



# Regional Workshop on Optofluidics and Optical Manipulation

7 November - 11 November 2011

*University of Cape Coast, Ghana*

The Abdus Salam International Centre for Theoretical Physics (ICTP) is organizing a Regional Workshop on Optofluidics and Optical to be held from 7 November to 11 November, 2011 at the University of Cape Coast, Ghana.

Optical manipulation implies the use of the radiation pressure of light on small samples immersed in liquid, gas or vacuum. Accordingly the technique is called optical tweezers (liquid) or optical levitation (gas or vacuum). Advances in these areas have led to very interesting application-driven research and technology development. The goals of the workshop are to introduce the principles of optical manipulation, discuss in detail some of the multidisciplinary application areas of interest to West Africa, and to have participants run basic experiments under expert supervision.

The long-term goals are to foster a sustainable effort in the areas of biophysics and biomedicine in West Africa. Specifically, a major application in biophysics is the study of the mechanical properties of cells and of many types of motor molecules and other macromolecules responsible for the motion of organelles within cells and the locomotion of entire cells. Such studies can be initiated with the optical techniques covered by this workshop.

## MAIN TOPICS OF THE SCHOOL:

- Fundamentals of optical manipulation: optical tweezers and optical levitation.
- Fundamentals of micro-fluidics and phase optical microscopy
- Fundamentals of cell mechanics and molecular motors
- Research topics in optical manipulation and applications in life science.
- Experimental demonstrations of optical manipulation.
- Discussions on instrumentation development, and possible low cost – high impact applications in physics and biomedicine.

Up to date information about the program of the school and conference can be found at the activity website <http://agenda.ictp.it/smr.php?2287>

## PARTICIPATION

Scientists from all countries that are members of the United Nations, UNESCO or IAEA may attend the Workshop. As it will be conducted in English, participants should have an adequate working knowledge of that language. Although the main purpose of the Centre is to help researchers from developing nations through a programme of training activities within the framework of international cooperation, students and scientists from developed countries are also welcome to attend. As a rule, travel and subsistence expenses of the participants should be borne by the home institution. Every effort should be made by candidates to secure support for their fare. **There is no registration fee.**

## HOW TO APPLY FOR PARTICIPATION

The application form can be accessed at the activity website:

<http://agenda.ictp.it/smr.php?2287>

Once in the website, comprehensive instructions will guide you step-by-step, on how to fill out and submit the application form.

## **Activity Secretariat:**

The Abdus Salam International Centre for Theoretical Physics (ICTP)

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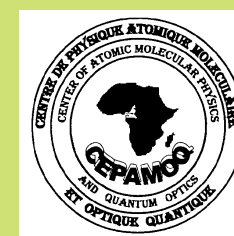
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**DEADLINE:**  
**15 July, 2011**