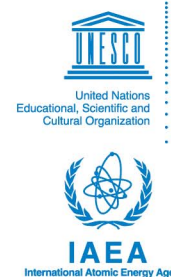




The Abdus Salam
International Centre for Theoretical Physics



Joint ICTP/IAEA Advanced School on
in-situ X-ray Fluorescence and
Gamma Ray Spectrometry

26 to 30 October 2009
Miramare, Trieste, Italy

The Abdus Salam International Centre for Theoretical Physics (ICTP) together with the International Atomic Energy Agency (IAEA) will organize an **Advanced School on *in-situ* X-ray Fluorescence and Gamma Ray Spectrometry** from 26 to 30 October 2009. It will be directed by Drs. **A. Markowicz** (IAEA, Vienna, Austria), **P. Martin** (IAEA, Vienna, Austria), and **U. Sansone** (IAEA, Vienna, Austria).

Local Organiser: **Dr. C. Tuniz** (ICTP, Trieste)

X-ray fluorescence (XRF) and gamma ray spectrometry techniques have successfully been applied in the field and in industrial environments for *in-situ* analysis, which covers the analysis of artefacts and materials that have not been moved from their original place of deposition/storage. Examples of applications include soil screening for metals, indoor and outdoor air pollution monitoring, screening of contaminated areas in emergency situations, investigation of cultural heritage objects (paintings, sculptures, etc), radioactive mapping of the terrestrial environment, monitoring of building materials, investigation of the radiation field in the vicinity of sunken objects, and decontamination assessment etc. A modern portable analyser based on XRF or gamma ray spectrometry brings to the field site unsurpassed savings in time and labour as well as an excellent performance often matching that of the laboratory instrument. Major advantages of portable (or transportable/movable) analysers include simplicity, speed of operation and flexible requirements for sample preparation. XRF and gamma ray spectrometry methods applied for *in-situ* analysis provide immediate analytical results in a truly non-destructive way which is of prime importance in the fields of environmental, archaeological and industrial applications.

PURPOSE:

The School will present recent advances in this area as well as the benefits of applying these techniques. It will also create an opportunity for scientists from developing countries to initiate collaboration with more advanced laboratories on use of portable XRF and gamma ray spectrometry and associated *in-situ* analytical methodologies.

TOPICS:

- Current status of portable instruments based on XRF and gamma ray spectrometry for *in-situ* measurements
- Analytical methodologies for *in-situ* analysis
- Advantages and limitations of XRF and gamma ray spectrometry techniques for *in-situ* measurements
- Selected *in-situ* applications
- Practical experience in *in-situ* measurements by using X-ray fluorescence (XRF) and gamma ray spectrometry techniques
- Role of the IAEA in promotion and effective use of XRF and gamma ray spectrometry instrumentation and analytical methodologies for *in-situ* applications in developing Member States

PARTICIPATION: The school represents a possibility for scientists and students of UN, UNESCO and IAEA Member States, and in particular members of the IAEA ALMERA network (Analytical Laboratories for the Measurement of Environmental Radioactivity), to work on practical exercises, and to refresh and up-date their knowledge and skills in X-ray fluorescence (XRF) and gamma ray spectrometry techniques. Although 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, scientists from developed countries are also welcome to apply. As the activity 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, 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.

HOW TO APPLY FOR PARTICIPATION

The application form can be accessed at the activity website
<http://agenda.ictp.it/smr.php?2064>

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

Deadline for receiving applications: **1 July 2009**

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DEADLINE
for requesting participation

1 July 2009