



# The 7th International Symposium on Negative Ions, Beams and Sources (NIBS'20) Online

01 - 10 September 2020

## Programme

## Tuesday 1 September 2020

### Oral Session T1: NIBS'20 Opening and Tutorial Lectures

Conveners: Dan Faircloth; Yuri Belchenko

Id	Title	Presenter
73	NIBS2020 Opening	TAKEIRI, Yasuhiko FAIRCLOTH, Dan BELCHENKO, Yuri
69	Negative ion source fundamentals	WADA, Motoi
70	Ion source technologies for accelerators	FAIRCLOTH, Dan
71	Ion source technologies for fusion	FANTZ, Ursel
72	Extraction of negative ions	LAWRIE, Scott

## Wednesday 2 September 2020

### Oral session O1: H<sup>-</sup> and D<sup>-</sup> sources for fusion

Conveners: Motoi Wada; Yuri Belchenko

31	Initial results of a plasma grid comparison experiment between NIFS and ITER-like types at BATMAN Upgrade	NAKANO, Haruhisa
18	Validation of the Distribution of Stripping Loss Neutrals in the Accelerator of the Negative Ion Source	IKEDA, Katsunori
21	Different characteristics of plasma meniscus formation between positive and negative beam extraction	NAGAOKA, Kenichi
53	Development of the directional Langmuir probe for the charged particle flow measurement	MASAKI, Shingo
41	Profile of the LHD negative ion beam source at the plasma meniscus from numerical beam calculation based on	SLIEF, Jelle
46	Damage to N-NBI systems due to positive ion back-streaming	WADA, Motoi
	<b>Coffee break</b>	
19	Research activities of RF based negative ion source in the ASIPP	XIE, Yahong
49	Beam Extraction and Optics of 200keV beam accelerator for neutral beam injection in China	SONG, Fei
28	Development of External RF Antenna based Cusp Free High Duty Factor Pulsed Negative Hydrogen Ion Source	GHODKE, Dharmraj
4	Probe for in situ measurement of work function and cesium dynamics	SINGH, Pranjal
45	Correction algorithm for cavity ring down based anion density measurement in a negative ion source having continuously fed cesium vapour	MUKHOPADHYAY, Debrup

## Thursday 3 September 2020

### Oral session O2: H<sup>-</sup> and D<sup>-</sup> sources for fusion

Conveners: Ursel Fantz; Gianluigi Serianni

<b>Id</b>	<b>Title</b>	<b>Presenter</b>
<b>63</b>	Are resonance phenomena creating instabilities in the magnetic filter region in a low-temperature plasma?	<b>SHAH, Miral</b>
<b>40</b>	Experimental results of 40kW, 1 MHz Solid State High Frequency Power Supply with Inductively Coupled Plasma	<b>GAJJAR, Sandip</b>
<b>0</b>	High-intensity polarized and un-polarized H-sources and injector development at BNL	<b>ZELENSKI, Anatoli</b>
<b>8</b>	BTR code for NBI Design and Optimization	<b>DLOUGACH, Eugenia</b>
<b>2</b>	Investigation of the negative ionization of hydrogen particles on metal surfaces with low work function	<b>GAINULLIN, Ivan</b>
<b>11</b>	Numerical modeling of the electrons confinement in the multicusp magnetic trap	<b>KLENOV, Viktor</b>
	<b>Coffee break</b>	
<b>32</b>	Impact of operational parameters on single beamlet deflection in a negative ion source for NBI	<b>HURLBATT, Andrew</b>
<b>29</b>	Transferring knowledge gained for pulsed extraction at the ELISE test facility to ITER-relevant CW extraction	<b>WÜNDERLICH, Dirk</b>
<b>56</b>	First operation of SPIDER and 1MV integrated power test in MITICA	<b>MARCUZZI, Diego</b>
<b>6</b>	Controlling the Shape of the ISIS H- Penning Ion Source Beam Pulse	<b>SARMENTO, Morais Tiago</b>
<b>20</b>	Experiments on Photo-Assisted O <sup>-</sup> and Al <sup>-</sup> Production with a Cesium Sputter Ion Source	<b>TARVAINEN, Olli</b>

## Friday 4 September 2020

### Oral session O3: H<sup>-</sup> sources for accelerators

Conveners: Dan Faircloth; Jacques Lettry

<b>Id</b>	<b>Title</b>	<b>Presenter</b>
<b>35</b>	H <sup>-</sup> Ion Source Research and Development at the Oak Ridge National Laboratory	<b>WELTON, Robert</b>
<b>37</b>	Recent performance of the SNS H <sup>-</sup> ion source with a record long run	<b>HAN, Baoxi</b>
<b>7</b>	Interface Boundary Conditions for Global Models of Multi-Chamber Negative Hydrogen Ion Sources	<b>AVERKIN, Sergey</b>
<b>1</b>	Improving of the Converter Surface Plasma Sources.	<b>DUDNIKOV, Vadim</b>
<b>36</b>	Quantifying the Cesium and H <sup>-</sup> Densities Inside the LANSCE H <sup>-</sup> Ion Source with Laser Absorption Techniques	<b>KLEINJAN, David</b>
<b>34</b>	Modeling filaments in H <sup>-</sup> ion source from the first principles	<b>YAMPOLSKY, Nikolai</b>

### Poster session P1

Conveners: Jacques Lettry; Dan Faircloth

<b>Id</b>	<b>Title</b>	<b>Presenter</b>
<b>25</b>	Work function behavior of C12A7 electride materials in low temperature hydrogen plasmas	<b>HEILER, Adrian</b>
<b>30</b>	Vacuum Pressure Considerations on the Performance and Lifetime of Penning Ion Sources	<b>LAWRIE, Scott</b>
<b>57</b>	Transport of a negative ion beam through a hydrogen plasma	<b>HENESTROZA, Enrique</b>
<b>74</b>	Operational experience with the ELENA Ion Source	<b>GAMBA, Davide</b>

# Tuesday 8 September 2020

## Poster session P2

Conveners: Zhimin Liu; Mahendrajit Singh

<b>Id</b>	<b>Title</b>	<b>Presenter</b>
<b>3</b>	Extraction of Negative Hydrogen Ions through a Plasma Electrode Covered by a Ta or Ti Foil	<b>MAESHIRO, Kenta</b>
<b>5</b>	Plasma Electrode Shape Suitable for Negative Hydrogen Ion Production	<b>BITO, Keita</b>
<b>12</b>	Velocity distribution functions of hydrogen atoms in ion source discharges	<b>TOKAI, Tatsuhiko</b>
<b>38</b>	Study of response of negative ion beam to bias voltage in phase space	<b>KISAKI, Masashi</b>
<b>39</b>	Primary electron analysis to improve the negative ion uniformity toward ITER-class long pulse and high power negative ion sources	<b>SHIMABUKURO, Yuji</b>
<b>10</b>	Ion time-of-flight signals from nanosecond laser ablation plasmas excited in constricted cavities	<b>HERNANDEZ, James Edward</b>
<b>43</b>	Improvements of stable negative ion production for long pulse beam operation toward the negative ion source for JT-60SA	<b>ICHIKAWA, Masahiro</b>
<b>50</b>	Measurements of work function and negative ion spectra from C12A7 electride immersed in a hydrogen plasma.	<b>SASAO, Mamiko</b>
<b>51</b>	Estimation of inter conductor stray capacitance for HV dc transmission line of negative neutral beam injector	<b>M N, Vishnudev</b>
<b>27</b>	The Cs-free Negative Hydrogen Ion Source Project at KAERI: A New Concept Multi-Pulsed Ion Source	<b>HUH, Sung-Ryul</b>
<b>14</b>	Study of the multi-driver decoupling model of RF negative ion sources	<b>WANG, Na</b>
<b>16</b>	Some technical verification on infra-red temperature measurement	<b>SHI, Chao</b>
<b>23</b>	Electrostatic Simulation and Analysis of Transmission Line Corner Section for the CFETR NNBI test platform	<b>WANG, Rixin</b>

## Wednesday 9 September 2020

### Oral session O4: H<sup>-</sup> and D<sup>-</sup> sources for accelerators and fusion

Conveners: Mamiko Sasao; Katsuyoshi Tsumori

<b>Id</b>	<b>Title</b>	<b>Presenter</b>
13	110 mA Operation of J-PARC Cesium RF-Driven H <sup>-</sup> Ion Source	<b>UENO, Akira</b>
33	High-speed Emittance Measurements for Beams Extracted from J-PARC RF Ion Source	<b>SHIBATA, Takanori</b>
48	Thermal Measurement of Beam Emittance for High Power Density Negative Ion Beams for the ITER NBI	<b>SAQUILAYAN, Glynnis Mae</b>
52	Issues in the measured values of Langmuir and photo-detachment probes measuring Cs-seeded plasmas	<b>TSUMORI, Katsuyoshi</b>
44	Recent Achievements in Studies of Negative Beam Formation and Acceleration in the Tandem Accelerator at Budker Institute	<b>SANIN, Andrey</b>
47	Steady-state charge-exchange ion source of 10 mA H <sup>-</sup> beam	<b>SHIKHOVTSEV, Igor</b>
	<b><i>Coffee break</i></b>	
22	Negative Ion Beam Acceleration and Transport in the HV injector prototype	<b>SOTNIKOV, Oleg</b>
58	Initial results of experiments on the new negative ion source for Novosibirsk AMS.	<b>KONSTANTINOV, Eugene</b>
54	Noise Mitigation Techniques in Thermocouple signals in Negative ion sources with RF and HV transients	<b>TYAGI, Himanshu</b>
61	Prediction of negative hydrogen ion density in permanent magnet-based helicon ion source (HELEN) using deep learning techniques	<b>SHUKLA, Vipin</b>
55	Design of FPGA based Triggering and Synchronization System (TSS) for Laser Photo Detachment diagnostic in ROBIN	<b>TYAGI, Himanshu</b>

# Thursday 10 September 2020

## Poster session P3

Conveners: Olli Tarvainen, Andrey Sanin

<b>Id</b>	<b>Title</b>	<b>Presenter</b>
59	Hydrogen negative ion beam extraction with Cs	<b>PARK, Min</b>
60	Recent progress in the RF Hydrogen Negative Ion Source in NFRI	<b>NA, Byungkeun</b>
15	Design of gas flow control of RF negative hydrogen ion source based on ASIPP NBI test facility	<b>WANG, Jinxin</b>
24	Analysis of plasma characteristics of high-power radio frequency negative ion source based on Langmuir probe	<b>XU, Yongjian</b>
64	Study of population dynamics of excited atomic hydrogen in negative hydrogen ion sources base on collisional radiative model	<b>LI, Zengshan</b>
26	BTR code Recent Modifications for Multi-Run Operation	<b>DLOUGACH, Eugenia</b>
9	BTR Application for Beam Slowing-down Analysis	<b>DLOUGACH, Eugenia</b>
62	Analysis of the DEMO-FNS magnetic field influence on the neutral beam injection and methods of injectors shielding	<b>ANANYEV, Sergey</b>

## Oral session O5

67	<b>NIBS'20 Award Lecture</b>	<b>KASHIWAGI, Mieko</b>
66	<b>NIBS'20 Summary</b>	
68	<b>Welcome to NIBS'22</b>	