FREE OF CHARGE

The Institute of Materials, Malaysia

Fingerprinting IV 2015

FORUM ON "TOWARDS FINGERPRINTING OF POLYMERIC COATINGS" IV

Date : Thursday, 29th Oct 2015

Time : 9.00 am - 5.00 pm

Venue : Dewan Tunku, Kelab Golf Negara Subang, Selangor

A successful industry-academia collaboration, in solving an industrial challenge on fingerprinting of polymeric coatings initiated by Institute of Materials, Malaysia (IMM) was started at 22nd March 2013. Three forums of "Towards Fingerprinting of Polymeric Coatings" I, II & III, which were held by IMM in 2013 and 2014, had succeeded in creating awareness on the practicality of the fingerprinting of polymeric coating materials. The well acceptance from the Malaysia oil & gas manufacturers for the **Coating Fingerprint Certificate** as one of the effective approaches for QA & QC tools for the enhancement of the overall painting and coating quality assurance was noted. The IMM Task Force on Fingerprinting Polymer Coatings (Phase 1: 2013-2014) finds that Fourier-transform infrared (FTIR) is a simple and reliable tool for the study of reproducibility (i.e. to fingerprint) of epoxies and hardeners as well as to differentiate different types of epoxies and hardeners without any intrusion of paint formulations. The FTIR fingerprinting regions for epoxy resin and hardener are proposed and **the confidence level of acceptance for QA & QC control is proposed at ≥ 90.0%.**

This forum is aimed at presenting the progressive reports on the IMM Task Force on Fingerprinting Polymer Coatings (Phase 2: 2015-2016). We will discuss the possible root causes of the premature failure of polymeric coatings on the steel structures; QA & QC control for the reduction in such occurrences or even prevent them from ever happening; as well as the advancement of materials testing technologies to tackle issues related to the consistency of coatings quality. The ultimate objective of the Task Force is to ensure that protective coatings manufacturers supply products according to specifications.

"Background of "Coating Fingerprint Certificate" can be viewed at
http://iomm.org.my/coating-fingerprint-certificate/background-of-coating-fingerprint-certificate/

Jointly organized by:

- IMM Polymer Committee
- IMM Materials & Asset Integrity Committee

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Anton Paar BRUKER

Presenters For Forum on " Towards Fingerprint of Polymeric Coatings" IV

Qualification for New Maintenance Painting System and Products for Offshore Application with the Execution of Coating Fingerprint Certification

Mr. Muhd Hawari Hassan, PETRONAS GTS, Malaysia

Abstract

Corrosive external environment at offshore poses a great deal of challenges for the operators to sustain high integrity and reliability of equipment and piping. Visual inspection reveals that protective coatings failures occur after relatively short span of application. There are many areas for improvement for conventional paint application. This paper highlights the initiative to improve the coating performance through setting up new requirement for testing and qualification prior to site application. Among discussion points are limited surface preparations, simulation of real conditions during applications,testing protocol, challenges and opportunity. Besides, the impact of the execution of Coating Fingerprint Certification for quality for new maintenance painting system will be highlighted.

Biodata

Mr. Mohd. Hawari Hasan has been with PETRONAS for over 17 years. After 10 years in refinery, he was transferred to PETRONAS Group Technical Solutions (GTS) and got promoted to Technical Professional position. Under GTS, he serves all PETRONAS OPUs (downstream and upstream sectors, local and abroad) providing technical consultancy especially in Corrosion matters. His responsibilities include PETRONAS Technical Standard Corrosion Discipline Custodian, Development of Corrosion Management Program (CMP), Corrosion Design Basis Memorandum (CDBM) and Asset Integrity Limit (AIL), Pipeline Corrosion Assessment for Process Optimization & Fitness for Service, Corrosion Study for PETRONAS Risk Based Inspection, and Selection and qualification of Protective Coating and Integrity Chemical Injection. He is also the PETRONAS Coating Committee leader.

First-of-its-kind Coating Fingerprint Certification in the WORLD: Initiatives, Progress and Execution

Ms. Nurul Asni Mohamed, PETRONAS GTS, Malaysia

Abstract

A successful industry-academia collaboration solving an industrial challenge on fingerprinting of polymeric coatings will be shared. Firstly, the quantum progress of IMM Task Force on Coatings Fingerprinting (Phase II) and the Coating Fingerprint Certification Scheme will be reported. Afterwards, the feedbacks and comments from paint manufactures for the mock execution of **Coating Fingerprint Certificate** for 2-component intermediate materials of polymeric coatings at paint factories in Malaysia for a period of 2 – 4 weeks will be presented. On top of that, in-house, on-site and third-party lab FTIR testing's for the execution of Coating Fingerprint Certification Scheme will be included in the discussion. The ultimate objectives of this certification are to ensure that protective coatings manufacturers supply products according to specifications and to address the issues of coatings quality assurance deficiencies in the oil & gas, power, marine & infrastructure industries.

Biodata

Ms. Nurul Asni Mohamed is the Principal Engineer (Corrosion) with 14 years of experience in PETRONAS Group Technical Solutions. She has an M. Eng. (Materials Science and Engineering) from Imperial College of Science, Technology and Medicine, United Kingdom. She currently works as an Internal Technical Consultant to PETRONAS upstream and downstream business units based in the headquarter office where she is responsible for the in-house CMP software development and deployment to PETRONAS upstream and downstream facilities as well as the CMP documents development for PETRONAS Terengganu Refinery (PPTSB) Condensate Fractionation Unit, Naphtha Hydrotreating Unit.

Matching FTIR Spectra for Raw and Intermediate Materials of 2-pack Paint Systems

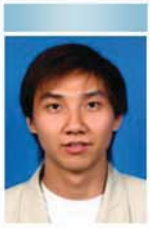
Ms. Renee Teo Yong Yin, Sales Engineer, Bruker (M) Sdn Bhd

Abstract

The existing problem of oil and gas companies faced for on-site jobs of polymeric coatings on steel pipelines is that the quality of polymeric coatings varies from job to job for the same product brand from the same supplier or paint manufacturer. This can be due to the inherent problem of the reformulation of polymeric coatings or in other words adulterated polymeric coatings are supplied, where the quality of the coatings deviates from the submitted specifications for prequalification and tender purpose. Major oil and gas companies in Malaysia are calling for **Coating Fingerprinting Certificate** for the supply of polymeric coatings from local paint manufactures as quality assurance requirement of the coatings supplied. This will reduce the possibility of failures of the polymeric coatings, which lead to the corrosion of steel pipelines resulting in leakage of crude oil and gas to the environment. In this case, Fourier-transform infrared (FTIR) is a simple and reliable tool for coating fingerprinting. Revelation of possible component(s) of raw materials and the 2-pack epoxy paints by carrying out extensive FTIR libraries search on FTIR spectra seems to be extremely challenging. Estimation of *correlation* of the sample spectrum to that of the reference spectrum using Compare function from one FTIR manufacturer, even the FTIR spectra are collected by different FTIR spectrometers from different FTIR manufacturers, can be made. The results of the *correlation* are reproducible. The reliability of mobile FTIR spectrometer to that of the bench-top FTIR spectrometer will be discussed.

Biodata

Ms. Renee Teo has worked in production sector as a Quality Control and also in commercial lab as a Chemist. She is experienced in handling various analytical instruments such as FTIR, Raman, NIR, ICPMS and UV Spectrophotometer. She works as an Application Chemist, and specializes in FTIR, NIR and Raman Spectroscopy for three years. She is responsible for installation, application training and trouble-shooting. Currently she is working with Bruker Malaysia, and specializes in Bruker Optic FTIR, Raman and NIR Spectroscopy.



Modern Rheological Measuring Methods for the Coating Technology

Mr. Josh Lai Say Aik, Anton Paar Malaysia Sdn Bhd

Abstract

"Rheology" is a section of physics which characterize the flow and deformation behavior of materials. Today, rheological phenomena such as yield point pseudoplasticity, thixotropy or viscoelastic behavior do not represent exotic terms anymore in the "world of coatings/paints". For people working in the coatings industry it is important to have as much information as possible on the several aspects of a coating system, which is structural strength and behavior at rest, flow behavior and structural recovery after the coating process. In the last ten years, the development of measuring instruments has achieved powerful progress. Also, the users of viscometers and rheometers profited from this development. With a new generation of rheometers, it was possible for the first time to simulate processing techniques down to the detail. Many different rheological tests are used in today's labpractice to describe the abovementioned behavior will be further discussed.

Biodata

Mr. Josh Lai Say Aik has been with Research Instruments Sdn. Bhd. as application specialist from 2009 – 2014. During his employment, he is responsible for proper installation, commissioning, training and application support of analytical division's products, TA Instruments (DSC, TGA, DMA, SDT, TMA, Nano-DSC, Nano-ITC and Rotational Rheometer) & Thermo Fisher Scientific (FTIR-Spectrometer and Raman Spectrometer). In the past 5 years, he has conducted over 90 trainings, technical presentation and in-situ demonstration in both government institutions and private companies. He has a Bachelor Degree of Industrial Chemistry and Master Degree of Polymer Technology from Universiti Teknologi Malaysia. He also had undergone analytical instrumentation factory training in TA Instruments, U.S., Thermo Fisher Scientific, U.S., and Anton -Paar, Austria. He currently joins Anton-Paar Malaysia Sdn. Bhd. as application specialist supporting Rheometer, Microwave synthesis & sample preparation, Tritec, and SAXS.

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Date : Thursday, 29th Oct 2015
Time : 9.00 am - 5.00 pm
Venue : Dewan Tunku, Kelab Golf Negara Subang, Kelana Jaya, Selangor.

Programme

8:00 am	Registration
9:00 am	Welcoming Remarks by IMM President, *Prof. Dr. Mohamad Kamal Harun*
9:15 am	Opening Speech by: *En. Bacho Pilong, Senior General Manager, Petroleum Operations Management Malaysia Petroleum Management*
9:30 am	**Qualification for New Maintenance Painting Systems and Products for Offshore Application with the Execution of Coating Fingerprint Certification** by *En. Muhd Hawari Hassan, PETRONAS GTS*
9:50 am	**First-of-its-kind Coating Fingerprint Certification in the WORLD: Initiatives, Progress and Execution** by *Ms. Nurul Asni Mohamed, PETRONAS GTS*
10:10 am	Tea-break
10:30 am	**Matching FTIR Spectra for Raw and Materials of 2-pack Paint System** by *Ms. Renee Teo Yong Yin, Bruker (M) Sdn Bhd*
10:40 am	**Modern rheological measuring methods for the coating technology** by *Mr. Josh Lai Say Aik, Anton-Paar Malaysia Sdn Bhd*
11:00 am	Demonstrations of equipment applications by *Bruker (M) Sdn Bhd & Anton-Paar Malaysia Sdn Bhd*
11:30 am	**Open Dialogue** chaired by: *En. Md. Azmi Mohd Noor (IMM Deputy President/ Head of Asset Integrity, Upstream HSE, Petronas) &* *En. Bacho Pilong*
12:30 pm	Lunch-break
2:00 pm	**Presentations by International Certification Bodies in relation to Quality Improvement Initiatives**
3:20 pm	Tea-break
3:40 pm	**Q&A and Panel Discussion** co-chaired by: *Assoc. Prof. Dr. Melissa Chan Chin Han, Chairperson – IMM Polymer Committee &* *Ms. Nurul Asni Mohamed, Chairperson – IMM Coating Fingerprinting Task Force*

Prior Registration required

Free-of-Charge for IMM Members and their Guests

Non-members	: RM 40.00
Walk-in Participants	: RM 60.00

For enquiries, please contact :

Ms. Zalilawati Hasan | Hp no : +6018 - 322 7310 | Email : zalilawati@mte.com.my

Please register online at
www.iomm.org.my

Institute of Materials, Malaysia

No 10-1, Jalan Bandar 3,
Pusat Bandar Puchong,
47160 Puchong,
Selangor Darul Ehsan, MALAYSIA

Tel: +603-5882 3574
Fax : +603-5882 3524
Website : www.iomm.org.my
Email : admin@iomm.org.my

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HIGHLIGHTS

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JWES is an organization accredited by Japan National Accreditation Board (JNAB) to certify personnel according to the requirement of ISO 17024

The Institute of Materials Malaysia (IMM) and the Malaysian Welding Society (MWJS) in collaboration with the Japan Welding Engineering Society (JWES) will conduct certification courses and examinations leading to the status of certified **ASSOCIATE WELDING ENGINEER (AWE) & WELDING ENGINEER (WE) on 10th—17th August 2015, Kuala Lumpur**

The objective of the course is to provide training, knowledge and examination leading to the Welding Engineer Certification in accordance to **JWES— WES8013:2008 Standard of Certification of Welding Coordination Personnel** and **ISO 14731 Welding Coordination Tasks and Responsibilities**.

ASSOCIATE WELDING ENGINEER (AWE)

Target participants

Engineers who are in charge of welding engineers /teaching welding engineering/inspection of welded products

Course Fee

Course & Exam	:	RM 4,500.00
6% GST	:	RM 270.00
5 years IMM Membership	:	RM 220.00

* Entrance Fee : RM20.00
* Annual Memberships: RM40/year x 5 years

1 year PRIMOS	:	RM 150.00
TOTAL	:	**RM 5,140.00**

WELDING ENGINEER (WE)

Target participants

Welding Engineers who meet any of the following requirements:

1. Have passed AWE examination
2. Have experience in attending a past AWE training course
3. Be in charge of welding engineering/inspection of welded products

Course Fee

Course & Exam	:	RM 5,500.00
6% GST	:	RM 330.00
5 years IMM Membership	:	RM 220.00

* Entrance Fee : RM20.00
* Annual Memberships: RM40/year x 5 years

1 year PRIMOS	:	RM 150.00
TOTAL	:	**RM 6,200.00**

Please call us for more information

Materials Technology Education Sdn Bhd

10-1 Jalan Bandar 3, Pusat Bandar Puchong, 47160 Puchong, Selangor, Malaysia.

Tel : (603)-58823574/84 Fax : (603)-58823524 Email: ikmal@mte.com.my or yusleyda@mte.com.my Website: www.iomm.org.my