



# WINTER COLLEGE ON MICRO AND NANO PHOTONICS FOR LIFE SCIENCES

11 - 22 February 2008

The Abdus Salam International Centre for Theoretical Physics (ICTP), in collaboration with the International Commission for Optics (ICO), the Optical Society of America (OSA), the International Society for Optical Engineering (SPIE), the European Optical Society (EOS) and the International Society on Optics Within Life Sciences (OWLS), will organize a Winter College on Micro and Nano Photonics for Life Sciences, which will be held at the ICTP, Trieste, Italy, from 11 to 22 February, 2008.

## DIRECTORS:

- M. Bertolotti** (University of Rome, Italy)
- M. Havenith** (Ruhr University, Germany)
- O. E. Martinez** (University of Buenos Aires, Argentina)

## LOCAL ORGANIZER:

- G. Denardo** (ICTP, Italy)

## I. PURPOSE AND NATURE

The Winter College will expose the participants to the recent achievements of the theory and applications of micro-optics and nano-photonics techniques for the study of Life Sciences. The scientific programme consists of lectures by international experts, internal seminars and group discussions, some laboratory demonstrations. The aim of the Winter College is to provide the background needed to follow the most advanced literature.

### MAIN TOPICS:

- *Nonlinear techniques (CARS, STED, harmonics and more)*
- *Optics of and with nanoparticles*
- *Single molecule/particle techniques*
- *Near field techniques*
- *Optical manipulation (structured light, tweezers)*

### WITH APPLICATIONS TO:

- *biosensors*
- *imaging beyond the classical limits  
(diffraction barrier, turbid media and more)*
- *optical tomography*
- *protein folding, DNA sequencing and more*

An ICTP **PREPARATORY SCHOOL** will be organized the week before the College (i.e. **4 - 8 February 2008**) for a limited number of selected participants. The purpose is to recollect some basic scientific elements that are relevant to the contents of the College lectures. The School Sessions will have a tutorial structure, i. e. will include lectures and exercises.

The LAMP (Laser, Atomic and Molecular Physics) programme will include group discussions and internal seminars by participants. Those who intend to deliver a seminar are expected to come to ICTP prepared with all the material needed for their talk.

The ICO - ICTP Prize (nominations are solicited) will be awarded during the ICTP Winter College (see info. on Page 3).

## II. PARTICIPATION

Scientists and students from all countries that are members of the UN, UNESCO or IAEA can attend the College. As it will be conducted in English, participants should have an adequate working knowledge of that language.

As a rule, travel and subsistence expenses of the participants are borne by the home institutions. However, limited funds are available for some participants from developing countries, who will be selected by the Organizers.

A limited number of grants will be made available by the Central European Initiative (CEI) Secretariat in Trieste to support participants from CEI countries.

Such financial support is available only for those who attend the entire activity. As scarcity of funds allows travel to be granted only in a few exceptional cases, every effort should be made by candidates to secure support for their fare (or at least half-fare) from their home country. There is no registration fee to attend the College.

### **Deadline for the RECEIPT of request for participation form:**

**14 OCTOBER 2007**

Candidates should complete and sign the attached "Request for Participation" form (also obtainable from : [http://cdsagenda5.ictp.trieste.it/full\\_display.php?ida=a07141](http://cdsagenda5.ictp.trieste.it/full_display.php?ida=a07141)) and return it by using only one of the following ways:

- **by e-mail** to: [smr1932@ictp.it](mailto:smr1932@ictp.it) (please save and send file attachments in either PDF -preferably- or RTF zipped or Doc format)
- or
- **by post** to:  
SMR 1932 - Winter College on Micro and Nano Photonics for Life Sciences  
the Abdus Salam International Centre for Theoretical Physics, Strada Costiera 11,  
34014 Trieste, Italy

*(Please include a recent photograph; signature of the candidate is compulsory)*

Any attachments to the request for participation, relevant to additional information for selection purposes, should not exceed 6 pages.

The decision of the Organizers will be communicated to all candidates as soon as possible thereafter.

### **III. ICO/ICTP Award 2008: call for nominations**

ICO, the International Commission for Optics, has established three awards: the 'ICO Prize', the ICO Galileo Galilei Award and the ICO/ICTP Award. The latter was established jointly with ICTP and the International Commission for Theoretical Physics (website: [http://users.ictp.it/~sci\\_info/awards/ICO/ICO.html](http://users.ictp.it/~sci_info/awards/ICO/ICO.html)). The deadline for nominations for the ICO/ICTP Award is [10 December 2007](#).

The ICO/ICTP Award is reserved for young researchers from developing countries (as defined by the United Nations), who conduct their research in a developing country. The award will be given to scientists who are less than 40 years old (on 31 December of the year for which the award is given), who are active in research in Optics and have contributed to the promotion of research activities in Optics in their own or another developing country. While the ICO Web page <http://www.ico-optics.org> has complete information, the instructions below should be sufficient to prepare nomination.

The **Award** consists of the following:

- 1) the ICO gives a cash amount of US\$ 1000 and a certificate;
- 2) the ICTP invites the winner to attend a College at the ICTP, Trieste, when the next appropriate opportunity arises, and to give a seminar on his/her work. ICTP will pay for travel and living expenses.

The award will be delivered to the winner in Trieste in the presence of representatives of ICO and ICTP. This award is given every year. The winner is selected on the basis of nominations received by the Award Committee in response to a 'Call for Nominations' published by both the ICO and the ICTP. The nominations must be documented by a complete Curriculum Vitae, including a list of publications and selected reprints (no more than three), as well as a complete employment history and description of the nominee's achievements for the promotion of research activity in *developing countries*.

The winners of previous awards are:

- 2000: Arbab Ali Khan (Pakistan)
- 2001: Arashmid Nahal (Iran) and Fernando Perez Quitian (Argentina)
- 2002: Aiphan Sennaroglu (Turkey)
- 2003: Robert Szipocs (Hungary)
- 2004: Imrana Ashraf Zahid (Pakistan) and Revati Nitin Kulkarni (India)
- 2005: Sarun Sumriddetchkajorn (Thailand)
- 2006: Hector Manuel Moya-Cessa (Mexico)
- 2007: Svetlana V. Boriskina (Ukraine)

The award committee is composed of Prof. A. Wagué of Université Cheikh Anta DIOP de Dakar, Senegal, Chair, Prof. G. Denardo of ICTP, Trieste, Italy, Prof. A. Consortini of University of Florence, Italy and Dr. M. Danailov of Elettra (the Synchrotron facility in Trieste), Italy.

Return your nomination, together with supporting information, no later than **10 December 2007**, to the Award Committee: Professor J. Niemela, the Abdus Salam International Centre for Theoretical Physics, Strada Costiera, 11, I-34014, Italy; e-mail: [niemela@ictp.it](mailto:niemela@ictp.it)

**Instructions on how to submit a nomination follow:**

**Nominations should include all information listed below:**

- Full name of nominee
- Nominator's name and address
- Nominator's signature, date
- Date of birth of nominee
- Business address
- Academic background, education (college or university, location, major field, degree, year awarded)
- Academic honors
- Employment history (position, organization, duties, dates)
- Publications, patents, unpublished reports, papers presented at meetings, etc. (attach a list of those you deem pertinent)
- Honors and awards
- Scientific achievements for which the candidate is nominated for this award: (attach a separate sheet)

**Notes:**

\* Nominators are encouraged to generate supporting letters; each supporting letter must come from a different country or ICO Territory and bring an additional information on the case. The number of supporting letters will not be a selection criterion.

\* The recipient will be expected to give a presentation based upon his/her achievements at the next appropriate ICO Meeting.