



School on

SYNCHROTRON RADIATION and FEL BASED METHODS and their MULTI- DISCIPLINARY APPLICATIONS

19 - 30 March 2012

ICTP, Miramare - Trieste, Italy

The Abdus Salam International Centre for Theoretical Physics (ICTP), and the Elettra Laboratory will jointly organize the above *School* to be held at the ICTP in Trieste from 19 to 30 March 2012.

Synchrotron Radiation (SR) based research techniques have become indispensable analytical tools in many domains of natural and life sciences. Emerging fourth generation light sources (free-electron lasers or FEL's) are opening new research opportunities in these domains, in particular for exploring ultrafast phenomena and structural organization of matter. These large-scale facilities also offer genuinely international environments, with a fast increasing number of scientists using synchrotron and free-electron light sources abroad to complement research done at their home laboratories, and offer opportunities to participate in the development of new tools and methodologies for interdisciplinary research.

The school is addressed to young researchers with a Ph.D, or at least several years of research activity. The major goal of the school is to disseminate the principles and potentials of synchrotron - and FEL-based techniques, with emphasis on the latest developments in experimental and theoretical methods for broadening the applications opportunities. The programme will include methodology aspects of crystallography, scattering, spectroscopy, imaging, spectro-microscopy, and related theoretical and computational approaches for the interpretation of SR and FEL experiments, as well as a wide range of applications in physical sciences, chemistry, biology, materials science, nanotechnology, environmental sciences, geology, pharmacology and medicine.

The School will consist of two 5-days working weeks with morning and afternoon lectures, complemented by practical training and demonstrations at the SR and FEL facilities at Elettra, Trieste. The following specific topics will be included:

- Fundamentals of SR and FEL Radiation •
- X-ray Absorption, Scattering and Diffraction Techniques and Applications •
- Photoemission Techniques and Applications •
- Microscopy and Imaging Techniques, and Applications •
- Ultrafast Processes and New Research Opportunities with FEL's •

Students and young scientists from all countries that are members of the UN, UNESCO or IAEA can attend the School. The main purpose of the Centre is to help researchers from developing countries through a programme of training activities within a framework of international co-operation. A limited number of scientists from developed countries are also welcome to attend. In particular this School is intended for strongly motivated graduate students and young post-doctoral scientists. Logistics limit the number of participants to 70-80.

Limited funds are available for some applicants from developing countries, to be selected by the organizers. Such financial support is available only to those who attend the entire school. Every effort should be made by candidates to secure support for their fares (or at least half-fare) from their home country. There is no registration fee for attending the School.

The online application form for this School is available at:
http://cdsagenda5.ictp.it/full_display.php?email=0&ida=a11156

The closing date for receipt of applications is **1 NOVEMBER 2011**.

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DEADLINE:

1 November 2011