



The Abdus Salam

**International Centre  
for Theoretical Physics**

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IAEA  
International Atomic Energy Agency

## ***Joint ICTP-IAEA Workshop on Advances in X-ray Instrumentation for Cultural Heritage Applications***

***13 - 17 July 2015***

*ICTP, Trieste (Italy)*

The International Atomic Energy Agency (IAEA) and the Abdus Salam International Centre for Theoretical Physics (ICTP) organizes a *Workshop on Advances in X-Ray Instrumentation for Cultural Heritage Applications*, to be held at the ICTP in Trieste, from 13 to 17 July 2015.

The purpose of the workshop is to inform and educate scientists on recent instrumental developments that improve and expand the analytical merits of X-ray based techniques for Cultural Heritage (CH) applications. Nowadays, X-ray based methodologies are applied for the characterization of cultural materials in a broad context, *in-situ* in museum and archaeological sites, using versatile handheld and portable devices or at advanced accelerator charged particle and synchrotron radiation facilities. The end-user community of this technology rapidly expands including now conservation scientists, professionals, CH Institutions and researchers from museums analytical laboratories and archaeological departments. The workshop program will emphasize hands-on practical sessions to familiarize the participants with the instrumentation and analytical features of handheld and portable X-ray spectrometers, including access to the IAEA end-station at the X-Ray Fluorescence (XRF) beamline of Elettra Sincrotrone Trieste and the experimental facilities of the ICTP Multidisciplinary Laboratory.

The following specific topics will be included:

- Trends and Developments in X-Ray Spectrometry Instrumentation
- Handheld/Portable XRF Analysers: *In-situ* methodologies, best practices, quantitative analyses
- 2D and 3D elemental/chemical speciation analysis and imaging using micro-XRF and micro-XANES spectrometries
- Standard-less XRF quantification and related software
- Macro and Full-Field XRF analysis
- XRF/XRD 2D imaging and micro-computed tomography (microCT)
- External Ion Beam Analysis
- Hands-on sessions on Handheld/Portable XRF analyzers, microCT, dual XRF-XRD analysis, Synchrotron micro-XRF and micro-XANES analysis

*Scientists and Ph.D. students from all countries that are members of the UN, UNESCO or IAEA can attend the Workshop. 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, a limited number of strongly motivated graduate student and post-doctoral scientists from developed countries are also welcome to attend. 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 workshop. 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 Workshop.***

**The online application form for this Workshop is available at:**

<http://indico.ictp.it/event/a14284/>

**Workshop Secretariat (smr2738)**

**c/o Elizabeth Brancaccio**

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### **Co-Directors:**

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### **DEADLINE:**

**29 March 2015**