



International Training Workshop on FPGA Design for Scientific Instrumentation and Computing

**11 – 22 November 2013
(Trieste, Italy)**

The Abdus Salam International Centre for Theoretical Physics (ICTP, Italy) will organize a Training Workshop on FPGA Design for Scientific Instrumentation and Computing, to be held at ICTP, Italy, from 11 to 22 November 2013.

PURPOSE OF THE COURSE

The aim of this training workshop is to introduce physicists, engineers, computer scientists and other scientists to state-of-the-art FPGA design methodologies focusing applications in scientific instrumentation and reconfigurable computing. The workshop will represent a unique opportunity for many of the participants to gain skills for designing and developing complete high performance systems for scientific applications at low cost. Furthermore, the increasing number of applications for embedded computing requiring prototyping has given rise to high demand for professionals with experience in prototyping systems using FPGAs.

Since the main barrier to exploit this low-cost technology is knowledge, this training workshop will contribute to generate know how through hands-on experimental activities with state of the art hardware and software. The participants will count on highly qualified lecturers and laboratory assistants who are selected professionals from academy, research centers and industry. This will contribute to provide a balanced perception and deeper understanding about limitations, trends and potentialities of this key technology.

The first half of the workshop will be dedicated to lectures on FPGA architectures and design methodologies, the VHDL hardware description language and logic synthesis, advanced digital design, digital arithmetic, FPGA based printed circuit board design, digital signal processing, CMOS integrated circuit technology, and fine-grained high-performance reconfigurable computing based on FPGA; while the second half will be dedicated to tutorials and assisted hands-on laboratory sessions on digital signal processing, reconfigurable virtual instrumentation, and reconfigurable computing based on FPGA. Other topics will include microelectronics technology trends and perspectives, and advanced case studies of relevant scientific applications of FPGA technology.

It is expected to enhance the capabilities of researchers, teachers, and engineers in exploiting cost-effective programmable logic devices for their instrumentation needs and R&D for scientific and academic purposes. By promoting networking and open international collaborations and by stimulating a community of experimental scientists with the necessary skills and willingness to contribute to collaborative open hardware/software research projects, this workshop will contribute to alleviate the lack of stimuli and isolation that typically afflicts many professionals from developing countries.

PARTICIPATION

Scientists and students from all countries which 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. Although the main purpose of the Centre is to help research workers from developing countries through a programme of training activities within a framework of international cooperation, students and post-doctoral scientists from advanced 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 (or at least half fare). 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. There is no registration fee to be paid.

HOW TO APPLY

The application form can be accessed at the activity website:
<http://agenda.ictp.it/smr.php?2499>

Once in the website, comprehensive instructions will guide you step-by-step, on how to fill out and submit online the application form **not later than 28 July 2013**. Recommendation letters are not mandatory, but may help you in the admission process.

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APPLICATION DEADLINE

28 July 2013

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