



The Abdus Salam  
International Centre for Theoretical Physics



## Joint ICTP/IAEA Workshop on Advanced Simulation and Modelling for Ion Beam Analysis

23 - 27 February 2009

Miramare - Trieste, Italy

The Abdus Salam International Centre for Theoretical Physics (ICTP), in collaboration with the International Atomic Energy Agency (IAEA, Vienna, Austria) is organizing a workshop on "Advanced Simulation and Modelling for Ion Beam Analysis" to be held at ICTP, Trieste, Italy, from 23 to 27 February 2009.

The intent of this School is to provide participants with knowledge of the underlying physics of IBA elemental depth profiling together with practical experience of using the various currently available IBA software packages that are capable of giving accurate results. IBA elemental depth profiling software is currently under intense development and the very powerful "new generation" codes SIMNRA and DataFurnace are now available which can be challenging even for expert users to fully exploit to obtain reliable and accurate results. The School will provide a series of practical exercises of increasing complexity using these codes, accompanied by appropriate lectures. The School will give examples of depth profiling using RBS, EBS, ERD, NRA, PIXE, PIGE and combinations of these techniques. Rough samples and samples with non-planar surface topographies will be discussed. High depth-resolution methods, deviations from single scattering, the handling of pulse pileup and the quantitative estimation of uncertainties will be addressed.

### TOPICS

- Introduction to accelerator based techniques
- Computer simulation of charged particle interactions with solids
- Depth profiling using particle scattering
- Elemental analysis and depth profiling using photon emission
- Depth sensitivity using resonant nuclear reactions
- Optimisation of experimental conditions
- Using multiple complementary techniques
- Analyses using software codes

### PARTICIPATION

Scientists and students from all countries that are members of the United Nations, UNESCO or IAEA may attend the School. 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, a limited number of students and post-doctoral scientists from developed 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.

### REQUESTS FOR PARTICIPATION

The application form can be accessed at the activity website:

<http://agenda.ictp.it/smr.php?2015>

Once in the website, comprehensive instructions will guide you step-by-step, on how to fill out and submit the application form. The deadline for submitting applications is 11 December 2008.

### Secretariat:

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### Directors:

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### Local Organizer:

**C. Tuniz**  
(ICTP, Trieste)

**DEADLINE**  
for requesting participation

**11 December 2008**