

## INTRODUCTION

Metallography is a characterisation technique that describes those features of the macro and microstructure of a material which are significant for a particular use. It provides information about the various phases, grain size and defects in the structure. The ability of the metallurgist and materials engineer to explore microstructures on finer scale has increased and is becoming easier with time. This could not have been possible without the technological advances in microscopy.

Samples preparation, however, remains one of the key factors in achieving the desired results from microstructure analysis and quantification. The course is therefore aimed to introduce the principles of sample preparation for microstructure studies. It will also describe the various characterisation techniques used and data interpretation. The course includes lectures and practical demonstrations.

## OBJECTIVES

This short course is designed for those who wish to learn the techniques of sample preparation of various materials which include metals, ceramics and composites for microstructural analysis.

Participants will also have the opportunity to gain hands-on experience with the equipment for samples preparation, microscopy and photomicrography.

## WHO SHOULD ATTEND

- This course is designed for engineers, scientists, lecturers, R&D personnel, technicians, and laboratory-assistants.
- The participants need not have basic knowledge in Materials Science and Metallurgy.

## COURSE PROGRAMME

### 6<sup>th</sup> March 2002 (Wednesday)

- 8.00 am : Registration  
8.30 am : Opening Remarks by Prof. Ir. Dr. Alias Mohd Noor the Dean of Faculty of Mechanical Engineering  
9.00 am : **Lecture 1 : Samples Preparation**  
10.30 am : Tea Break  
10.45 am : **Lecture 2 : Microstructural Analysis**  
12.45 pm : Lunch  
2.00 pm : **Workshop I : Samples Preparation**  
5.00 pm : Tea Break

### 7<sup>th</sup> March 2002 (Thursday)

- 8.30 am : **Lecture 3 : Quantitative Image Analysis**  
10.00 am : Tea Break  
10.15 am : **Workshop 2 : Etching Technique**  
12.45 pm : Lunch  
2.00 pm : **Workshop 3 : Microstructural Analysis**  
4.30 pm : Closing Remarks by Prof. Dr. Awaluddin Mohd. Shaharoun Deputy Dean (Development) Faculty of Mechanical Eng., UTM  
5.00 pm : Tea Break  
5.15 pm : End

## REGISTRATION FEE

Fee : RM500.00 per participant (inclusive of lecture notes, other course materials, lunches and refreshments).

*Certificate of Attendance will be awarded to participants who have successfully completed the course.*

## ACCOMMODATION

Special room rates have been negotiated for participants and guests attending this seminar at The Puteri Pan Pacific, Johor Bahru for RM145.00 per night per room (with breakfast). University accommodation is also available at the rate of RM80.00 (single).

The hotel and university accommodation reservation should be made with the secretariat for this special tariff entitlement.

## FURTHER INFORMATION

### Enquiries should be directed to:

Assoc. Prof. Dr. Esah bt. Hamzah  
Head of Dept. of Materials Engineering  
Faculty of Mechanical Engineering  
Universiti Teknologi Malaysia  
81310 UTM Skudai, Johor

Telephone : 07-5504562 / 5504645

Fax : 07-5566159

e-mail : esah@fkm.utm.my  
nazim@fkm.utm.my

Our website is at:  
<http://www.fkm.utm.my/~metal2002>

## REGISTRATION FORM

### SHORT COURSE ON ADVANCED METALLOGRAPHY & MICROSTRUCTURAL ANALYSIS - 2002

6<sup>th</sup> and 7<sup>th</sup> March, 2002  
Faculty of Mechanical Engineering  
Universiti Teknologi Malaysia

Name: .....

Designation: .....

Organisation: .....

Address: .....

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.....

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

E-mail: .....

## PAYMENT

I enclosed herewith a cheque/money order/bank draft RM\_\_\_\_\_ for the registration fee, payable to "Bendahari UTM".

(Please add 50 cents for outstation cheques)

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

*Note: Photocopies of this reply form are acceptable.*

## COURSE LECTURER

**Mr. Rene Hoeg** : Graduated with specialisation in Metallurgy and Design from Copenhagen Technical University in 1973. He has 27 years work experience and a Founder of Danish Society of Materialography. He is also a Co-Founder of the Norwegian and Polish Society of Materialography.

## ORGANISING COMMITTEE

**Advisor** : Prof. Ir. Dr. Alias Mohd Noor  
(Dean Faculty of Mechanical Engineering)

**Chairperson** : Assoc. Prof. Dr. Esah Hamzah  
(Head Dept. of Materials Engineering)

**Co-Chairperson** : Mr. H. S Ong (CLMO Technology)

**Deputy Chairperson** : Assoc. Prof. Dr. Ali Ourdjini

**Secretary** : Engku Mohd Nazim Engku Abu Bakar

**Deputy Secretary** : Norhayati bt. Ahmad

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Zainalabidin b. Abbas  
Ayub b. Abu  
Jefri b. Samin  
Md Yani b. Kasiren  
Norafidah bt. Mohd. Mohedin

## IMM SOUTHERN REGION COMMITTEE

**Chairman** : Assoc. Prof. Dr. Esah Hamzah (UTM)

**Secretary** : Y.M. Engku Mohd Nazim b. Engku  
Abu Bakar (UTM)

**Members** : M. Aniq Nagin b. Abdullah (Pasifik Cekap)  
Micheal Fong (International Coating)  
Astuty bt. Amrin (UTM)  
Assoc. Prof. Dr. Ahmad Mahir Mokhtar (UTM)  
Noor Hisham Ab. Hamid (UTM)  
Harold Lim (SBN)  
Peyser Beh Pang Keat (Pasifik Cekap)  
Leong Weng Onn (Mentonmas)

## FINAL ANNOUNCEMENT

### SHORT COURSE ON ADVANCED METALLOGRAPHY & MICROSTRUCTURAL ANALYSIS 2002

6<sup>th</sup> and 7<sup>th</sup> March, 2002

*at*

Seminar Hall  
Faculty of Mechanical Engineering  
Universiti Teknologi Malaysia, Skudai  
Johor

*Jointly Organised by*



Department of Materials Engineering,  
Faculty of Mechanical Engineering  
Universiti Teknologi Malaysia

Institute of Materials  
Malaysia (IMM) Southern Region

CLMO Technology  
(BUEHLER, Malaysia)