

**REGISTRATION FORM**  
**4 DAY e-TRAINING ON**  
**"METAL PLATING FOR CORROSION AND WEAR"**  
**22, 23, 24 & 25 MARCH 2022 (9.00 AM – 1.00 PM)**

**REGISTRATION FEE**

	Registration Fee	SBL-Khas	Non-Contributor
		Please Tick (✓)	
<b>Members / Non Members</b>	<b>RM1,200</b>		
		<b>Application No:</b> _____	

Please register the following person/s:

Name: \_\_\_\_\_  
 Designation: \_\_\_\_\_  
 Email: \_\_\_\_\_ Contact no.: \_\_\_\_\_  
 MISIF member     Non-MISIF member

Name: \_\_\_\_\_  
 Designation: \_\_\_\_\_  
 Email: \_\_\_\_\_ Contact no.: \_\_\_\_\_  
 MISIF member     Non-MISIF member

Name: \_\_\_\_\_  
 Designation: \_\_\_\_\_  
 Email: \_\_\_\_\_ Contact no.: \_\_\_\_\_  
 MISIF member     Non-MISIF member

*Particulars of person making booking:*

Name: \_\_\_\_\_  
 Designation: \_\_\_\_\_  
 Company/Organization: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Tel: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_

# e-TRAINING ON METAL PLATING FOR CORROSION AND WEAR

## 22, 23, 24 & 25 MARCH 2022

SBL-KHAS  
 Course Serial No.  
 10001151268  
 MyCoID: 473883H



**PLATFORM:**  
 ONLINE VIA WEBEX

**TRAINER:**  
**ASSOC. PROF. DR. NURULAKMAL BT. MOHD SHARIF**  
 SCHOOL OF MATERIALS AND MINERAL RESOURCES,  
 ENGINEERING CAMPUS, UNIVERSITI SAINS MALAYSIA

**ORGANISED BY:** UNIVERSITI SAINS MALAYSIA & USAINS HOLDING SDN BHD  
**IN COLLABORATION:** MALAYSIAN IRON AND STEEL INDUSTRY FEDERATION  
**SUPPORTED BY:** SOUTH EAST ASIA IRON AND STEEL INSTITUTE



## **INTRODUCTION**

This course is designed to provide basic knowledge on metallurgy (structure and properties, processing techniques), and fundamental of metal plating. At the end of this course, participants should be able to:

- (i) Explain structure-process-properties relationship for metals and alloys;
- (ii) Understand basic principles of plating (electroplating and electroless);
- (iii) Apply knowledge on basic principles to do trouble shooting (for typical defects / problems occurring during plating);
- (iv) Differentiate between the various plating processes (electroplating, electroless plating, anodizing, CVD, PVD) and understand the typical parameters involved in each processes.

## **COURSE CONTENTS**

- Lecture 1 – Structure – Properties – Process Relationship for Steel
- Lecture 2 – Hardness & Wear
- Lecture 3 – Corrosion of Metal
- Lecture 4 – Surface Finish and Metal Plating Techniques
- Lecture 5 – Fundamentals of Plating
- Lecture 6 – Electroplating: Kinetics and Process Control & Bath Solution
- Lecture 7 – Electroless Metal Deposition
- Lecture 8 – Electroless Plating: Process Control
- Lecture 9 – Characterize Coating Quality: Hull Cell
- Lecture 10 – Metal Plating: Nickel, Zinc, Chrome
- Lecture 11 – Anodizing and Hot Dip Galvanizing
- Lecture 12 – Other Deposition Process: Anodizing, PVD, CVD

## **ABOUT THE INSTRUCTORS**

**ASSOC. PROF. DR. NURULAKMAL BT. MOHD SHARIF** joined USM Engineering Campus in 2001 after completing her PhD in Materials Engineering (Metallurgy) from University of Wales Swansea, United Kingdom. She is currently an Assoc. Professor at School of Materials & Mineral Resources Engineering, USM. She has obtained several grants from USM, JICA and also MOSTI to develop alloys for high temperature application, Intermetallic composites, fatigue of Al composites, and development of lead-free solder alloy. She was a member of the MLVK advisory board (Steel making & Foundry) (2007), MARA advisory board (Electroplating Technology Certificate and Diploma in Foundry) (2011) and also has conducted many training courses for MISIF, Intel, KOBE Precision, Kilang Sprocket and others. Consultation works include heat treatment on steel, microstructure studies and recycling of solid waste into valuable product.

## **WHO SHOULD ATTEND**

This course is designed for engineers, maintenance engineers, managers, supervisors who wish to broaden their knowledge of metallurgy of steel and general corrosion knowledge.

## **ABOUT USAINS HOLDING SDN BHD**

USAINS Holding Sdn Bhd (USAINS) formed in 1998, is the corporate arm of Universiti Sains Malaysia (USM).

## **ABOUT MALAYSIAN IRON AND STEEL INDUSTRY FEDERATION (MISIF)**

The Malaysian Iron & Steel Industry Federation (MISIF) is the national association representing the iron and steel manufacturing companies of Malaysia. Among its many activities, MISIF regularly organizes technical training courses relevant to the metalworking sector. MISIF has recently obtained the support of USM to conduct courses related to materials and metallurgy.

## **DATE, TIME AND PLATFORM**

Date : **22, 23, 24 & 25 March 2022 (Tuesday-Friday)**  
Time : **9.00 am – 1.00 pm (Daily)**  
Platform: **Online via Webex**

## **REGISTRATION FEE AND ADMINISTRATIVE DETAILS**

**MEMBERS / NON MEMBERS: RM1,200**  
**DEADLINE FOR REGISTRATION: 21 MARCH 2022 (MONDAY)**

1. **No refund** will be entertained although participants can be substituted at any time.
2. The organizer reserves the right to cancel, reschedule, postpone or amend the course date/venue/programme, due to unforeseen circumstances.

## **SKIM BANTUAN LATIHAN**

Companies registered with HRDF can apply for refund under **SBL-Khas Scheme**.

## **FOR INFORMATION**

Mr. Khairol Anuar Mohammed  
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Ms. Norlian Mohamed Najib

## **MALAYSIAN IRON & STEEL INDUSTRY FEDERATION (MISIF)**

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Tel: 03-55133970 / Fax: 03-55133891 / Email: [norlian@misif.org.my](mailto:norlian@misif.org.my)