SCIENTIFIC PROGRAMME

Wednesday, June 6th

8:30-9:00 REGISTRATION
9:00-9:10 Welcome, G. FIORENTINI, INFN Legnaro Director
9:10-9:30 Introduction (Fifty years of the Legnaro Laboratories), R.A. RICCI, INFN Legnaro

SESSION Cultural Heritage
Chairman: DRAN, Jean-Claude (C2RMF)
9:30-10:00 Ion Beam Analysis in cultural heritage studies: milestones and perspectives
J.C. DRAN, C2RMF, Paris, France
10:00-10:30 The “New AGLAE” project: a new beamline dedicated to cultural heritage – Present status and future improvements
C. PACHECO, C2RMF, Paris, France
10:30-11:00 Present activities at LABEC, Florence
P. A. MANDÒ, University of Florence and LABEC, Florence, Italy
11:00-11:30 Coffee break
11:30-12:00 Recent studies at Cedad with ion beam analysis and accelerator mass spectrometry
L. CALCAGNILE, University of Salento, Lecce, Italy
12:00-12:30 Basic and applied nuclear physics at CIRCE (Caserta)
F. TERRASI, DSA-SUN and INFN Napoli
12:30-12:50 New accelerator facilities for IBA and AMS measurements at IFIN-HH Magurele Romania
S. M. DOGARU, IFIN-HH – Horia Hulubei National Institute of Physics and Nuclear Engineering and University of Bucharest, Romania

SESSION LNL Ion Beam Facilities
Chairman: RICCI, Renato Angelo (INFN Legnaro)
12:50-13:10 Interdisciplinary physics with small accelerators at LNL: status and perspectives
V. RIGATO, INFN Legnaro, Italy
13:10-13:30 The Tandem-ALPI-PIAVE accelerator complex of LNL
C. A. UR, INFN Padova, Italy
13:30-14:30 Lunch

SESSION Materials Modifications and Analysis
Chairmen: MAZZOLDI, Paolo (Padova University) and RIGATO, Valentino (INFN, Legnaro)
14:30-15:05 Ion beam analysis and modern materials science
L. C. FELDMAN, Institute for Advanced Materials, Devices and Nanotechnology, Rutgers University, USA
An overview of the activities and developments at the Surrey Ion Beam Centre
R. P. WEBB, Surrey Ion Beam Centre University of Surrey, Guildford, UK

Interdisciplinary research in France
M. TOULEMONDE, CIMAP-GANIL and University of Caen, France

Coffee break

Ion beams for application in science and industry: activities in Germany and the European infrastructure project SPIRIT
W. MÖELLER, Helmholtz-Zentrum Dresden-Rossendorf, Germany

Ion beam analyses of radionuclide migration in heterogeneous rocks
U. ALONSO, CIEMAT, Madrid, Spain

Deflection of MeV protons by an unbent half-wavelength silicon nano-crystal
D. DE SALVADOR, University of Padova and INFN Legnaro, Italy

Overview of the research activity on ion-beam lithography of single-crystal diamond at the University of Torino and partner institutions
P. OLIVERO, University of Torino and INFN Torino, Italy

Nanostructuring superconductors by ion beams: from radiation hardness studies to materials engineering
G. GHIGO, Politecnico of Torino and INFN Torino, Italy

Thursday, June 7th

REGISTRATION

Nanostructured materials and nano bio experiments with energetic ion beams
D. K. AVASTHI, Inter-University Accelerator Centre, New Delhi, India

Materials research at the CMAM-UAM
A. ZUCCHIATTI, Centro de Micro Analísí de Materiales, Universidad Autónoma de Madrid, Madrid, SPAIN

Optical and magneto-optical properties of Au-based nanoparticles obtained by ion implantation in silica
G. MATTEI, University of Padova, Italy

Nuclear cross-sections data for ion beam analysis
M. CHIARI, INFN Firenze, Italy

Coffee break

POSTER SESSION

Compositional measurements in SiO₂-GeO₂ Fiber Bragg Gratings using a nuclear microprobe
M.C. JIMÉNEZ-RAMOS, Atomic, Molecular and Nuclear Physics Department and Centro Nacional de Aceleradores, Universidad de Sevilla, Spain

Ge strips for channelling: fabrication process and steering effects of a 400 GeV proton beam
S. CARTURAN, Department of Physics, University of Padova, and INFN Legnaro, Italy

Lunch
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<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Speaker</th>
<th>Institution</th>
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<tr>
<td>13:30-14:05</td>
<td><strong>Fundamental Dosimetry of Ion Beams</strong></td>
<td>H. RABUS, Physikalisch-Technische Bundesanstalt -PTB-, Braunschweig, Germany</td>
<td><strong>Chairmen:</strong> BELLI, Mauro (ISS Roma) and COLAUTTI Paolo (INFN Legnaro)</td>
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<td>14:05-14:25</td>
<td><strong>Track nanodosimetry of light ions</strong></td>
<td>V. CONTE, INFN Legnaro, Italy</td>
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<td>14:25-14:45</td>
<td><strong>An innovative neutron spectrometer based on CR39 track detectors</strong></td>
<td>M. CARESANA, Energy Department, Politecnico di Milano, Italy</td>
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<td>14:45-15:05</td>
<td><strong>The INFN Micro-Si Experiment: study and development of a silicon microdosimeter for radiation quality assessment</strong></td>
<td>M. LORENZOLI, Politecnico di Milano and INFN Milano, Italy</td>
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<td>15:05-15:25</td>
<td><strong>Setup of the BINS superheated drop detectors spectrometer and application to the Be(p,n) neutron energy spectrum determination</strong></td>
<td>R. CIOLINI, Department of Mechanical, Nuclear and Production Engineering, University of Pisa, Italy</td>
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<td>15:25-16:15</td>
<td><strong>Coffee break</strong></td>
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<td>16:15-16:50</td>
<td><strong>Tracking down the links between ionising radiation and biological response: The importance of radiation track structure from a UK perspective</strong></td>
<td>M.A. HILL, Gray Institute for Radiation Oncology &amp; Biology Department of Oncology, University of Oxford, UK</td>
<td><strong>Chairmen:</strong> CHERUBINI, Roberto (INFN Legnaro) and BELLI, Mauro (ISS Roma)</td>
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<td>16:50-17:10</td>
<td><strong>The Cyclotron Laboratory and the RFQ accelerator in Bern</strong></td>
<td>M. NIRKKO, Albert Einstein Center for Fundamental Physics, Laboratory for High Energy Physics (LHEP), University of Bern, Switzerland</td>
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<td>17:10-17:30</td>
<td><strong>Comparison of the biological effectiveness of 45 MeV c-ions and γ-rays in inducing early and late effects in normal human primary fibroblasts</strong></td>
<td>M. A. TABOCCHINI, Istituto Superiore di Sanità and INFN Roma 1, Gruppo Collegato Sanità, Roma, Italy</td>
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<td>17:30-17:50</td>
<td><strong>Non-linear effects induced by low doses of ionizing radiations of different quality</strong></td>
<td>R. CHERUBINI, INFN Legnaro, Italy</td>
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<td>17:50-18:10</td>
<td><strong>Radionuclides production by proton and deuteron beams irradiation</strong></td>
<td>F. GROPPI, Department of Physics, University of Milano, Italy</td>
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<td>18:10-18:30</td>
<td><strong>Radiosensitizing effect of gold nanoparticles in carbon ion irradiation of Human Cervical cancer cells</strong></td>
<td>H. KAUR, Inter-University Accelerator Centre, New Delhi, India</td>
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<td>19:30</td>
<td><strong>Social Dinner</strong></td>
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Friday, June 8th

9:00  The INFN Commissione Scientifica 5: Status and Future developments  
M. CARPINELLI, University of Sassari and INFN Cagliari  
Introduced by G. Fiorentini (LNL Director)

**SESSION Radiation Damage**  
Chairman: CARPINELLI, Massimo (Sassari University and INFN Cagliari)

9:20-9:50  
Irradiation facility for multidisciplinary research at LNS  
L. COSENTINO, INFN-LNS, Italy

9:50-10:05  
Ion beam testing of electronic components  
S. PACCAGNELLA, DEI-University of Padova, Italy and INFN Padova, Italy

10:05-10:20  
The SIRAD irradiation facility at LNL  
L. SILVESTRIN, University of Padova, and INFN LNL, Italy

10:20-10:35  
MAPRAD: an INFN spin-off the validation of electronics components for space applications  
F. DI CAPUA, MAPRad srl, Perugia, Italy

10:35-10:50  
Activity of Thales Alenia Space in the field of radiation testing of electronic components for space applications  
M. SARNO, Thales Alenia Space, Rome, Italy

10:50-11:10  Coffee break

**SESSION Ion Beam Facilities**  
Chairman: LOMBARDI, Augusto (INFN Legnaro)

11:10-11:30  
The Naples University 3 MV tandem accelerator  
L. CAMPAGOLA, University of Napoli, Italy

11:30-11:50  
Industrial research activities at the Tandetron accelerator of Bologna  
M. BIANCONI, CNR-IMM Istituto per la Microelettronica e i Microsistemi, Bologna, Italy

**SESSION The European Network**  
Chairman: RICCI, Renato Angelo (INFN Legnaro)

11:50-12:00  
EFINION: The European Forum for Innovative applications of Nuclear ION beams and tools: an EC/FP7-ENSAR Network  
S. HARISSOPOULOS, Tandem Accelerator Laboratory, NCSR “Demokritos”, Athens

12:00-12:10  
ENSAR: Transnational Access to LNL and LNS  
E. FIORETTO, INFN National Laboratories of Legnaro, Italy

12:10-12:30  
Concluding remarks  
P. MAZZOLDI, University of Padova, Italy

12:30-14:00  Lunch

14:00-18:10  Legnaro 50 years