

## **Workshop**

# **“Applications of Nanotechnology in Industry: Opportunity of Integration Among IDB Member States”**

**Cairo; 29<sup>th</sup> – 31<sup>st</sup> January 2012**

**Organized by  
National Research Centre**

**in collaboration with  
Alexandria University**

**under the auspices of**

**Prof. Dr. Ashraf Shaalan**

**President of National Research Centre**

### **Chairperson**

**Prof. Dr. Ekram Fateen, Vice President for Research &  
International Relations  
National Research Centre**

### **Directors**

**Prof. Dr. Salma Naga**

**Prof. Dr. Karima Haggag**

### **Coordinator**

**Dr. Hosam El-Sayed**

**Sponsored by  
The Islamic Development Bank**

**Background and rationale of the workshop**

In the dawn of this new eon, science and modern technology have advanced beyond our wildest dreams. The world nowadays is persistently changing and novel devices are becoming smaller, more compact, and more complex than ever before. One new branch of science has sparked a revolution, seizing the interests of scientists, engineers, politicians and general citizens all over the Islamic countries. That new sector is termed nanotechnology.

Nanotechnology is an emerging interdisciplinary technology that has been thriving in many areas during the recent decade, including materials science, textiles, food, drugs, mechanics, electronics, optics, medicine, plastics, energy, electronics, and aerospace. Its profound societal impact has been considered as the huge momentum to usher in a second industrial revolution.

There are many research institutions in almost the Islamic countries working in the field of nanotechnology to serve the national economy of their respective countries. This goal has not been entirely achieved due to several reasons. Among others, lack of clear S&T policies and strategies, lack of coordination on bilateral and regional levels as well as lack of collaborative research, development and innovation (R, D & I) are the main barriers of reaching this goal. The maximum success of our research institutions will be achieved if and only if all the natural resources, especially those would be processed by nanotechnology, of the Islamic

countries are amalgamated properly and for the benefit of our countries as opposed to foreign and multinational companies.

This workshop is designed to be an intensive co-working for specialists in the academic, administration and industrial sectors in all fields of interest related to the application of nanotechnology in Science, Technology and Innovation. It is aimed to give them an opportunity to discuss, exchange opinion and reach recommendations of how to maximize the benefits and experiences in the application of nanotechnology in industry.

### **Targeted Audience**

This workshop targets a wide audience, including:

- Scientists from R & D establishments
- Professionals from industry
- Lecturers/students from universities/colleges
- Mid-to senior-level government officials in ministries of relevant fields,
- Representatives from different industries that are either influenced by or influencing nanotechnology; such as Textiles, Energy, Electronics, Biotechnology, Chemistry, Dyes, Material Sciences and Automotive, and
- Entrepreneurs in ecological issues.

### **Preliminary proposed items**

#### **FIRST: Fabrication, characterization & tools**

- 1- Modeling and simulation
- 2- Fabrication and characterization

3- Reliability

4- Instrumentation

## **SECOND: Advanced Materials**

1- Particles, CNT, coatings, and polymers

2- Bio-nano-materials and nano-composites

3- Durable nano-material (corrosion-resistant, heat resistant, abrasion-resistant material)

4- Material for energy (material for energy generations and storage)

5- Nano-structure separating membrane device  
(transport membrane material, catalytic membrane, bio thin-film material)

## **THIRD: Medicine**

1- Drug delivery

2- Cancer

3- Tissue engineering

4- Diagnostic

5- Nano-bio-sensor and artificial senses

6- Nano-bio-chip and bio device

## **Fourth: Electronics and Microsystems**

1- Nano electronics

2- Fluidics

3- Novel semiconductor devices

4- WCM, MEMS, NEMS

## **FIFTH: Energy & Environment**

1- Filtration

2- Reduction of energy consumption

3- Increasing the efficiency of energy production

4- Risk of using nanoparticles

### **Sixth: Heavy Industry**

1- Aerospace

2- Nanotechnology in steel industry

3- Vehicle manufacture

### **Seventh: Consumer goods**

1- Foods

2- Textiles

3- Cosmetics

4- Agriculture

### **Language**

All aspects of the workshop will be conducted in English.

### **REGISTRATION FEES <sup>(a)</sup>**

<b>Registration type</b>	<b>Paid till 01.01.2012<sup>(b, c)</sup></b>	<b>Paid after 01.01.2012<sup>(b, c)</sup></b>
Attendance + certificate	100 L.E.	150 L.E.
Attendance + certificate + bag + printed matters	200 L.E.	250 L.E.
Attendant + certificate + bag + printed matter + coffee break + lunch	325 L.E.	350 L.E.
Attendant + certificate + bag + printed matter + coffee break + lunch + Bibliotheca Alexandrina <sup>(d)</sup>	450 L.E.	500 L.E.

(a) For non-Egyptian participants: US\$ 300 covering printed matters, coffee break, lunch, internal transportation, visit to Bibliotheca Alexandrina

(b) The declared fees are for the NRC members

(c) For Egyptian other than the NRC members, extra 50 L.E. is added in all cases

(d) Including transportation from the NRC/Alexandria/NRC and lunch