

# ION BEAMS '12

## Multidisciplinary Applications of Nuclear Physics with Ion Beams

June 6<sup>th</sup>-8<sup>th</sup>, 2012

Laboratori Nazionali di Legnaro (Padova), Italy

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### FIRST CIRCULAR

#### SCOPE OF THE CONFERENCE

The conference will be held at the I.N.F.N. Laboratori Nazionali di Legnaro (Padova, Italy) in the frame of the celebration of the 50<sup>th</sup> anniversary of the foundation by the Padova University of the "Laboratorio dell'Acceleratore di Ioni di Legnaro" (1961) as an initiative of Prof. A. Rostagni with the installation of a 5.5 MV CN Van de Graaff Accelerator to contribute to the promotion and the development of nuclear physics researches in Italy. As a result of the agreement between the University of Padova and the I.N.F.N (Istituto Nazionale di Fisica Nucleare) signed in 1968, the Legnaro Laboratory became the Laboratori Nazionali di Legnaro providing a national facility serving as focal point in the development of fundamental and applied nuclear physics in Italy achieving during the years the status of a Large international Nuclear Facility as shown by the installation of various ion beam accelerators (the 2MV AN2000 Accelerator operational in 1971, the 16 MV XTU Tandem Accelerator operational in 1981 and the ALPI Superconducting LINAC operational in 1991).

Since the beginning, the Laboratory mission was conceived not only for fundamental research in nuclear physics but also for applications in multidisciplinary fields, recognizing that ion beam techniques are a key element for the exchange of scientific knowledge in complex studies.

As a matter of facts, ion beams are extensively used in many scientific disciplines to analyze, test and transform the physical and chemical properties of many organic and inorganic materials. Furthermore a large activity is present in radiation biophysics, dosimetry and radiation detector development.

The Laboratori Nazionali di Legnaro (LNL) is recognized as an international centre with active research programs emphasizing ion beam analysis, materials science, radiation biophysics, dosimetry, environmental physics and surface modification by ion beams.

The centre has a pretty large interdisciplinary research equipment developed in the last 50 years including three ion accelerators devoted to interdisciplinary studies, which deliver several thousands beam-time hours per year to external and internal users. At present about 50 national and international user groups are using the interdisciplinary facilities in the following scientific areas:

- Radiation Interaction and Damage
- Surface Modification
- Materials Science
- Nuclear Data Acquisition and Analysis
- Ion Beam Analysis and Channeling
- Environmental Sciences
- Art and Archaeology
- Dosimetry, Microdosimetry, Nanodosimetry
- Radiation Biophysics and Medicine.

The Conference will present the state of the art of applications of ion beam techniques in interdisciplinary fields at international level through a few invited talks of recognized experts and will outline the status of research with ion beams and facilities in Italy.

#### Preliminary list of invited speakers

- D.K. Avasthi (IUAC, New Delhi, India)
- L.C. Feldman (Institute for Advanced Materials, Devices and Nanotechnology, Rutgers University, USA)
- M. Hill (CRUK/MRC, Gray Inst. for Radiation Oncology and Biology, Oxford, UK)
- W. Möller (Helmholtz-Zentrum Dresden-Rossendorf, Germany)
- C. Pacheco (C2RMF-Centre de recherche et de restauration des musées de France, Palais du Louvre, Paris, France)
- H. Rabus (Physikalisch-Technische Bundesanstalt, Braunschweig, Germany)
- M. Toulemonde (CIMAP Laboratory, Caen, and GANIL, France)
- R. Webb (Surrey Ion Beam Centre, University of Surrey, Guildford, UK)
- A. Zucchiatti (Centro de Micro Análisis de Materiales, Universidad Autónoma de Madrid, Spain)

#### Presentations of Italian Ion Beam Facilities

- M. Bianconi (CNR-IMM, Bologna, Italy)
- L. Calcagnile (Centro Datazione e Diagnostica, Università del Salento, Lecce, Italy)
- L. Campajola (Dipartimento di Scienze Fisiche, Università di Napoli Federico II and INFN Sez. di Napoli, Italy)
- G. Cuttone (INFN Laboratori Nazionali del Sud, Catania, Italy)
- M. G. Grimaldi (Dipartimento di Fisica e Astronomia, Università di Catania, and MATIS CNR-IMM, Catania, Italy)
- P. Mandò (Università di Firenze and INFN LABEC Firenze, Italy)
- V. Rigato (INFN Laboratori Nazionali di Legnaro, Italy)
- F. Terrasi (CIRCE, INNOVA and Dept. of Environmental Sciences – Sec. Università di Napoli, Italy)
- C. Ur (INFN Padova, Italy)

#### ABSTRACT SUBMISSION and PROCEEDINGS

We encourage the submission of original oral and poster contributions in the indicated scientific areas. The Scientific Committee will select some original contributions for oral presentation.

Selected oral and poster contributions will be published in the Proceedings of the Conference in a dedicated AIP volume.

Authors are invited to submit abstracts using the Indico web-interface at <http://ionbeams12.inl.infn.it/>. The deadline for submitting abstracts is **March 31, 2012**. Authors will be notified about the acceptance of their contribution by **April 20, 2012**.

Please note that the first time that you use the INDICO system you must follow the instructions to create your own INDICO account.

#### VENUE and TRAVEL

The conference will be held at Laboratori Nazionali di Legnaro (Padova). Legnaro is only 10 Km (6 miles) from Padova. Details on transportation and routes to Legnaro will be available on the [conference web page](#). A bus service between the hotels in Padova and Legnaro will be organized daily for Conference participants. Details will be available on the Conference web page.

## **REGISTRATION and ACCOMMODATION**

The registration fee is **350 €** if paid before or on April 30. After April 30 the fee will increase to 400€ . The Conference fee includes transportation between Padova hotels and the conference site, lunches at the LNL Canteen from Wednesday, June 6th, to Friday, June 8th, the book of abstracts, a copy of the Conference Proceedings, the Social Dinner that will take place on Thursday, June 7th. The fee for accompanying persons is 50€ for the social dinner.

Details about registration and accommodation in Padova hotels will be available on the [Conference website](#). Registration will open on February 20. The deadline for registration and hotel reservation is **April 30**.

The second circular will be distributed by the end **of April 2012**.

We would be grateful if you could bring this announcement to the attention of your colleagues.

Information concerning the Conference will be available on the web site <http://ionbeams12.lnl.infn.it/>. For any questions you may contact [ionbeams12@lnl.infn.it](mailto:ionbeams12@lnl.infn.it).

Looking forward to seeing you at Laboratori Nazionali di Legnaro,

The Organizing Committee

*Renato Angelo Ricci (Chair)*

*Valentino Rigato (Scientific Secretary)*

*Roberto Cherubini*

*Paolo Colautti*

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A. Lombardi, *INFN Legnaro, Italy*  
P. Mazzoldi, *Università di Padova, Italy*  
C.A. Ur, *INFN Padova, Italy*

### Conference Secretaries

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### **CONTACT ADDRESS**

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