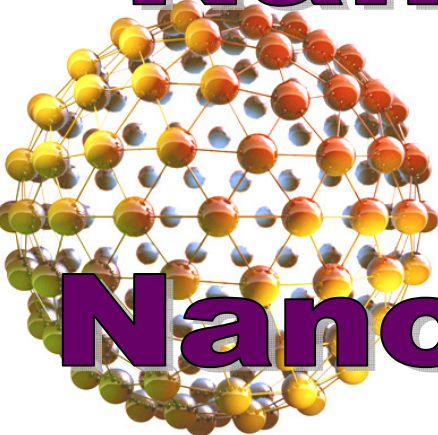





**2-day course on**



# **Nanomaterials and Nanotechnology**



## **WHO SHOULD ATTEND?**

**This course provides a general introduction to nanomaterials and nanotechnology. It is designed for those who are active or intended to be active in this field which include Researchers, Scientists and Engineers. As the field of nanomaterials is developing very rapidly, the course provides an ideal opportunity to review the scope and applicability of the currently available and emerging nanomaterials in various engineering industries.**

**Dates : 5 & 6 MARCH 2012 (Monday & Tuesday)**

**Time : 9.00 a.m. – 5.00 p.m.**

**Venue : Auditorium 2, Kompleks Eureka,  
Universiti Sains Malaysia, Penang.**

in collaboration with :



(wholly-owned by Universiti Sains Malaysia)

### **Previous clients:**

- ❖ Penang Seagate Industries (M) Sdn. Bhd.
- ❖ University Tun Hussein Onn Malaysia (UTHM)
- ❖ Malaysian Agricultural Research and Development Institute (MARDI)
- ❖ Universiti Sains Malaysia (USM)

**HRDF Claimable\***

**\*Subject to HRDF Approval**

## INTRODUCTION

This module starts by defining nanotechnology and surveying on the status of the technology at the moment. Then, it focuses on the most important fundamental component that enables nanotechnology: nanomaterials. Nanotechnology can be defined as any technology done on a nanoscale that has applications in the real world.

There is currently an extraordinary amount of interest in nanotechnology as such technology has enormous consequences on the design and engineering of everything from common consumer products like cosmetics, textile and building to more sophisticated nanosystems that support enormous applications in electronics, information technology, medicine, biology, energy, automotive, aerospace and other industries. Hopes exist for being able to make things smaller, more efficient, greener, lighter, or work better than is possible with conventional bulk materials. Nanomaterials are then enabling component of nanotechnology and have been developed as a consequence of truly significant recent advances within the materials science community. This module integrates knowledge from the techniques to synthesis nanomaterials of various dimensions, mode of characterisations to the examples of use of these materials in nanotechnology.

This module is designed for those who are active or intended to be active in this field and has a main aim as to simulate interest in this important field.

## COURSE OBJECTIVES

- i. To introduce and discuss on the topic of nanotechnology and nanomaterials.
- ii. To establish understanding on common methods for the production of nanomaterials and on the characterisation techniques.
- iii. To address the importance of expanding research and innovation in nanoscale science and engineering.

## REGISTRATION FEE

### **RM990.00 PER PARTICIPANT**

(Covers training materials, refreshment including lunch and Certificate of Attendance.)

**GROUP DISCOUNT – RM891.00 PER PARTICIPANT** (minimum of 3 participants from the same company/organisation)

**SPECIAL FEE FOR ACADEMICIANS AND STUDENTS – RM880.00 PER PARTICIPANT** (not entitled for group discount)

## COURSE FACILITATOR

Dr Zainovia Lockman did her undergraduate work in materials science and engineering at Imperial College London, UK. She graduated with a first class Hons. in 1999. She received her PhD from Imperial College on electronic materials focusing on template material for high temperature superconductor and had also involved in magnesium diborides. Upon completion of her PhD, Dr Zainovia spent six months working as a post-doctoral research assistance at Imperial College then continued working on synthesis and characterisations of various nanostructured electronic oxides at University of Cambridge, UK for a year.

She started working at Universiti Sains Malaysia in 2004 focusing her research in synthesis and characterisations of electronic oxides especially those with semiconducting properties, photocatalysis and also on electrochromic oxides. Her current research interest has been largely in the formation of oxide nanotubes, nanorods and nanowires by chemical and oxidation processes. Her research has been funded by Ministry of Higher Education and Ministry of Science Technology and Innovation Malaysia through various schemes and she also had received several grants from international bodies for example Nippon Sheets Glass Foundation, Japan and United Kingdom Prime Minister Initiative II Award.

Through her outstanding works on nanostructured oxides, Dr Zainovia was awarded UNESCO-L’Oreal Malaysia for Women in Science Fellowship in 2009 and was a recipient of Young Scientist Award Springer 2010 at a conference in France. The outcomes of her research have been published in more than 100 publications especially in high impact journals and also in conference proceedings.

## MORE INFO:

### Technical Details:

**Dr. Zainovia Lockman**

School of Materials & Mineral Resources Engineering, USM.

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(E) zainovia@eng.usm.my / zainovia@gmail.com

### Registration and others:

**Khairol Anuar Hazir Mohammed**

**USAINS Holding Sdn. Bhd.**

(D) 04-653 4372 / (M) 012-286 9048

(E) khairol@usainsgroup.com / khairol\_usains@yahoo.com

**LIST OF ACCOMMODATION NEARBY COURSE VENUE IS AVAILABLE UPON REQUEST**

# **Nanomaterials and Nanotechnology**

## **PROGRAM SCHEDULE**

### **DAY 1**

9.00 a.m. – 10.30 a.m.	Introduction to Nanotechnology
10.30 a.m. – 10.45 a.m.	Tea Break
10.45 a.m. – 1.00 p.m.	Nanostructures and Nanomaterials
1.00 p.m. – 2.00 p.m.	Lunch
2.00 p.m. – 3.30 p.m.	0Dimensions nanomaterials: nanopowders
3.30 p.m. – 3.45 p.m.	Tea Break
3.45 p.m. – 5.00 p.m.	1Dimensions nanomaterials: Nanorods, Nanotubes, Nanowires

### **DAY 2**

9.00 a.m. – 10.30 a.m.	2Dimensions nanomaterials: thin film
10.30 a.m. – 10.45 a.m.	Tea Break
10.45 a.m. – 1.00 p.m.	3D nanomaterials: self-assembly nanostructure
1.00 p.m. – 2.00 p.m.	Lunch
2.00 p.m. – 3.30 p.m.	Overview of the applications of nanomaterials
3.30 p.m. – 3.45 p.m.	Tea Break
3.45 p.m. – 5.00 p.m.	General issues on health and safety

#### **Disclaimer**

The Organizer reserves the right to reschedule or cancel any part of its published programme or venue due to unforeseen circumstances and will not accept liability for costs incurred by participants or their organizations for the cancellation of travel arrangements and/or accommodation reservations as a result of the course being cancelled or postponed. Advance notice will be given if there is such a change or cancellation.

## REGISTRATION FORM

# NANOMATERIALS AND NANOTECHNOLOGY MARCH 2012

Fax or send registration form to : Khairol Anuar, USAINS Holding Sdn. Bhd., Ground Floor,  
Kompleks EUREKA, Universiti Sains Malaysia, 11800 USM, PENANG.

Fax : 04-657 2210

or

Email to : khairol@usainsgroup.com / khairol\_usains@yahoo.com

*Please register the following name/names: (Please use separate sheet, if required)*

Item	Participants Name <i>(Please print clearly or attach business card)</i>	Position & Email
*1.		
2.		
3.		
4.		
5.		
<b>Industry Sector:</b>		
<b>Company:</b>		
<b>Address:</b>		
<b>Postcode:</b>		
<b>*Primary Person:</b>		<b>*Mobile Phone:</b>
<b>*Telephone No.:</b>	<b>*Fax No.</b>	<b>*E-mail:</b>

### Mode of Payment

	Number	Bank	No. of Participants:	
I enclose <input type="checkbox"/> Crossed Cheque <input type="checkbox"/> Bank Draft <input type="checkbox"/> Money Order <input type="checkbox"/> LO/PO				
			Group Discount:	
			Total Sum:	<b>RM</b>
	Payment must be made payable to <b>'USAINS HOLDING SDN. BHD.'</b>			

#### 1. BANK TRANSFER *[Please fax your Bank-in Slip (Print your name & details on the slip)].*

Payee Name: **USAINS Holding Sdn. Bhd.**  
 Details: **NANOMATERIALS AND NANOTECHNOLOGY FEBRUARY 2012**  
 Name of Bank: **CIMB Bank Berhad (USM Branch), Universiti Sains Malaysia, 11800 USM Penang.**  
 Account Number: **0709-0006708-05-7**

#### 2. A LOCAL ORDER (LO) OR PURCHASE ORDER (PO) must be presented before the event.

The Organizer reserves the right to refrain a registered participant from taking part in the event if no proof of payment can be presented. This only applies to registered participants who have NOT paid the registration fee PRIOR to the event date.

#### 3. CANCELLATION / SUBSTITUTION

A full refund less administration fee of RM300.00 will be given for cancellation received not later than **10 working days** before the course. No refund will be made after this period. However, substitute participants are welcomed at no extra charge provided written notice of at least **5 working days** before the event is given to the Organizer.