



The Abdus Salam  
International Centre for Theoretical Physics



# PHYSWARE 2012

A COLLABORATIVE WORKSHOP ON LOW-COST EQUIPMENT AND APPROPRIATE TECHNOLOGIES  
THAT PROMOTE UNDERGRADUATE LEVEL HANDS-ON PHYSICS EDUCATION  
THROUGHOUT THE DEVELOPING WORLD

26 November to 7 December 2012

Delhi, India \*

## THE MISSION

The purpose of the *Physware* Series of Workshops is to create and strengthen the regional and international networks of physics educators who can impact the quality of physics education at the tertiary level, especially in the developing countries. *Physware* emanates from shared concerns on the lack of high-quality education in physics with detrimental consequences on scientific research and socio-economic progress. This concern was voiced through a resolution on *Importance of Active Learning and Hands-on Physics Education* adopted by the International Union for Pure and Applied Physics (IUPAP) at its 26<sup>th</sup> General Assembly held at Tsukuba, Japan, in October 2008. It led to a Memorandum of Understanding between IUPAP and ICTP in October 2009, affirming cooperation for organizing a series of *Educate the Educator* Workshops for five years. IUPAP works on this through its International Commission on Physics Education (ICPE).

## TOPICS AND ACTIVITIES

The Workshop will be modeled on the pilot *Physware* Workshop held at Trieste in February 2009 on teaching of Mechanics. It will focus on teaching Electricity and Magnetism. Activities will include:

1. Development of Low-cost Equipment
2. Development of Active Learning Materials
3. Use of Technologies for Physics Teaching
4. Ways of Integrating Contemporary Research and Applications

## SALIENT FEATURES

A significant milestone in international cooperation, the *Physware* Workshop aims to provide a sustainable model for capacity building of physics educators in the developing countries as it

- (i) uses curriculum and resource material easily adapted to the needs of any region;
- (ii) uses low-cost equipment and locally available technologies;
- (iii) introduces appropriate technology and applications of relevance to the work place, thereby motivating interest;
- (iv) employs activity based pedagogies proven to be effective through educational research;
- (v) assesses participant needs and attainment of workshop goals through pre-workshop discussions, on-site feedback and post-workshop evaluations;
- (vi) organizes collaborative groups to enhance professional development opportunities for physics educators who teach in developing countries;
- (vii) identifies regional leaders who can in turn organize regional versions of *Physware* Workshops thereby reaching out to a critical number of physics educators necessary for affecting change.

## PARTICIPATION

The aim of the Workshop is to bring together a vibrant and eclectic group of Physics Educators, Physics Education Researchers, Teacher Educators, Curriculum Developers and Researchers at universities in the South Asia region, and with the potential to serve as regional leaders and carry forward the mission of this *Educate the Educator* Workshop series. **Candidates from countries that are members of the UN, UNESCO or IAEA may attend this Workshop.** As it will be conducted in English, participants should have an adequate working knowledge of this language. Although the main purpose of ICTP is to help participants from developing countries through a programme of training activities within a framework of international cooperation, a limited number of those from developed countries are also welcome to attend. There is no registration fee. **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 from their home countries. However, limited funds are available for some participants who are nationals of, and working in, a developing country, and who are not more than 45 years old.** Such support is available only for those who attend the entire activity. Since the Workshop will be conducted in Delhi, India, preference will be given to candidates from India and neighbouring countries.

**How to apply:** Until 26 August 2012 candidates can access the Online Application Form through the activity webpage: <http://agenda.ictp.it/smr.php?2375>. Once in the website, comprehensive instructions will guide applicants step-by-step, on how to fill out and submit online the application.

**WORKSHOP CONTACTS:** WEBPAGE: <http://agenda.ictp.it/smr.php?2375>  
SECRETARIAT (at ICTP): [smr2375@ictp.it](mailto:smr2375@ictp.it)

\* *Physware* Workshop will be held at the D S Kothari Centre for Research and Innovation in Science Education, Miranda House, University of Delhi, Delhi 110 007, India

Home Pages: ICTP: <http://www.ictp.it> Kothari Center: <http://www.mirandahouse.ac.in/dskc/>



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APPLICATION  
DEADLINE:

26 AUGUST 2012