work experience OR
b. Diploma or Degree in equivalent Science/ Engineering related field OR
c. IMM Certified Protective Coating Technician Level 2 (Multi-skill) or equivalent; OR
d. Attended relevant academic Coating Inspection Course dedicated to the IMM Coating Inspector Level 1 Certification with at least 3 months of practical experience in painting technology.

Certified Coating Inspector Level 2

a. Minimum six (6) months of documented working experience after obtaining IMM Coating Inspector Level 1 certification or equivalent qualifications OR
b. Attended relevant academic Coating Inspection Course dedicated to the IMM Coating Inspector Level 1 Certification with at least 6 months of practical field experience in coating inspection.

Candidates without experience are required to attend IMM approved/recognized training courses which prepares and provides comprehensive guidance and practice aligned to the topics covered in the examination.

Candidates with experience is encouraged to attend IMM approved/recognized training courses.

11. RESIT OF EXAMINATION

A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

12. RE-CERTIFICATION

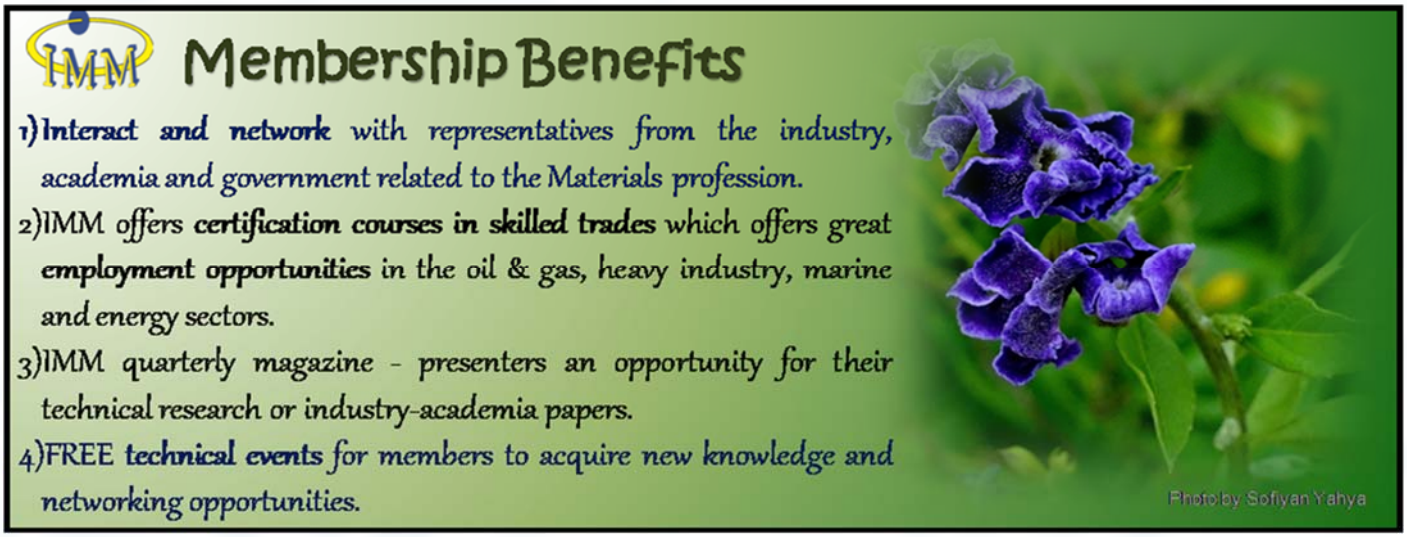
All certified IMM Coating Inspectors Level 1/Level 2 can apply for re-certification before the expiry of their certification period.

6 months prior to expiry of certification (at the end of the 5th year of certification), candidate can apply for re-certification for another 5 years by
providing proof to IMM that he/she has been employed in a related profession; and
accumulating sufficient Continuing Professional Development (CPD) points*.

Note: More details on certification process can be viewed at

https://drive.google.com/file/d/1ZlswRYnXP7cdayjoKz-hBcf4wA8lcKDV/view?usp=sharing

Scan QR code here



Institute of Materials, Malaysia

IMM Coating Certification Scheme

IMM Certified Coating Inspector Level 1

Code: CIL1

This scheme covers the technical and practical fundamentals of coating inspection work. The Coating Inspector Level 1 certification scheme is established to certify the competency of individuals equipped with the knowledge and skills in coating inspection.

Reference standards (reference used shall refer to the latest published document):

- ASTM D 1186-87: Non Destructive Measurement of Dry Film Thickness of Non Magnetic Coatings Applied to a Ferrous Base
- ASTM D 610: Evaluation Degree of Rusting on Painted Steel Surfaces
- IMM FP01: Coating Fingerprinting Overall Procedures for Paints Using FTIR and Other Related Methods
- ISO 8501-1: Preparation of Steel Substrates Before Application of Paint and Related Products – Visual Assessment of Surface Cleanliness
- ISO 8509: Tests for the Assessment of Surface Cleanliness

Who should apply

The scheme is suitable for candidate with or without experience in industrial painting or inspection and will also be applicable to those who require a knowledge of painting inspection such as painting inspector, painting supervisor, technicians, specifiers, and engineers who have been trained and/or have experience in coatings inspection and desire to be certified for career advancement.

Objective

To assess the following knowledge and skills:

- Specify protective paint/coating system to a variety of substrates
- Supervise the preparation of substrates prior to painting
- Supervise the application of paint coatings
- Conduct inspections to satisfy clients/industry & government standards
- Diagnose and rectify faults in paint coatings and communicate in written form

Exam topics

- Introduction to corrosion
- Composition & manufacture of paints; and paint fingerprinting
- Types of paint and their use
- Surface preparation
- Application and storage of paint
- Paint faults and coating defects
- Test and measurement instrumentation
- Safety and health
- The role of the coating inspector
- Coating project specifications
- Codes and standards

Examination format

Exam consists of 100 - 120 multiple choice questions. The questions are based on the above exam topics and include the assessment of understanding the practical aspects of the use of inspection tools and visual inspection.

Examination duration

2.5 hours

Examination fee

As specified on IMM website.

Candidate's criteria

Candidate should have

- Pass in SPM with at least 2 years relevant work experience OR
- Diploma or Degree in equivalent Science/Engineering related field OR
- IMM Certified Protective Coating Technician Level 2 (Multi-skill) qualification or equivalent; OR
- Attended relevant academic Coating Inspection Course dedicated to the IMM Coating Inspector Level 1 Certification with at least 3 months of practical experience in painting technology.

Pre-requisite training

Candidate without experience is required to attend IMM approved/recognized training course which prepares and provides comprehensive guidance and practice aligned to the topics covered in the examination.

Candidate with experience is encouraged to attend IMM approved/recognized training course.

Criteria for certification

The candidate must pass the examination with a minimum total mark of 70%.

Certificate awarded

IMM Certified Coating Inspector Level 1

Validity period of certificate

5 years

Re-sit of examination

A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification

6 months prior to expiry of certification (at the end of the 5th year of certification), candidate can apply for re-certification for another 5 years by

- providing proof to IMM that he/she has been employed in a related profession; and

- accumulating sufficient Continuing Professional Development (CPD) points*.

Prior to the expiry of the 5-year re-certification (at the end of the 10th year of certification), candidate can continue to be certified for a further 5-year period by

- providing proof to IMM that he/she has been employed in a related profession
- accumulating sufficient CPD points*; and
- attending the relevant Refresher Course for certification (if any).

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the 5-year certification or re-certification period.

** The minimum number of CPD points to be accumulated over a 5-year period shall be 100 points with an annual requirement of at least 10 points.*

IMM Coating Certification Scheme

IMM Certified Coating Inspector Level 2

Code: CIL2

IMM offers the Coating Inspector Level 2 certification scheme to broaden the technical knowledge and perform inspection analysis and monitoring in a structured and systematic inspection diagnostic.

Reference standards (reference used shall refer to the latest published document):

- ASTM D 1186-87: Non Destructive Measurement of Dry Film Thickness of Non Magnetic Coatings Applied to a Ferrous Base
- ASTM D 3359-87: Measuring Adhesion by Tape Test
- ASTM D 4541-95: Pull-Off Strength of Coatings by Portable Adhesion Testers
- ASTM D 5162-91: Discontinuity (holiday) Testing of Non Conductive protective Coating on Metallic Substrates
- ASTM D 610: Evaluation Degree of Rusting on Painted Steel Surfaces
- ASTM D 6677: Standard Test Method for Evaluating Adhesion by Knife
- IMM FP01: Coating Fingerprinting Overall Procedures for Paints Using FTIR and Other Related Methods
- ISO 8501-1: Preparation of Steel Substrates Before Application of Paint and Related Products – Visual Assessment of Surface Cleanliness
- ISO 8509: Tests for the Assessment of Surface Cleanliness

Who should apply

The scheme is suitable for candidate who has already been certified as Coating Inspector Level 1 or others with equivalent qualification.

Objective

To access the following knowledge and skills:

- Specify protective paint/coating system to a variety of substrates
- Supervise the preparation of substrates prior to painting
- Supervise the application of paint coatings
- Conduct inspections to satisfy clients/industry & government standards
- Diagnose and rectify faults in paint coatings and communicate in written form

Exam topics

- Corrosion theory and terminology
- Advance surface preparation
- Advance paint faults and coating defects test
- Measuring instrument/inspection – Diagnose failure
- Composition & manufacture of paints
- Application & storage of paints
- The role of a coating inspector/inspection test plan
- Painting specification
- Calculation/mathematics
- Safety and health

Examination format

Exam consists of 3 sections to be conducted over 1 full day.

- Paper 1 consists of 10 multiple choice questions (1 mark each) and 6 subjective questions (10 marks each).
- Paper 2 consists of 4 practical questions (10 marks each)
- Paper 3 is the oral exam (25 marks) whereby each candidate will be interviewed individually.

Examination duration

Paper 1 - 3 hours
Paper 2 - 2 hours
Paper 3 - 30 minutes
The oral exam may be conducted in parallel with the practical session.

Examination fee

As specified on IMM website.

Candidate's criteria

Candidate should have

- Minimum six (6) months of documented working experience after obtaining IMM Coating Inspector Level 1 certification or equivalent qualifications OR
- Attended relevant academic Coating Inspection Course dedicated to the IMM Coating Inspector Level 1 Certification with at least 6 months of practical field experience in coating inspection.

Pre-requisite training

Candidate is encouraged to attend the 1-day IMM approved/recognized training course which prepares and provides comprehensive guidance and practice aligned to the topics covered in the examination.

Criteria for certification

The candidate must pass the examination with a minimum mark of 70% for each paper.

Certificate awarded

IMM Certified Coating Inspector Level 2

Validity period of certificate

5 years

Re-sit of examination

A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification

6 months prior to expiry of certification (at the end of the 5th year of certification), candidate can apply for re-certification for another 5 years by

providing proof to IMM that he/she has been employed in a related profession; and

accumulating sufficient Continuing Professional Development (CPD) points*.

Prior to the expiry of the 5-year re-certification (at the end of the 10th year of certification), candidate can continue to be certified for a further 5-year period by

- providing proof to IMM that he/she has been employed in a related profession
- accumulating sufficient CPD points*; and
- attending the relevant Refresher Course for certification (if any).

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the 5-year certification or re-certification period.

** The minimum number of CPD points to be accumulated over a 5-year period shall be 100 points with an annual requirement of at least 10 points.*


IRC RUBBER CON
2022
New Developments In Natural Rubber
6 ~ 8 September 2022
Kuala Lumpur, Malaysia
www.rubbercon2022.com
Supported by:
Organised by:
The Plastics and Rubber Institute Malaysia
International Rubber Conference Organisation

List of Tracks & Topics

Rubber Science & Technology
- Rubber Biotechnology & Upstream
- Materials Science for Rubber Application
- New Polymer Synthesis
- Novelty in Rubber

Environmental & Sustainability
- Sustainability
- Environmental Management
- Safety & Health

Rubber Manufacturing & Engineering
- Modern Rubber Processing Technology
- Rubber Applications
- Rubber Products
- Rubber Engineering

Rubber Techno-Economic & Marketing
- Rubber Techno-economics
- Rubber Marketing and Pricing

Proposed Journal publication info:
Only selected papers to be published in The Malaysian Journal of Chemistry (MJChem) (SCOPUS-indexed) & Journal of Rubber Research (JRR by Springer) (ISI-indexed)

Important dates

- **Abstract submission duration: 1 Oct 2021 to 30 Apr 2022. Abstract template available from www.rubbercon2022.com (Direct Link)**
- **Notice of abstract submission: 2 weeks from abstract submission date**
- **Full manuscript submission : 16 Sept 2022 to 30 Nov 2022**

Registration Fee for Speakers & Participants

	Early Bird (until 30 April 2022)	Normal Fee (1 May 2022 - 5 Sept 2022)	On-Site
International	USD 350	USD 450	USD 500
Malaysian	RM 1350	RM 1800	RM 2000
Online (International)	USD 150	USD 150	USD 150
Online (Malaysian)	RM 600	RM 600	RM 600
Student (International)	USD 150	USD 150	USD 150
Student (Malaysian)	RM 500	RM 500	RM 500

REGISTER NOW

INSTITUTE OF MATERIALS, MALAYSIA
PROTECTIVE COATING TECHNICIAN
(BLASTER and/or PAINTER)

Nineth Revision
10th November 2021

1. INTRODUCTION

This brochure serves as a guide for obtaining the Institute of Materials, Malaysia (IMM) Protective Coating Technician Assessment and Certification. It is designed to satisfy the need of the Malaysian Oil & Gas Exploration & Production (EP) industry and other industries for formally assessed and certified blasters and painters as per requirement in the Standard Malaysian EP Oil & Gas industry blasting and painting Specification no: PETRONAS Technical Standard PTS 15.20.03 (2016) - Protective Coating and Lining and Shell Technical Specification SES 47.1 (2017) – Protective Coating, Encapsulation and Wrapping Specification.

The Blaster and Painter Assessment & Certification Scheme was established in response to the EP industry, which has identified a need to enhance the skills of blasters and painters in the industry. The scheme is aimed at improving the quality of workmanship thereby reducing overall costs involved in rework, service repair and total recoating resulting in staggering losses. The lesson learnt by all asset operators/owners is premature failures not matching the system's lifespan capability. Root cause analysis by manufacturers and industry research attributed about 70% of the failures to surface preparation and application weakness.

The local industry has recognized the importance of protective coating and blasting and painting as a skilled task to effectively deliver "high tech" protection against expensive environmental corrosion.

With the help of the industry, IMM has designed, set up and implemented an assessment and certification scheme for blasters and painters. To date IMM has assessed and certified more than 7000 protective coating technicians over a period of 20 years and has been constantly reviewing and upgrading the Blaster and Painter assessment scheme.

To further improve the quality of the personnel to be certified and for the industry to look forward with better confidence for blasting and painting works carried out by such personnel, IMM has recently revised the assessment topics to upgrade its certification program to be on par with international standards such as those of AMPP (merger of NACE & SSPC).

Reference standards (reference used shall refer to the latest published document):

- ISO 8501-1: Preparation of Steel Substrates Before Application of Paints and Related Products — Visual Assessment of Surface Cleanliness — Part 1: Rust Grades and Preparation Grades of Uncoated Steel Substrates and of Steel Substrates After Overall Removal of Previous Coatings
- SSPC PA-1: Shop, Field, and Maintenance Coating of Metals

2. THE PROTECTIVE COATING TECHNICIAN CERTIFICATION SCHEME

This certification scheme will assess the candidate on their capabilities and competency in abrasive blasting and/or protective coating painting skills, mainly in the oil & gas and heavy engineering industries. The participants will be assessed both in the theory and practical aspects of Blasting and/or Painting which will determine their competency in accordance with the terms and conditions of IMM Coating Certification Scheme.

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

The assessment program includes a 2-hour pre-assessment briefing followed by an examination which comprises 2 parts. The first part consists of multiple choice questions (theory). The second part is a practical examination whereby the candidate is assessed on his/her skills in blasting and/or painting on a mild steel test panel. The candidate has a choice to sit for only the Blaster or Painter examinations or both.

Although this assessment program is intended for only experienced blasters and/or painters, the candidate is strongly encouraged to attend IMM approved/recognized training courses of 2 days (blasting) + 2 days (painting) or more days to refresh themselves before attending the 1-day assessment program by IMM. The IMM approved training courses are conducted by IMM certified trainers through IMM Authorised Training Body (ATB) or Associate Training Partner (ATP). Nevertheless, a prior training program for experienced blasters and painters is not compulsory.

Eligibility of candidate (minimum pre-requisites) to sit for the 1-day IMM assessment is shown in Clause 7 below.

3. TRAINING AND EXAMINATION TOPICS

The topics for assessment in terms of the knowledge and skills needed by candidate include the following:

i. Understanding corrosion types, factors affecting corrosion and effects of corrosion
ii. Standards and paint materials data sheets
iii. Composition and important types of paint
iv. Surface preparation and related techniques
v. Application of paint
vi. Paint faults and coating defects
vii. Quality assurance checks
viii. Health, safety and environment - hazards, safety features and preventive measures
ix. About coating fingerprinting

4. EXAMINATION AND ASSESSMENT

The examination comprises both theory and practical assessments, as follows:

IMM PCT Level 2 (Multi-skill)
The examination/assessment shall be preceded by a 2-hour pre-assessment briefing

IMM PCT Level 1 (Blaster or Painter)
Blaster: The examination/assessment shall be preceded by a 1-hour pre-assessment briefing

Painter: The examination/assessment shall be preceded by a 1-hour pre-assessment briefing

The candidate has a choice to sit for only the Blaster or Painter examinations or both.

4.1 Theory

IMM PCT Level 2 (Multi-skill)
Paper 1 - Surface preparation, 23 multiple choice questions

Paper 2 – Painting, 23 multiple choice questions

IMM PCT Level 1 (Blaster or Painter)
Paper 1 - Surface preparation, 23 multiple choice questions

OR

Paper 2 – Painting, 23 multiple choice questions

Note: A total of 3 multiple choice questions on interpersonal skills and professional conduct/ethics are included in Paper 1 and Paper 2.

4.2 Practical assessment

IMM PCT Level 2 (Multi-skill)

Part 1- Surface Preparation

i. Identify the main parts of a setup blasting equipment.
ii. Identify the safety features of blasting equipment and explain its function.
iii. To carry out blasting on a mild steel test panel of minimum dimensions 1 m x 1 m x 6 mm thick welded with 1 piece of H-beam of minimum size 300 mm x 300 mm x 300 mm height x 6 mm thick and 1 piece of round pipe of minimum size 152.4 mm diameter x 300 mm height x 6 mm thick plus 2 nos. of 25.4 mm x 110 mm height bolt & nut to achieve the minimum surface cleanliness standard of SA 2½ standard.

Part 2 - Painting

i. Identify the main parts of airless spray equipment.
ii. Identify and explain the safety features of an airless spray gun.
iii. Show how to check that the one- or two-pack paint is the correct one with reference to the paint technical data sheets.
iv. Explain how the mixing of one- or two-pack paint is to be carried out.
v. To carry out spraying of paint on a test panel.

IMM PCT Level 1 (Blaster or Painter)
For Blaster only: Part 1- Surface preparation

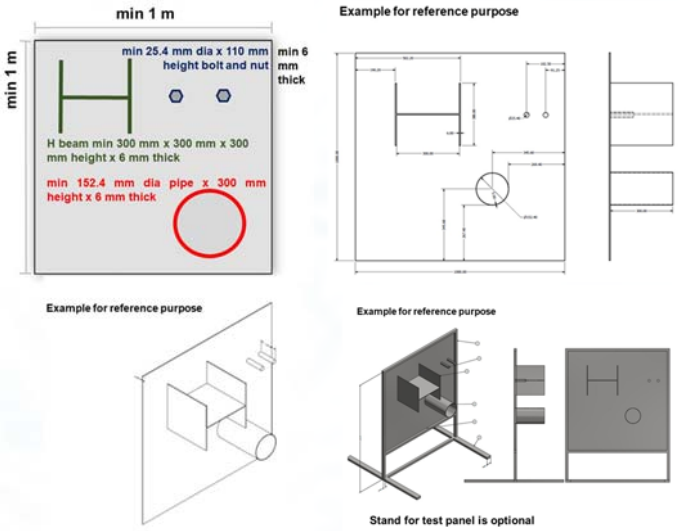
i. Identify the main parts of a setup blasting equipment.
ii. Identify the safety features of blasting equipment and explain its function.
iii. To carry out blasting on a mild steel test panel of minimum dimensions 1 m x 1 m x 6 mm thick welded with 1 piece of H-beam of minimum size 300 mm x 300 mm x 300 mm height x 6 mm thick and 1 piece of round pipe of minimum size 152.4 mm diameter x 300 mm height x 6 mm thick plus 2 nos. of 25.4 mm x 110 mm height bolt & nut to achieve the minimum surface cleanliness standard of SA 2½ standard.

OR

For Painting only: Part 2 - Painting

i. Identify the main parts of airless spray equipment.
ii. Identify and explain the safety features of an airless spray gun.
iii. Show how to check that the one- or two-pack paint is the correct one with reference to the paint technical datasheets.
iv. Explain how the mixing of one- or two-pack paint is to be carried out.
v. To carry out spraying of paint on a test panel.

Typical mild steel test panel for practical assessment
Abrasive blast to SA 2½ and coat with one- or two-pack coating.

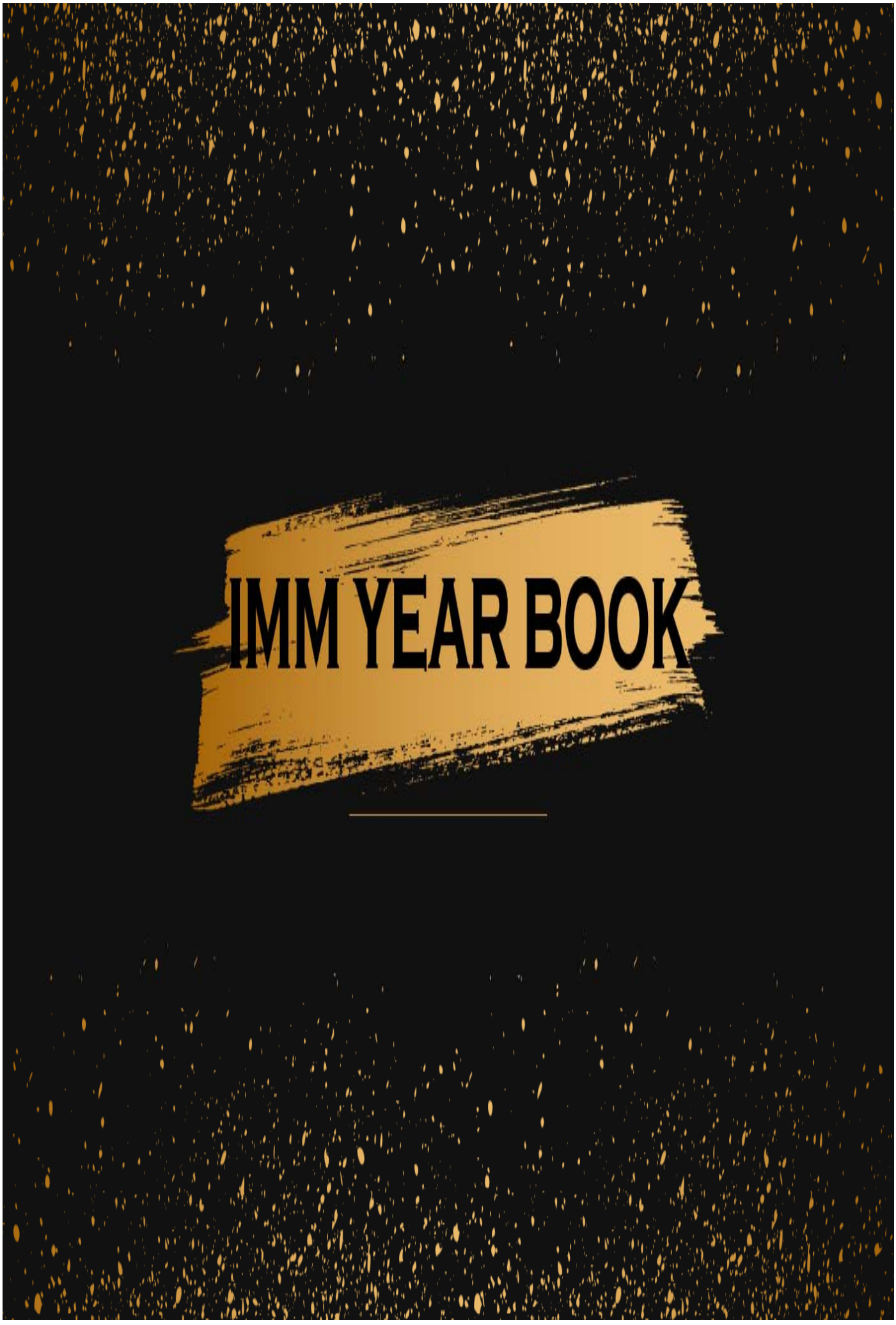


The candidate must be successful in each of the following:

i. Minimum pass mark of 70% each of Part 1 and/or Part 2 in the theory examination.
ii. Minimum pass mark of 70% each of Part 1 and/or Part 2 in the practical assessment.

Note: More details on certification process can be viewed at https://drive.google.com/file/d/1f3R_uBcQAB1HB1n3St8MV3GL6AqRFAyk/view?usp=sharing

Scan QR code


IMM YEAR BOOK

LIST OF HONOURS

IMM ADVISOR

2020 - 2022

Prof. Ts. Dr. Mohamad Kamal Harun

2013 - 2018

Datuk Ir. (Dr.) Abdul Rahim Hj. Hashim

2007 - 2012

Datuk Ir. Yeow Kian Chai

2002 - 2006

Dato' Dr. Mohd Ariffin Aton

1996 - 2001

Prof. Dato' Dr. Hj. Mohd Mansor Salleh

HONORARY FELLOWS OF IMM

2020	PROF. TS. DR. MOHAMAD KAMAL HARUN
2020	IR. MOHD SURADI MOHD YASIN
2020	IR. MAX ONG CHONG HUP
2018	DATUK IR. (DR.) ABDUL RAHIM HASHIM
2017	DATO' DR. IR. HAJI MOHD ABDUL KARIM ABDULLAH
2016	DATO' DR. ONG ENG LONG
2013	DATUK ANUAR TAIB
2012	EN. ZAINUDDIN ISHAK
2010	YAB. PEHIN SRI HAJI ABDUL TAIB MAHMUD
2008	DR. A. RAHIM MD. NOR
2007	DATUK IR. YEOW KIAN CHAI
2004	DR. IR. SAMAD SOLBAI
2002	ROY VOGELPOEL
2000	PROF. DATO' DR. HJ MOHD MANSOR SALLEH
1992	BRIAN SHONE

IMM PAST PRESIDENTS

2016 - 2020
Ts. Mohd. Azmi Mohd. Noor

2012 - 2016
Prof. Ts. Dr. Mohamad Kamal Harun

2008 - 2012
Dato' Dr. Ong Eng Long

2004 - 2008
Mr. Zainuddin Ishak

2000 - 2004
Dr. A. Rahim Md. Nor

1996 - 2000
Dr. Ir. Samad Solbai

1988 - 1996
Prof. Dato' Dr. Hj. Mohd Mansor Salleh

IMM COUNC

2020-2022

Advisor	Prof. Ts. Dr. Mohamad Kamal Harun - Universiti Teknologi MARA
President	Dato' Dr. Ir. Ts. Haji Mohd Abdul Karim Abdullah - Serba Dinamik Group Berhad
Deputy President	Ts. Dr. Chew Khoon Hee - Tunku Abdul Rahman University College
Honorary Secretary	Prof. Ts. ChM. Dr. Melissa Chan Chin Han - Universiti Teknologi MARA
Honorary Treasurer	Ts. Dr. Mohamed Ackiel Mohamed - Serba Dinamik Group Berhad
Immediate Past President	Ts. Mohd. Azmi Mohd. Noor - Kebabangan Petroleum Operating Company Sdn Bhd
Council Members	Ir. Ong Hock Guan - Shell Malaysia Exploration & Production
	Ts. Dr. Mahmood Anwar - Curtin University Malaysia
	Mark Hew Yoon Onn - Universal Corrosion Engineering (M) Sdn Bhd
	Assoc. Prof. Ts. Dr. Tay Chia Chay - Universiti Teknologi MARA
	Asst. Prof. Ts. Dr. Yu Lih Jiun - UCSI University
	Ir. Max Ong Chong Hup - Norimax Sdn Bhd
	Assoc. Prof. Dr. Lim Teck Hock - Tunku Abdul Rahman University College
	Ts. Brian Lim Siong Chung - Geopolitan Sdn Bhd
	Kang Kim Ang - CorrTrol Synergy Sdn Bhd
	Nik Khairil Azman Nik Abdullah - Temperlite Insulation Sdn Bhd
	Dr. Amalina Muhammad Afifi - Universiti Malaya
	Danny Tan Kim Chew - Abadi Oil & Gas Services Sdn Bhd
	Ir. Ho Choon Fei - KVA Konsult
	Jason Yap Haw Shin - Leading Concept Engineering Sdn Bhd
	Mohd Fairuz Mohd Salleh - Serba Dinamik Group Bhd
	Mohd Iqbal Yaakup - Petron Malaysia Refining & Marketing Bhd
	Dato' Seri Mohd Jai Suboh - Velosi (M) Sdn Bhd
	Ir. Mohd Syukri Mohd Khalid - Sarawak Shell Bhd
	Dr. Nazatul Liana Sukiman - Universiti Malaya
	Ir. Ts. Noor Hisham Yahaya - Safe Asbestos Solutions Sdn Bhd
	Ts. Ong Thai Kiat - Tunku Abdul Rahman University College
	Raymond Phen - Asean Bintulu Fertilizer Sdn Bhd
	ChM. Dr. Shahrul Nizam Ahmad - Universiti Teknologi MARA
	Sobendran Vengadasalam - Eco Movement Sdn Bhd
	Ts. Wan Mohd Arif Wan Ibrahim - Universiti Malaysia Perlis

2018-2020

Advisor	Datuk Ir. Dr. Abdul Rahim Hj. Hashim - Universiti Malaya
President	Ts. Mohd Azmi Mohd Noor - Kebabangan Petroleum Operating Company Sdn Bhd
Deputy President	Dato' Dr. Ir. Haji Mohd. Abdul Karim Abdullah - Serba Dinamik Group Bhd
Honorary Secretary	Prof. Ts. ChM. Dr. Melissa Chan Chin Han - Universiti Teknologi MARA
Honorary Treasurer	Ts. Dr. Zulkarnain Kedah - Serba Dinamik Group Bhd
Immediate Past President	Prof. Ts. Dr. Mohamad Kamal Harun - Universiti Teknologi MARA
Council Members	Dato' Paduka Ts. Udani Dato' Seri Mohamed Daud - Max Energy Sdn Bhd
	Ts. Dr. Chew Khoon Hee - Tunku Abdul Rahman University College
	Assoc. Prof. Dr. Lim Teck Hock - Tunku Abdul Rahman University College
	Ts. Dr. Tay Chia Chay - Universiti Teknologi MARA
	Ir. Ong Hock Guan - Shell Malaysia Exploration & Production
	Ts. Brian Lim Siong Chung - NTT Quality Construction
	Danny Tan Kim Chew - Abadi Oil & Gas Services Sdn Bhd
	Nurul Asni Mohamed - PETRONAS Group Technical Solutions
	Rehan Ahmed - PETRONAS Carigali Sdn Bhd
	Sofiyan Yahya - Cekap Technical Services Sdn Bhd
	Prof. Dr. Esah Hamzah - Universiti Teknologi Malaysia
	Assoc. Prof. Dr. Andri Andriyana - Universiti Malaya
	Dr. Mohamed Ackiel Mohamed - Serba Dinamik Group Bhd
	Dr. Yong Soon Kong - Universiti Teknologi MARA
	Ir. Pau Kiew Huai - Malaysia LNG Sdn Bhd
	Mohamed Siraj Abdul Razack - MIR Valve Sdn Bhd
	Muhammad Hawari Hasan - PETRONAS Group Technical Solutions
	Tan Su Anne - PETRONAS Group Technical Solutions

IL MEMBERS

2016-2018

Advisor	Datuk Ir. Dr. Abdul Rahim Hj. Hashim - Universiti Teknologi PETRONAS
President	Mohd. Azmi Mohd. Noor - Kebabangan Petroleum Operating Company Sdn Bhd
Deputy President (2016-2017)	Assoc. Prof. Dr. Othman Mamat - Universiti Teknologi PETRONAS
Deputy President (2017-2018)	Sofiyan Yahya - Cekap Technical Services Sdn Bhd
Honorary Secretary	Assoc. Prof. Dr. Melissa Chan Chin Han - Universiti Teknologi MARA
Honorary Treasurer	Ir. Mohd Suradi Yasin - Materials Technology Education Sdn Bhd
Assistant Honorary Treasurer	Dr Zulkarnain Kedah - Serba Dinamik Sdn Bhd
Immediate Past President	Prof. Dr. Mohamad Kamal Harun - Higher Education Leadership Academy
Council Members	Dato' Dr. Ir. Haji Mohd Abdul Karim Abdullah - Serba Dinamik Group Bhd
	Dato' Udani Dato' Seri Mohamed Daud - Max Energy Sdn Bhd
	Datuk Ir. Wahiruddin Wahid - PRA Services Sdn Bhd
	Prof. Ir. Dr. Ramesh Singh - Universiti Malaya
	Ir. Assoc. Prof. Dr. Edwin Jong Nyon Tchan - Advanced Metallurgy & Welding Technology Sdn Bhd
	Assoc. Prof. Eur. Ing. Nigel Patrick Brewitt - Norimax-MTIS
	Assoc. Prof. Dr. Tan Winie - Universiti Teknologi MARA
	Dr. Andrew Spowage - Woodgroup Intetech Malaysia
	Dr. Hasnah Abdul Wahab - SIRIM Bhd
	Dr. Samsul Bahar Sadli - PETRONAS Carigali Sdn Bhd
	Ir. Lai Kah Chiung - PETRONAS RAPID Project
	Ir. Max Ong Chong Hup - Norimax Sdn Bhd
	Ir. Mohd Raziff Embi - Malakoff Corporation Bhd
	Ir. Ong Hock Guan - Sarawak Shell Bhd
	Ir. Pau Kiew Huai - Malaysia LNG Sdn Bhd
	Harry Woon Tar Woi - Bredero Shaw (M) Sdn Bhd
	Kamal Azam Ibrahim - PETRONAS Group Technical Solutions
	Mazri Md. Ali - PETRONAS MPM
	Mohamed Siraj Abdul Razack - MIR Valve Sdn Bhd
	Muhammad Hawari Hasan - PETRONAS Group Technical Solutions
	Nurul Asni Mohamed - PETRONAS Group Technical Solutions
	Zainudin Zulkifli - KNM Group Bhd

2014-2016

Advisor	Datuk Ir. (Dr.) Abdul Rahim Hj. Hashim - Universiti Teknologi PETRONAS
President	Prof. Dr. Mohamad Kamal Harun - Universiti Malaysia Kelantan/ Universiti Teknologi MARA
Deputy President	Mohd. Azmi Mohd. Noor - PETRONAS Upstream HSE
Hononary Secretary (2014)	Ir. Abdul Razak Abu Hurairah - Morecap Sdn Bhd
Hononary Secretary (2015)	Dr. Valliyappan David Natarajan - Universiti Teknologi MARA
Acting Honorary Secretary (2015)	Ainil Fidrah Mohd Ghazali - Materials Technology Education Sdn Bhd
Honorary Treasurer	Ir. Mohd. Suradi Yasin - Materials Technology Education Sdn Bhd
Immediate Past President	Dato' Dr. Ong Eng Long- Kossan Rubber Bhd
Council Members	Dato' Ir. Mohd Jai Suboh - Velosi Sdn Bhd
	Datuk Ir. Wahiruddin Wahid - PRA Services Sdn Bhd
	Prof. Dr. A.S. Md. Abdul Haseeb - Universiti Malaya
	Prof. Dr. Esah Hamzah - Universiti Teknologi Malaysia
	Prof. Dr. Rajkumar Durairaj - Universiti Tunku Abdul Rahman
	Prof. Ir. Dr. Ramesh Singh - Universiti Malaya
	Assoc. Prof. Dr. Chia Chin Hua - Universiti Kebangsaan Malaysia
	Assoc. Prof. Dr. Chan Chin Han - Universiti Teknologi MARA
	Dr. Andrew Spowage - Woodgroup Intetech Malaysia
	Dr. Hasnah Abdul Wahab - SIRIM Bhd
	Dr. Karen Wong Mee Chu - Universiti Tunku Abdul Rahman
	Dr. Tan Winie - Universiti Teknologi MARA
	Ir. Dr. Edwin Jong Nyon Tchan - Jurutera Perunding Akal Sdn Bhd
	Ir. Lai Kah Chung - PETRONAS RAPID
	Ir. Lee Swee Eng - KNM Group Bhd
	Ir. Max Ong Chong Hup - Norimax Sdn Bhd
	Ir. Mohd Raziff Embi - Malakoff Corporation Bhd
	Ir. Pau Kiew Huai - PETRONAS Group Technical Solutions
	Bernard Maxmillan Sim - Bureau Veritas (M) Sdn Bhd
	David Lim Chee Cheong - ExxonMobil E&P (M) Inc
	Halimah Pit – Shell Bhd
	Harry Woon Tar Woi - Bredero Shaw (M) Sdn Bhd
	Maimunah Ismail - Independent Materials Consultant
	Nigel Patrick Brewitt - Norimax Sdn Bhd
	Nurul Asni Mohamed - PETRONAS Group Technical Solutions

IMM COUNC

2012-2014

Advisor	Datuk Ir. (Dr.) Abdul Rahim Hj. Hashim - Universiti Teknologi PETRONAS
President	Prof. Dr. Mohamad Kamal Harun - Universiti Malaysia Kelantan/ Universiti Teknologi MARA
Deputy President	Prof. Dr. Che Husna Azhari - Universiti Kebangsaan Malaysia
Honorary Secretary	Ir. Max Ong Chong Hup - Norimax Sdn Bhd
Honorary Treasurer	Ir. Mohd. Suradi Yasin - Materials Technology Education Sdn Bhd
Immediate Past President	Dato' Dr. Ong Eng Long - Kossan Rubber Bhd
Council Members	Dato' Ir. Mohd Jai Suboh - Velosi Sdn Bhd Datuk Ir. Wahiruddin Wahid - PRA Services Sdn Bhd Prof. Dr. Ahmad Fauzi Mohd Noor - Universiti Sains Malaysia Prof. Dr. Esah Hamzah - Universiti Teknologi Malaysia Prof. Dr. Saifollah Abdullah - Universiti Teknologi MARA Assoc. Prof. Dr. Andrew Spowage - University of Nottingham Malaysia Campus Dr. Aaron Goh Suk Meng - Curtin University Dr. Edwin Jong Nyon Tchan - Petra-JPA David Lim Chee Cheong - ExxonMobil E & P (M) Inc Ir. Abdul Razak Hurairah - Morecap Sdn Bhd Ir. Lai Kah Chung - PETRONAS RAPID Ir. Lee Hung Sang - Petra Resources Sdn Bhd Ir. Mohd Raziff Embi - Malakoff Power Bhd Ir. Pau Kiew Huai - PETRONAS Group Technical Solutions Eng Kim Leng - Bina - Goodyear Sdn Bhd Eur. Ing. Nigel Brewitt - MTIS Sdn Bhd Frankie Chua Cheng Huat- PLC Laboratory Sdn Bhd Harry Woon Tar Woi - Bredero Shaw (M) Sdn Bhd Kang Kim Ang - Corrtrol Sdn Bhd Maimunah Ismail - Sarawak Shell Malaysia Mohd. Azmi Mohd. Noor - Sarawak Shell Malaysia Noor Hisham Abdul Hamid - Universiti Teknologi Malaysia Siti Haslina Ramli - PETRONAS Research Tungku Nor Manira Tungku Idris Shah- Norimax Sdn Bhd Yii Ming Sing - Malaysia LNG Sdn Bhd

2010-2012

Advisor	Datuk Ir. Yeow Kian Chai - PETRONAS
President	Dato' Dr. Ong Eng Long - Kossan Rubber Industries Bhd
Deputy President	Prof. Dr. Mohamad Kamal Harun - Universitit Teknologi MARA
Honorary Secretary	Ir. Max Ong Chong Hup - Norimax Sdn Bhd
Honorary Treasurer	Ir. Mohd. Suradi Yasin - Materials Technology Education Sdn Bhd
Immediate Past President	Zainuddin Ishak - Ingress Fabricators Sdn Bhd
Council Members	Dato' Ir. Mohd. Jai Siboh - Velosi Sdn Bhd Datuk Ir. Wahiruddin Wahid - Shell Malaysia Prof. Dr. Ahmad Fauzi Mohd. Noor - Universiti Sains Malaysia Prof. Dr. Che Husna Azhari - Universiti Kebangsaan Malaysia Prof. Dr. Esah Hamzah - Universiti Teknologi Malaysia Assoc. Prof. Dr. Andrew Spowage - University of Nottingham Malaysia Campus Dr. Abdul Aziz Mohamed - Agensi Nuklear Malaysia Dr. Azmi Idris - SIRIM Bhd Dr. Teh Ser Kok - Freelance Consultant Eur. Ing. Nigel Brewitt - MTIS Sdn Bhd Abdul Razak Hurairah - Morecap Sdn Bhd Christopher Kettle - Sarawak Shell Bhd David Lim Chee Cheong - ExxonMobil E & P (M) Inc Eng Kim Leng - EKL Ventures Sdn Bhd Frankie Chua Cheng Huat - PLC Laboratory Sdn Bhd Harry Woon Tar Woi - Bredero Shaw (M) Sdn Bhd Johar Juhari - PETRONAS Group Technical Solutions Kang Kim Ang - Corrtrol Corrosion Sdn Bhd Maimunah Ismail - Shell Malaysia Mohd. Tajudin Alias - Materials Technology Education Sdn Bhd Noor Hisham Abdul Hamid - Universiti Teknologi Malaysia Siti Haslina Ramli - PETRONAS Research Sdn Bhd Tungku Nor Manira Tungku Idris Shah - Norimax Sdn Bhd Yii Ming Sing - Malaysia LNG Sdn Bhd

IL MEMBERS

2008-2010

Advisor	Datuk Ir. Yeow Kian Chai - PETRONAS
President	Dato' Dr. Ong Eng Long - Kossan Rubber Bhd
Deputy President	Prof. Dr. Mohamad Kamal Harun - Universiti Teknologi MARA
Honorary Secretary	Ir. Max Ong Chong Hup - GLP-Norimax Sdn Bhd
Honorary Treasurer	Ir. Mohd. Suradi Yasin - Materials Technology Education Sdn Bhd
Immediate Past President	Zainuddin Ishak - Ingress Fabricators Sdn Bhd
Council Members	Tan Sri Kok Onn - Gadang Holdings Bhd
	Dato' Eric Wong - Timer Group
	Prof. Dr. Che Husna Azhari - Universiti Kebangsaan Malaysia
	Prof. Dr. Esah Hamzah - Universiti Teknologi Malaysia
	Prof. Dr. Hanafi Ismail - Universiti Sains Malaysia
	Assoc. Prof. Dr. Teh Ser Kok - Freelance Consultant
	Dr. Abdul Aziz Mohd - Agensi Nuklear Malaysia
	Dr. Azmi Idris - SIRIM Bhd
	Dr. Edwin Jong Nyon Tchan - Shell Deepwater Group, KL
	Dr. Engr. Chong Chien Fatt - Ancom Bhd
	Ir. Lee Swee Eng - KNM Group Bhd
	Abd. Rahim Noh - UEM Builders Bhd
	Chris Chiam Teck Seng - Muhibbah Steel Industries
	Eng Kim Leng - TTDI Development Sdn Bhd
	Frankie Chua Cheng Huat - PLC Laboratory Sdn Bhd
	Johar Juhari - PETRONAS GTS
	Kang Kim Ang - Corrtrol Corrosion Specialists Sdn Bhd
	Maimunah Ismail - Shell Deepwater Group, KL
	Mohd Noor Hussen - PETRONAS Carigali Sdn Bhd
	Ng Yin Loong - Mudajaya Corporation Bhd
	Ong Hock Guan - Sarawak Shell Bhd, Miri
	Siti Haslina Ramli - PETRONAS Research & Scientific Services
	Tan Ai Tong - Bertam Alliance Bhd
	Yii Ming Seng - Malaysia LNG Sdn Bhd

2006-2008

Advisor	Dato' Dr. Mohd Ariffin Aton
President	Zainuddin Ishak
Deputy President	Dato' Dr. Ong Eng Long
Honorary Secretary	Ir. Max Ong Chong Hup
Honorary Treasurer	Ir. Mohd. Suradi Yasin
Immediate Past President	Dr. A. Rahim Mohd. Nor
Council Members	Prof. Dr. Che Husna Azhari
	Prof. Dr. Esah Hamzah
	Assoc. Prof. Dr. Mohamad Kamal Harun
	Assoc. Prof. Dr. Saifollah Abdullah
	Dr. Abdul Aziz Mohamed
	Dr. Edwin Jong Nyon Tchan
	Dr. Leong Kok Hong

2004-2006

Advisor	Dato' Dr. Mohd Ariffin Aton
President	Zainuddin Ishak
Deputy President	Dato' Dr. Ong Eng Long
Honorary Secretary	Ir. Max Ong Chong Hup
Honorary Treasurer	Ir. Mohd. Suradi Yasin
Immediate Past President	Dr. A. Rahim Mohd. Nor
Council Members	Assoc. Prof. Dr. Ahmad Fauzi
	Assoc. Prof. Dr. Mohamad Kamal Harun
	Dr. Abdul Aziz Mohamed
	Dr. Edwin Jong Nyon Tchan
	Dr. Leong Kok Hong
	Dr. Samsudin Bani
	Chong Chien Fatt
	Harry Woon Tar Woi
	Johar Juhari
	Kamarudin Malek
	Nor Hisham Abdul Hamid

2002-2004

Advisor	Dato' Dr. Mohd Ariffin Aton
President	Dr. A. Rahim Mohd. Nor
Deputy President	Zainuddin Ishak
Honorary Secretary	Ir. Max Ong Chong Hup
Honorary Treasurer	Ir. Mohd. Suradi Yasin
Immediate Past President	Dr. Samad Solbai
Council Members	Dato' Dr. Ong Eng Long
	Prof. Dr. Che Husna Azhari
	Prof. Dr. Radzali Othman
	Assoc. Prof. Dr. Ahmad Fauzi Md. Noor
	Assoc. Prof. Dr. Esah Hamzah
	Assoc. Prof. Dr. Mohamad Kamal Harun
	Dr. Edwin Jong Nyon Tchan
	Dr. Teh Ser Kok
	Ir. Mohd Raziff Embi
	Chong Chien Fatt
	Haji Ghalib Tham
	Harry Woon Tar Woi
	Johar Juhari
	Kang Kim Ang
	Maimunah Ismail

IMM COUNCIL MEMBERS

2000-2002

Advisor	Dato' Dr. Hj. Mohd Mansor Salleh
President	Dr. A. Rahim Mohd. Nor
Deputy President	Zainuddin Ishak
Honorary Secretary	Ir. Max Ong Chong Hup
Honorary Treasurer	Ir. Mohd. Suradi Yasin
Immediate Past President	Dr. Samad Solbai
Council Members	Dato' Dr. Ong Eng Long
	Prof. Dr. Che Husna Azhari
	Assoc. Prof. Dr. Esah Hamzah
	Assoc. Prof. Dr. Mohamad Kamal Harun
	Dr. Lim Ching Liang
	Dr. Samad Solbai
	Dr. Teh Ser Kok
	Ir. Mohd Raziff Embi
	Ir. Tee Yin Tiong
	Chong Chien Fatt
	Hamizan Mohd Derus
	Harry Woon Tar Woi
	Kang Kim Ang
	Maimunah Ismail

1998-2000

Advisor	Dato' Dr. Hj. Mohd Mansor Salleh
President	Dr. Samad Solbai
Deputy President	Dr. A. Rahim Mohd. Nor
Honorary Secretary	Ir. Max Ong Chong Hup
Honorary Treasurer	Ir. Mohd. Suradi Yasin
Council Members	Dato' Dr. Ong Eng Long
	Prof. Dr. Che Husna Azhari
	Prof. Dr. Radhakrishna
	Assoc. Prof. Dr. Esah Hamzah
	Dr. Lim Ching Liang
	Dr. Teh Ser Kok
	Ir. Mohd Raziff Embi
	Bob Phang
	David Lim Chee Cheong
	Kang Kim Ang
	Maimunah Ismail
	Mohd Adaham Adullah
	Wan Zaharah Wan Mohamad
	Zainuddin Ishak

1987-PROTEM COMMITTTEE

Chairman	Dato' Dr. Hj. Mohd Mansor Salleh
Deputy Chairman	Dr. Teh Ser Kok
Honorary Secretary	Ir. Max Ong Chong Hup
Honorary Treasurer	Helmi Hashim
Council Members	Dr. Lim Ching Liang
	Dr. Samad Solbai
	Ir. Mohd. Suradi Yasin
	Abdullah Hassan
	Andrew Wong Hee Sing
	Bert Heikoop
	Brian Shone
	David Lim Chee Cheong
	Jamaliah Idris
	Peter Kok Lok San
	Wan Zaharah Wan Mohamad

1996-1998

Advisor	Dato' Dr. Hj. Mohd Mansor Salleh
President	Dr. Samad Solbai
Deputy President	Dr. A. Rahim Mohd. Nor
Honorary Secretary	Ir. Max Ong Chong Hup
Honorary Treasurer	Ir. Mohd. Suradi Yasin
Council Members	Prof. Dr. Che Husna Azhari
	Assoc. Prof. Dr. Esah Hamzah
	Dr. Muhamad Deraman
	Dr. Teh Ser Kok
	Ir. Mohd Raziff Embi
	Ir. Rahim Noh
	Johar Juhari
	Kang Kim Ang
	Maimunah Ismail
	Ramli Omar
	Wan Zaharah Wan Mohamad

IMM ACTIV

No.	Event	Date	Venue
1., 2.	IMM WEEK 2021: THE EVOLUTION OF MATERIAL, SCIENCE AND TECHNOLOGY IN THE POST-COVID ERA	15th - 19th March 2021	Kuala Lumpur
3.	2ND SYMPOSIUM ON RAILWAY INFRASTRUCTURE & ENGINEERING	3rd February 2021	Online Zoom Platform
4.	WEBINAR: INSIGHTS INTO STATE-OF-THE-ART MECHANICAL SURFACE CHARACTERIZATION	25th May 2021	Facebook School of Mechanical Engineering, UTM
5.	VIRTUAL IMM-UITM TECH TALK: THE FUTURE OF MATERIALS SCIENCE AND TECHNOLOGY	17th April 2021	Online Google Meet Platform
6.	VIRTUAL X-RAY DIFFRACTION CLINIC	27th April 2021	Online Google Meet Platform
7.	WEBINAR: MOLDING SIMULATION	3rd March 2021	Online Google Meet Platform
8.	1-DAY RHEOLOGY WORKSHOP ON POLYMERS	28th September 2021	Online Zoom Platform
9.	MATERIALS LECTURE COMPETITION 2021 (MLC 2021)	28th July 2021	Online WEBEX Platform

VITIES 2021

No.	Event	Date	Venue
10.	SARAWAK SHELL BERHAD PARTICIPATION IN ICPER SEMINAR BY UNIVERSITI TEKNOLOGI PETRONAS	13th – 15th July 2021	Virtual
11.	UTHM-IMM MATERIALS LECTURE COMPETITION 2021	11th April 2021	Online ZOOM Platform
12.	VIRTUAL INDUSTRIAL TALK 2021: MATERIAL TESTING (IN COLLABORATION WITH CTRM TESTING LABORATORY)	6th June 2021	Online Google Meet Platform
13.	WINNER OF MATERIALS LECTURE COMPETITION (MLC 2021)	28th July 2021	Live streaming via Facebook MLC 2021 Final
14.	6th IMM COUNCIL MEETING	30th July 2021	Online Zoom Platform

IMM ACTIV

No.	Event	Date	Venue
1.	EDUCATION & FURTHER STUDIES FAIR	7th – 8th & 14th – 15th March 2020	Mid Valley Exhibition Centre
2.	IMM TVET REGIONAL SERIES OF TECHNICAL FORUMS	2nd March 2020	Grand Palace Hotel, Miri
3.	IMM FIRST COUNCIL MEETING (TERM: 2020 - 2022)	10th March 2020	Meeting Room Level 4, Menara Serba Dinamik, Shah Alam
4.	UiTM-MATERIALS LECTURE COMPETITION 2020	10th March 2020	Institute of Business Excellence (IBE), UiTM Shsh Alam
5.	WINNER OF MATERIALS LECTURE COMPETITION (MLC2020)	27th August 2020	Online Zoom Platform centered in iDEC, UPM
6.	UTM-MATERIALS LECTURE COMPETITION 2020	8th March 2020	Seminar Hall, Block C23, UTM
7.	MALAYSIA FINALIST PARTICIPATION IN THE VIRTUAL 2020 YOUNG PERSONS' WORLD LECTURE COMPETITION (YPWLC 2020)	27th August 2020	Online Google Meet Platform
8.	VIRTUAL INDUSTRIAL TALK– INJECTION MOLDING– WHAT YOU NEED TO KNOW?	29th July 2020	Online Google Meet Platform

VITIES 2020

No.	Event	Date	Venue
9.	UTHM-IMM MATERIALS LECTURE COMPETITION 2020	9th March 2020	Universiti Tun Hussein Onn Malaysia, UTHM
10.	MALAYSIA BOARD OF TECHNOLOGIST (MBOT) WITH THE TECHNICAL EXPERT PANEL (TEP) WORKSHOP	9th July 2020	Begonia Room, Palm Garden Hotel IOI Resort City, Putrajaya
11.	THE FIRST-OF-ITS-KIND VIRTUAL TRAINING COURSES FOR "IMM COATING FINGERPRINT CERTIFICATION SCHEME"	22nd - 24th July 2020	Online Zoom Platform
12.	MEETING WITH AUTHORIZED TRAINING BODY (ATB)	18th September 2020	Online Zoom Platform
13.	HARI PROFESION TEKNIKAL NEGARA 2020 (HPTN2020)	14th December 2020	Online Google Meet Platform
14	YOUNG PERSONS' WORLD LECTURE COMPETITION 2020	12th November 2020	Online Final 2020

IMM ACTIV

No.	Event	Date	Venue
1.	APPRECIATION DINNER WITH DATUK IR. DR. ABDUL RAHIM HASHIM	25th January 2019	Concorde Hotel, Shah Alam
2.	FORUM ON "USING TECHNOLOGY TO ADDRESS GLOBAL PLASTIC AND ENVIRONMENTAL ISSUE"	22nd March 2019	Kelab Golf Negara Subang
3.	PARTICIPATION OF IMM IN THE SARAWAK OIL & GAS SEMINAR AND EXHIBITION (SOGSE) 2019	13th - 14th April 2019	Imperial Mall Hotel, Miri, Sarawak
4.	MAKING INROADS INTO THE LAND TRANSPORT INDUSTRY: MEMORANDUM OF UNDERSTANDING BETWEEN IMM AND PRASARANA MALAYSIA BHD	19th April 2019	Alila Bangsar, Kuala Lumpur
5.	FORUM ON "TOWARDS POLYMERIC COATING FINGERPRINTING" V: BIG WAVE	4th April 2019	Dewan Presiden, Kelab Golf Negara Subang
6.	MATERIALS LECTURE COMPETITION 2019	30th April 2019	Centre of Graduate Studies, UTeM main campus, Melaka
7.	IMM-UITM STUDENT CHAPTER ACADEMIC VISIT TO KUALITI ALAM - CENVIRO	6th March 2019	Kualiti Alam - Cenviro, Negeri Sembilan
8.	SABAH OIL & GAS CONFERENCE AND EXHIBITION (SOGCE 2019)	10th – 11th July 2019	Magellan Sutera Harbour Resort, Kota Kinabalu

VITIES 2019

No.	Event	Date	Venue
9.	MEMORANDUM OF UNDERSTANDING BETWEEN INSTITUTE OF MATERIALS, MALAYSIA AND UNIVERSITI TUN HUSSEIN ONN MALAYSIA TO ESTABLISH UTHM-IMM MATERIALS STUDENT CHAPTER	29th August 2019	Mudzaffar Hotel, Melaka
10.	YOUNG PERSON'S WORLD LECTURE COMPETITION 2019	10th October 2019	297 Euston Road, London, United Kingdom
11.	IMM CORROSION CONFERENCE	17th October 2019	Sheraton Imperial KL
12.	29TH ANNUAL GENERAL MEETING	22nd March 2019	Kelab Golf Negara Subang
13.	MLC SEMI-FINAL 2019	4th April 2019	Centre of Graduate Studies, UTeM main campus, Melaka
14.	STRATEGIC COLLABORATION BETWEEN POLITEKNIK KOTA KINABALU (PKK) AND INSTITUTE OF MATERIALS MALAYSIA	23rd February 2019	Bilik Tetamu PKK, Kota Kinabalu, Sabah
15.	MOGEC GOLF CHAMPIONSHIP 2019	2nd March 2019	Mines Resort Golf Club
16.	UiTM MATERIALS LECTURE COMPETITION	13th March 2019	Faculty of Mechanical Engineering, UiTM Shah Alam

IMM ACTIV

No.	Event	Date	Venue
1	HALF-DAY SEMINAR "CORROSION CONTROLS AND PREVENTION" AND SITE VISIT TO NAVY BASE, LUMUT	14th May 2018	Cawangan Penguasa Kejuruteraan Armada Pangkalan Tentera Laut Diraja Malaysia, Lumut
2	YOUNG PERSON'S WORLD LECTURE COMPETITION 2018	11th October 2018	Fairview Course Arena, Port Elizabeth, South Africa
3	28TH ANNUAL GENERAL MEETING	16th March 2018	Impiana KLCC Hotel, Kuala Lumpur
4	MATERIALS LECTURE COMPETITION 2018	3rd May 2018	Universiti Teknologi Malaysia, Kuala Lumpur Campus
5	MEMORANDUM OF UNDERSTANDING SIGNING CEREMONY BETWEEN UNIVERSITI TEKNOLOGI MARA AND INSTITUTE OF MATERIALS, MALAYSIA	13th September 2018	Universiti Teknologi MARA Shah Alam
6	4TH MALAYSIAN OIL AND GAS SERVICES EXHIBITION AND CONFERENCE (MOGSEC 2018)	25th - 27th September 2018	Kuala Lumpur Convention Centre
7	STRATEGIC COLLABORATION BETWEEN POLYTECHNIC OF SULTAN AZLAN SHAH, MINISTRY OF HIGHER EDUCATION AND INSTITUTE OF MATERIALS, MALAYSIA	16th August 2018	Dewan Mualim, Behrang

VITIES 2018

4

5

9

10

11

3

14

No.	Event	Date	Venue
8	CORROSION FORUM: CORROSION AND COATINGS DEVELOPMENT IN INDUSTRY	5th July 2018	Universiti Teknologi MARA Shah Alam
9	PETROEDGE & NRGEDGE SIGNED MEMORANDUM OF UNDERSTANDING WITH INSTITUTE OF MATERIALS, MALAYSIA	20th April 2018	Holiday Inn Glenmarie, Kuala Lumpur
10	MALAYSIA BOARD OF TECHNOLOGIST STRATEGIC TECHNOLOGY FIELD OPTIMIZATION WORKSHOP	4th - 6th May 2018	WP Hotel, Kuala Lumpur
11	FIRST IMM INTERNATIONAL APPLIED VIBRATION CONFERENCE (IAVIC)	21st - 22nd November 2018	Parkroyal, Bukit Bintang, Kuala Lumpur
12	MALAYSIA BOARD OF TECHNOLOGISTS: PROFESSIONAL ASSESSMENT PANEL WORKSHOP	19th - 21st October 2018	Royale Chulan, Bukit Bintang, Kuala Lumpur
13	SEMINAR ON VIBRATION TECHNOLOGY IN THE ERA OF INDUSTRY 4.0	16th March 2018	Impiana KLCC Hotel, Kuala Lumpur
14	INAUGURAL SYMPOSIUM ON RAILWAY INFRASTRUCTURE AND ENGINEERING	24th January 2018	Universiti Tunku Abdul Rahman Sungai Long Campus

IMM ACTIV

No.	Event	Date	Venue
1	1-DAY COATING CONFERENCE	18th May 2017	Corus Hotel, Kuala Lumpur
2	IMM AWAY DAY	14th January 2017	Amverton Resort, Pulau Carey
3	1-DAY CONFERENCE ON PIPELINES CORROSION MANAGEMENT	27th September 2017	Corus Hotel, Kuala Lumpur
4	27TH ANNUAL GENERAL MEETING	16th March 2017	Universiti Teknologi Malaysia Space, Kuala Lumpur
5	MEMORANDUM OF UNDERSTANDING SIGNING CEREMONY BETWEEN IMM AND SOUTH WEST JIATONG UNIVERSITY	16th November 2017	Corus Hotel, Kuala Lumpur
6	IMM & SOCIETY FOR PROTECTIVE COATINGS COOPERATION AGREEMENT SIGNING CEREMONY	17th March 2017	PETRONAS Twin Tower, Kuala Lumpur

VITIES 2017

3

7

8

9

11

12

No.	Event	Date	Venue
7	30TH ANNIVERSARY IMM DINNER	6th November 2017	Intercontinental Hotel, Kuala Lumpur
8	1-DAY CONFERENCE ON PREVENTION OF LOSS OF PRIMARY CONTAINMENT	31st October 2017	Bintulu
9	MATERIALS LECTURE COMPETITION 2017	16th May 2017	Asia Pacific University Auditorium, Bukit Jalil, KL
11	1-DAY SYMPOSIUM ON MATERIALS PROCESSING, INSPECTION & TESTING	24th August 2017	Puteri Pacific Hotel, Johor Bahru
10	IMM VIBRATION CONFERENCE	16th November 2017	Corus Hotel, Kuala Lumpur
12	1-DAY CONFERENCE ON INSULATION	16th March 2017	Universiti Teknologi Malaysia Space, Kuala Lumpur

IMM ACTIVIT

No.	Event	Date	Venue
1.	FIRST "IMM CERTIFIED COATING FINGERPRINT QUALITY CONTROLLER" COURSE	23rd - 24th February 2016	Four Points Sheraton Hotel
2.	10TH INTERNATIONAL MATERIALS TECHNOLOGY CONFERENCE & EXHIBITION 2016	16th - 19th May 2016	Putraworld Trade Centre
3.	VIBRATION AWARENESS SEMINAR	17th November 2016	Promenade Hotel, Kota Kinabalu
4.	ACADEMY OF SCIENCES MALAYSIA CONFERMENT 2016	13th December 2016	Kuala Lumpur Convention Center
5.	5TH REGIONAL MATERIALS TECHNOLOGY CONFERENCE	8th May 2015	Miri
6.	1-DAY CONFERENCE UNDER INSULATION	13th October 2016	Corus Hotel, Kuala Lumpur

IES 2016-2015

No.	Event	Date	Venue
7.	COATINGS & CORROSION, FABRICATION & WELDING 2016	17th - 19th May 2016	Putra World Trade Centre
8.	MATERIALS LECTURE COMPETITION 2016	26th May 2016	Universiti Malaya
9.	MATERIALS LECTURE COMPETITION 2015	14th May 2015	Bangi-Putrajaya Hotel
10.	THE-FIRST-OF-ITS-KIND IMM COATING FINGERPRINT FOUNDATION COURSE IN THE WORLD	10th September 2015	Holiday Inn Glenmarie
11.	IEM-IMM-UMS FORUM ON OIL & GAS INDUSTRY	19th November 2015	The Palace Hotel
12.	24TH ASEAN WELDING FEDERATION COUNCIL MEETING	21st - 24th October 2015	Majapahit Hotel, Surabaya, Indonesia

IMM ACTIVIT

No.	Event	Date	Venue
1.	SEMINAR ON MATERIALS & ASSET INTEGRITY	21st March 2014	Kelab Golf Negara Subang
2.	FORUM ON TOWARDS FINGERPRINTING OF POLYMERIC COATINGS I	22nd March 2013	Kelab Golf Negara Subang
3.	9TH INTERNATIONAL MATERIALS TECHNOLOGY CONFERENCE & EXHIBITION 2014	13th - 16th May 2014	Putra World Trade Center
4.	MATERIALS LECTURE COMPETITION 2013	30th May 2013	Seri Pacific Hotel, Kuala Lumpur
5.	FORUM ON SPECIALTY POLYMERS FOR HIGH TEMPERATURE & HIGH PRESSURE APPLICATION IN THE OIL & GAS INDUSTRY	14th June 2013	PETRONAS Twin Towers, Kuala Lumpur
6.	FORUM ON "TOWARDS FINGERPRINTING OF POLYMERIC COATINGS" III	20th June 2014	Glenmarie Golf and Country Club
7.	2ND INTERNATIONAL MATERIALS SYMPOSIUM CUM 4TH REGIONAL MATERIALS TECHNOLOGY CONFERENCE & EXHIBITION	12th September 2013	Eastwood Valley Golf & Country Club, Sarawak

IES 2014-2012

No.	Event	Date	Venue
8.	FORUM ON TOWARDS FINGERPRINTING OF POLYMERIC COATINGS II	11th October 2013	Tanjung Puteri Golf Resort
9.	YOUNG PERSON'S WORLD LECTURE COMPETITION 2014	23rd October 2014	California, USA
10.	ASIAN WELDING FEDERATION (AWF) - AMERICAN WELDING SOCIETY (AWS) COLLABORATION	14th - 15th November 2013	
11.	WELDING INTEGRITY INPROVEMENT TASK FORCE (WII TF)	28th November 2014	
12.	PIPELINE INTERGRITY SEMINAR & NETWORKING COCKTAIL	20th September 2012	Kuala Lumpur
13.	EVENING TALK ON THE "GOOD & BAD PRACTISE IN FABRICATION AND USE OF STAINLESS STEEL"	6th December 2012	Kuala Lumpur
14.	8TH INTERNATIONAL MATERIALS TECHNOLOGY CONFERENCE & EX-HIBITION 2012	9th - 12th July 2012	Sunway Resort & Spa, Selangor

IMM ACTIVIT

No.	Event	Date	Venue
1.	"ADVANCED COATINGS STANDARD & TECHNOLOGY" SYMPOSIUM JOINTLY ORGANISED BY IMM-SSPC MOU SIGNING CEREMONY	15th November 2011	Glenmarie Golf & Country Club
2.	3RD REGIONAL MATERIALS TECHNOLOGY CONFERENCE	26th April 2011	Miri
3.	7TH INTERNATIONAL MATERIALS TECHNOLOGY CONFERENCE & EXHIBITION 2010	14th - 16th June 2011	Hilton Hotel, Kuching
4.	IMM EXPANDS INTO SABAH AND SARAWAK (2009) FROM LEFT: JOHN WONG PAK KUNG (CHAIRMAN IMM LABUAN CHAPTER), ANDREW RONGGIE (ADVISOR IMM KUCHING CHAPTER), NURUL ADZWAN SULAIMAN (CHAIRMAN IMM KUCHING CHAPTER)		
5.	6TH INTERNATIONAL MATERIALS TECHNOLOGY CONFERENCE & EXHIBITION 2008	14th - 16th June 2008	Hilton Hotel, Kuching
6.	5TH INTERNATIONAL MATERIALS TECHNOLOGY CONFERENCE & EXHIBITION 2006	17th - 20th July 2006	Crowne Plaza Mutiara Hotel, Kuala
7.	SEMINAR ON "NEW COATING TECHNOLOGY"	26th March 2008	Holiday Inn Glenmarie Hotel, KL

IES 2011-1980

4

5

9

10

11

DID YOU KNOW

Malaysian Materials Science & Technology Society (MMS) changed its name to the Institute of Materials, Malaysia (IMM) on 16 June 1997 by the new President, Ir. Dr. Samad Solbai, Ir. Max Ong Chong Hup (Honorary Secretary) and Ir. Mohd Suradi Yasin (Honorary Treasurer).

Founders of Malaysian Materials Science & Technology Society

Prof. Dato' Dr. Hj Mohd Mansor Salleh

Ir. Max Ong Chong Hup

No.	Event	Date	Venue
8.	4TH INTERNATIONAL MATERIALS TECHNOLOGY CONFERENCE & EXHIBITION 2004 & MOU SIGNING CEREMONY BETWEEN IMM-INTERMERGER SDN BHD ON THE FORMATION OF MATERIALS TECHNOLOGY EDUCATION SDN BHD	23rd - 25th March 2004	Hotel Istana, Kuala Lumpur
9.	3RD INTERNATIONAL MATERIALS ENGINEERING & TECHNOLOGY CONFERENCE & EXHIBITION "ENGINEERING MATERIALS IN THE MILLENIUM"	23rd - 24th May 2002	Holiday Inn, Miri
10.	2ND INTERNATIONAL MATERIALS ENGINEERING & TECHNOLOGY CONFERENCE & EXHIBITION 1999	25th March 1999	Sheration Hotel Subang
11.	1ST INTERNATIONAL MATERIALS TECHNOLOGY CONFERENCE & EXHIBITION	1st - 3rd March 1990	Putra World Trade Centre
12.	2ND INTERNATIONAL MATERIALS ENGINEERING & TECHNOLOGY CONFERENCE & EXHIBITION 1999	25th March 1999	Sheration Hotel Subang
13.	PLENARY SESSION, CHARITY GOLF, TECHNICAL FACTORY VISIT IN CONJUNCTION WITH IMM 10TH ANNUAK GRAND MEETING	17th October 2001	MSE Training Centre, Pasir Gudang

Mid- to far-FTIR Region for Conformity Analysis of Inorganic Raw Materials and Paints with Inorganic Components

SALIM Yoga Sugama[1], **ABD RASHID** Norsyazlin[1], **ABDUL HALIM** Suhaila Idayu[1], **HARUN** Mohammad Kamal[1], **ONG** Chong Hup[2], and **CHAN** Chin Han*[1]

[1]Universiti Teknologi MARA, Faculty of Applied Sciences, 40450 Shah Alam, Selangor, Malaysia
E-mail: cchan_25@yahoo.com.sg (*corresponding author), yoga.s.salim@gmail.com, norsyazlinrashid@gmail.com, suhailaidayu@gmail.com, mkharun@gmail.com

[2]Norimax Sdn Bhd, 2, Jalan TPP 5/17, Taman Perindustrian Puchong, Seksyen 5, 47160 Puchong, Selangor, Malaysia
E-mail: maxong54@gmail.com

Declaration: The content of this article was reprinted with permission from Wiley Online Library [Macromolecular Symposia], http://dx.doi.org/10.1002/masy.202100139.

Introduction

For batch-to-batch consistency and conformity/ authentication of protective paints supplied to the job site, FTIR spectroscopy with wavenumber ranging from 4000-600 cm^{-1} is used. This mid-IR region is particularly useful for identification of organic compounds [1]. Due to the requirements for a better performance of the protective coatings in the oil & gas industry, inorganic compound(s) and/or metal (e.g. TiO_2, Al_2O_3, zinc powder) are often added into the paint formulation. For this reason, it is necessary to evaluate the suitability and applicability of an extended range of FTIR region from 600-100 cm^{-1} (far-IR) for the evaluation protocol on both inorganic raw materials and paints with inorganic component(s).

Experimental

Inorganic raw materials [titanium dioxide, TiO_2 (rutile and anatase) and calcium carbonate, $CaCO_3$] and paints with inorganic components (epoxy zinc, glassflake epoxy, glass flake polyester, silicone-aluminum) were studied. FTIR analysis was carried out in the range of 4000-100 cm^{-1} by averaging 32 scans at a resolution of 4 cm^{-1} using mid- to far-IR spectrophotometer Invenio (Bruker, Billerica, Massachusetts, USA). The spectra were analyzed using OPUS software without any spectral correction.

A degree of similarity (r) was obtained by comparing the spectra of samples to the Reference spectrum using high sensitivity compare feature in the said software. The acceptance threshold was set at r ≥ 0.900 (with tolerance ± 0.002) after taking into considerations the random errors that are derived from sampling and operator who performed the analysis.

Results and discussion

1. Raw Materials

In this communication, we show selected results for raw material TiO_2. The TiO_2 pigment that is used in paint formulation is often a mixture, and not of a standalone component such as rutile or anatase. Figure 1 shows selected compositions (wt%/wt%) of rutile/anatase TiO_2 mixture. The evolution of absorbance bands in rutile-anatase mixture can be seen around 900-200 cm^{-1} (Ti-O stretching vibrations) and 3800-2600 cm^{-1} (O-H stretching vibrations at higher wavenumbers). The absorbance band around 468-463 cm^{-1} (which is specific to anatase) splits into two bands as the content of rutile increases. One hidden absorbance band at ~492 cm^{-1} in anatase spectrum becomes more prominent as the content of rutile increases. This band eventually emerges to another band around 540-440 cm^{-1} as the results of molecular vibrations at different polymorph surfaces.

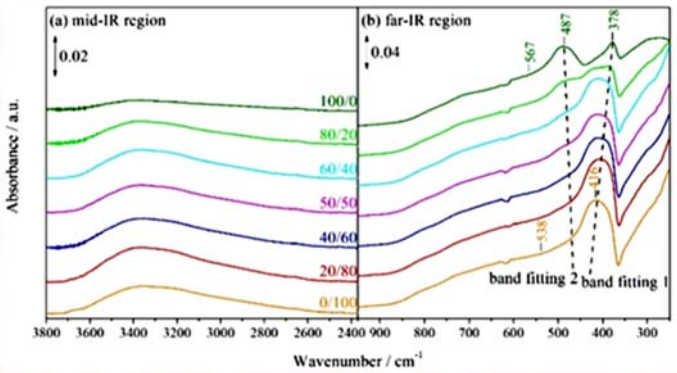


***Fig. 1** Stacked FTIR spectra of mixture rutile/anatase of TiO_2 from mid- to far-IR. The significant absorbance bands identified in (a) mid-IR region is O-H stretching vibrations, while in (b) is the Ti-O stretching vibrations in the far-IR region. Anatase (orange spectrum) and rutile (dark green spectrum).*

For the estimation of *r* values, the spectrum of rutile TiO_2 was used as the reference for comparing against the rutile/anatase TiO_2 mixtures. The *r* values for both rutile/ anatase TiO_2 mixture is listed in Table 1. The industry acceptance threshold for QA/QC of paint raw materials and its polymeric paint is $r \geq 0.900$ (with tolerance ±0.002) [2]. For analyzed mid-IR region (4000-700 cm^{-1}), the *r* values were above 0.898 when up to 15 wt% of rutile TiO_2 was replaced with anatase. This shows that the mid-FTIR analysis should not be adopted to authenticate rutile TiO_2 from anatase TiO_2. The mid-IR region could not differentiate rutile from anatase until the added rutile amount is above 15 wt%. On the other hand, mid- to far-IR or solely far-IR provides better accuracy during authentication of rutile TiO_2. As low as ≥ 2 wt% of rutile TiO_2 can be differentiated from anatase TiO_2 in the mixture.

In the case of $TiO_2/CaCO_3$ mixture, the mid- to far-IR or far-IR analysis can only differentiate $CaCO_3$ from the mixture when ≥ 13 wt% of $CaCO_3$ is present. While it is sufficed to say that the incorporation of far-IR range may help to differentiate anatase from rutile TiO_2 and *vice*

versa based on the calculation of *r* values, however, it cannot differentiate very well anatase TiO_2 from $CaCO_3$ and *vice versa*.

Table 1. *r values of FTIR spectra of rutile/anatase TiO_2 and anatase TiO_2/$CaCO_3$ mixtures in reference to rutile and anatase TiO_2, respectively.*

Sample	Ratio	*r* value		
		Mid-Far IR	Far IR	Mid IR
Rutile/Anatase	100/0	1.000	1.000	1.000
	99/1	0.967	0.964	0.998
	99/2	0.893	0.885	0.994
	85/15	0.429	0.419	0.917
	80/20	0.342	0.330	0.835
Anatase/$CaCO_3$	100/0	1.000	1.000	1.000
	87/13	0.924	0.926	0.923
	85/15	0.878	0.879	0.907

Besides, for FTIR conformity analysis using *r* values, two unresolved absorbance bands [419-387 cm^{-1} (band fitting 1) and 490-448 cm^{-1} (band fitting 2) in Figure 1] were chosen for desummation on the basis that these bands change significantly after adding anatase into rutile TiO_2. Attempt to separate the overlapping $CaCO_3$ and TiO_2 absorbance bands at the far-IR region (900-300 cm^{-1}) was unsuccessful. Thus, the area under the absorbance band 3 (more detail information about area under the curve of band 3 for anatase TiO_2 / $CaCO_3$ mixtures is available in ref. [3]), was estimated for anatase TiO_2/ $CaCO_3$ mixtures. Replacement of anatase TiO_2 with $CaCO_3$ causes the area of band 3 to increase and the degree of similarity to reduce for all compositions.

By comparison, the former approach utilizing mathematical *compare* function is comparatively more practical for QA/QC work in a testing laboratory as well as for on-site analysis than the latter approach by desummation technique.

2. Polymeric Paints

The batch-to-batch consistency of paint samples that contain inorganic or metallic compound(s) was estimated following the procedure in ref. [2] within mid-IR region. It is interesting to point out that the aluminum flake in silicone-aluminum paint does not show any IR absorbance band in mid-IR as well as far-IR region under the experimental conditions. The same observation is noted for zinc dust in zinc rich paints (*i.e.* inorganic zinc and epoxy-zinc) under similar experimental conditions.

Table 2 summarizes the *r* values of four commonly used paints with inorganic or metallic compound(s) content namely epoxy-zinc, silicone-aluminum, glassflake polyester and glassflake epoxy. All the *r* values of the paints from different production batches exhibit the thresholds that are within the allowable limit ($r \geq 0.898$), with the exception found on a dry sample. The *r* values of dry silicone-aluminum paint were found to be 0.356 ± 0.018 within the entire range of IR region (4000 – 700 cm^{-1}) and 0.358 ± 0.018 within the fingerprint region (2000 – 900 cm^{-1}). This paint was extracted from the sample that had not been properly stored and handled.

Table 2. *The r values of two batches of paint samples (i.e. B1 and B2) in reference to the respective Reference spectrum.*

Sample code	*r* ± *s*	
	(full region)	(fingerprint region)
	4000-700 cm^{-1}	2000-900 cm^{-1}
EPZ4_A_B1	0.976 ± 0.001	0.988 ± 0.004
EPZ4_A_B2	0.953 ± 0.011	0.976 ± 0.008
Epoxy5_A_B1	0.998 ± 0.001	0.999 ± 0.001
Epoxy5_A_B2	0.996 ± 0.001	0.998 ± 0.001
Polyester1_A_B1	0.999 ± 0.001	0.999 ± 0.001
Polyester1_A_B2	0.982 ± 0.001	0.982 ± 0.001
Silicone4_A_B1	0.984 ± 0.002	0.990 ± 0.003
Silicone4_A_B2	0.930 ± 0.015	0.926 ± 0.021
Silicone4_A_B1dry	0.356 ± 0.018	0.358 ± 0.018

[a] Reference spectrum was generated following the procedures in ref. [1]

Conclusion

After evaluating the usefulness and contribution of far-IR in the conformity and consistency verification of supplied paints, it can be concluded that far-FTIR may not be needed for the purpose of batch-to-batch consistency check of polymeric paints with inorganic components. Although mid-far IR and far-IR can differentiate rutile TiO_2 from anatase TiO_2, it could not differentiate very well anatase TiO_2 from $CaCO_3$. For raw materials that are IR-inactive, the consistency check can be supported by Certificate of Analysis (*e.g.* mill certificate). Hence, the determination of *r* values for the purpose of spectra comparison within the mid-IR region is sensitive even for the paints with inorganic components.

Acknowledgement

The authors gratefully acknowledge Serba Dinamik Holdings Bhd. [100-IRMI/PRI 16/6/2 (024/2018)] for the financial support of the research works.

References

[1] Salim, Y.S.; Chan, C.H., Ong C.H. Physical and structural analyses for batch-to-batch consistency of epoxy paints: a case study on epoxy coatings for oil and gas industry in Malaysia. *Corr. Eng. Sci. Technol.* 2018, 53, pp 468–476.

[2] IMM FP01:2020, Coating Fingerprinting Overall Procedures for Paints Using FTIR and Other Related Methods, 2020.

[3] Abd Rashid, N.; Salim Y.S.; Abdul Halim S.I.; Harun, M.K.; Ong, C.H.; Chan, C.H. Mid and far Fourier-transform infrared authentication analysis for polymeric paints and their raw materials.

STUDENT EDITORIAL

Poly(methyl methacrylate) Cra Antibacterial

Abstract

Cranioplasty is the secondary surgery done to restore the skull defect after the previous surgery of decompressive craniectomy [1]. Poly (methyl methacrylate) (PMMA) is the most commonly used material to restore the skull defect. This is done through an in situ forming approach where the reagents are mixed to initiate a radical polymerization of PMMA to repair the skull directly cement [2]. Despite PMMA having better long-term outcomes, it is difficult to disinfect the newly formed implant properly thus infection has complicated the outcome of this procedure with a significant rate of graft infection of more than 10% [1]. These infections are mostly caused by strains of bacteria Staphylococcus epidermidis or Staphylococcus aureus which are found in indwelling foreign devices and surgical wards, respectively [3]. Therefore, if the implant can be modified with antibacterial properties, then it can overcome the drawback from the lack of deep disinfection and thus reduce the risk of infection caused by these bacterias. Moreover, current research gave conflicting results regarding the efficacy of PMMA modified with antibacterial properties [4, 5]. This research has proven that Sulfonated PMMA (SPMMA) can be successfully loaded with antibacterial agents which displayed a strong resistance to bacterial growth in the antimicrobial assay test.

Objectives

- To create SPMMA which can be loaded with gentamicin to produce a chemically modified PMMA with antibacterial properties.

Methodology

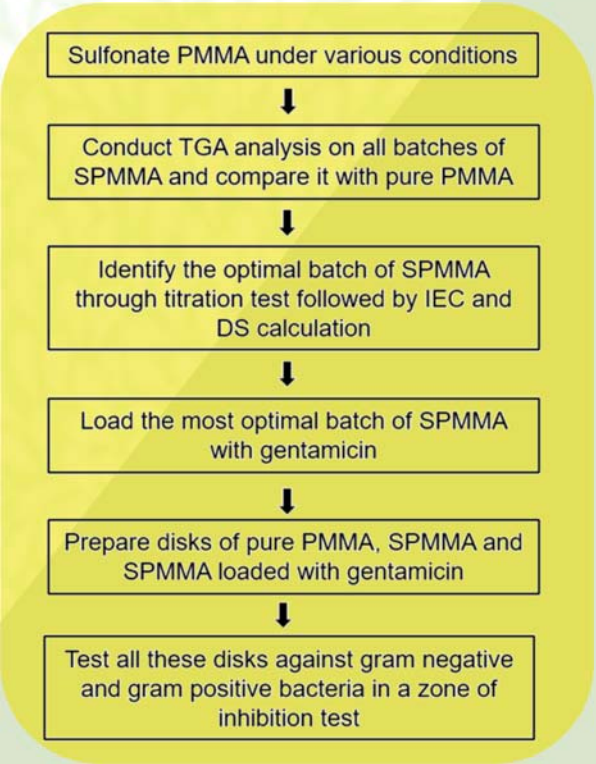


Figure 1 *Flowchart for the preparation and testing of the SPMMA*

Results and Discussion

Sulfonation of PMMA

Current research done on the sulfonation process of PMMA is limited [6]. Therefore, the PMMA was sulfonated under six different conditions as summarised in Table 1.

Table 1 Sulfonation of PMMA under different conditions

Batch	I			II		
Concentration	Concentrated Sulfuric Acid			Concentrated Sulfuric Acid		
Temperature (°C)	60			80		
Ratio of mass of PMMA to volume of acid	1:3			1:4		
Duration (hrs)	2	4	6	2	4	6

For reference on the sulfonation of PMMA, 10 g of PMMA powder and 100 mL of sulfuric acid was mixed and the mixture was stirred at 100 °C for 2 hours [6]. This resulted in the pure PMMA powder (**Figure 2(a)**) becoming yellowish in appearance after sulfonation as seen in **Figure 2(b)**.

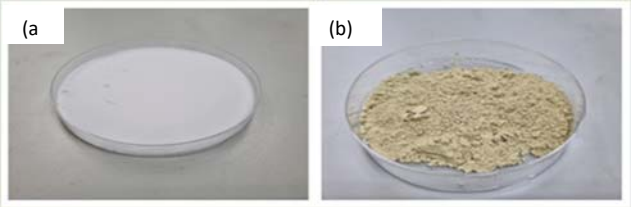


Figure 2 *Images of (a) pure PMMA powder and (b) Sulfonated PMMA powder*

There is a noticeable trend for both batches where the intensity of the colour changes as the duration of sulfonation increased. Furthermore, batch II produced SPMMA with much greater intensity of colour as compared to batch I of the same sulfonation duration, indicating the ratio of PMMA (g) to H_2SO_4 (mL) of 1:4 in batch II resulted in greater sulfonation as compared to batch I with ratio 1:3. Visually polymers will change colour to dark yellowish after a successful sulfonation process [6].

Ionic Exchange Capacity (IEC) and Degree of Sulfonation (DS)

The volume of NaOH needed to reach the neutral pH of each batch is done for three repetitions to get more reliable data. A trend is noticed where the average NaOH needed to reach the neutral pH increased as the sulfonation time increased. In addition to this, Batch II samples required more NaOH to reach the neutral pH than batch I samples of the same duration. This indicates that ratio 1:4 of batch II resulted in a greater degree of sulfonation as compared to ratio 1:3 of batch I.

anioplasty Bone Cement with Modifications

$$IEC = \frac{(\text{Average Volume of NaOH consumed}) * (\text{Molarity of NaOH})}{(\text{Dried Weight of SPMMA})}$$

Equation (1) [7].

$$DS = \frac{(M_{PMMA})(IEC)}{1000 - (M_{SO_3H})(IEC)} \times 100\%$$

Equation (2) [7].

Where;
Molarity of NaOH = 0.02 M
Dried SPMMA weight = 0.1 g
M_{PMMA} = molar mass of PS = 100.12 $gmol^{-1}$
M_{SO3H} = molar mass of sulfonic group = 81 $gmol^{-1}$

As expected, the IEC and DS values, calculated using **Equations 1** and **2**, increased as the sulfonation time increased as shown in Table 2. The IEC and DS values increased almost twice in batch II from 2 hours to 4 hours.

Table 2 *IEC and DS results*

Sample	Batch	Duration (hrs)	IEC (mEq/g)	DS (%)
A	I	2	0.67	7.13
B	I	4	0.69	7.28
C	I	6	0.70	7.43
D	II	2	0.75	7.96
E	II	4	1.26	14.05
F	II	6	1.40	15.81

The IEC values and DS percentage only showed a slight increase as the duration increased in all of the samples in batch I. Sample D showed a slight increase from the sample C. However, the IEC value of sample E was approximately 1.68 times greater than D. Furthermore, the DS percentage was 7 % higher than D as well. Sample F only displayed a DS percentage increase of only 1.76 % from sample E. Therefore, the optimal SPMMA chosen for antibacterial loading was sample E. Sulfonation is mostly conducted on organic molecules with an aromatic ring. Since PMMA does not have aromatic rings, the IEC and DS values are much lower than the standard results from sulfonating polymers with aromatic rings [8]. Moreover, neutralising SPMMA took much longer than expected due to the excess sulfuric acid left over, further giving evidence that sulfonation is more effective in polymers with aromatic rings.

Antimicrobial Assay Test

The standard measurements in the antimicrobial test consists of measuring the longest and shortest diameter of the bacterial growth inhibition in milli-meters and this parameter will be referred to as Zone of Inhibition *i.e.,* ZoI (mm) [9]. The ZoI were only seen in SPMMA loaded with gentamicin (GSPMMA). PMMA and SPMMA did not display any form of resistance to bacterial growth of *E. coli* or *S. aureus* as represented in **Figure 3**. The bacterial resistance displayed was measured using a ruler.

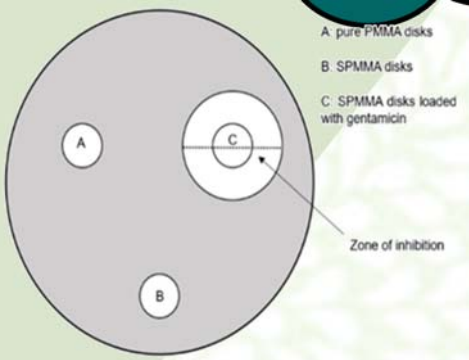


Figure 3 Antimicrobial Assay test

Therefore, only the ZoI of SPMMA loaded with gentamicin disks were measured and tabulated in **Table 3** .

Table 3 Zone of Inhibitions of G-SPMMA against the two strains of bacteria

SPMMA loaded with gentamicin disk number (G-SPMMA)	Zone of Inhibition (ZoI) / mm	Against E. coli	Against S. aureus
1	Longest	43	30
	Shortest	37	30
2	Longest	32	32
	Shortest	30	31
3	Longest	33	35
	Shortest	30	34

Studies done on loading biomaterials with gentamicin has shown success in resisting bacterial growth and preventing infection [10, 11]. These studies have shown that the antibacterial agents binding to the free surface show much more consistent results in the efficacy of the antibacterial resistance as compared to other methods of antibacterial modification such as antibacterial coating or directly incorporating antimicrobial agents in the polymer matrix [12]. This can be seen in this research findings where the zone of inhibitions for each disk is consistent with no significant deviation.

Conclusions

- The longer the sulfonation time, the higher the ionic exchange capacity (IEC) and degree of sulfonation (DS)
- It is proven that the chemical modification is a success and SPMMA can bind with gentamicin.
- It is proven that final material has antibacterial properties compared to pure PMMA through quantifiable data in zone of inhibition test.
- This study provides consistent data on the antibacterial properties of the fully modified PMMA.

Reported and edited by:

Mohamed Nazran Nazeer, Taylors University Mechanical Engineering Undergraduate Student, TU-IMM Student Chapter.
Supervised by Ts Dr Choo Hui Leng, Programme Director – Mechanical Engineering, School of Computer Science and Engineering, Taylor's University.

References

[1] N. Acciarri, F. Nicolini and M. Martinoni, "Cranioplasty : Routine Surgical Procedure or Risky Operation?," *World Journal of Surgical Research,* vol. 5, no. 5, pp. 22-33, 2016.

[2] T. Russo, R. . D. Santis, A. Gloria, K. Barbaro, A. Altigeri, I. V and J. V. Rau, "Modification of PMMA Cements for Cranioplasty with Bioactive Glass and Copper Doped Tricalcium Phosphate Particles," *Polymers (Basel),* vol. 12, no. 1, 2019.

[3] Mario et al., "Complications following cranioplasty: incidence and predictors in 348 cases," *J Neurosurg,* pp. 182-188, 2015.

[4] Russo et al, "Modification of PMMA Cements for Cranioplasty with Bioactive Glass and Copper Doped Tricalcium Phosphate Particles," *Polymers (Basel),* vol. 12, no. 37, pp. 1-12, 2020.

[5] M. Arora, . E. Chan, S. Gupta and . A. Diwan, "Polymethylmethacrylate bone cements and additives: A review of the literature," *World Journal of Orthopedics,* vol. 4, no. 2, pp. 67-74, 2013.

[6] N. Dahdouh, S. Amokrane, R. Murillo, E. Mekatel and D. Nibou, "Removal of Methylene Blue and Basic Yellow 28 Dyes from Aqueos Solutions Using Sulphonated Waste Poly Methyl Methacrylate," *Journal of Polymers and the Environment,* vol. 28, pp. 271-283, 2019.

[7] Ngadiwiyana et al, "Sulfonated polystyrene and its characterization as a material," *Journal of Physicss: Conference Series,* vol. 1025, p. 012133, 2018.

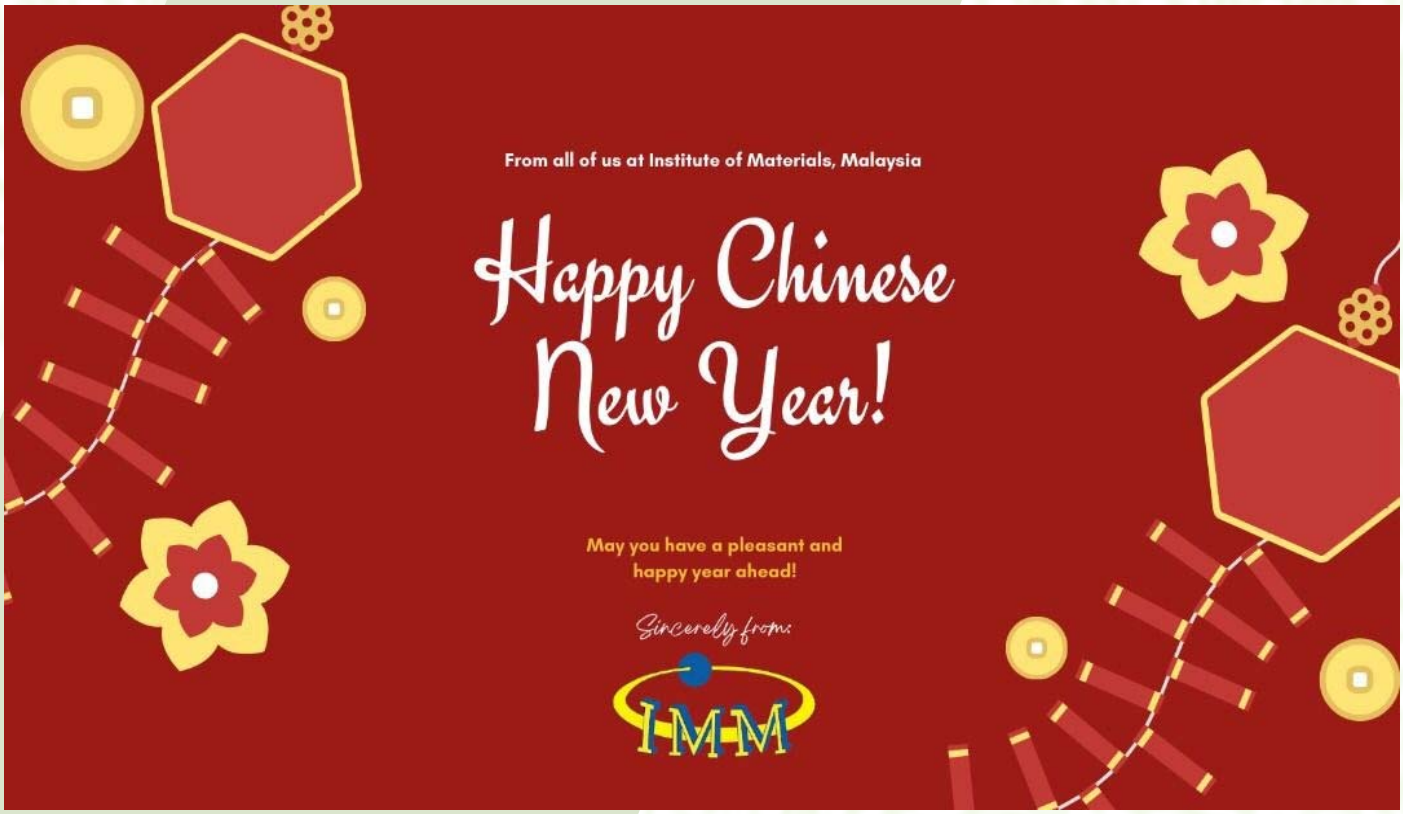
[8] O. B. Soile, F. Oyeyiola and E. D. Avan, "Aromatic Sulphonation and Related Reactions," *International Journal of Advancements in Research & Technology,* vol. 6, no. 8, 2017.

[9] Vaidya et al, "Antimicrobial Efficacy and Synergy of Metal Ions against Enterococcus faecium, Klebsiella pneumoniae and Acinetobacter baumannii in Planktonic and Biofilm Phenotypes," *Scientific Report,* vol. 7, no. 5911, pp. 1-9, 2017.

[10] Tang et al, "Gentamicin-loaded carbonated hydroxyapatite coatings with hierarchically porous structures: drug delivery properties, bactericidal properties and biocompatibility," *Royal Society of Chemistry,* vol. 1, no. 78, p. 41500–41509, 2014.

[11] Lucas-Girot et al, "Gentamicine-Loaded Calcium Carbonate Materials: Comparison of Two Drug-Loading Modes," *Journal of Biomedical Materials Research, Part B, Applied Biomaterials,* vol. 73, no. 1, pp. 164-170, 2005.

[12] V. Sedlarik, Biodegradation - Life of Science, IntechOpen, 2013.



IKM PROFESSIONAL CENTRE
TRAINING CALENDAR 2022

DATE	ONLINE TRAINING	TRAINERS
12 - 13 Jan 2022 (Monday - Tuesday)	General QA/QC Procedures for Testing Laboratories	ChM PUA HIANG
26 - 27 Jan 2022 (Wednesday - Thursday)	Calibration of Test and Measuring Instruments and Metrological Traceability	MR CHEN SOO FATT
14 - 15 Feb 2022 (Monday - Tuesday)	Statistical Methods for Chemists	PROF ChM DR SHARON TEH GEOK BEE
16 - 17 Feb 2022 (Wednesday - Thursday)	Understanding the Elements of MS ISO/IEC 17025:2017	ChM CHANG HON FONG
21 - 22 Feb 2022 (Monday - Tuesday)	Basic Laboratory Skills & Techniques	PROF ChM DR SHARON TEH GEOK BEE
2 - 3 Mar 2022 (Wednesday - Thursday)	Procedures of Method Validation & Verification	ChM CHANG HON FONG
7 - 8 Mar 2022 (Monday - Tuesday)	Chemical Safety and Security	DATIN ChM DR ZURIATI ZAKARIA
9 - 10 Mar 2022 (Monday - Tuesday)	Management of Chemicals & Chemical/Lab Wastes	ChM DR MALARVILI RAMALINGAM
14 - 15 Mar 2022 (Monday - Tuesday)	MS ISO/IEC 17025:2017 Management Systems Internal Auditing	ChM PUA HIANG

Email us for more information:
ayu@ikm.org.my / azizi@ikm.org.my
Tel: 03–77283272

https://ikm.org.my/ikm-professional-centre/training-calendar/

Institut Kimia Malaysia

Bengkel Pemurnian Bidang Teknologi


Reported by: Prof. Ts. ChM. Dr. Melissa Chan Chin Han, Chairperson of IMM-MBOT Committee and
Ts. Wan Mohd Arif Wan Ibrahim, Chairperson of IMM-MBOT Assessment Panel

Date: 26th – 28th November 2021
Venue: New World Petaling Jaya Hotel, Malaysia
Organized by Malaysian Board of Technologists

A 3-day "Bengkel Pemurnian Bidang Teknologi" was organized by the Malaysian Board of Technologies (MBOT) from 26th – 28th November 2021 at the New World Petaling Jaya Hotel, Malaysia. Prof. Ts. ChM. Dr. Chan Chin Han and Ts. Wan Mohd Arif Wan Ibrahim represented the Institute of Materials, Malaysia (IMM) in the field of materials science technology. On top of that, the Deputy President of IMM, Ts. Dr. Chew Khoon Hee represented Tunku Abdul Rahman University College in the same field and the council member of IMM, Ir. Ts. Noor Hisham Yahaya, participated in the field of oil and gas.

To date, MBOT has recognized 24 technology and technical fields. These technology fields are not permanent and will dynamically change based on the rapid growth of technology. Each technology field went through rigorous verification and requirements study before being approved by the Board and recognized as MBOT technology and technical fields.

The objectives of this workshop were to revisit and harmonize the definition, sub-fields and professional services for the fields of technology under MBOT. The panel members presented the definition, qualification requirement to be a Technologist or Technician, sub-fields and professional services for the assigned fields of technology and the strategies that can strengthen the MBOT fields of technology. Besides, the panel members prepared the expected technology competency and technical competency for development, manufacturing, testing, commissioning and maintenance of the assigned technology field.

IMM as one of the Technology Expert Panel (TEP) will assist MBOT in developing the best practices for materials science technology to be documented as practicing provision for technologists and technicians in that field. These practicing provisions are aligned with the function of MBOT which is spelled out in clause 5 (e) under Act 768, where the Board may determine and regulate the conduct and ethics of the technologists and technician's profession.

Figure 1 *The MBOT panel members of Materials Science Technology.*
From the left: Ts. Wan Mohd Arif Wan Ibrahim, Ts. Dr. Chew Khoon Hee and Prof. Ts. ChM. Dr. Melissa Chan Chin Han

Figure 2 *The MBOT panel members*
From the left: Ts. Wan Mohd Arif Wan Ibrahim, Ir. Ts. Noor Hisham Yahaya, Ts. Dr. Chew Khoon Hee, Prof. Ts. ChM. Dr. Melissa Chan Chin Han and Assoc. Prof. Ts. Dr. Mohd Rusllim Mohamed (Director of Technology and Technical Accreditation Secretariat, MBOT)

Figure 3 *IMM Council members at the workshop*

Figure 4 *Group photo*

Young Persons' World Lecture Competition 2021

Reported by: Dr. Nor Akmal Binti Fadil (Chairperson of IMM-MLC Committee, 2020-2022)

Date: 11th November 2021
Venue: ZOOM Platform

The IOM3 Young Persons' World Lecture Competition (YPWLC) has been held annually in different locations around the globe including Brazil, South Africa, Malaysia, and Australia since 2005 in London. This year's competition, YPWLC 2021 took place virtually on 11 November 2021 at 20:00 – 00:00 MYT (12:00 – 16:00 GMT). This is the second time the competition is held virtually due to the Covid-19 pandemic . The competition was organized by IOM3 Student & Early Career Committee and participated by the finalists from around the world (Malaysia, South Africa, Australia, China, Canada, Russia, and Hong Kong) who had won their respective finals and represented their countries at this year's final.

Malaysia's representative, Ms. Farah Hannan Abd Nasir, a postgraduate student from Universiti Malaya, had won the second prize at the competition with her topic 'Traps in Organic Semiconductors' to bring home a prize money of £1500 and a MacBook. Besides, she was awarded a one-year IOM3 free membership to be part of a dynamic and vibrant professional community. Earlier in July 2021, she had won The Materials Lecture Competition 2021 (MLC2021) organized virtually by the Institute of Materials, Malaysia (IMM) and Universiti Sains Malaysia (USM). The competition rules of the MLC 2021 were adopted from the YPWLC 2021 where a15-minute lecture is given by the participants followed by Q&A session from the three judges on a topic related to materials, minerals, mining, packaging, clay technology and wood science and engineering.

The judging panel of YPWLC 2021 included the Chair of the judging panel, Dr. Philip Bischler CEng CSci FIMMM, Mr. Neil Glover FREng CEng FIMMM, President of IOM3 and Dr. Ilija Rasovic MIMMM, IOM3 Student & Early Career Committee.

The first prize went to Ms. Hannah Ramsay representing Canada, with her talk on *'Silver Clusters: Small Material, Big Potential'.* She won ~~a~~ prize money of £2000 and a Macbook. Juncheng Fan from China won the third place with a prize money of £1000 and a MacBook.

The main objective of YPWLC competition is to encourage the young materials scientists and engineers to develop their communication and presentation skills. Delivering an informative complex technical knowledge in an enthusiastic and understandable way to a non-specialist audience has become an essential communication skill in today's dynamic world. For ten years, Malaysia through IMM, has continuously participated in the event with the support from both public and private universities in the country.

Figure 1. Ms. Farah Hannan and the panel of judges (from left: Dr. Ilija Rasovic, Dr. Philip Bischler, and Mr. Neil Glover) during the competition (a snapshot photo via ZOOM Application).

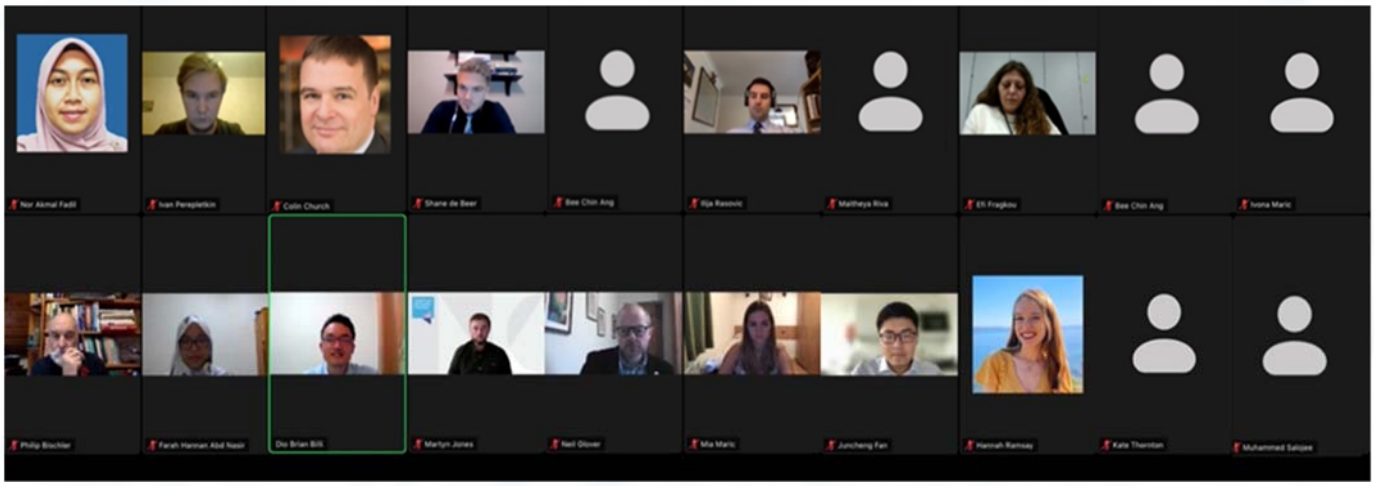


Figure 2. Some of the participants, panel of judges, organizing committees, and the audience (a snapshot photo via ZOOM Application).

INSTITUTE OF MATERIALS, MALAYSIA

Updated on 30th December 2021

Institute of Materials, Malaysia (IMM) is a non-profit professional society that promotes honourable practice, professional ethics and encourages education in materials science, technology and engineering. Engineers, academicians, technicians, skilled workers and professionals are amongst its members exceeding 6800.

Registered with the Registrar of Societies on 6th November 1987, the Malaysian Materials Science & Technology Society (MMS) changed its name to the Institute of Materials, Malaysia (IMM) on 16th June 1997. The objectives of 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.

IMM is administered by a council of 30 members, with volunteers leading more than 15 materials committees and more than 4 regional chapters, and supported by a secretariat with full time staff.

IMM Vision

To be internationally recognised leading institution in Materials Science and Technology.

IMM Mission

(1) To be the technical authority on material science and technology
(2) To develop an enhance competency and skills for all categories and practitioner
(3) To become an internationally recognized certifying body
(4) To be the forum for industry and academia collaboration
(5) To positively contribute to society and quality of life

The IMM membership is categorised into 6 different grades and open to anyone above the age of 17 years - individuals and companies keen in developing and contributing towards the growth of materials science, technology and engineering in Malaysia.

Over the years, IMM have conducted courses on coatings, coatings fingerprinting, corrosion, welding, vibration etc in support of the oil and gas industry in Malaysia. Over 750 Coatings Inspectors have been trained and certified as well as more than 3300 Blasters & Painters, Supervisors, Corrosion Technician and Vibration Practitioners. Its certification programmes are recognized by PETRONAS and all oil & gas operators. Since January 2011, more than 80 Associate Welding Engineers, more than 90 Welding Engineers, more than 30 Senior Welding Engineers and more than 45 Coating Fingerprint Quality Controllers were trained and certified.

IMM has also organised 10 International Materials Technology conferences (IMTCE) on a biennial basis, and numerous technical seminars, educational programmes, technical visits, and materials awareness programmes since 1988.

Public courses, such as Microbiologically Influenced Corrosion (MIC) and Welding Technology for Non-Welding Personnel, are being offered occasionally. Training on materials awareness has also been conducted in public listed companies.

The courses and programmes are being organised by Authorized Training Body/Bodies and Authorized Event Organizer/Organizers.

Collaborations with the Asian Welding Federation, Sabah Skills Technology Centre (SSTC), and local universities continue to be part of IMM's vision and long term mission to educate, train and serve the materials fraternity.

GENERAL INFORMATION ON MEMBERSHIP

The IMM Membership is open to all individuals and companies in developing the contribution of Materials science, technology and engineering towards industrial growth in Malaysia. The technology of materials is advancing day-to-day throughout the world. Membership to the IMM will enable networking and exchange of knowledge from a very wide variety of specialised areas of expertise. Please feel free to download or print a copy of the application form together with the IMM regulations. If you have any doubt, please do not hesitate to contact our secretariat through the phone; +603-76611591 or email to secretariat@iomm.org.my

Annual subscriptions shall be payable in advance on 1st January of each year. Those admitted into the IMM between 1st July and 31st December in any year shall pay only half the annual subscription. Seniors (above 55 years old) get 50% discount off their annual subscriptions.

We have an online application for membership for selected grades. Membership application forms in document format can be accessed from www.iomm.org.my.

Kindly fill the form and email to secretariat@iomm.org.my or send it to :

IMM SECRETARIAT
Suite 1006, Level 10, Block A, Kelana Centre Point,
No. 3 Jalan SS 7/19,
47301 Petaling Jaya, Selangor

IMM MEMBERSHIP BENEFITS

(1) IMM activities offer members to interact and network with representative from the industry, academia and government related to the Materials profession.

(2) Members will gain knowledge on career opportunities for their children, friends etc as IMM offers certification courses in skilled trades *e.g.* Welding, Painting, Inspection, Corrosion *etc*.

(3) IMM-JWES Welding Engineer Certification program leading to a Welding Engineer Certification which offers great employment opportunities in the oil & gas, heavy industry, marine and energy sectors.

(4) IMM publications – quarterly magazine plus annual conferences offer presenters an opportunity for their technical research or industry-academia papers to be published in ISI- and Scopus-index journals.

(5) IMM organizes many free technical events for members to acquire new knowledge and networking opportunities. Participants to these events will also receive Certificate of Attendance for their Continuing Professional Development records.

IMM MEMBERSHIP FEES SCHEDULE AS PER BELOW:

Description	Amount			
	Entrance Fee	Processing Fee	Transfer Fee	Annual Subscription
Fellow (F.I.M.M)	-	RM 300.00	RM 10.00	RM 150.00
Professional (M.I.M.M)	-	RM 150.00	RM 10.00	RM 100.00
Associate (A.M.I.M.M)	-	RM 150.00	RM 10.00	RM 80.00
Company	RM 50.00	-	-	RM 200.00
Ordinary	RM 20.00	-	-	RM 40.00
Student	RM 10.00	-	-	RM 10.00
Ordinary/ Company for affiliates	RM 40.00/ RM 50.00	-	-	NIL

INSTITUTE OF MATERIALS, MALAYSIA

Updated on 30th December 2021

REGULATIONS GOVERNING ADMISSION AND TRANSFER OF MEMBER GRADES

The Council shall establish a Membership Committee which will be responsible for these Regulations and for review of applications for new membership and transfer to other grades (upgrades). The Membership Committee shall recommend for Council approval for admission and transfer of membership. 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.

Every application for membership, individual or company, shall be proposed and seconded according to these regulations and shall be forwarded to the IMM Secretariat who on behalf of the Honorary Secretary will process for consideration and approval of the Membership Committee before tabling for Council's endorsement. The Council may at its discretion reject any application without assigning any reason thereof. The Council may use its discretion to exempt the need for proposer and seconder for Student, Ordinary and Company membership.

Each company on admission as a member shall be entitled to nominate one representative to exercise all rights of membership. Only representatives of Company membership, as well as 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 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 can have membership to similar grades but shall have no voting rights.

MEMBERSHIP GRADE & REQUIREMENT

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 qualification, 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 Malaysian Citizen and 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 that 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 member of the IMM without the prior approval of the Vice-Chancellor or Head of Department of the university or relevant authority concerned.



IMM Week 2021: The Evolution of Material, Science and Technology in The Post-Covid Era

1-Day Rheology Workshop on Polymers

Materials Lecture Competition 2021 (MLC 2021)

FREE Ordinary Membership for Affiliates:

The Institute of Materials, Malaysia will recognize members of various professional institutions and societies for membership at "Ordinary Grade" without any annual subscriptions. Such members shall submit to IMM proof of their current membership of the respective institutions together with their application.

Members of the following institutions and societies are eligible to apply for affiliate membership:

1. American Welding Society
2. Asian Welding Federation
3. Board of Architects Malaysia
4. Board of Engineers, Malaysia
5. Engineering Institutes under the Engineering Council of UK
6. Geological Society of Malaysia
7. Institut Kimia Malaysia
8. Institute of Corrosion UK
9. Institute of Materials Singapore
10. Institute of Physics Malaysia
11. Institution of Engineers, Malaysia
12. Jabatan Minerals & Geoscience
13. Malaysian Medical Association
14. Malaysian Nurses Association
15. Malaysian Society for Non-Destructive Testing
16. Malaysian Welding & Joining Society
17. Persatuan Arkitek Malaysia
18. Plastics & Rubber Institute of Malaysia
19. Singapore Welding Society
20. Society of Petroleum Engineers
21. The Welding Institute UK

FREE Company Membership for Affiliates:

The Institute of Materials, Malaysia will recognize various professional institutions and associations for membership at "Company Grade" without any annual subscriptions.

Companies registered with the following Trade Associations are recognized for Affiliate Company Memberships:

1. Federation of Malaysian Manufacturers (FMM)
2. Malaysian Offshore Contractors Association (MOCA)
3. Malaysian Oil & Gas Engineering Council (MOGEC)
4. Malaysian Oil & Gas Services Council (MOGSC)

The companies shall submit to IMM proof of their current membership at the respective trade associations together with their application.

NOTE: The above provisions for affiliate membership for individuals and companies was approved by the IMM Council in accordance with the powers vested in the Council as per Clause 6.1.3 of the IMM Constitution and was subsequently endorsed by members at its 21st Annual General Meeting held on 19th March 2011.

IMM COUNCIL MEMBERS & COMMITTEES

2020-2022 SESSION

Advisor:	Prof. Ts. Dr. Mohamad Kamal Harun (Universiti Teknologi MARA)
President:	Dato' Dr. Ir. Ts. Haji Mohd Abdul Karim Abdullah (Serba Dinamik Group Berhad)
Deputy President:	Ts. Dr. Chew Khoon Hee (Tunku Abdul Rahman University College)
Honorary Secretary:	Prof. Ts. ChM. Dr. Melissa Chan Chin Han (Universiti Teknologi MARA)
Honorary Treasurer:	Ts. Dr. Mohamed Ackiel Mohamed (Serba Dinamik Group Berhad)
Immediate Past President:	Ts. Mohd. Azmi Mohd. Noor (Triple EEE Sdn Bhd)
Council Members:	Ir. Ong Hock Guan (Shell Malaysia Exploration & Production)
	Ts. Dr. Mahmood Anwar (Curtin University Malaysia)
	Mark Hew Yoon Onn (Universal Corrosion Engineering (M) Sdn Bhd)
	Assoc. Prof. Ts. Dr. Tay Chia Chay (Universiti Teknologi MARA)
	Asst. Prof. Ts. Dr. Yu Lih Jiun (UCSI University)
	Ir. Max Ong Chong Hup (Norimax Sdn Bhd)
	Assoc. Prof. Dr. Lim Teck Hock (Tunku Abdul Rahman University College)
	Ts. Brian Lim Siong Chung (Geopolitan Sdn Bhd)
	Kang Kim Ang (CorrTrol Synergy Sdn Bhd)
	Nik Khairil Azman Nik Abdullah (Temperlite Insulation Sdn Bhd)
	Dr. Amalina Muhammad Afifi (Universiti Malaya)
	Danny Tan Kim Chew (Abadi Oil & Gas Services Sdn Bhd)
	Ir. Ho Choon Fei (KVA Konsult)
	Jason Yap Haw Shin (Leading Concept Engineering Sdn Bhd)
	Mohd Fairuz Mohd Salleh (Serba Dinamik Group Berhad)
	Mohd Iqbal Yaakup (Petron Malaysia Refining & Marketing Berhad)
	Dato' Seri Mohd Jai Suboh (Velosi (M) Sdn Bhd)
	Ir. Mohd Syukri Mohd Khalid (Sarawak Shell Berhad)
	Dr. Nazatul Liana Sukiman (Universiti Malaya)
	Ir. Ts. Noor Hisham Yahaya (Safe Asbestos Solutions Sdn Bhd)
	Ts. Ong Thai Kiat (Tunku Abdul Rahman University College)
	Raymond Phen (Asean Bintulu Fertilizer Sdn Bhd)
	ChM. Dr. Shahrul Nizam Ahmad (Universiti Teknologi MARA)
	Sobendran Vengadasalam (Eco Movement Sdn Bhd)
	Ts. Wan Mohd Arif Wan Ibrahim (Universiti Malaysia Perlis)

REGIONAL CHAPTER CHAIRPERSONS

Bintulu	Raymond Phen	Asean Bintulu Fertilizer Sdn Bhd
Miri	Ir. Dr. Edwin Jong Nyon Tchan	Advanced Metallurgy & Welding Technology Sdn Bhd
Southern	Assoc. Prof. Dr. Tuty Asma Abu Bakar	Universiti Teknologi Malaysia
Northern	Ts. Wan Mohd Arif Wan Ibrahim	Universiti Malaysia Perlis

WORKING COMMITTEE CHAIRPERSONS

Asset Integrity	Dato' Dr. Ir. Johari Basri	Serba Dinamik Group Berhad
Coating	Devinakumar Ratanam	Topfields Borneo Sdn Bhd
Coating Fingerprinting	Prof. Ts. ChM. Dr. Melissa Chan Chin Han	Universiti Teknologi MARA
Corrosion	Ir. Ong Hock Guan	Shell Malaysia Exploration & Production
Insulation	Danny Tan Kim Chew (Chairperson)	Abadi Oil & Gas Services Sdn Bhd
	Nik Khairil Azman Nik Abdullah (Co-Chairperson)	Temperlite Insulation Sdn Bhd
Vibration	Ir. Mohd Syukri Mohd Khalid (Chairperson)	Sarawak Shell Berhad
	Afandi Abd Hamid (Co-Chairperson)	Serba Dinamik Group Berhad
Polymer	Ts. Dr. Chew Khoon Hee (Chairperson)	Tunku Abdul Rahman University College
	Ts. Ong Thai Kiat (Co-Chairperson)	Tunku Abdul Rahman University College
Continuous Professional Development (CPD)	Ts. Dr. Chew Khoon Hee	Tunku Abdul Rahman University College
Education	Ir. Max Ong Chong Hup	Norimax Sdn Bhd
Examination & Certification Panel	Ts. Brian Lim Siong Chung	Geopolitan Sdn Bhd
Certification Panel	Dr. Nazatul Liana Sukiman (Co-Chairperson)	Universiti Malaya
	Jason Yap Haw Shin (Co-Chairperson)	Leading Concept Engineering Sdn Bhd
Examination Panel	Ir. Ho Choon Fei (Co-Chairperson)	KVA Konsult
	Sobendran Vengadasalam (Co-Chairperson)	Eco Movement Sdn Bhd
IMM-MBOT	Prof. Ts. ChM. Dr. Melissa Chan Chin Han	Universiti Teknologi MARA
IMM-MBOT Assessment Panel	Ts. Wan Mohd Arif Wan Ibrahim	Universiti Malaysia Perlis
Impartiality	Kang Kim Ang	CorrTrol Synergy Sdn Bhd
Industry, Professional Body and Government Agency Liaison	Ir. Ts. Noor Hisham Yahaya	Safe Asbestos Solutions Sdn Bhd
Materials Lecture Competition (MLC)	Dr. Nor Akmal Fadil	Universiti Teknologi Malaysia
Materials Mind Editorial Board	Assoc. Prof. Ts. Dr. Tay Chia Chay	Universiti Teknologi MARA
Membership	Ts. Dr. Chew Khoon Hee	Tunku Abdul Rahman University College
Standards Assurance	Assoc. Prof. Dr. Amalina Mohammad Afifi	Universiti Malaya
Standards Development	Asst. Prof. Ts. Dr. Yu Lih Jiun (Co-Chairperson)	UCSI University
	Ts. Dr. Mahmood Anwar (Co-Chairperson)	Curtin University Malaysia
Student Chapter	Assoc. Prof. Dr. Lim Teck Hock (Chairperson)	Tunku Abdul Rahman University College
	Dr. Amirah Amalina Ahmad Tarmizi (Co-Chairperson)	Universiti Teknologi MARA
Young Professionals	Mohd Fairuz Mohd Salleh	Serba Dinamik Group Berhad

TASK FORCE CHAIRPERSONS

Task Force on Upgrade of Coating Certification Schemes	Mark Hew Yoon Onn	Universal Corrosion Engineering (M) Sdn Bhd
Task Force on Upskilling Sarawak Engineers & Technicians	Mohamad Syazwan Abdullah @ Laga Jenggi	Malaysia LNG Sdn Bhd

Notes:

1) obs: observer
2) Alt: alternate

IMM COUNCIL MEMBERS & COMMITTEES

2020-2022 SESSION

ASSET INTEGRITY COMMITTEE

Secretariat Coordinator: Norita Othman
Alternate: Edayue Fanashim

Chairperson:	Dato' Dr. Ir. Johari Basri	Serba Dinamik Group Bhd
Deputy Chairperson:	Ts. Mohd. Azmi Mohd. Noor	Triple EEE Sdn Bhd
Secretary:	Dr. Dasline Sinta	Dreamcatcher Energy Sdn Bhd
Treasurer:	Nora Afzan Abd Wahab	Cekap Technical Services Sdn Bhd
Member:	Dato' Senu Mohd Noor	Ria Solutions (M) Sdn Bhd

CORROSION COMMITTEE

Secretariat Coordinator: Aberamy Dayalam
Alternate: Norita Othman

Chairperson:	Ir. Ong Hock Guan	Shell Malaysia Exploration & Production
Deputy Chairperson:	Nik Khairil Azman Nik Abdullah	Temperlite Insulation Sdn Bhd
Deputy Chairperson:	Kamal Azam Ibrahim	Head, Materials, Corrosion & Inspection, Petronas Group Technical Solution
Secretary:	Syarifah Nazliah Syed Abdul Rahman	BSSTECH CP (M) Sdn Bhd
Treasurer:	Leow Chun Ho	Shell Malaysia Exploration & Production
Members:	Azlizul Aizat Razali (obs)	Materials Technology Education Sdn Bhd
	Azzura Ismail (obs)	Universiti Tun Hussein Onn Malaysia
	Chew Boon Kheng	GPT Resources Sdn Bhd
	Danny Tan Kim Chew	Abadi Oil & Gas Services Sdn Bhd
	Eric Lay Chee Hong (obs)	TBSB Engineering Sdn Bhd
	Junaidy Abdullah	Norimax Sdn Bhd
	Kang Kim Ang	Corrtrol Synergy Sdn Bhd
	Karen Cheng Siew Hoon	Serba Dinamik Group Bhd
	Dr. Kee Kok Eng	Universiti Teknologi PETRONAS
	Kent Ooi	Chong Wah-NTIA Sdn Bhd
	Kok Wai Chee	CSI System Sdn Bhd
	Lee Meng Lai (obs)	PT. Oktan Polimer Sukses
	Mark Hew Yoon Onn	Universal Corrosion Engineering (M) Sdn Bhd
	Ir. Max Ong Chong Hup (obs)	Norimax Sdn Bhd
	Mohamad Ikmal Hisham Ashari (obs)	Materials Technology Education Sdn Bhd
	Mohd. Khairi Kadir	Rohrback Cosasco Systems Sdn Bhd
	Noraishah Mohamad Noor	Rapid Rail Sdn Bhd
	Norinsan Kamil Othman	Universiti Kebangsaan Malaysia
	Ong Wei Rex	Corrodynamic Sdn Bhd
	Dr. Saeid Kakooei (obs)	Universiti Teknologi PETRONAS
	Tariq Mehtab Mohd. Ishaq	T4 Energy
	Dr. Yoga Sugama Salim	Matcor Technology & Services Pte Ltd

COATING COMMITTEE

Secretariat Coordinator: Aberamy Dayalam
Alternate: Norita Othman

Chairperson:	Devinakumar Ratanam	Topfields Borneo Sdn Bhd
Secretary:	Dr. Sabrina Yahaya	Universiti Teknologi MARA
Members:	Ahmad Badli Shah Abdul Aziz	International Paint (M) Sdn Bhd
	Bowie Tan	Hiap Soon Hong Sdn Bhd
	Chantana Murugan	Freelance
	Chan Wai Sing	Material Protection Engineering Sdn Bhd
	Chang Yau Chong	Kansai Paint Asia Pacific Sdn Bhd
	Choo Siang Wen	Kebabangan Petroleum Operating Company Sdn Bhd
	Darren Tan Wee Boon	SDD Master Solutions Sdn Bhd
	David Ngau	Seacademy Sdn Bhd
	Era Perumal Raman	PS Peruvision Sdn Bhd
	Ernest Lau Hong Kit	Innocorr Offshore Sdn Bhd
	Fong Yen Way	MISC Berhad
	Jimmy Tiang Wee Chiat	Wasserwelt Sdn BHd
	Lee Kang Huey	Metalcoat Engineering Sdn Bhd
	Lee Meng Lai	PT. Oktan Polimer Sukses
	Mohd Iqbal Yaakup	Petron Malaysia Refining & Marketing Berhad
	Mohamad Ikmal Hisham Ashari	Materials Technology Education Sdn Bhd
	Mohd. Wahidduzzaman Zainal	PPG Coatings (M) Sdn Bhd
	Muhammad Johanis Mohd Sharif	Metalcoat Engineering Sdn Bhd
	Dato' Udani Dato' Seri Mohamed Daud	Max Energy Sdn Bhd
	Selvandran Vello	Hempel (M) Sdn Bhd
	Suhaidi Mohamad Nawawi	Universal Corrosion Engineering (M) Sdn Bhd
	Tariq Mehtab Mohd Ishaq	Schmidt Abrasive Blasting Sdn Bhd
	Terry Chow Qiu Li	Flakeshield Sdn Bhd
	Teh Tiong Poh	Jotun (M) Sdn Bhd
	Terence Wee Tee Hin	PPG-Sigma Coatings (M) Sdn Bhd
	Ting Lai Liong	Dutech Instruments Sdn Bhd

COATING FINGERPRINTING COMMITTEE

Secretariat Coordinator: Aberamy Dayalam
Alternate: Norita Othman

Advisor:	Prof. Ts. Dr. Mohamad Kamal Harun	Universiti Teknologi MARA
Chairperson:	Prof. Ts. ChM. Dr. Melissa Chan Chin Han	Universiti Teknologi MARA
Deputy Chairperson:	Asst. Prof. Ts. Dr. Yu Lih Jiun	UCSI University
Secretary:	Suhaila Idayu Abdul Halim	Universiti Teknologi MARA
	Norsyazlin Rashid (alt)	Universiti Teknologi MARA
Treasurer:	Nurul Fatahah Asyqin Zainal	Universiti Teknologi MARA
Members:	Abdul Aziz Haron	SIRIM QAS International Sdn Bhd
	Ahmad Badli Shah Abdul Aziz	International Paint Sdn Bhd
	Ang Soon Thian (obs)	Eurofins NM Laboratory Sdn Bhd
	Azlizul Aizat Razali (obs)	Materials Technology Education Sdn Bhd
	Ts. Brian Lim Siong Chung	Geopolitan Sdn Bhd
	Chang Yau Chong	Kansai Asia Pacific Sdn Bhd
	Ts. Dr. Chew Khoon Hee (obs)	Tunku Abdul Rahman University College
	Chow Mee Ling	Agilent Technologies Sales (M) Sdn Bhd
	Daniel Wong Chin Thong (obs)	Eurofins NM Laboratory Sdn Bhd
	Hairunnisa Ramli	Universiti Teknologi MARA
	Ismaliza Ismail	Malaysia Rubber Board
	Kelly Hong Mun Key (obs)	Nexus Analytics Sdn Bhd
	Kenneth Way (obs)	Mettler Toledo (M) Sdn Bhd
	Lee Choon Siong	Jotun (M) Sdn Bhd
	Leow Chun Ho (alt)	Shell Malaysia Exploration & Production
	ChM. Lim Chuan Gee (alt)	SIRIM Bhd
	Assoc. Prof. Dr. Lim Teck Hock (obs)	Tunku Abdul Rahman University College
	Ts. Dr. Mahmood Anwar	Curtin University, Sarawak
	Ir. Max Ong Chong Hup	Norimax Sdn Bhd
	Mohamad Ariff Sukur	Sarawak Shell Malaysia
	Mokhtar Othman (alt)	International Paints (M) Sdn Bhd
	Mohamad Ikmal Hisham (obs)	Materials Technology Education Sdn Bhd
	Mohd Wahidduzzaman Zainal (alt)	PPG Coatings (M) Sdn Bhd
	Nurjaimi Ali	PETRONAS Group Technical Solution
	Quah Kean Gin (alt)	Jotun (M) Sdn Bhd
	Renee Teo Yong Yin	Bruker (M) Sdn Bhd
	Selvandran Vello	Hempel (M) Sdn Bhd
	Teh Tiong Poh (alt)	Jotun (M) Sdn Bhd
	Terence Wee Tee Hin	PPG Coatings (M) Sdn Bhd
	Ir. Zarina Rasmin (alt)	SIRIM QAS International Sdn Bhd

IMM COUNCIL MEMBERS & COMMITTEES

2020-2022 SESSION

CONTINUING PROFESSIONAL DEVELOPMENT (CPD) COMMITTEE

Secretariat Coordinator: Wong Wing Kiong
Alternate: Aberamy Dayalam

Chairperson:	ChM. Dr. Shahrul Nizam Ahmad	Universiti Teknologi MARA
Members:	Ir. Mohd Suradi Yasin	JOTAC Academy Sdn Bhd
	Ir. Maimunah Ismail	Freelance MCI Lecturer & Consultant
	Dr. Mohd Muzamir Mahat	Universiti Teknologi MARA
	Dr. Mas Mira Abd Rahman	Universiti Malaya

CERTIFICATION PANEL

Secretariat Coordinator: Norita Othman
Alternate: Edayue Fanashim

Chairperson:	Dr. Nazatul Liana Sukiman	Universiti Malaya
Member:	Harvin Kaur Gurchran Singh	Asia Pacific University of Technology & Innovation

EDUCATION COMMITTEE

Secretariat Coordinator: Aberamy Dayalam
Alternate: Norita Othman

Chairperson:	Ir. Max Ong Chong Hup	Norimax Sdn Bhd
Deputy Chairperson:	Assoc. Prof. Dr. Andrew Spowage	Queen Mary University of London
Secretary & Treasurer:	Asst. Prof. Dr. Maxine Yee Swee Li	University of Nottingham Malaysia
Members:	Prof. Dr. Agus Geter Edy Sutjipto	Universiti Malaysia Pahang
	Assoc. Prof. Dr. Andri Andriyana	Universiti Malaya
	Assoc. Prof. Dr. Ang Bee Chin	Universiti Malaya
	Dr. Amirah Amalina Ahmad Tarmizi	Universiti Teknologi MARA
	Dr. Azzura Ismail	Universiti Tun Hussein Onn Malaysia
	Ts. Dr. Chew Khoon Hee	Tunku Abdul Rahman University College
	Ts. Dr. Mahmood Anwar	Curtin University Malaysia
	Assoc. Prof. Ts. Dr. Muhamad Azizi Mat Yazid	Universiti Teknologi Malaysia
	Dr. Nazatul Liana Sukiman	Universiti Malaya
	Assoc. Prof. Eur-Ing. Nigel Patrick Brewitt	MTIS Sdn Bhd
	Prof. Ir. Dr. Rajkumar Durairaj	Universiti Tunku Abdul Rahman
	Dr. Sharifah Adzila Syed Abu Bakar	Universiti Tun Hussein Onn Malaysia
	Asst. Prof. Ts. Dr. Yu Lih Jiun	UCSI University
	Ts. Wan Mohd Arif Wan Ibrahim	Universiti Malaysia Perlis

EXAMINATION AND CERTIFICATION PANEL (ECP)

Secretariat Coordinator: Wong Wing Kiong
Alternate: Norita Othman

Chairperson:	Ts. Brian Lim Siong Chung	Geopolitan Sdn Bhd
Secretary:	Ts. Dr. Yvette Shaan-Li Susiapan	Asia Pacific University of Technology & Innovation
Treasurer:	Harvin Kaur Gurchran Singh	Asia Pacific University of Technology & Innovation

EXAMINATION PANEL

Secretariat Coordinator: Wong Wing Kiong
Alternate: Norita Othman

Co-Chairperson:	Ir. Ho Choon Fei	KVA Konsult
Co-Chairperson:	Sobendran Vengadasalam	Eco Movement Sdn Bhd
Member:	Choo King Xin	Advenxus Solutions Sdn Bhd
	Ts Dr Yvette Shaan-LI Susiapan	Asia Pacific University of Technology & Innovation

IMPARTIALITY COMMITTEE

Secretariat Coordinator: Wong Wing Kiong
Alternate: Norita Othman

Chairperson:	Kang Kim Ang	CorrTrol Synergy Sdn Bhd
Deputy Chairperson:	Assoc. Prof. Eur-Ing. Nigel Patrick Brewitt	MTIS Sdn Bhd
Secretary:	Kuan You Wai	PKN Building Solution Sdn Bhd
Members:	Ir. Hanafi Ali	Freelance
	Assoc. Prof. Ts. Dr. Tay Chia Chay	Universiti Teknologi MARA

INDUSTRY, PROFESSIONAL BODY AND GOVERNMENT AGENCY LIAISON COMMITTEE

Secretariat Coordinator: Wong Wing Kiong
Alternate: Aberamy Dayalam

Chairperson:	Ir. Ts. Noor Hisham Yahaya	Safe Asbestos Solutions Sdn Bhd
Deputy Chairperson:	Dato' Seri Mohd Jai Suboh	Velosi (M) Sdn Bhd
Secretary:	Ts. Wan Mohd Arif bin W. Ibrahim	Universiti Malaysia Perlis
Member:	Ts. Dr. Dasline Sinta	Dream Catcher Energy Sdn Bhd
	Ts. Dr. Norsaidatul Akmar Mazelan	Think Plus Consulting Sdn Bhd

INSULATION COMMITTEE

Secretariat Coordinator: Norita Othman
Alternate: Edayue Fanashim

Chairperson:	Danny Tan Kim Chew	Abadi Oil & Gas Services Sdn Bhd
Co-Chairperson:	Nik Khairil Azman Nik Abdullah	Temperlite Insulation Sdn Bhd
Deputy Chairperson:	Syarifah Nazliah Syed Abdul Rahman	BSSTech CP (M) Sdn Bhd
Secretary:	Lean Zhen Hua	Armacell Engineered Systems Ltd
Treasurer:	Chan Wai Sing	Metalcoat Engineering Sdn Bhd
Members:	Dr. Bernard L H Saw	Universiti Tunku Abdul Rahman
	Lee Meng Lai (obs)	PT. Oktan Polimer Sukses
	Mohamad Ikmal Hisham Ashari	Materials Technology Education Sdn Bhd
	Ir. Muhammad Zaid Kamardin	PETRONAS Group Technical Solutions
	Nik Ayman Nik Mouspha	Bumi Armada Bhd
	Rehan Ahmed	PETRONAS Carigali Sdn Bhd
	Soh Wei Ching	Sapura Energy Bhd
	William Soon	Armacell Engineered Systems Ltd
	Dr. Ye Ming Chian	Universiti Tunku Abdul Rahman
	Yii Ming Sing	Freelance

IMM-MBOT COMMITTEE

Secretariat Coordinator: Aberamy Dayalam
Alternate: Norita Othman

Chairperson:	Prof. Ts. ChM. Dr. Melissa Chan Chin Han	Universiti Teknologi MARA
Secretary:	Ts. Dr. Mahmood Anwar	Curtin University, Sarawak
Members:	Ts. Dr. Mas Ayu Hassan	Universiti Malaysia Pahang
	Ir. Ts. Noor Hisham Yahaya	Safe Asbestos Solutions Sdn Bhd
	Ts. Wan Mohd Arif Wan Ibrahim	Universiti Malaysia Perlis

IMM-MBOT ASSESSMENT PANEL

Secretariat Coordinator: Aberamy Dayalam
Alternate: Norita Othman

Chairperson:	Ts. Wan Mohd Arif Wan Ibrahim	Universiti Malaysia Perlis
Deputy Chairperson:	Ts. Dr. Mahmood Anwar	Curtin University, Sarawak
Members:	Ts. Dr. Mas Ayu Hassan	Universiti Malaysia Pahang
	Prof. Ts. ChM. Dr. Melissa Chan Chin Han	Universiti Teknologi MARA
	Ir. Ts. Noor Hisham Yahaya	Safe Asbestos Solutions Sdn Bhd

MATERIALS MIND EDITORIAL BOARD

Secretariat Coordinator: Aberamy Dayalam
Alternate: Norita Othman

Chief Editor:	Assoc. Prof. Ts. Dr. Tay Chia Chay	Universiti Teknologi MARA
Deputy Chief Editor:	Assoc. Prof. Dr. Lim Teck Hock	Tunku Abdul Rahman University College
Managing Editor 1:	Nurul Fatahah Asyqin Zainal	Universiti Teknologi MARA
Managing Editor 2:	Ts. Dr. Nur Aimi Jani	Universiti Teknologi MARA
Members:	Dr. Amirah Amalina Ahmad Tarmizi	Universiti Teknologi MARA
	Ts. Brian Lim Siong Chung	Geopolitan Sdn Bhd
	Hairunnisa Ramli	Universiti Teknologi MARA
	Prof. Ts. ChM. Dr. Melissa Chan Chin Han	Universiti Teknologi MARA
	Ir. Mohd. Raziff Embi	Malakoff Power Bhd

IMM COUNCIL MEMBERS & COMMITTEES

2020-2022 SESSION

MATERIALS LECTURE COMPETITION COMMITTEE

Secretariat Coordinator: Aberamy Dayalam
Alternate: Hadi Hasmadi

Chairperson:	Dr. Nor Akmal Fadil	Universiti Teknologi Malaysia
Members:	Ts. Dr. Ahmad Zahirani Ahmad Azhar	International Islamic University Malaysia
	Dr. Alya Naili Rozhan	International Islamic University Malaysia
	Dr. Andrew Ng Kay Lup	Xiamen University Malaysia
	Assoc. Prof. Ir. Dr. Ang Bee Chin	Universiti Malaya
	Assoc. Prof. Ir. Dr. Chai Ai Bao	University of Nottingham Malaysia
	Ir. Dr. Christine Yeo Wan Sieng	Curtin University Malaysia
	Dr. Chou Pui May	Taylor's University
	Assoc. Prof. Ts. Dr. Ervina Efzan Mohd Noor	Multimedia University
	Dr. Hairul Effendy Ab. Maulod	Univeriti Teknikal Malaysia
	Assoc. Prof. Ts. Dr. Hamimah Abd. Rahman	Universiti Tun Hussein Onn Malaysia
	Assoc. Prof. Dr. Hasan Zuhudi Abdullah	Universiti Tun Hussein Onn Malaysia
	Assoc. Prof. Ir. Dr. How Ho Cheng	University of Nottingham Malaysia
	Assoc. Prof. Dr. Ir. Julie Juliewatty Mohamed	Universiti Malaysia Kelantan
	Dr. Kee Kok Eng	Universiti Teknologi PETRONAS
	Assoc. Prof. Dr. Khairel Rafezi Ahmad	Universiti Malaysia Perlis
	Dr. Nashrah Hani Jamadon	Universiti Kebangsaan Malaysia
	Dr. Nazatul Liana Sukiman	Universiti Malaya
	Ts. Dr. Nik Roselina Nik Roseley	Universiti Teknologi MARA
	Ts. Dr. Norazean Shaari @ Md Noh	Universiti Selangor
	Assoc. Prof. Dr. Norkhairunnisa Mazlan	Universiti Putra Malaysia
	Ms. Nurfanizan Mohd Afandi	Universiti Tenaga Nasional
	Assoc. Prof. Dr. Nurulakmal Mohd Sharif	Universiti Sains Malaysia
	Dr. Mohd Edeerozey Abd Manaf	Univeriti Teknikal Malaysia
	Ts. Dr. Mohd Salahuddin Mohd Basri	Universiti Putra Malaysia
	Dr. Mohd Sani Sarjadi	Universiti Malaysia Sabah
	Dr. Mohamad Zaki Abdullah	Universiti Teknologi PETRONAS
	Mr. Ong Thai Kiat	Tunku Abdul Rahman University College
	Ts. Dr. Pua Fei Ling @ Grace Pua	Universiti Tenaga Nasional
	Assoc. Prof. Dr. Rozyanty Rahman	Universiti Malaysia Perlis
	Assoc. Prof. Ts. Dr. Sazmal Effendi Arshad	Universiti Malaysia Sabah
	Ir. Dr Sung Aun Naa	Curtin University Malaysia
	Dr. Wan Fahmin Wan Ali	Universiti Teknologi Malaysia
	Dr. Yanny Marliana Baba Ismail	Universiti Sains Malaysia
	Dr. Yong Soon Kong	Universiti Teknologi MARA

MEMBERSHIP COMMITTEE

Secretariat Coordinator: Aberamy Dayalam
Alternate: Edayue Fanashim

Chairperson:	Ts. Dr. Chew Khoon Hee	Tunku Abdul Rahman University College
Co-Chairperson:	Mark Hew Yoon Onn	Universal Corrosion Engineering (M) Sdn Bhd
Secretary:	Ts. Dr. Mahmood Anwar	Curtin University Malaysia
Treasurer:	Karen Cheng Siew Hoon	Serba Dinamik Group Bhd
Members:	Agnes Cheng Siew Chen	Datacom Systems (Asia) Sdn Bhd
	Ir. Khoo Chee Chong	AG Recycling Enterprise
	Michelle Yee Han Lin	EEW Malaysia Sdn Bhd
	Roger Ng Tuoh Ming	Arotech Sdn Bhd
	Ir. Teo Kuang Kim	PKM Project Konsultant Sdn Bhd
	Wong Cheng Siung	Aspac Alliance Steels Sdn Bhd

MIRI CHAPTER

Secretariat Coordinator: Wong Wing Kiong
Alternate: Norita Othman

Chairperson:	Ir. Dr. Edwin Jong Nyon Tchan	Advanced Metallurgy & Welding Technology Sdn Bhd
Deputy Chairperson:	Giridharan Anandan	Velosi Sdn Bhd
Vice Chairperson I:	Prof. Dr. Beena Giridharan	Curtin University Malaysia
Vice Chairperson II:	Dr Bernard Maxmillan Sim	Bureau Veritas (M) Sdn Bhd
Secretary:	Ir. Andrew Ling Tuong Thai	Sarawak Shell Bhd
Assistant Secretary:	Yung Chik Kiing	Bureau Veritas (M) Sdn Bhd
Treasurer:	Lee Chung Khiong	Dayang Enterprise Holdings Berhad
Education Officer:	Ir. Dr. Christine Yeo	Curtin University Malaysia
Student Advisor:	Ir. Dr. Sung Aun Naa	Curtin University Malaysia
Public Liaison Officer:	Sheron Lim	Sarawak Shell Bhd
Project Engagement:	Kelvin Wong Chong Soon	Advanced Metallurgy & Welding Technology Sdn Bhd
Members:	Dayang Nur Rafiza	PB Sdn Bhd
	Devinakumar Ratanam	Topfields Borneo Sdn Bhd
	Ir. Desmond Chin Teck Eng	Shin Yang Shipyard Sdn Bhd
	Ts. Dr. Mahmood Anwar	Curtin University Malaysia
	Roslee Yusof	PC Sdn Bhd
	Shukri Johari	Bureau Veritas (M) Sdn Bhd
	Phang Yeen Yeem	Bureau Veritas (M) Sdn Bhd

NORTHERN CHAPTER

Secretariat Coordinator: Wong Wing Kiong
Alternate: Norita Othman

Chairperson:	Ts. Wan Mohd Arif W. Ibrahim	Universiti Malaysia Perlis
Deputy Chairperson:	Assoc. Prof. Ts. Dr. Mohd Sobri Idris	Universiti Malaysia Perlis
Secretary:	Assoc. Prof. Ts. Dr. Ragunathan Santiagoo	Universiti Malaysia Perlis
Treasurer:	Dr. Farah Farhana Zainal	Universiti Malaysia Perlis
Members:	Haslan Fadhli Ahmad Marzuki	SIRIM Berhad (Kedah)
	Dr. Khairul Anwar Abdul Halim	Universiti Malaysia Perlis
	Mohammad Hafiz Zakaria	Malamet Sdn Bhd (Kedah)
	Dr. Mohamad Izha Ishak	SIRIM Berhad (Kedah)
	Ts. Mohamed Syazwan Osman	Universiti Teknologi MARA (Penang)
	Muhd Syahir Muhammad Zahari	Southern Steel Berhad
	Ts. Noorina Hidayu Jamil	Universiti Malaysia Perlis
	Dr. Raa Khimi Shuib	Universiti Sains Malaysia (Penang)
	Dr. Rafiza Ramli	Lumileds Sdn Bhd (Penang)
	Assoc. Prof. Dr. Razif Muhammed Nordin	Universiti Teknologi MARA (Perlis)
	Assoc. Prof. Dr. Yamuna	Universiti Tunku Abdul Rahman (Perak)
	Zawawi Mahim	Mineral Research Centre, Minerals and Geoscience Department Malaysia (Perak)

POLYMER COMMITTEE

Secretariat Coordinator: Norita Othman
Alternate: Aberamy Dayalam

Chairperson:	Ts. Dr. Chew Khoon Hee	Tunku Abdul Rahman University College
Co-Chairperson:	Ts. Ong Thai Kiat	Tunku Abdul Rahman University College
Secretary:	Dr. Lee Xiau Yeen	Tunku Abdul Rahman University College
Members:	Assoc. Prof. Dr. Albert Tshai Kim Yeow	Nottingham University (Malaysia Branch)
	Lee Meng Lai	PT. Oktan Polimer Sukses
	Dr. Low Zhi Huang	Top Glove International
	Renee Teo Yong Yin	Bruker (M) Sdn Bhd

IMM COUNCIL MEMBERS & COMMITTEES

2020-2022 SESSION

SOUTHERN CHAPTER

Secretariat Coordinator: Wong Wing Kiong
Alternate: Norita Othman

Chairperson:	Assoc. Prof. Dr. Tuty Asma Abu Bakar	Universiti Teknologi Malaysia
Deputy Chairperson:	Assoc. Prof. Dr. Muhamad Azizi Mat Yajid	Universiti Teknologi Malaysia
Secretary:	Dr. Wan Fahmin Faiz Wan Ali	Universiti Teknologi Malaysia
Treasurer:	Dr. Abdillah Sani Mohd Najib	Universiti Teknologi Malaysia
Members:	Dr. Engku Mohd. Nazim Engku Abu Bakar	Universiti Teknologi Malaysia
	Prof. Dr. Esah Hamzah	Universiti Teknologi Malaysia
	Dr. Habibah Ghazali	Universiti Teknologi Malaysia
	Assoc. Prof. Dr. Hamimah Abd Rahman	Universiti Tun Hussein Onn Malaysia
	Assoc. Prof. Dr. Jariah Mohamad Juoi	Universiti Teknikal Malaysia Melaka
	Mohd. Noor Fahmi Wichi	Petronas Carigali Sdn Bhd
	Dr. Nor Akmal Fadil	Universiti Teknologi Malaysia

STANDARDS ASSURANCE COMMITTEE

Secretariat Coordinator: Wong Wing Kiong
Alternate: Norita Othman

Chairperson:	Assoc. Prof. Dr. Amalina Muhammad Afifi	Universiti Malaya
Deputy Chairperson:	Dr. Nor Ishida Zainal Abidin	University of Malaya
Secretary:	Dr. Nashrah Hani Jamadon	Universiti Kebangsaan Malaysia
Treasurer:	Dr. Ummi Hani Abdullah	Universiti Putra Malaysia
Members:	Assoc. Prof. Ir. Dr. Leo Choe Peng	Universiti Sains Malaysia
	Prof. Dr. Ir. Mariatti Jaafar @ Mustapha	Universiti Sains Malaysia
	Assoc. Prof. Dr. Nadras Othman	Universiti Sains Malaysia
	Norhashidah Talip	Malaysian Nuclear Agency
	Assoc. Prof. Dr. Roslina Binti Ahmad	University of Malaya
	Dr. Suriani Ibrahim	University of Malaya
	Ir. Dr. Wong Yew Hoong	University of Malaya
	Dr. Tuan Zaharinie Tuan Zahari	Universiti Malaya

STANDARDS DEVELOPMENT COMMITTEE

Secretariat Coordinator: Aberamy Dayalam
Alternate: Norita Othman

Co-Chairperson:	Asst. Prof. Ts. Dr. Yu Lih Jiun	UCSI University
Co-Chairperson:	Ts. Dr. Mahmood Anwar	Curtin University Malaysia
Secretary:	Dr. Jamuna Thevi Kalitheertha Thevar	SIRIM Berhad
Treasurer:	Victor Ananth Paramananth	Polis Diraja Malaysia
Members:	William Soon Guok Hau	Armacell Asia Ltd
	Danny Tan Kim Chew	Abadi Oil & Gas Services Sdn Bhd
	Dr. Sumaiya Islam	Curtin University Malaysia
	Abdul Aziz Haron	SIRIM QAS International Sdn Bhd
	Ummi Zulaikha Abd Rahman	UCSI University

STUDENT CHAPTER

Secretariat Coordinator: Norita Othman
Alternate: Hadi Hasmadi

Chairperson:	Assoc. Prof. Dr. Lim Teck Hock	Tunku Abdul Rahman University College
Co-Chairperson:	Dr. Amirah Amalina Ahmad Tarmizi	Universiti Teknologi MARA
Secretary:	Ts. Ong Thai Kiat	Tunku Abdul Rahman University College
Members:	Ts. Brian Lim Siong Chung	Geopolitan Sdn Bhd
	Ts. Dr. Ho Mui Yen	Tunku Abdul Rahman University College
	Dr. Liew Chiam Wen	Tunku Abdul Rahman University College
	Ts. Dr. Mahmood Anwar	Curtin University Malaysia

TASK FORCE ON UPGRADE OF COATING CERTIFICATION SCHEMES

Secretariat Coordinator: Aberamy Dayalam
Alternate: Norita Othman

Chairperson:	Mark Hew Yoon Onn	Universal Corrosion Engineering (M) Sdn Bhd
Members:	Ahmad Badli Shah Abdul Aziz	International Paint Sdn Bhd
	Bowie Tan	Hiap Soon Hong Sdn Bhd
	Devinakumar Ratanam	Topfields Borneo Sdn Bhd
	Era Perumal Raman	PS Peruvision Sdn Bhd
	Hasnizam Azrul Zainal Abidin	Bredero Shaw (M) Sdn Bhd
	Karen Cheng Siew Hoon	Serba Dinamik Group Bhd
	Mohd. Wahidduzzaman Zainal	PPG Coatings (M) Sdn Bhd
	Mohd Zaidi Handarek	TK Blasting & Coating Sdn Bhd
	Nik Ismail Karim	Jotun Paints (M) Sdn Bhd
	Rosnah Hussein	EEW Pipe Coating Sdn Bhd
	Suhaidi Mohamad Nawawi	Universal Corrosion Engineering (M) Sdn Bhd
	Ir. Teo Kuang Kim	PKM Project Konsultant Sdn Bhd
	Ting Lai Liong	Dutech Instruments Sdn Bhd
	Vijendran aka Jvejay.	ExxonMobil
	Wan Muhammad Haffizudin	KB Engineering Coating Sdn Bhd
	Yii Ming Sing	Freelance

VIBRATION COMMITTEE

Secretariat Coordinator: Aberamy Dayalam
Alternate: Hadi Hasmadi

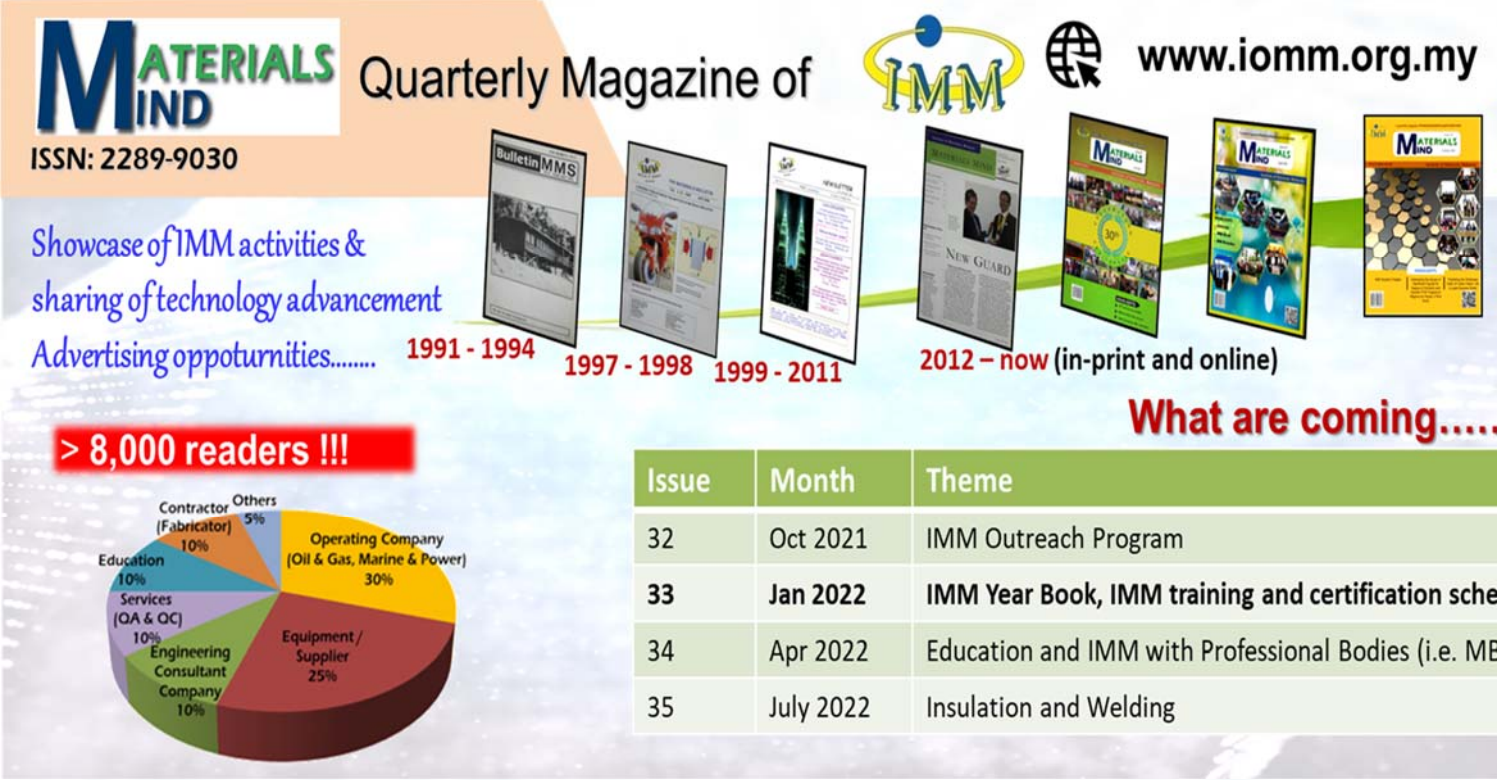
Chairperson:	Ir. Mohd Syukri Mohd Khalid	Sarawak Shell Berhad
Co-Chairperson:	Afandi Abd Hamid	Serba Dinamik Group Berhad
Members:	Abdul Qaiyum Alidin	Serba Dinamik IT Solution Sdn Bhd
	Dr. Alex Ong Zhi Chao	University Malaya
	Prof. Dr. Andy Tan Chit Tan	University Tunku Abdul Rahman
	Kdr. Dr. Ir. Arman Ariffin	Royal Malaysian Navy
	Dilip G Nair	Serba Dinamik Sdn Bhd
	Mohd Fairuz Mohd Salleh	Serba Dinamik Sdn Bhd
	Karen Cheng Siew Hoon	Materials Technology Education Sdn Bhd
	Kavinthran Devarajan	Technovibs Sdn Bhd
	Martin Agar	Wood Group
	Mokhtar Mohd Tahir	Serba Dinamik Group Berhad
	Mozaki Ibrahim	RB Spectra Sdn Bhd
	Dr. Muhamad Azhan Anuar	Universiti Teknologi MARA (UiTM)
	Muhammad Ariff Othman	Baytech Engineering Sdn Bhd
	Assoc. Prof. Ir. Dr. Nadianor Md Yusop	Universiti Teknologi MARA
	Ong Yong Khai	Shell Malaysia Exploration & Production
	Assoc. Prof. Dr. Rahizar Ramli	University Malaya
	Razaman Maydin	RZF Engineering Services Sdn Bhd
	Salim Sumormo	Petronas Global Technical Solutions
	Dr. Shahrul Azmi	SIRIM Berhad
	Ir. Dr. Shamsul Akmar Ab Aziz	Sciences and Technologies Research Institute for Defence (STRIDE)
	Syazana Shafee	SIRIM Berhad
	Assoc. Prof. Dr. Vincent Lee Chieng Chen	Curtin University
	Lt. Kdr. Wan Mariana	Royal Malaysian Navy
	Assoc. Prof. Ir. Dr. Zainal Fitri Zainal Abidin	Universiti Kuala Lumpur

YOUNG PROFESSIONALS COMMITTEE

Secretariat Coordinator: Aberamy Dayalam
Alternate: Edayue Fanashim

Chairperson:	Mohd Fairuz Mohd Salleh	Serba Dinamik Sdn Bhd
Deputy Chairperson:	Tasha Fazira	DNV GL Malaysia Sdn Bhd
Secretary:	Nur Naqiuddin Mdd Nordin	National Oilwell Varco (NOV)
Members:	Amir Hisham Albakri	Innoveam Sdn Bhd
	Hafiz Harun	Serba Dinamik Sdn Bhd
	Hisham Mokhtar	ProtEx Solutions Sdn Bhd
	Lai Jie Ying	DNV GL Malaysia Sdn Bhd
	Mohamad Nashriq	Universiti Teknologi PETRONAS
	Mohamad Syamil Naim Mohd Yusof	Universiti Putra Malaysia
	Mohd Fakhrul Amirul Bin Mohd Farid	DNV GL Malaysia Sdn Bhd
	Mohd Firdaus Jahari	Serba Dinamik Sdn Bhd
	Nur Hureen Amanda Binti Mokhtar	DNV GL Malaysia Sdn Bhd
	Nurul Nabilah Azhari	Serba Dinamik Sdn Bhd

Compiled by: IMM Secretariat,
The information was updated as of 30th December 2021



Issue	Month	Theme
32	Oct 2021	IMM Outreach Program
33	**Jan 2022**	**IMM Year Book, IMM training and certification schemes**
34	Apr 2022	Education and IMM with Professional Bodies (i.e. MBOT)
35	July 2022	Insulation and Welding

INSTITUTE OF MATERIALS, MALAYSIA

ANNUAL REPORT OF THE COUNCIL

(FOR THE YEAR ENDING 31ST DECEMBER 2021)

Dear IMM Members,

On behalf of the IMM Council, I am pleased to present the report of the activities of IMM covering the period from 1st January 2021 to 31st December 2021.

(I) IMM MANAGEMENT COMMITTEE AND COUNCIL MEETINGS

The IMM Management Committee and Council meetings held during the year were as follows:

Date	Management Committee Meeting (Term 2020-2022)
23 January 2021	4th Meeting
24 April 2021	5th Meeting
17 July 2021	6th Meeting
30 October 2021	7th Meeting

Date	Council Meeting (Term 2020-2022)
5 February 2021	4th Meeting
7 May 2021	5th Meeting
30 July 2021	6th Meeting
19 November 2021	7th Meeting

(II) IMM ACTIVITIES CARRIED OUT IN THE YEAR 2021

Date	Activity
20 Jan 2021	Education Committee Meeting No.2 (Term: 2020 – 2022)
27 Jan 2021	Discussion Meeting of IMM Certification Programs
27 Jan 2021	IMM-Malaysia Board of Technologists (MBOT) Meeting in Moving Forward 2021
2 Feb 2021	Northern Chapter Meeting
22 Feb 2021	Polymer Committee Meeting No.2 (Term: 2020 – 2022)
25 Feb 2021	Materials Lecture Competition (MLC) 2021 Committee Meeting
25 Feb 2021	Vibration Committee Meeting No.2 (Term: 2020-2022)
26 Feb 2021	IMM Week Meeting
2 Mar 2021	Coating Committee Meeting No.1 (Term: 2020 – 2022)
5 Mar 2021	Informal Discussion on Proposed Standardization of Level / Category for IMM Certification Programs
5 Mar 2021	Education Committee Meeting No.3 (Term: 2020 – 2022)
9 Mar 2021	Polymer Committee Meeting No.3 (Term: 2020 – 2022)
15 - 19 Mar 2021	IMM Week
19 Mar 2021	IMM Annual General Meeting No.31
30 Mar 2021	Corrosion Committee Meeting No.2 (Term: 2020 – 2022)
6 Apr 2021	IMM ISO/IEC 17024: 2012 Internal Audit
27 Apr 2021	Second Discussion Meeting on Certification Course in Mix Mode
27 Apr 2021	Task Force on Upgrading Coating Certification Scheme (TFUCCS) Committee Meeting (Term: 2020 – 2022)
29 Apr 2021	Standard Development Committee Meeting No.2 (Term: 2020 – 2022)
20 May 2021	Discussion with Cloud Events Studio
20 May 2021	Coating Fingerprinting Committee No.2 (Term: 2020 – 2022)
21 May 2021	The Japan Welding Engineering Society (JWES) - IMM Meeting
2 Jun 2021	MLC 2021 Semi-Final
29 Jun 2021	IMM ISO/IEC 17024: 2012 Internal Audit Closing Meeting
30 Jun 2021	Education Committee Meeting No.4 (Term: 2020 – 2022)
1 Jul 2021	Discussion on the Registration of IMM Trainers
2 Jul 2021	Perbincangan Berkenaan Kursus Induksi kepada Calon Penilaian Professional MBOT
7 Jul 2021	Discussion on the Registration of IMM Trainers
14 Jul 2021	MLC 2021 Final
14 Jul 2021	IMM Thermal Spray Coating Applicator Certification Working Sub-Committee Meeting No.1
15 Jul 2021	Corrosion Committee Meeting No.3 (Term: 2020 – 2022)
21 Jul 2021	Thermal Spray Coating Applicator Certification Working Sub-Committee Meeting No.2
27 Jul 2021	Coating Committee Meeting No.2 (Term: 2020 – 2022)
11 Aug 2021	Thermal Spray Coating Applicator Certification Working Sub-Committee Meeting No.3
11 Aug 2021	Student Chapter Committee Meeting No.2 (Term: 2020 – 2022)
26 Aug 2021	Corrosion Monitoring Working Sub-Committee Meeting No.4
27 Aug 2021	IMM ISO 17024 Management Review Meeting
2 Sept 2021	Coating Fingerprinting Committee No.3 (Term: 2020 – 2022)

Date	Activity
8 Sept 2021	Continuing Professional Development (CPD) Committee Meeting No.2 (Term: 2020 – 2022)
11 Sept 2021	Miri Chapter Meeting No.4 (Term: 2020 – 2022)
13 Sept 2021	Corrosion Monitoring Working Sub-Committee Meeting No. 5
17 Sept 2021	IMM-JWES Meeting on Procedure for Remote Seminar
20 Sept 2021	Corrosion Monitoring Working Sub-Committee Meeting No. 6
23 Sept 2021	CPD Committee Meeting No.3 (Term: 2020 – 2022)
27 Sept 2021	Corrosion Monitoring Working Sub-Committee Meeting No. 7
5 Oct 2021	IMM-Construction Industry Development Board (CIDB) meeting on the draft of the Memorandum of Understanding (MoU)
7 Oct 2021	Discussion on IMM Coating Certification Programs for the new edition of the Industrial Skills Framework (IndSF)
11 Oct 2021	Corrosion Monitoring Working Sub-Committee Meeting No. 8
12 - 13 Oct 2021	Clean Power & New Energy 2021
13 Oct 2021	1-Day Rheology Workshop on Polymers
14 Oct 2021	MBOT Webinar Series 2021
16 Oct 2021	Polymer Committee Meeting No.4 (Term: 2020 – 2022)
20 Oct 2021	Membership Committee Meeting No.2 (Term: 2020 – 2022)
21 Oct 2021	Asset Integrity Committee Meeting No.2 (Term: 2020 – 2022)
28 Oct - 2 Nov 2021	Penilaian Profesional MBOT melalui IMM bagi Bidang Material Science dan Oil & Gas
28 Oct 2021	IMM-Crest Tribology & Mechanical Testing Webinar
29 Oct 2021	Polymer Committee Meeting No.5 (Term: 2020 – 2022)
2 Nov 2021	Corrosion Committee Meeting No.4 (Term: 2020 – 2022)
3 Nov 2021	IMM Zoom Meeting with Sabah Skills and Technology Centre (SSTC)
3 Nov 2021	Education Committee Meeting No.5 (Term: 2020 – 2022)
8 Nov 2021	Membership Committee Meeting No.3 (Term: 2020 – 2022)
9 Nov 2021	Corrosion Monitoring Working Sub-Committee Meeting No. 11
11 Nov 2021	Discussion with Student Chapter of Tunku Abdul Rahman University College (TAR UC) on the Preparation of the Pre-Assessment Video for Thermal Spray Applicator
13 Nov 2021	Miri Committee Meeting No.5 (Term: 2020 – 2022)
16 Nov 2021	Corrosion Monitoring Working Sub-Committee Meeting No. 12
17 Nov 2021	Examination and Certification Panel Discussion
24 Nov 2021	IMM Secretariat Meeting
26 - 28 Nov 2021	Bengkel Pemurnian Bidang Teknologi, MBOT
7 Dec 2021	Insulation Committee Meeting (Term: 2020 – 2022)
15-17 Dec 2021	3rd International Conference on Materials Research and Innovation (ICMARI 2021)

(III) HIGHLIGHTS OF ACTIVITIES IN 2021

FULL REPORT ON SECTION (III) CAN BE ACCESSED ELECTRONICALLY ON IMM WEBSITE (www.iomm.org.my).

(IV) SUMMARY AND MOVING FORWARD

The IMM Management Committee and the IMM Council would like to express their sincere gratitude to all members of the Working Committees, Regional Chapters, staffs and not-staffs of the IMM Secretariat and other parties for their continuous effort and support in fulfilling the objectives of IMM despite Covid-19 pandemic situation.

To remain relevant and competitive, IMM will continue to keep moving forward with new initiatives and improving existing systems. We look forward to a successful 2022.

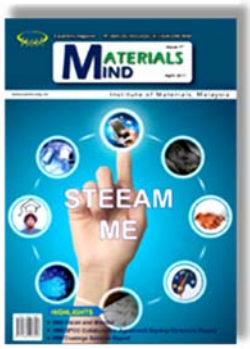
On behalf of the Council

Prof. Ts. ChM. Dr. Melissa Chan Chin Han

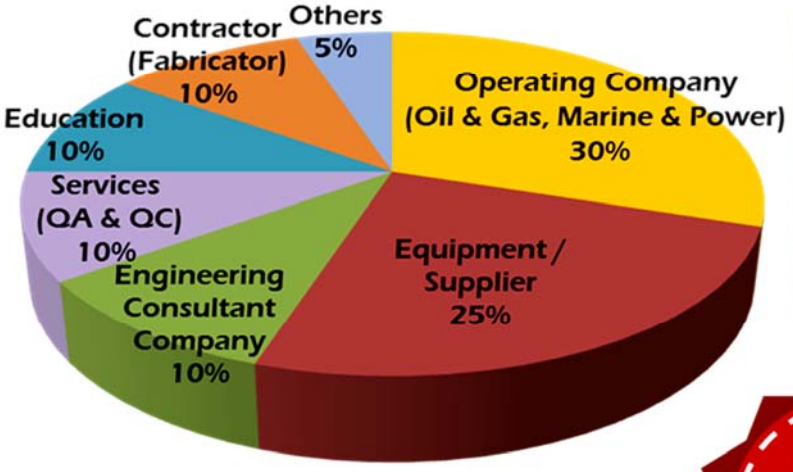
Honorary Secretary, IMM
Date: 1st Jan 2022

MATERIALS MIND

Quarterly Magazine of Institute of Materials, Malaysia



Our Readers



General Information

Frequency: Quarterly Magazine
Format: Print & Online Editions
Reader: ~ 8000
ISSN: 2289-9030

Magazine Content

Event & Activity Reports, Conference Information, Technical Papers, Information on IMM, IMM Course Details, Advertorial, IMM Supporting Events and many more…..

DIGITAL EDITION FREE

Advertisement Rates

Code	In Print (Book Format)	Online (Webpage)	Price / Duration
A	**Standard Full Page** Size: A4 210 (w) mm × 297 (h) mm	**Bottom right side bar** * Size: 60 (w) mm × 60 (h) mm	**RM 600** / 3 months *
B	**Standard Full Page** Size: A4 210 (w) mm × 297 (h) mm	**Bottom right side bar** * Size: 60 (w) mm × 60 (h) mm	**RM 2,000** / 1 year *
C	**Back Outside Cover** Size: A4 210 (w) mm × 297 (h) mm	**Central banner** * Size: 200 (w) mm × 80 (h) mm	**RM 1,000** / 3 months *
D	**Back Outside Cover** Size: A4 210 (w) mm × 297 (h) mm	**Central banner** * Size: 200 (w) mm × 80 (h) mm	**RM 3,000** / 1 year *

+6018-9113480
secretariat@iomm.org.my
www.iomm.org.my
Institute of Materials Malaysia

MATERIALS MIND

Invitation to Advertise in Materials Mind, published by Institute of Materials, Malaysia for in Print and Online

Please tick your preferred date, write the year and preferred code for advertisement.

☐ 1st Quarter – **January** ☐ 2nd Quarter – **April**

☐ 3rd Quarter – **July** ☐ 4th Quarter – **October** of the **year**: _____

Preferred **code**: _____ (refer front page of this leaflet)

Technical Requirement

- JPG / Ai / PDF / PSD Format
  Ai / Illustrator – Text must be outlined and saved together with high resolution picture embedded.
- Image quality should be at least 150 pixel per inch.
- Artwork prepared by the customer.

Payment

Full payment to be made 2 weeks before date of the advertisement.

Cancellation

10-day notice before the advertisement date, otherwise deposit will be forfeited.

PAYMENT NOTE

1) Payment can be made by cheque, telegraphic transfer & bank draft as follows:

Account Name: **Institute of Materials, Malaysia**
Account No: **8009055156**
Swift Code: **CIBBMYKL**
Bank Name: **CIMB BANK Berhad**
Country: **Malaysia**

Cheque can be sent to
Suite 515, Level 5, Block A,
Kelana Center Point (Lobby B),
No. 3 Jalan
SS 7/19, Kelana Jaya, 47301
Petaling Jaya, Selangor
via post/mail or direct bank-in.

2) Payment can also be made by IBG, GIRO or Cash Deposit Machine (CDM) as follows:

Account Name: **Institute of Materials, Malaysia**
Account No: **8009055156**
Bank Name: **CIMB BANK**

Please email your bank-in slip as your payment proof to **secretariat@iomm.org.my**

TEMPERLITE®

Insulation

Why Use PERLITE?

- Water Repellant
- Corrosion Resistant
- Combat Corrosion Under Insulation (CUI)
- Non Combustible
- Low Thermal Conductivity
- Asbestos Free
- Acid / Alkali Resistant
- Stable to 650°C
- Lightweight
- All-Weather & Takes Foot Traffic

TEMPERLITE INSULATION SDN BHD (227465-T) (formerly known as ITW Insulation Systems Malaysia Sdn. Bhd)
Lot PT33, Jalan 2, Kawasan Perindustrian Salak Tinggi, 43900 Sepang, Selangor, Malaysia

CALL +60387062486 **VISIT** www.temperlite.com.my **EMAIL** sales@temperlite.com.my **FAX** +60387062485