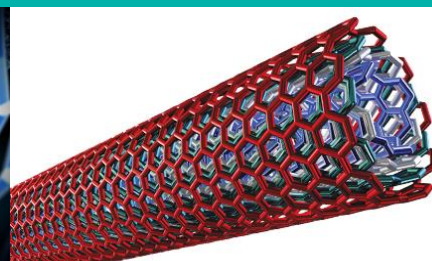
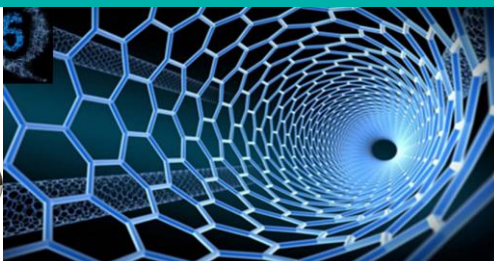




1-Day Short Course On

NANOSCALE CHARACTERIZATION & DETECTION TECHNIQUES: THE ANALYTICAL TOOLBOX FOR NANOMATERIALS



INTRODUCTION

Nanoscale science and nanotechnology are the study and application of extremely small things that encompasses nearly every discipline of science and engineering. This field is defined primarily by a unit of length, the “nano” refers to the metric prefix 10^{-9} m which is equivalent to 1 nm, at which lies the ultimate control over the form and function of matter.

Indeed, since the types of atoms and their fundamental properties eventually come to a limit by the laws of quantum physics, we have the freedom to exercise our creativity to build materials and devices with control down to the level of individual atoms and molecules – such, nanotechnology arena results in properties and performance far superior to conventional technologies. In some cases, it allows access to entirely new properties which are different from their bulk materials.

The rapid growth of the field in the past two decades has been enabled by the advances in the fabrication and characterization of increasingly smaller structures. Advances on the fabrication side (with the emergence of two paradigms, referred as a “top-down” and “bottom-up” approach respectively), have been supported by equally important abilities in the imaging and characterization of nanometer scale features. The course provides an overview of such enabling technologies.

OBJECTIVES

Upon completion of this course, participants will be able to:

- Understand the capabilities of nanotechnology analytical instruments
- Know how to use related equipment for nano-scale fabrication and characterization
- Develop an awareness on which instrument/tools is/are suitable for a particular characterization

COURSE CONTENT

1. Introduction to Nanotechnology
2. Transmission Electron Microscopy
3. Dynamic Light Scattering
4. Static Light Scattering
5. Small Angle Neutron Scattering
6. Small Angle X-ray Scattering
7. Atomic Force Microscopy

DATE: 16th August 2018

TIME: 9.00am - 5.00pm

VENUE: Level 16, Menara 2, Menara Kembar Bank Rakyat, Jalan Travers, 50470 Kuala Lumpur

COURSE TRAINER



Dr. Zulkifli M.A. Merican received his BSc (Hons) degree in Heterogeneous Chemistry from The University of New England (UNE) at New South Wales, Australia (1998) and a PhD in Supramolecular Organic Chemistry from the same university (2005) under the supervision of Professor Maxwell Gunter, a leading expert in Supramolecular Dynamics.

After completing several postdoctoral and senior research fellowships in Australia and Saudi Arabia, he is now appointed as a Senior Lecturer in the Department of Fundamental and Applied Sciences, at The Universiti Teknologi PETRONAS, Tronoh, Perak in Malaysia. He is a recipient of several excellent awards: University of New England K.G. Lewis Prize (1997), Australian Research Council (ARC) Funded Postgraduate Scholarship (1998), New Staff Start-Up Research Fund of University of Queensland (2007) and Australian Nuclear Science and Technology Organization (ANSTO) award (2008-2009) which allowed him to conduct experiments using a Neutron scattering technique at the National Institute of Standards and Technology (NIST) at USA (2009).

Dr. Merican's research interests and program lies at the interface of polymer-nanocomposites, synthetic organic supramolecular chemistry, enhanced oil recovery, catalysis and membranes for water and carbon dioxide utilization. He is currently a principal investigator for several YUTP projects and teaching Chemistry for Foundation and Undergraduate students at the Department of Fundamental and Applied Sciences, UTP.

HOW TO APPLY

Email to cape@utp.edu.my for registration by 1st August 2018. Seats are limited. A seat will be confirmed once the payment / LOU is received. Confirmed participants will be informed via email.

WHO SHOULD ATTEND?

The course is aimed at scientists (chemistry, physics, materials, biology) and engineers (chemical, mechanical, biomedical) in research and development of processes involving fine particles, soft materials, cosmetics, liquids, surfactants, biological and proteins solutions, polymeric films, ordered nanoobjects as such as gratings, self-organized molecular super architectures.

COURSE FEES

RM 680 (Professionals)
10% Discount (UTP Alumni, PETRONAS & Group Registration)
20% Discount (Student)

Course fee is inclusive of 0% GST. Group registration is applicable for 3 pax and above from the same company.

The fees include refreshments and the course materials.

A certificate of attendance will be issued upon successful completion of the course.

CONTACT DETAILS

Course Coordinator:
Dr. Zulkifli Merican
Tel: +605-368 7654
Email: zulkifli.aljunid@utp.edu.my

Course Registration:
Mr. Farhan Zulkefly
Tel: +603-2276 0136 / +60143150602
Email: farhan.zulkefly@utp.edu.my