

The fast growth of Nano-Science/Technology and their vast applications in most industries have opened new markets as well as career pathways. Knowledge and skills in this area presents extensive opportunities for those who are in or consider joining this fast-growing domain.

The programme has been carefully designed to prepare the learners for embracing the new era by offering them the required knowledge and professional skill sets according to their background and as fit their prior experience with the subject. Two levels are therefore developed, Fundamentals and Advance as follows:

#### **A: Fundamentals & Applications**

Elementary knowledge suitable for Students, Industry Technicians, Medical Staff, School Teachers or anyone who considers learning about NANO.

**One-day Workshop, Liverpool Science Park**

**Date: 10<sup>th</sup> March 2020**

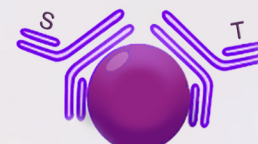
Learners who complete Level A can apply to join and complete level B.  
Those with prior knowledge of the subject may choose to apply for Level B only.

#### **B: Advanced Technologies and Applications**

- Knowledge & Technical skills in the practical use of the technology.
- Designed for Industry Scientific/Technical Staff seeking further skills, R&D Staff & Researchers, Students, Science Tutors and those who already know the basic concepts.

**Two-day workshop, Liverpool**

**Date: 22<sup>nd</sup> April 2020**



ShimyaTech



NANO BIOSOLS

## **Pathway to "NANOWORLD"**

A complete training programme

*By ShimyaTech & NanoBiosols*

# **NanoParticles & NanoFilms**

**New & Extended Know-how  
for Workplace or Research**

**New potential career path and  
opportunities in the job market**

[www.shimyatech.com](http://www.shimyatech.com)

[www.nanobiosols.com](http://www.nanobiosols.com)

## Workshop A: NanoPartilces & NanoFilms Fundamentals & Basic Concepts

### Who should attend:

This workshop fits anyone with minimum GCSE/A level in Chemistry/Physics background and look to learn and involve in Nanoscience and Nanotechnology.

### At the end of this course you should learn:

- fundamentals of Nanoparticles and Nanofilms, their properties and current applications in order to get ready to enter into Nano world
- the background required to attend Workshop B (Optional) to complete your knowledge and skills to work with materials and coatings at Nano scale.
- to identify the paths to find new opportunities in Nanomaterials and Nanocoatings.

### Main Topics:

- Basic concepts in Nano: Introduction to Nanoscience & Nanotechnology; Introduction to Nanoparticles and Nanocoatings
- Preparation and Properties of Nanomaterials and Nanofilms: Physical and Chemical Properties; Preparation of Nanoparticles and Nanofilms; Characterisation and identification
- Current Applications in daily life and industry: pharmaceuticals and medicine; Cosmetics, modified surfaces, paints and coatings; Electronics and sensors

**Date:** Wednesday 10<sup>th</sup> March 2020

**Duration:** One full day

**Venue:** Liverpool Science Park, 131 Mount Pleasant L3 5TF

### Registration:

**Workshop A:** £120 for graduates and professionals; £80 for students

**Workshop B:** £250 for graduates and professionals; £180 for students

**Package registration for workshop A&B:** £300 for graduates and professionals; £200 Students **Early Bird (until 10<sup>th</sup> February):** %20 off

**Contact us by Email:** [info@shimyatech.com](mailto:info@shimyatech.com)

Included in the registration: lunch and refreshments, teaching materials, certificate of attendance

## Workshop B: NanoPartilces & NanoFilms Advanced Technology Applications

### A Skill-Oriented Training:

This is an advance course which uses hands-on and laboratory training to give the trainees an opportunity to receive valuable skills to support their current or future career.

The workshop covers advance topics of knowledge and technical skills which fits best those who have completed Part A of our programme or have prior knowledge and experience in this area.

### At the end of this course you should learn:

- Deep insight into Nano scale materials and films, current and future applications
- Key skills for working with nanomaterials and nanofilms
- New opportunities for the application of Nanomaterials and coatings

### Main Topics:

**A. Preparation, Modification and properties:** of Metal (Gold, Silver), Magnetic (Iron); Semi-conductor (Quantum dots) Polymer Nanoparticles and Liposomes and Non-metal Nanoparticles; Surface functionalisation

**B. Applications in Nanomedicine and Biomedical Engineering:** Drug Delivery; diagnosis and therapies, Detection and prevention of infection; Bioimaging and medical diagnosis;

**C. Applications in Advanced Technologies:** Energy, Printed Electronics and catalysts; Smart materials and devices; Biosensors, In-Vivo and In-Vitro Diagnostics; Environmental protection and Health and safety concerns

**D. Hands on session on NanoMaterials and Nanofilms (Laboratory Techniques)**

1. The Lotus effect, Surface enlargement, modification and engineering
2. Thyndal Effect Detection and physical properties of nanoparticles
3. Preparation of Nanoparticles (silver, gold etc)
4. preparation of dye-sensitised solar cells
5. Preparation of Nanofilms by electrodeposition
6. Application of Nanofilms as Electrocalysts; applications in fuel cells

**Date:** Wednesday 22<sup>nd</sup> April 2020

**Duration:** 2 days (one full day lab experience included)

**Venue:** Liverpool