8th International symposium on Negative Ions, Beams and Sources - NIBS'22

Sunday, 2 October 2022 - Friday, 7 October 2022

Orto Botanico - Padova, Italy

Programme

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Sunday, 2 October 2022

Registration **(2 Oct 2022, 16:00 - 18:00)**

Monday, 3 October 2022

Registration: Registration - Foyer (3 Oct 2022, 08:00 - 09:00)

Opening (3 Oct 2022, 09:00 - 09:20)

Oral session 1: Oral session 1 - Auditorium (3 Oct 2022, 09:20 - 11:00)

time	[id] title	presenter
09:20	[94] The BO2022 project. For a history of students and graduates of the University of Padova (1222- 20th century)	LA ROCCA, Cristina (Università di Padova)
09:50	[87] Fundamental processes related to negative ion production of different ion species	SASAO, Mamiko (Office of R&D Promotion, Doshisha University)
10:20	[89] Stockli: RF (Light) Negative Ion Sources for Non-Fusion Applications, a tutorial	Dr STOCKLI, Martin

Coffee Break: Coffee Break - Columns hall (3 Oct 2022, 11:00 - 11:20)

Oral session 2 - Auditorium (3 Oct 2022, 11:20 - 13:10)

time	[id] title	presenter
11:20	[95] A review of the NIFS negative-ion based NBI driven with Filament-Arc (FA) discharge	TSUMORI, Katsuyoshi
11:50	[84] The ITER Neutral Beam Test Facility: status and perspectives	TOIGO, Vanni
12:20	[70] Towards low divergence beams for the ITER neutral beam injection system	VELTRI, Pierluigi (ITER Organization)
12:50	[69] A Method of Confirming the Operation of Active Magnetic Compensation Coils on the ITER HNBs	Dr ZACKS, Jamie (ITER Organisation)

Lunch (3 Oct 2022, 13:10 - 14:40)

Oral session 3 - Auditorium (3 Oct 2022, 14:40 - 16:40)

time	[id] title	presenter
14:40	[4] Ultra-low work function of caesiated surfaces and impact of specific hydrogen plasma species	HEILER, Adrian
15:10	[12] Mach probe diagnostic for determining positive ion fluxes in H$^-$ ion sources	Mr WOLF, Vinzenz (AG Experimentelle Plasmaphysik, Universität Augsburg, 86135 Augsburg, DE)
15:30	[36] Effect due to Cs injection upon the beam current oscillation extracted from the J-PARC negative hydrogen ion source	Prof. WADA, Motoi (Doshisha University)
15:50	[25] Photoelectric current measurement of plasma grid materials for a compact H- ion source	Ms NISHIWAKI, Mayuko
16:20	[54] Exploring Cesium and H- beam properties internal to the LANSCE H- Ion Source using Resonant Absorption Spectroscopy and Cavity Ring Down Spectroscopy	Dr KLEINJAN, David (Los Alamos National Laboratory)

Coffee Break - Columns hall (16:40 - 17:00)

Guided tour to Botanical Garden (3 Oct 2022, 17:05 - 18:35)

Welcome Reception - food and wine (3 Oct 2022, 18:45 - 21:45)

Tuesday, 4 October 2022

Oral session 4 - Auditorium (4 Oct 2022, 08:30 - 10:30)

time	[id] title	presenter
08:30	[59] Paving the road towards ITER relevant long deuterium pulses at ELISE by investigating improved operational scenarios	WÜNDERLICH, Dirk (Max-Planck-Institut für Plasmaphysik)
09:00	[68] The negative beam source with single driver for CRAFT NNBI: design and conditioning results	XIE, yahong
09:30	[46] THE 1MV MITICA POWER SUPPLY BEYOND THE MODERN TECHNOLOGICAL LIMITS: FIRST EXPERIENCE DURING INTEGRATION PHASE	BOLDRIN, Marco (Consorzio RFX)
10:00	[6] First H- Beam Extracted from the Non-Caesiated External RF-Coil Ion Source at ISIS	Dr LAWRIE, Scott (UKRI)

Coffee Break - Columns hall (10:30 - 10:50)

Oral session 5 - Auditorium (4 Oct 2022, 10:50 - 13:00)

time	[id] title	presenter
10:50	[3] Numerical study of RF power coupling in fusion-relevant single- and multi-driver H^- ion sources	ZIELKE, Dominikus
11:20	[7] SImplified fluid models of radiofrequency and plasma density for NIO1 and design	CAVENAGO, Marco (INFN-LNL)
11:50	[52] Investigation of spatially resolved plasma parameter and potential distributions at the BATMAN Upgrade ion source	BRIEFI, Stefan
12:20	[80] Construction of a Filament-RF driven hybrid negative ion source at NIFS	TSUMORI, Katsuyoshi

Lunch (13:00 - 14:30)

Oral session 6 - Auditorium (4 Oct 2022, 14:30 - 16:30)

time	[id] title	presenter
14:40	[91] Tutorial	Prof. FANTZ, Ursel
15:10	[74] Negative and positive ion density in front of negative ion production surface in large-scaled negative ion source for fusion	NAKANO, Haruhisa (National Institute for Fusion Science, National Institutes of Natural Sciences)
15:40	[11] Key parameters for the ion velocity distribution at the plasma meniscus of a caesiated negative ion source	PIMAZZONI, Antonio
16:10	[60] Langmuir-probe measurement in the vicinity of plasma grid aperture of hydrogen negative ion source	RATTANAWONGNARA, engrhyt

Poster session 1 (4 Oct 2022, 17:30 - 19:30)

time	[id] title	presenter
17:30	[61] Summary of caesium evaporation and deposition during SPIDER’s first campaign	FADONE, Michele

17:35	[51] Effect of plasma grid and bias plate biasing on the SPIDER negative ion beam	AGOSTINI, matteo
17:40	[53] Comparison among possible design solutions for the Stray Field Shielding System of the DTT Neutral Beam Injector	VERONESE, Fabio (Consorzio RFX)
17:45	[43] Study on the stitching method of beam target infrared image based on local transformation	Dr XU, yongjian (institute of plasma physics, chinese academy of science) Ms CHEN, liping (institute of plasma physics, chinese academy of science)
17:50	[39] Influence of plasma parameters on the effectiveness of multi-cusp magnetic field confinement in negative ion sources	CANDELORO, Valeria
17:55	[35] Design and test of a module of a breathable Electrostatic Shield for the MITICA 1 MV negative Ion Beam Source	CHITARIN, Giuseppe (University of Padova and Consorzio RFX)
18:00	[34] Investigations on Cs dispersion and Mo coating on SPIDER components	Ms CAVALLINI, Caterina Ms CANDELA, Valentina
18:05	[33] Study and development of diagnostic systems to characterise the extraction region in SPIDER	SEGALINI, Beatrice
18:10	[45] Optimization of a negative oxygen ion beam	HAN, Jia (Université de Lausanne)
18:15	[30] Observation of beamlet displacement and parallelism in NIO1	UGOLETTI, Margherita CAVENAGO, Marco (INFN-LNL)
18:20	[29] Numerical and experimental investigations of a microwave interferometer for the negative ion source SPIDER	Dr AGNELLO, Riccardo (EPFL - Consorzio RFX)
18:25	[21] Drift and non-uniformity mitigation in H- source with Plasma Ion Funnels	VARIALE, Vincenzo (Universita e INFN, Bari (IT))
18:30	[19] Direct current measurements of the SPIDER beam: a comparison to existing beam diagnostics	SHEPHERD, Alastair
18:35	[67] Three-dimensional calculations of the inductive coupling between radio-frequency waves and plasma in the drivers of the SPIDER device	LÓPEZ-BRUNA, Daniel (Laboratorio Nacional de Fusión, CIEMAT)
18:40	[17] Influence of different magnetic configurations on plasma parameters in SPIDER device	ZAGORSKI, Roman
18:45	[16] Numerical study of the plasma meniscus shape and beam optics in RF negative ion sources	Mr HAYASHI, Katsuya (Keio University)
18:50	[13] Creating negative ion beams from neutral gases using a negative Hydrogen ion source	PAUL, Andrew
18:55	[9] Continuous pulse advances in the negative ion source NIO1	Dr BARBISAN, Marco (Consorzio RFX (CNR, ENEA, INFN, Università di Padova, Acciaierie Venete SpA))
19:00	[64] Development of a Negative Helium Ion Source with Non-Metallic Charge Exchange	JACKLE, Philip (Simon Fraser University)

Wednesday, 5 October 2022

Oral session 7 - Auditorium (5 Oct 2022, 08:30 - 10:20)

time	[id] title	presenter
08:30	[49] Source Performance Optimization in Cesiated Mode in ROBIN	PANDYA, Kaushal (Institute for Plasma Research)
09:00	[72] Plasma emission monitored via optical emission spectroscopy during the Cs conditioning at SPIDER	MARIO, Isabella
09:20	[82] Experimental results of the SPIDER negative ion accelerator in view of the next operations	SARTORI, emanuele
09:50	[73] Progress in the development of negative ion beam source in Korea	PARK, Min (Korea institute of Fusion Energy (KFE))

Coffee Break - Columns hall (10:20 - 10:40)

Oral session 8 - Auditorium (5 Oct 2022, 10:40 - 12:40)

time	[id] title	presenter
10:40	[15] 120 mA Operation of J-PARC Cesiated RF-Driven H^- Ion Source	UENO, Akira
11:10	[66] Over 7200 hours commissioning of RF-driven negative hydrogen ion source developed at CSNS	Dr CHEN, Weidong (Institute of High Energy Physics, Chinese Academy of Sciences)
11:40	[24] Discoloration of RF antenna coil surface after long-term operation of J-PARC ion source	Dr SHIBATA, Takanori (KEK)
12:00	[50] Correlation H- beam properties to Cs-coverage	LETTRY, Jacques (CERN)

Lunch (12:40 - 14:10)

Oral session 9 - Auditorium (5 Oct 2022, 14:10 - 16:40)

time	[id] title	presenter
14:10	[5] Caesium Balance of the ISIS H$^-$ Penning Ion Source in Long Pulse Operation	TARVAINEN, Olli Antero (STFC Rutherford Appleton Laboratory)
14:40	[48] Plasma Electrode Materials for Cs-free Negative hydrogen ion Sources	SASAO, Mamiko (Office of R&D Promotion, Doshisha University)
15:10	[86] The effect of oxygen impurities on a caesium-covered Mo(001) surface: insights from Molecular Dynamics simulations for negative ion sources.	RUTIGLIANO, MARIA (CNR-ISTP (Istituto per la Scienza e Tecnologia dei Plasmi))
15:40	[37] Rotational and vibrational temperatures of Hydrogen nonequilibrium plasmas from Fulcher band emission spectra	BRUNO, Domenico (ISTP - CNR)
16:10	[27] Development and Commissioning of a Hydrogen Ion Source for the CERN ALPHA Experiment	JOHNSON, Mark Andrew (Science and Technology Facilities Council - ASTeC)

Coffee Break (16:40 - 17:00)

Oral session10 - Auditorium (5 Oct 2022, 17:00 - 19:00)

time	[id] title	presenter
17:00	[42] Operation and Research Activities on the Three H- Injector Systems at the Spallation Neutron Source	HAN, Baoxi
17:30	[1] An H- Surface Plasma Source for the ESS Storage Ring	Prof. DUDNIKOV, vadim (muons, Inc)
17:50	[23] Recent H− ion source research and development at the Oak Ridge National Laboratory	WELTON, Rob
18:20	[58] Increasing the H- output current and Reducing Performance Variations of the SNS H- Source	STOCKLI, Martin

Conference Dinner - Sala Rossini (5 Oct 2022, 20:30 - 23:30)

Thursday, 6 October 2022

Poster Session 2 (6 Oct 2022, 08:30 - 11:00)

time	[id] title	presenter
08:30	[85] Characteristics of co-extracted electrons reduction for the Cs-free negative ion source using TPDsheet-U	GOKA, Taiga (Tokai university)
08:35	[83] Overview of MITICA diagnostics design and procurement	PASQUALOTTO, Roberto (Consorzio RFX)
08:40	[81] Energy distribution of fragments in H2 dissociation by electron impact for the use in numerical models	SARTORI, emanuele
08:45	[79] Characteristics of extracted negative ion beam using electron emitters on the Cs-free negative ion source TPDsheet-U	ONUMA, Ryuichi
08:50	[78] Development of Cs-injection System for KFE RF hydrogen Negative Ion Beam Source	NA, Byungkeun (Korea Institute of Fusion Energy)
08:55	[77] Laser Powder Bed Fusion: an innovative production method for creating components and devices for Nuclear Physics	Ms CANDELA, Silvia (INFN, CRF) Ms CANDELA, Valentina (INFN, CRF)
09:00	[76] Effects of different particle injection models on the results of PIC simulation	WU, Hongyu (HUST)
09:05	[75] The Effect of Beam Chopping on the Emittance Growth of Negative Hydrogen Ion Beam	LI, Hui
09:10	[71] The impact of neutral beam parameters on current drive and neutron yield in DEMO-FNS	VELTRI, Pierluigi (ITER Organization)
09:15	[18] Characterization of the Plasma in SPIDER using a Cs-H Collisional Radiative model	POURADIER DUTEIL, Basile
09:23	[65] Volume and surface effects in Cs-free regimes in NIO1	CAVENAGO, Marco (INFN-LNL)
09:28	[63] Work Function Measurements in BATMAN Upgrade using LEDs Revealing Remarkably Low Values	BERNER, Jacob M
09:33	[62] H- Beam formation simulation in negative ion source for CERN’s Linac4 accelerator	VNUCHENKO, Anna (CERN)
09:38	[57] USE OF ELECTRICAL MEASUREMENTS FOR NON-INVASIVE ESTIMATION OF PLASMA ELECTRON DENSITY INSIDE THE DRIVER OF SPIDER	Dr JAIN, Palak (Consorzio RFX)
09:43	[38] Spider plasma emission between 300 nm and 900 nm in different operative conditions	ZANIOL, Barbara (Consorzio RFX)
09:48	[47] Highly electronegative plasma conditions in the SPIDER negative ion source	POGGI, Carlo SARTORI, emanuele (unipd)
09:53	[31] Study of the relationship between the source complexity and the beam divergence and homogeneity in SPIDER	UGOLETTI, Margherita
09:58	[44] Preliminary design of tungsten wire calorimeter for CRAFT NNBI	Mrs YU, ling (institute of plasma physics, chinese academy of science)
10:03	[93] Laser-assisted negative ion production in caesium sputter ion source	HOSSAIN, Akbar (University of Jyväskylä)

Excursion (6 Oct 2022, 13:00 - 20:30)

Friday, 7 October 2022

Bus transfer (08:00 - 08:30)

Oral session 11 - Teaching Room 3rd floor (7 Oct 2022, 08:30 - 10:30)

time	[id] title	presenter
08:30	[10] Repercussions of the magnetic filter field and the extraction aperture configurations on the negative ion beam properties: insights from a Particle-In-Cell model.	Dr FUBIANI, gwenael (CNRS)
09:00	[8] Study of plasma meniscus including the surface produced negative ions by using PIC-MCC simulation	MIYAMOTO, Kenji
09:30	[14] Dynamic responses of negative ion meniscus to externally applied RF field	Prof. NAGAOKA, Kenichi (National Institute for Fusion Science)
10:00	[56] BATMAN Upgrade: general results from beam optics studies	WIMMER, Christian (Max-Planck-Inst. f. Plasmaphysik)

Coffee Break (10:30 - 10:50)

Oral session 12 (7 Oct 2022, 10:50 - 12:50)

time	[id] title	presenter
10:50	[40] Utilization of Compact ECR plasma source for large area H- ion production	SHARMA, Shweta
11:20	[41] Experimental Characterization and Theoretical Studies of ECR Produced Hydrogen Plasma Ion Beams	Ms SINGH, Priti (Department of Energy Science and Engineering, Indian Institute of Technology Delhi) NARAYANAN, RAMESH (Department of Energy Science and Engineering, Indian Institute of Technology Delhi, India)
11:50	[2] Photo-assisted Cl-, Br- and I- production in cesium sputter ion source	Mr HOSSAIN, Akbar (University of Jyväskylä)
12:20	[20] Simple beam energy recovery as alternative to Residual Ion dump in Neutral Ion Beam Injections	VARIALE, Vincenzo (Universita e INFN, Bari (IT))

Lunch - NBTF 2 floor (12:50 - 13:50)

Closing - Teaching Room 3rd floor (7 Oct 2022, 13:50 - 14:50)

Guided visit to RFX and NBTF (7 Oct 2022, 14:50 - 16:50)

Bus transfer to Padova downtown (16:50 - 17:20)