11th International Conference on
Heavy Ion Accelerator Technology
June 8-12, 2009 - Venezia (Italy)

Scientific Program

SUNDAY 07 June 2009

SALA PALLADIO

17:00 – 19:00 ***Registration***

MONDAY 08 June 2009

AULA MAGNA

Session GENERAL TOPICS
Chair: G. Bisoffi

09:00 – 09:30 ***Opening***

09.30 – 10:00 ***Nuclear Physics Perspectives with next-generation RNB Facilities***
G. Bollen, *Michigan State University, USA*

Session RADIOACTIVE ION BEAMS FACILITIES
Chair: G. Bisoffi

10:00 – 10:30 ***Complementarity of new RNB Facilities and their Technological Challenges***
J. Nolen, *Physics Division, Argonne National Laboratory, USA*

10:30 – 11:00 Coffee break - Sala Vivaldi

Session RADIOACTIVE ION BEAMS FACILITIES
Chair: R. Laxdal

11:00 – 11:30 ***The RI beams from the Tokai Radioactive Ion Accelerator Complex (TRIAC)***
A. Osa, *Japan Atomic Energy Agency, Japan*

11:30 – 11:50 ***ReA3, the new reaccelerated beam facility at MSU/NSCL***
M. Doleans, *National Superconducting Cyclotron Laboratory, USA*

11:50 – 12:10 ***First Beam Tests of the ^{252}Cf CARIBU Project***
R. Pardo, *Argonne National Laboratory, USA*

12:10 – 12:30 ***Operational experience with the EXCYT facility***
D. Rifuggiato, *INFN/LNS, Italy*

12:30 – 12:50 ***The SPES project: an ISOL facility for exotic beams***
G. Prete, *INFN/LNL, Italy*

12:50 – 13:10 ***The SPES Project: research and development for the multi-foil direct target***
M. Manzolaro, *INFN/LNL, Italy*

13:10 – 14:40 **Lunch - San Trovaso Restaurant**

Session RADIOACTIVE ION BEAMS FACILITIES
Chair: O. Kester

14:40 – 15:10 ***Radiological safety aspects of the design of the RNB facilities***
D. Ene, *CEA, IRFU/SPhN, France*

15:10 – 15:30 ***Progress on the commissioning of Radioactive Isotope Beam Factory at RIKEN Nishina Center***
K. Yamada, *RIKEN Nishina Center, Japan*

15:30 – 15:50 ***Intensity-upgrade plans of RIKEN RI-beam factory***
O. Kamigaito, *RIKEN Nishina Center, Japan*

15:50 – 16:10 ***The refinement of REX-ISOLDE***
F. Wenander, *CERN, Switzerland*

16:10 – 16:30 ***Building design for high beam-power facilities, the example of SPIRAL2***
J.M. Lagniel, *GANIL, France*

16:30 – 17:00 **Coffee break - Sala Vivaldi**

17:00 – 18:30 ***POSTER SESSION – Cloister***

19:00 – 21:00 **Welcome Reception – Cloister**

TUESDAY 09 June 2009

AULA MAGNA

Session ELECTROSTATIC ACCELERATORS
Chair: F. Osswald

09:00 – 09:30 ***Present and Future of Electrostatic Accelerators***
D. Weisser, *Department of Nuclear Physics, Research School of Physics and Engineering, Australian National University, Australia*

09:30 – 09:50 ***Upgrade of the Bucharest FN Tandem Accelerator***
S. Dobrescu, *National Institute for Physics and Nuclear Engineering (IFIN-HH), Romania*

09:50 – 10:10 ***Development Activities at BARC-TIFR Pelletron Accelerator Facility***
A.K. Gupta, *Nuclear Physics Division, BARC, India*

10:10 – 10:30 ***Maier-Leibnitz-Laboratorium - Tandem operation and experiments***
L. Beck, *Maier-Leibnitz-Laboratorium / Beschleunigerlabor, Germany*

10:30 – 11:00 Coffee break - Sala Vivaldi

Session ELECTROSTATIC ACCELERATORS
Chair: D. Rifuggiato

11:00 – 11:20 ***"DIANA" - a new, deep-undergroung accelerator facility for astrophysics experiments***
M. Leitner, *Lawrence Berkeley National Laboratory, USA*

11:20 – 11:40 ***Progress of an accelerator mass spectrometry system on the TSUKUBA 12UD Pelletron Tandem accelerator***
K. Sasa, *University of Tsukuba, Japan*

Session CIRCULAR ACCELERATORS
Chair: D. Rifuggiato

11:40 – 12:10 ***Operation status of High Intensity Ion Beams at GANIL***
F. Chautard, *CNRS, France*

12:10 – 12:30 ***Status report and future development at FLNR JINR heavy ions accelerator complex***
G. Gulbekian, *JINR, Russia*

12:30 – 12:50 ***RCNP cyclotron facility***
K. Hatanaka, *Research Center for Nuclear Physics, Osaka University, Japan*

12:50 – 13:10 ***RF Sytem for Heavy Ion Cyclotrons at RIKEN RIBF***
N. Sakamoto, *Nishina Center, RIKEN, Japan*

13:10 – 14:40 Lunch - San Trovaso Restaurant

Session CIRCULAR ACCELERATORS
Chair: A. Noda

14:40 – 15:00 ***A novel design of a cyclotron-based accelerator system for multi-ion-therapy***
J. M. Schippers, *Paul Scherrer Institute, Switzerland*

15:00 – 15:20 ***Design study of the medical cyclotron SCENT300***
M. Maggiore, *INFN/LNS, Italy*

15:20 – 15:50 ***HIRFL-CSR Commissioning Status***
Y. Liu, *Institute Modern Physics, Chinese Academy of Sciences, China*

15:50 – 16:10 ***Acceleration, Deceleration and Bunching of Stored and Cooled Ion Beams at the TSR, Heidelberg***
M. Grieser, *Max Planck Institut für Kernphysik, Germany*

16:10 – 16:30 ***Status of the Cryogenic Storage Ring***
R. Von Hahn, *Max Planck Institut für Kernphysik, Germany*

16:30 – 17:00 **Coffee break - Sala Vivaldi**

WEDNESDAY 10 June 2009

AULA MAGNA

Session APPLICATIONS AND ANCILLARY SYSTEMS
Chair: I. Hofmann

09:00 – 09:30 ***Medical application of Hadrontherapy***
E. Hug, *Center for Proton Therapy at Paul Scherrer Institute, Switzerland*

09:30 – 10:00 ***Review on HI Accelerators for Hadrontherapy***
K. Noda, *National Institute of Radiological Sciences, Japan*

10:00 – 10:30 ***New and Improved AMS Facilities***
H.A. Synal, *Laboratory of Ion Beam Physics, ETH Zurich, Switzerland*

10:30 – 11:00 **Coffee break - Sala Vivaldi**

Session APPLICATIONS AND ANCILLARY SYSTEMS
Chair: R. Pardo

11:00 – 11:20 ***The radiation assurance test facility at INFN-LNS Catania***
A. B. Alpat, *INFN/Perugia Section, Italy*

11:20 – 11:40 ***Development of beam current monitor with HTS SQUID and HTS current sensor***
T. Watanabe, *The Institute of Physical and Chemical Research, Japan*

S e s s i o n I O N S O U R C E S
Chair: R. Pardo

11:40 – 12:10 ***Latest developments in ECR Charge Breeders***
T. Lamy, *Laboratoire de Physique Subatomique et de Cosmologie, UJF Grenoble 1, CNRS/IN2P3, INPG, France*

12:10 – 12:30 ***Initial Results of the ECR Charge Breeder for the ^{252}Cf Fission Source Project (CARIBU) at ATLAS***
R. Vondrasek, *Argonne National Laboratory, USA*

12:30 – 12.50 ***Ion beam cocktail development and ECR ion source plasma physics experiments at JYFL***
O. Tarvainen, *University of* Jyväskylä*, Department of Physics, Accelerator Laboratory, Finland*

12:50 – 13:10 ***Metal ion beam and beam transmission development at JYFL***
H. Koivisto, *University of* Jyväskylä*, Department of Physics, Accelerator Laboratory, Finland*

13:10 – 14:40 **L u n c h - S a n T r o v a s o R e s t a u r a n t**

S e s s i o n I O N S O U R C E S
Chair: R. Repnow

14:40 – 15:00 ***Superconducting ECR ion source development at LBNL***
D. Leitner, *Lawrence Berkeley National Laboratory, USA*

15:00 – 15:30 ***A High-Performance Electron Beam Ion Source***
J. Alessi, *Collider-Accelerator Department, Brookhaven National Laboratory, USA*

15:30 – 15:50 ***Acceleration of heavy ions generated by ECR and EBIS***
R. Becker, IAP, *Universität Frankfurt, Germany*

15:50 – 16:10 ***Dresden electron beam ion sources: latest developments***
G. Zschornack, *Technische Universitaet Dresden, Institute of Applied Physics, Germany*

16:10 – 16:30 ***Ion Sources at the Michigan Ion Beam Laboratory: Capabilities and Performance***
F. Naab, *University of Michigan, USA*

16:30 – 17:00 **C o f f e e b r e a k - S a l a V i v a l d i**

17:00 – 18:30 ***POSTER SESSION – Cloister***

19:00 – 20:30 **V i s i t t o S t . M a r k ' s B a s i l i c a**

THURSDAY 11 June 2009

AULA MAGNA

Session LINACS
Chair: D. Weisser

09:00 – 09:30 **Heavy Ion Superconducting Linacs: new machines and new upgrades**
R. Laxdal, *TRIUMF, Canada*

09:30 – 09:50 ***Commissioning of the ATLAS Upgrade Cryomodule***
P. Ostroumov, *Argonne National Laboratory, USA*

09:50 – 10:10 ***Frequency Tuning and RF Systems for the ATLAS Energy Upgrade SC Cavities***
G. Zinkann, *Argonne National Laboratory, USA*

10:10 – 10:30 ***Performances of the ISAC Heavy Ion Linacs***
M. Marchetto, *TRIUMF, Canada*

10:30 – 11:00 Coffee break - Sala Vivaldi

Session LINACS
Chair: A. Roy

11:00 – 11:20 ***HIE-ISOLDE LINAC: Status of the R&D activities***
M. Pasini, *CERN, Switzerland*

11:20 – 11:40 ***Development of heavy ion accelerator and associated systems***
D. Kanjilal, *Inter University Accelerator Centre (IUAC),* India

11:40 – 12:00 ***Operational experience of the superconducting LINAC booster at Mumbai***
V. Nanal, *Tata Institute of Fundamental Research, India*

12:00 – 12:20 ***Multiple charge state ion beam acceleration with an RFQ LINAC***
J. Tamura, *Tokyo Institute of Technology, Japan*

12:20 – 12:40 ***Upgrade of the HIT Injector LINAC-Frontend***
S. Yaramyshev, *GSI, Germany*

12:40 – 13:00 ***Status of linac beam commissioning for the Italian Hadron Therapy Center CNAO***
P. A. Posocco, *Consorzio RFX – INFN/LNL, Italy*

13:00 – 14:30 Lunch - San Trovaso Restaurant

14:30 – 19:30 Conference Tour - Venetian Islands

19:30 – 22:30 Conference Banquet - Locanda Cipriani

FRIDAY 12 June 2009

AULA MAGNA

Session LINACS
Chair: O. Kamigaito

09:00 – 09:30 **The GSI UNILAC Upgrade Program to Meet FAIR Requirements**
L. Dahl, *GSI, Germany*

09:30 – 09:50 ***Status of Construction and Commissioning of the GSI HITRAP Decelerator***
O. Kester, *NSCL, Michigan State University, USA*

09:50 – 10:10 ***Improved on line performance of the installed ALPI Nb sputtered QWRs***
A. M. Porcellato, *INFN/ LNL, Italy*

10:10 – 10:30 ***Operational experience in PIAVE-ALPI complex***
E. Fagotti, *Consorzio RFX – INFN/LNL, Italy*

10:30 – 11:00 Coffee break - Sala Vivaldi

Session GENERAL TOPICS
Chair: J.M. Lagniel

11:00 – 11:30 ***Towards GeV Laser-driven ion acceleration***
B. M. Hegelich, *Los Alamos National Laboratory, USA and Ludwig-Maximilian Universität München, Germany*

11:30 – 11:50 ***Laser accelerated ions and their potential use for therapy accelerators***
I. Hofmann, *GSI, Germany*

11:50 – 12:20 ***Heavy Ion Irradiation of Nuclear Reactor Fuel***
H. Palancher, *CEA, France*

12:20 – 12:40 ***HIAT09 Outlook***
A. Roy, *Inter – University Accelerator Centre, India*

12:40 – 13:00 ***Closing***

13:00 – 14:30 Lunch - San Trovaso Restaurant

14:30 – 19:30 Visit to INFN - Laboratori Nazionali di Legnaro

LIST OF POSTER CONTRIBUTIONS

SESSION A: GENERAL TOPICS

A 1 **REFERENCE SIGNAL GENERATION WITH DIRECT DIGITAL SYNTHESIS FOR FAIR**
M. Bousonville
GSI, Germany

A 2 **OVERVIEW OF AR BEAM INDUCED DESORPTION FROM DIFFERENT MATERIALS AT TSL**
O. Malyshev[1], M.C. Bellachioma[2], M. Bender[3], H. Kollmus[2], A. Kraemer[2], H. Reich-Sprenger[2], M. Leandersson[4], E. Hedlund[5], L. Westerberg[5], A. Krasnov[6] and B. Zajec[7]
[1] ASTeC, STFC Daresbury Laboratory, UK, [2] GSI, Germany, [3] Ludwig-Maximilians-Universität München, Germany, [4] KTH Physics, Sweden, [5] Uppsala University, Sweden, [6] BINP, Russia, [7] "Jozef Stefan" Institute, Svolenia

A 3 **PREPARATION OF THE IRRADIATION TEST AT CAVE HHD OF GSI DARMSTADT**
A. Plotnikov[1], E. Mustafin[1], E. Floch[1], E. Schubert[1], T. Seidl[1], A. Smolyakov[2] and I. Strasik[1]
[1] GSI, Germany, [2] ITEP, Russia

A 4 **IRRADIATION OF SUPERCONDUCTING MAGNET COMPONENTS FOR FAIR**
E. Mustafin[1], L. Latysheva[2], E. Floch[1], A. Plotnikov[1], E. Schubert[1], T. Seidl[1], A. Smolyakov[3] and I. Strasik[4]
[1] GSI, Germany, [2] INR RAS, Germany, [3] ITEP, Russia, [4] STU, Slovakia

A 5 **DEPTH-PROFILING OF THE RESIDUAL ACTIVITY INDUCED BY HIGH-ENERGY URANIUM IONS IN THIN STAINLESS STEEL TARGET**
I. Strasik[1]*, E. Mustafin[1], E. Floch[1], T. Seidl[1], A. Plotnikov[1], E. Schubert[1] and A. Smolyakov[1]
*[1] GSI, Germany *on leave from FEI STU Bratislava, Slovakia*

A 6 **ITEP HEAVY ION RFQ OUTPUT LINE UPGRADE FOR EXPERIMENTS OF REACTOR MATERIAL INVESTIGATION UNDER IRRADIATION**
T.V. Kulevoy, A.A. Aleev, G.N. Kropachev, R.P. Kuibeda, A.A. Nikitin, S.V. Rogozhkin, A.I. Semennikov, A.D. Fertman
Institute for Theoretical and Experimental Physics, Moscow, Russia

SESSION B: ELECTROSTATIC ACCELERATORS

B 1 **CURRENT STATUS REPORT OF RAPID, THE UNIVERSITY OF TOKYO**
S. Ito, A. Morita and H. Matsuzaki
Department of Nuclear Engineering and Management, School of Engineering, The University of Tokyo, Japan

SESSION C: LINACS

C 1 **CONCEPTUAL DESIGN OF A RADIO FREQUENCY QUADRUPOLE FOR THE HEAVY-ION MEDICAL FACILITY**
G. Hahn and D.H. An
Korea Institute of Radiological and Medical Science, Korea

SESSION E: ION SOURCES

E 4 **NOVEL MODES OF VACUUM DISCHARGE IN MAGNETIC FIELD AS THE BASE FOR EFFECTIVE ION GENERATION**
S. Cherenshchykov
Institute of High Energy Physics and Nuclear Physics of National Science Center "Kharkov Institute of Physics and Technology", Ukraine

E 5 **UPGRADE AND COMMISSIONING OF THE PIAVE-ALPI ECR INJECTOR AT LNL**
A. Galatà, M. Sattin, L. Bertazzo, S. Contran, A. Dainese, A. Lombardi, D. Maniero, M. Poggi, F. Scarpa and A. Facco
INFN/LNL, Italy

E 6 **HIGH CURRENT ION SOURCES, BEAM DIAGNOSTICS AND EMITTANCE MEASUREMENT**
M. Cavenago[1], M. Comunian[1], E. Fagotti[1], T. Kulevoy[1,2], S. Petrenko[1,2] and M. Poggi[1]
[1] INFN/LNL, Italy, [2] ITEP, Russia

SESSION F: RADIOACTIVE ION BEAM FACILITIES

F 1 **A SECONDARY RADIOACTIVE BEAM LINE SECTION FOR THE SPIRAL 2 PROJECT: FIRST STEP, THE DESIGN STUDY**
F. Osswald and A. Khouaja
CNRS/IN2P3, Uni. Strasbourg, France

F 2 **HOLLOW CATHODE E-GUN FOR EBIS IN CHARGE BREEDING EXPERIMENT**
V. Variale[1], V. Valentino[1], M. Batasova[2], G. Kusnetsov[2], T. Clauser[3] and A. Rainò[3]
[1] INFN/Bari Section, Italy, [2] BINP, Russia, [3] Bari University, Physics Department, Italy

F 3 **STUDY AND TEST ON THE 1+ ION SOURCE OF THE SPES PROJECT**
M. Libralato[1], M. Manzolaro[1], A. Andrighetto[1], L. Biasetto[1], G. Meneghetti[2], S. Carturan[1], D. Scarpa[1], P. Colombo[2] and G. Prete[1]
[1] INFN/LNL, Italy, [2] University of Padua, Italy

F 4 **THE LIGHT ION GUIDE CB-ECRIS PROJECT AT THE TEXAS A&M UNIVERSITY CYCLOTRON INSTITUTE**
G. Tabacaru[1], H. L. Clark[1], G. Kim[1], D.P. May[1], F. Abegglen[1], G. Chubaryan[1], G. Souliotis[1], J. Arje[2]
[1] Cyclotron Institute, Texas A&M University, USA, [2] JYFL, Finland

SESSION G: APPLICATIONS

G 1 **A NEW ACCESS CONTROL UNIT FOR GANIL AND SPIRAL 2**
J.L. Baelde, C. Berthe and J.F. Rozé
GANIL, France

G 2 **STATUS OF THE CAVIAR DETECTOR AT LISE-GANIL**
L. Perrot[1], S. Grévy[2], C. Houarner[2], R. Hue[2], C. Marry[2], S.M. Lukyanov[3] and R. Astabatyan[3]
[1] IPN-IN2P3-CNRS, France, [2] GANIL-IN2P3-CNRS, France, [3] JINR, Russia

G 3 **HEBT LINES FOR THE SPIRAL2 FACILITY**
L. Perrot[1], P. Bertrand[2], J.L. Biarrotte[1] and D. Uriot[3]
[1] IPN-IN2P3-CNRS, France, [2] GANIL-IN2P3-CNRS, France, [3] SACM/IRFU/DSM/CEA, France

G 4 DEVELOPMENT OF RASTER SCANNING SYSTEM AT NIRS-HIMAC

T. Furukawa, T. Inaniwa, S. Sato, N. Saotome, T. Shirai, Y. Takei, S. Fukuda, S. Mori, A. Nagano, Y. Iwata, S. Minohara and K. Noda
National Institute of Radiological Sciences, Japan

G 5 STATUS OF ELECTRON BEAM ION SOURCES FOR PARTICLE THERAPY

G. Zschornack[1], V. Ovsyannikov[2], F. Grossmann[2], F. Ullmann[2], A. Schwan[2], E. Tanke[3] and P. Urschuetz[3]
[1] Technische Universitaet Dresden, Institute of Applied Physics, Germany, [2] DREEBIT GmbH Dresden, Germany, [3] Siemens AG Erlangen, Germany

G 6 DEVELOPEMENT OF TREATMENT PLANNING SOFTWARE FOR CARBON-ION SCANNING AT HIMAC

T. Inaniwa, T. Furukawa, S. Sato, S. Mori, N. Kanematsu, K. Noda and T. Kanai
National Institute of Radiological Sciences, Japan

G 7 RESEARCH ON MEASUREMENT OF THE FISSION PRODUCT NUCLIDE ^{126}SN BY AMS

H. Shen[1], S. Jiang[1], M. He[1], K.J. Dong[1], X. Wang[1], C. Li[1], G. He[1], D. Zhang[2], G. Shi[2], C. Huang[2],S. Wu[1], J. Gong[1] , L. Lu[1] , S. Li[2] and S. Wu[1]
[1] China Institute of Atomic Energy, China
[2] College of Physical Science and Engineering Technology , Guangxi university, China

G 8 ACCELERATOR MASS SPECTROMETRY FOR LONG-LIVED HEAVY ION ^{236}U AT CIAE

X. Wang, H. Shen, S. Wu, S. Jiang, M. He, Y. Bao, X. Guan, Y. Hu, Q. You, C. Li and W. Wang
China Institute of Atomic Energy, China