

WINTER COLLEGE on OPTICS: Fundamentals of Photonics - Theory, Devices and Applications

10 -22 February 2014

Miramare - Trieste, Italy

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 Optics and Photonics (SPIE), the European Optical Society (EOS), the Società Italiana di Ottica e Fotonica (SIOF), the US National Academy of Sciences (NAS), and the International Society on Optics Within Life Sciences (OWLS) will organize a **Winter College on Optics: Fundamentals of Photonics - Theory, Devices and Applications**, which will be held at ICTP, Trieste, Italy, from **10 to 22 February, 2014**.

DIRECTORS: **P. Cheben** (National Research Council of Canada), **L. Ponce** (Instituto Politécnico Nacional Unidad Altamira, Mexico), **L. Pavesi**, (Universita degli studi di Trento), **M. L. Calvo** (Universidad Complutense de Madrid)

LOCAL ORGANIZERS: **J. Niemela** (ICTP, Italy), **M. Danailov** (Elettra, Trieste)

The **Winter College** consists of four parts. The first one presents foundations of electromagnetic optics, optical waveguides and photodetectors. The second part is dedicated to integrated optics theory, photonic circuits design, numerical simulations, special sources for integrated optics ending with special dedication to photonic materials, assembling and packing techniques. The third part of the course will be dedicated to technological applications of waveguide platform and optoelectronic circuits. Finally, the fourth part concentrates in particular photonics devices, non-linear photonics and plasmonics and ending with applications of photonics in biomedicine and renewable energy.

MAIN TOPICS

- Fundamental of photonics, electromagnetic optics, waveguides theory
- Integrated optics, photonics circuits
- Computational methods for photonic devices design and characterization
- Waveguide platforms and optoelectronic circuits
- Technology transfer
- Photonics in biomedicine and renewable energy

An ICTP **PREPARATORY SCHOOL** will be organized the week before the College (from **3 to 7 February 2014**) for a limited number of selected participants. The Preparatory School will provide background tutorials and exercises designed to help the participants in following the College lectures.

The **LAMP** (Laser, Atomic and Molecular Physics) program is intended for presentations by the participants. All participants are encouraged to present their own research, either in poster form or as a short oral presentation, and the program will be finalized sufficiently prior to the start of the College. Poster prizes will be awarded, sponsored by the International Society for Optics and Photonics (SPIE).

PARTICIPATION

Scientists and students 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 this language. 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 (or at least half- fare). However, limited funds are available for some participants, who are nationals of, and working in, a developing country. Such support is available only for those who attend the entire activity. There is no registration fee.

HOW TO APPLY

The application form can be accessed at the activity website:

http://cdsagenda5.ictp.it/full_display.php?id=a13188

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

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College's web page: <http://agenda.ictp.it/smr.php?2572> ICTP Home Page: www.ictp.it

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International Society on
Optics Within Life Sciences
Non-Profit Organization established on August 13, 1990

DEADLINE

OCTOBER 20, 2013