International Atomic Energy Agency Technical Meeting on Nuclear Spectrometry Methods for in-situ Characterization of Materials

19 - 23 May 2008

IAEA Headquarters, Vienna, Austria

ANNOUNCEMENT

BACKGROUND

Various nuclear spectrometry methods can be successfully applied in the field and in industrial environments for the *in-situ* analysis (*in-situ* is a Latin phrase meaning *in the place* which might be used in many different contexts); this meeting will cover the analysis of artefacts and materials that have not been moved from their original place of deposition/storage. A modern nuclear spectrometry portable analyser 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 features of portable (or transportable/movable) analysers include simplicity, speed of operation and flexible requirements for sample preparation. Nuclear spectrometry methods applied for *in-situ* analysis can provide immediate analytical results (very important for interactive measurement programmes, e.g., assessing contaminated sites) in a truly non-destructive way (critical for study of museum samples, works of art and archaeological objects). A range of possible applications of i*n-situ* analysis is very wide and covers the following fields:

- Industrial applications including mineral exploration, mining, process control, alloy sorting, measurement of coating thickness, plastic scrap sorting, monitoring of corrosion processes, study of catalytic materials
- Environmental applications including soil screening for metals, indoor and outdoor air pollution monitoring, water monitoring, assessment of radiation exposure, decontamination assessment etc.
- Archaeological applications and study of cultural heritage objects including analysis and identification of artefacts in museums and at archaeological sites for authentication and provenance studies, analysis of artefacts for purposes of their preservation and restoration
- Extraterrestrial applications

Nuclear spectrometry techniques which are used for *in-situ* characterization of materials include:

- X-ray fluorescence (XRF)
- Gamma spectrometry
- Mössbauer spectrometry
- Raman spectroscopy

- Alpha spectrometry

A Technical Meeting is planned to highlight, review and discuss issues related to the current status and trends of *in-situ* nuclear spectrometry techniques and their applications. It is considered beneficial to Member States to assess capabilities, advantages and limitations of the techniques in order to encourage effective applications in support of scientific and technological development. Proposed subjects of discussion include:

- Nuclear spectrometry instrumentation for *in-situ* measurements
- Analytical methodologies for *in-situ* analysis
- Advantages and limitations of nuclear spectrometry methods for *in-situ* measurements
- Selected *in-situ* applications
- Further improvements in analytical performance of portable nuclear spectrometry instrumentation and methodologies for *in-situ* applications
- Harmonization of analytical procedures for *in-situ* applications
- Role of the IAEA in promotion and effective use of nuclear spectrometry instrumentation and associated analytical methodologies for *in-situ* applications in the developing Member States

OBJECTIVES

To review the current status, developments, and trends in portable nuclear spectrometry instrumentation and associated analytical methodologies for *in-situ* characterisation of materials, and to produce a relevant report (proceedings).

PARTICIPATION

A person will be eligible to participate only if nominated by the Government of an IAEA Member State (Ministry of Foreign Affairs or National Atomic Energy Authority) or by an Organisation invited to participate. Nomination for participation should be received by the IAEA not later than **17 March 2008.** The participant should be a developer and/or user of nuclear spectrometry instrumentation and methods for in-situ characterisation of materials. *A contribution from the participant in the form of a short abstract covering his/her work relevant to the objectives of the meeting will be necessary for consideration for participation.*

FINANCIAL SUPPORT

As a general rule, the IAEA does not pay the costs for attendance to the meeting. However, limited funds may be made available to assist the attendance of selected participants and approved in accordance with the current Agency rules and regulations. Generally, not more than one financial grant will be awarded to any one Member State. If Governments wish to apply for financial support on behalf of their nominees, they should address specific requests to the IAEA Scientific Secretary.

MEETING FORMAT

To facilitate proceedings, participants are invited to contribute an oral presentation on subject relevant to the scope and objectives of this meeting. Participants should submit an abstract of their proposed presentation along with their nomination. The official language of the meeting is English. No

interpretation will be provided. It is expected that the meeting will start at 9:00 on Monday 19 May and conclude by 16:00 on Friday 23 May.

The outputs of discussions will be recorded for possible dissemination to Member States as an IAEA technical publication. Contributors of material to be included in the Agency proceedings are required to assign all copyrights or rights to publish to the Agency. Please complete and sign the Form B and send it to the IAEA Scientific Secretary by post or email. The authors should ensure that material they make available for possible publication by the IAEA does not include copyrighted material or other impediments for reproduction.

LOCAL ARRANGEMENTS

It is the responsibility of all participants to make their own travel arrangements to/from Austria. Detailed information on accommodation, local transport to/from the meeting venue, and other organisational details, will be sent to all designated participants well in advance of the meeting.

VISA

Designated participants who require a visa to enter Austria should submit the necessary application to the nearest diplomatic or consular representative of Austria well in advance of entry. An official letter of invitation will be issued to all designated participants by the IAEA Scientific Secretary.

DEADLINES

- **17 March 2008**: Submittal of requests to the IAEA for participation and financial support close
- **4 April 2008:** Participants informed of their acceptance of participation and request for financial support.

IAEA SCIENTIFIC SECRETARY

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