

## **SATELLITE MEETING**

### **"Neutron Based Techniques for the Detection of Illicit Materials and Explosives"**

to be held within the framework of the IAEA "International Topical Meeting on Nuclear Research Applications and Utilization of Accelerators",

Vienna, 4 – 8 May 2009

### **ANNOUNCEMENT AND CALL FOR PAPERS**

There is a worldwide need for improved technologies for the efficient inspection of cargo containers, especially in the transportation sector. The main objectives are the detection of contraband such as illicit drugs, fissile materials, explosives and weapons and the verification of declared manifests. Technology capable of detecting explosives and drugs has a vital role to play in protecting society. Presently, the detection of concealed contraband is based mainly on the use of X-rays, vapour detection and sniffer dogs. X-rays are widely used since they have many advantages, particularly their high speed and their high resolution images. However the limitations of X-ray inspection techniques have stimulated the need to develop additional methods, including those based on the use of neutrons. Neutron based techniques offer a powerful tool for the detection of illicit materials and bulk explosives, particularly because of their ability to determine composition combined with good penetration. In addition, many neutron based techniques use accelerators, including neutron generators.

The main focus of this **Satellite Meeting** is on the development and application of neutron techniques for the detection of illicit materials and explosives. Both new emerging applications and novel techniques in established fields will be presented. In addition, methods and facilities for the production of fast neutrons will be discussed.

The main topics to be addressed at the **Satellite Meeting**:

- Accelerator technologies, particularly those suited to neutron generation outside the laboratory, including developments in neutron generators
- Neutron-based techniques for the improved detection of illicit materials (such as illegal drugs, explosives and special nuclear materials)
- Research into components of neutron analysis systems, including neutron sources, detectors, signal processing, data processing, imaging and data presentation
- The development and demonstration of complete scanning systems
- Modelling aspects of proposed systems. e.g., radiation transport calculations, signal processing, imaging, validation, radiation dosimetry, shielding design, etc.
- Consideration how proposed techniques could best be integrated into a complete system to be used by non-specialists.

The main objective of the **Satellite Meeting** is to promote exchange of information among IAEA Member States representatives/delegates and to discuss new trends in neutron applications for the detection of illicit materials and explosives. It is also aimed at enhancing research collaboration

between Member States and promoting education on topics related to the conference, emphasising the potential of nuclear based technology for solving a wide variety of societal issues.

#### **SATELLITE MEETING: IMPORTANT INFORMATION**

- The **Satellite Meeting** will be held in parallel with the main conference programme for a number of half days (depending on the number of contributed papers).
- Participants in the **Satellite Meeting** will be required to register for and participate in the main conference. For instructions please refer to the Announcement and Call for Papers for the main conference.
- It is intended that the proceedings of the **Satellite Meeting** will be published together with the main conference proceedings in the IAEA Proceedings Series.
- The submission of abstracts and papers to the **Satellite Meeting** will follow the same process (including deadlines) as the submission of papers to the main conference. For instructions please refer to the Announcement and Call for Papers for the main conference.
- Deadlines:
  - Submission of abstract (400 words): 6 October – 3 November 2008  
(LISA System)
  - Notification of paper/poster acceptance: 20 December 2008
  - Submission of full papers: 30 March – 27 April 2009
- Organization

The Organizing Committee of the **Satellite Meeting** is composed of:

- Brian Sowerby, CSIRO, Australia
- Christopher Franklyn, NECSA, South Africa
- Françoise Mulhauser, IAEA Vienna

For any question concerning participation, please contact the Organizers.