

Institute of Physics Publishing

13<sup>th</sup> International Conference  
on the Physics of  
Highly Charged Ions  
2006

Journal of Physics: Conference Series Vol. 58

August 28 – September 1, 2006  
Belfast, Northern Ireland

Printed from e-media with permission by:

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571  
[www.proceedings.com](http://www.proceedings.com)

ISBN: 978-1-60560-284-4

Some format issues inherent in the e-media version may also appear in this print version.

Copyright (2006) by the Institute of Physics Publishing.

All rights reserved.

For permission requests, please contact the Institute of Physics Publishing at the address below.

Institute of Physics Publishing  
Dirac House, Temple Back  
Bristol BS1 6BE UK

**Tel** +44 (0)117 929 7481  
**Fax** +44 (0)117 929 4318

## TABLE OF CONTENTS

<b>Colliding-Beams Experiments for Studying Fundamental Atomic Processes.....</b>	1
<i>R A Phaneuf</i>	
<b>Atomic Physics Experiments with Trapped and Cooled Highly Charged Ions .....</b>	9
<i>H-J Kluge, W Quint, D F A Winters</i>	
<b>Neutral-particle Emission from Multiply Charged Biomolecular Ions in Collisions with Electrons.....</b>	17
<i>T Tanabe</i>	
<b>Swift Highly Charged Ion Channelling.....</b>	25
<i>D Dauvergne</i>	
<b>HCI Issues in Tokamak Fusion Plasmas .....</b>	33
<i>HP Winter</i>	
<b>SASE FELs: Interactions with Atoms and Ions .....</b>	41
<i>E T Kennedy</i>	
<b>Fragmentation of Molecules by Fast Ion Impact .....</b>	49
<i>C Dimopoulou, N Haag, R Moshammer, P D Fainstein, A Dorn, M Dürr, D Fischer and J Ullrich</i>	
<b>The Progress of the HIRFL-CSR Project and the Commissioning of the Cluster Target .....</b>	55
<i>Xiaohong Cai, Rongchun Lu, Caojie Shao, Fangfang Ruan, Deyang Yu, Mingsheng Li, D K Toropkov, Yu V Shestakov, R S Sadykov, S A Zevakov, Jiawen Xia, Wenlong Zhan</i>	
<b>Status of Charged Particle Microbeams for Radiation Biology .....</b>	62
<i>M Folkard, K M Prise, B Vojnovic</i>	
<b>Production of a Nm Sized Slow HCI Beam with a Guiding Effect.....</b>	68
<i>T Ikeda, T M Kojima, Y Iwai, Y Kanai, T Kambara, T Nebiki, T Narusawa, Y Yamazaki</i>	
<b>Laser-accelerated High-energy Ions: State Of-the-art and Applications .....</b>	74
<i>M Borghesi, J Fuchs, O Willi</i>	
<b>Photorecombination Studies of Highly Charged Ions at the Storage Ring ESR: a Progress Report .....</b>	81
<i>C Brandau, C Kozuharov, A Müller, K Beckert, P Beller, D Bernhardt, F Bosch, S Böhm, F J Currell, A Gumberidze, Z Harman, J Jacobi, P H Mokler, F Nolden, R Reuschl, S Schippers, E W Schmidt, U Spillmann, Z Stachura, M Steck, Th Stöhlker, A Wolf</i>	
<b>Precision Tests of QED in Strong Fields: Experiments on Hydrogen- and Helium-like Uranium.....</b>	87
<i>A Gumberidze, Th Stöhlker, D Banaś, K Beckert, P Beller, H F Beyer, F Bosch, X Cai, S Hagmann, C Kozuharov, D Liesen, F Nolden, X Ma, P H Mokler, M Steck, D Sierkowski, S Tashenov, A Warczak, Y Zou</i>	
<b>Experiment and Theory in Interplay on High-Z Few-electron Ion Spectra from Foil-excited Ion Beams and Electron Beam Ion Traps .....</b>	93
<i>E Träbert, P Beiersdorfer, E H Pinnington, S B Utter, M J Vilcas, Y Ishikawa</i>	

<b>Spectroscopic Studies of Xenon EUV Emission in the 40-80 Nm Wavelength Range Using an Absolutely Calibrated Monochromator</b>	97
<i>H Merabet, R Bista, R Bruch, A L Godunov, S Fülling</i>	
<b>Prominent Soft X-ray Lines of Sr-like Au<sup>41+</sup> in Low-energy EBIT Spectrum</b>	101
<i>Marius Jonas Vilkas, Yasuyuki Ishikawa, Elmar Träbert</i>	
<b>Transitions Among Low-lying Levels of Mg V</b>	105
<i>N C Deb, A Hibbert</i>	
<b>High-precision Mass Measurements for Fundamental Applications Using Highly-charged Ions with SMILETRAP</b>	109
<i>Sz Nagy, T Fritioff, I Bergström, K Blaum, M Suhonen, A Solders, R Schuch</i>	
<b>X Ray and EUV Spectroscopic Measurements of Highly Charged Tungsten Ions Relevant to Fusion Plasmas</b>	113
<i>R Radtke, C Biedermann, P Mandelbaum, J L Schwob</i>	
<b>Stokes Lines, Quantum Defects and the Yukawa Potential</b>	117
<i>C J McGrath, S F C O'Rourke, D S F Crothers</i>	
<b>Towards a G-factor Determination of the Electron Bound in Highly-charged Calcium Ions</b>	121
<i>B Schabinger, J Alonso, K Blaum, G Werth, H-J Kluge, W Quint, M Vogel, S Stahl</i>	
<b>The <sup>1,3</sup>P<sup>o</sup> Resonant States of LiI and BiV Below the n = 2 Threshold</b>	125
<i>Ming-Keh Chen</i>	
<b>He-like Argon, Chlorine and Sulfur Spectra Measurement from an Electron Cyclotron Resonance Ion Trap</b>	129
<i>M Trassinelli, S Boucard, D S Covita, D Gotta, A Hirtl, P Indelicato, É-O Le Bigot, J M F dos Santos, L M Simons, L Stingelin, J F C A Veloso, A Wasser, J Zmeskal</i>	
<b>Correlation and Quantum Electrodynamical Effects on the Radiative Lifetime and Relativistic Nuclear Recoil in Ar<sup>13+</sup> and Ar<sup>14+</sup> Ions</b>	133
<i>Z Harman, U D Jentschura, C H Keitel, A Lapierre, R Soria Orts, J R Crespo López-Urrutia, H Tawara, J Ullrich, A N Artemyev, I I Tupitsyn, A V Volotka, V M Shabaev</i>	
<b>Photorecombination of Berylliumlike Ti<sup>18+</sup>: Hyperfine Quenching of Dielectronic Resonances</b>	137
<i>S Schippers, E W Schmidt, D Bernhardt, D Yu, A Müller, M Lestinsky, D A Orlov, M Grieser, R Repnow, A Wolf</i>	
<b>Investigation of the Decay Properties of the 1s(2s)<sup>2</sup> State in Li-Like Uranium</b>	141
<i>S Trotsenko, Th Stöhlker, D Banas, C Z Dong, S Fritzsche, A Gumberidze, S Hagmann, S Hess, P Indelicato, C Kozhuharov, M Nofal, R Reuschl, J Rzadkiewicz, U Spillmann, A Surzhykov, M Trassinelli, G Weber</i>	
<b>Study of Intra-L Shell Transitions in Be-like Uranium</b>	145
<i>J Rzadkiewicz, D Banaś, H F Beyer, C Brandau, C Z Dong, S Fritzsche, A Gójska, A Gumberidze, S Hagmann, C Kozhuharov, R Reuschl, U Spillmann, Th Stöhlker, A Surzhykov, S Tashenov, S Trotsenko</i>	
<b>RCI Simulation for EUV Spectra from Sn Ions</b>	149
<i>T Kagawa, H Tanuma, H Ohashi, K Nishihara</i>	
<b>Relativistic Atomic Data for EUV and X-ray Spectra of Highly Charged Cu-, Zn-, Ga- and Ge-like Ions (70 ≤ Z ≤ 92)</b>	153
<i>P Quinet, E Biémont, P Palmeri, E Träbert</i>	
<b>MCDF Calculations for EUV-emissions of 4d-open Shell Ions Based on the Features of Non-local Exchange Integrals</b>	157
<i>Fumihiro Koike, Stephan Fritzsche, Katsunobu Nishihara</i>	

<b>Momentum-transfer Dependence of Ionization Cross Sections for C<sup>6+</sup>+He Collisions</b>	161
<i>J Fiol, S Otranto, R E Olson</i>	
<b>X-ray Emission Cross Sections Following Charge Exchange by Multiply Charged Ions of Astrophysical Interest</b>	165
<i>S Otranto, R E Olson, P Beiersdorfer</i>	
<b>Electron Impact Excitation of Ne-like Ni XIX</b>	169
<i>K M Aggarwal, F P Keenan</i>	
<b>Molecular Orientation Effects in CO Fragmentation Induced by Charge-changing Collisions of 6 MeV O<sup>4+</sup> Ions</b>	173
<i>T Mizuno, T Majima, H Tsuchida, Y Nakai, A Itoh</i>	
<b>Fine Structure Effective Collision Strengths for the Electron Impact Excitation of the Sulphur Ion S V</b>	177
<i>C E Hudson, K L Bell</i>	
<b>Single and Double Electron Capture by Slow He<sup>2+</sup> from Atoms and Molecules</b>	181
<i>S Figueira da Silva, G Kowarik, F Aumayr, HP Winter</i>	
<b>Experimental Evidence for Young's Interference Effects in Autoionization Following 30 keV He<sup>2+</sup>+H<sub>2</sub> Collision</b>	185
<i>J-Y Chesnel, A Hajaji, R O Barrachina, F Frémont</i>	
<b>Charge Exchange of Highly Charged Argon Ions As a Function of Projectile Energy</b>	188
<i>F I Allen, C Biedermann, R Radtke, G Fussmann</i>	
<b>Comparison of the Stopping Powers Calculated by Using Rate Equations with Those by the Monte Carlo Method</b>	192
<i>K Moribayashi</i>	
<b>Electron Capture by O<sup>3+</sup> Ions from He, H<sub>2</sub>O and CO<sub>2</sub></b>	195
<i>O Abu-Haija, J A Wardwell, E Y Kamber</i>	
<b>State Selective Capture by Highly Charged Xe Ions</b>	199
<i>V G Hasan, S Knoop, R Morgenstern, R Hoekstra</i>	
<b>Electron Capture and Ionization in Collisions of Multiply Charged Ions with H(2s)</b>	203
<i>L F Errea, F Guzmán, Clara Illescas, L Méndez, B Pons, A Riera, J Suárez</i>	
<b>Fully Differential Cross Sections for 3.6 MeV u<sup>-1</sup> Au<sup>Z+</sup><sub>p</sub> + He Collisions</b>	207
<i>D S F Crothers, C J McGrath, R T Pedlow, S F C O'Rourke</i>	
<b>Effects of Configuration Interaction on the Alignment of Beryllium-like Ions</b>	211
<i>A Surzhykov, U D Jentschura, Th Stöhlker, S Fritzsche</i>	
<b>Interferences in Electron Emission Spectra from 1, 3 and 5 MeV H<sup>+</sup> + N<sub>2</sub> Collisions</b>	215
<i>J L Baran, S Das, F Járai-Szabó, L Nagy, J A Tanis</i>	
<b>Cusp Formation in Classical Trajectory Monte-carlo Calculations of Single Atomic Ionization by the Impact of Neutral Projectiles</b>	219
<i>L Sarkadi, R O Barrachina, P Macri</i>	
<b>Electron-ion Recombination Measurements of Fe<sup>7+</sup>, Fe<sup>8+</sup>, Fe<sup>13+</sup> Motivated by Active Galactic Nuclei X-ray Absorption Features</b>	223
<i>E W Schmidt, S Schippers, C Brandau, D Bernhardt, A Müller, M Lestinsky, F Sprenger, J Homann, D A Orlov, M Grieser, R Repnow, A Wolf, D Lukic, M Schnell, D W Savin</i>	
<b>Resonances in Electron Capture Total Cross Sections for Ion-H(1s) Collisions</b>	227
<i>P Barragán, L F Errea, F Guzmán, L Méndez, I Rabadán, A Riera</i>	

<b>4d-4f Unresolved Transition Arrays of Xenon and Tin Ions in Charge Exchange Collisions .....</b>	231
<i>H Tanuma, H Ohashi, S Fujioka, H Nishimura, A Sasaki, K Nishihara</i>	
<b>Charge Exchange Spectroscopy in Sn<sup>q+</sup>(q = 6-15)-he Collisions .....</b>	235
<i>H Ohashi, H Tanuma, S Fujioka, H Nishimura, A Sasaki, K Nishihara</i>	
<b>Interference Between Dielectronic and Radiative Recombination in Electron - Highly Charged Bi Collisions .....</b>	239
<i>Hirotugu Tobiya, Hiroaki Nohara, Anthony P Kavanagh, Nobuyuki Nakamura, Hirofumi Watanabe, Hiroyuki A Sakaue, Yueming Li, Daiji Kato, Fred J Currell, Chikashi Yamada, Shunsuke Ohtani</i>	
<b>Radiative Processes Studied for Bare Uranium Ions in Collisions with H<sub>2</sub> .....</b>	243
<i>G Weber, Th Stöhlker, D Banas, S Fritzsche, A Gumberidze, S Hagmann, S Hess, C Kozuharov, M Nofal, U Popp, R Reuschl, U Spillmann, A Surzhykov, S Trotsenko</i>	
<b>Electron Localization Among Three Moving Centers: Coulomb Explosion with Slow Highly Charged Ions .....</b>	247
<i>Tomoko Ohyama-Yamaguchi, Atsushi Ichimura</i>	
<b>Competition Between Radiative Recombination and Nuclear Excitation by Electron Capture .....</b>	251
<i>A Pálffy, Z Harman, A Surzhykov, W Scheid</i>	
<b>Projectile Focusing Near the Recoil-ion Threshold .....</b>	255
<i>V D Rodríguez, P A Macri, R O Barrachina</i>	
<b>Ionization of Helium by Fast and Highly Charged Ions .....</b>	259
<i>P A Macri, V D Rodríguez, R O Barrachina</i>	
<b>Theoretical Multiconfiguration Dirac-Fock Method Study on the Structure of L-X-ray Satellite and Hypersatellite Lines of Zirconium .....</b>	263
<i>Katarzyna Ślabowska, Marek Polasik</i>	
<b>Resonant Electron Processes with Open-shell Highly Charged Ion Targets .....</b>	267
<i>Nobuyuki Nakamura, Hirotugu Tobiya, Hiroaki Nohara, Anthony P Kavanagh, Hirofumi Watanabe, Hiroyuki A Sakaue, Yueming Li, Daiji Kato, Fred J Currell, Chikashi Yamada, Shunsuke Ohtani</i>	
<b>Theoretical Study of Multiple Ionization of Diatomic Molecules by Ion Impact .....</b>	271
<i>C A Tachino, M E Galassi, R D Rivarola</i>	
<b>Energy Gain Spectroscopy of Multiply Charged Light Ions in Collisions with Hydrogen at 50 eV/u .....</b>	275
<i>K Ishii, Y Inoue, H Ogawa, A Itoh, N Sakamoto</i>	
<b>Charge Changing Cross Sections in Collisions of <sup>18</sup>O<sup>7+</sup> with He at Energies Below 1 keV/u .....</b>	279
<i>K Ishii, A Itoh, K Okuno</i>	
<b>Electron-impact Excitation of Fe II .....</b>	283
<i>C A Ramsbottom, C J Noble, V M Burke, M P Scott, P G Burke</i>	
<b>Emission Characteristics of K Cascade Photons After Radiative Electron Capture at Strong Central Fields .....</b>	287
<i>P H Mokler, X Ma, E G Drukarev, A I Mikhailov, I A Mikhailov</i>	
<b>Forward Backward Asymmetry in Electron Emission from H<sub>2</sub> by Fast Carbon Ions and Young Type Interference Effect .....</b>	291
<i>D Misra, A H Kelkar, U Kadkhane, A Kumar, P D Fainstein, L C Tripathi</i>	

<b>Vacancy Rearrangement Processes in Multiply Ionized Atoms .....</b>	295
<i>M Czarnota, M Pajek, D Banaś, J-CI Dousse, Y-P Maillard, O Mauron, P A Raboud, M Berset, J Hoszowska, K Ślabkowska, M Polasik, D Chmielewska, J Rzadkiewicz, Z Sujkowski</i>	
<b>A New Method for Detecting the Contribution of High Rydberg States to Electron-ion Recombination .....</b>	299
<i>I Orbán, S Böhm, M Fogle, A Paál, R Schuch</i>	
<b>First Results from the Stockholm Electron Beam Ion Trap .....</b>	303
<i>S Böhm, A Enulescu, T Fritio, I Orban, S Tashenov, R Schuch</i>	
<b>Radiative Electron Capture to Continuum (RECC) in 90AMeV U<sup>88+</sup>(1s<sup>2</sup>2s<sup>2</sup>) + N<sub>2</sub>: the Short Wavelength Limit of Electron Nucleus Bremsstrahlung .....</b>	307
<i>M Nofal, S Hagmann, Th Stöhlker, D H Jakubassa-Amundsen, Ch Kozhuharov, X Wang, A Gumberidze, U Spillmann, R Reuschl, S Hess, Strotzenko, D Banas, F Bosch, D Liesen, R Moshammer, J Ullrich, R Dörner, M Steck, F Nolden, P Beller, K Beckert, B Franczak</i>	
<b>Multiple Charge Transfer by Slow Multi-Charged Xe Ions .....</b>	311
<i>H Ito, Y Chihara, Y Suzuki, T Hirayama, T Koizumi</i>	
<b>Relativistic Collisions of Highly-charged Ions: Electron Capture Via Electron-positron Pair Production .....</b>	315
<i>D S Condren, J F McCann, D S F Crothers</i>	
<b>Charging and Discharging of Nano-capillaries During Ion-guiding of Multiply Charged Projectiles .....</b>	319
<i>M Fürsatz, W Meissl, S Pleschko, I C Gebeshuber, N Stolterfoht, HP Winter, F Aumayr</i>	
<b>Angular Distribution of Ions Transmitted by an Anodic Nanocapillary Array .....</b>	323
<i>H F Krause, C R Vane, F W Meyer, H M Christen</i>	
<b>Stark Mixing of Ionic Intermediate States in Radiative Recombination of Channeled Ions .....</b>	327
<i>K Yu Bahmina, V V Balashov, A A Sokolik, A V Stysin</i>	
<b>Observation of HCl-induced Nanostructures with a Scanning Probe Microscope .....</b>	331
<i>Masahide Tona, Hirofumi Watanabe, Satoshi Takahashi, Yuso Fujita, Takashi Abe, Sun Jian, Nobuyuki Nakamura, Nobuo Yoshiyasu, Chikashi Yamada, Makoto Sakurai, Shunsuke Ohtani</i>	
<b>Auger Electrons Emitted from Nitrogen Ions Passing Through a Metallic Microcapillary .....</b>	335
<i>Y Kanai, Y Nakai, Y Iwai, K Nishio, H Masuda, Y Yamazaki</i>	
<b>X-ray Emission in Slow Highly Charged Ion-surface Collisions .....</b>	339
<i>H Watanabe, T Abe, Y Fujita, J Sun, S Takahashi, M Tona, N Yoshiyasu, N Nakamura, M Sakurai, C Yamada, S Ohtani</i>	
<b>Deposition and Re-emission of Potential Energy - Extended Dynamical COB Simulation .....</b>	343
<i>D Kost, F Röder, W Möller</i>	
<b>Formation of Negative Ions in Collisions Between Fluorine Ions and C<sub>60</sub> Molecule Versus the Kinetic Energy of Projectiles .....</b>	347
<i>S Martin, L Chen, R Brédy, J Bernard, M Kerleroux, G Montagne, X Ma, B Wei</i>	
<b>SPM Observation of Slow Highly Charged Ion Induced Nanodots on Highly Orientated Pyrolytic Graphite .....</b>	351
<i>Y Mitsuda, B E O'Rourke, N Nakamura, Y Kanai, S Ohtani, Y Yamazaki</i>	
<b>Conformational Changes to Plasmid DNA Induced by Low Energy Carbon Ions .....</b>	355
<i>C A Hunniford, D J Timson, R J H Davies, R W McCullough</i>	

<b>Doubly-resonant Coherent Excitation of HCl Planar Channeled in a Si Crystal .....</b>	359
Y Nakano, S Masugi, T Muranaka, T Azuma, C Kondo, A Hatakeyama, K Komaki, Y Yamazaki, E Takada, T Murakami	
<b>Observation of High-lying Weak Autoionizing Resonances of Ne, Na, and Mg Atoms by Charge-separated Photoion-yield Method .....</b>	363
K Kato, T Osawa, S Obara, Y Tohyama, T Nagata, Y Azuma, F Koike	
<b>Theoretical Studies on Photoionization of Na-like Iron Ion.....</b>	367
J J Wan, C Z Dong, C C Sang, X B Ding, L Y Xie, J Jiang	
<b>Quantum Revivals in Ultrashort Intense Field Dissociation of Molecular Ions.....</b>	371
D S Murphy, C R Calvert, J McKenna, I D Williams, J F McCann	
<b>Imaging Quantum Vibrations on an Ultrashort Timescale: the Deuterium Molecular Ion .....</b>	375
J McKenna, C R Calvert, W A Bryan, E M L English, J Wood, D S Murphy, I C E Turcu, J M Smith, K G Ertel, O Chekhlov, E J Divall, J F McCann, W R Newell, I D Williams	
<b>Dynamic Imaging of a Dissociative D<sub>2</sub><sup>+</sup> Nuclear Wavepacket in Intense Laser Fields .....</b>	379
C R Calvert, J McKenna, W A Bryan, J Wood, E M L English, I C E Turcu, J M Smith, K G Ertel, O Chekhlov, E J Divall, W R Newell, I D Williams	
<b>Fine-structure Resolved Photoionization of Metastable Be-like Ions C III, N IV, and O V .....</b>	383
A Müller, S Schippers, R A Phaneuf, A L D Kilcoyne, H Bräuning, A S Schlachter, M Lu, B M McLaughlin	
<b>Doubly Excited Resonances in the Photoionization Spectrum of Li<sup>+</sup> .....</b>	387
S W J Scully, I Álvarez, C Cisneros, E D Emmons, M F Gharaibeh, D Leitner, M S Lubell, A Müller, R A Phaneuf, R Püttner, A S Schlachter, S Schippers, W Shi, C P Ballance, B M McLaughlin	
<b>Determination of Charge State, Energy and Angular Distributions of Tin Ions Emitted from Laser Produced Plasma Based EUV Sources. ....</b>	391
O Morris, P Hayden, P Dunne, F O'Reilly, G O'Sullivan, E Sokell, E L Antonsen, S N Srivastava, K C Thompson, D N Ruzic	
<b>Compact 14.5 GHz All-permanent Magnet ECRIS for Experiments with Slow Multicharged Ions .....</b>	395
E Galutschek, R Trassl, E Salzborn, F Aumayr, HP Winter	
<b>First Investigations on the Dresden EBIS-A.....</b>	399
V P Ovsyannikov, G Zschornack, F Großmann, R Heller, U Kentsch, M Kreller, S Landgraf, M Schmidt, F Ullmann	
<b>Injection of Refractory Metals Into EBIT Using a Knudsen Cell .....</b>	403
C Yamada, K Nagata, N Nakamura, S Ohtani, S Takahashi, H Tobiya, M Tona, H Watanabe, N Yoshiyasu, M Sakurai, A P Kavanagh, F J Currell	
<b>Recent Experimental Developments for the Lamb Shift Investigation in Heavy Ions .....</b>	407
R Reuschl, D Banas, H F Beyer, S Chatterjee, A Gumberidze, S Hess, T Krings, D Liesen, D Protic, U Spillmann, Th Stöhlker, M Trassinelli, S Trotsenko, Gweber, the Focal Collaboration	
<b>A 2D Position Sensitive Germanium Detector for Spectroscopy and Polarimetry of High-energetic X-rays.....</b>	411
Th Stöhlker, U Spillmann, D Banas, H F Beyer, J Cl Dousse, S Chatterjee, S Hess, C Kozhuharov, M Kavcic, T Krings, D Protic, R Reuschl, J Szlachetko, S Tashenov, S Trotsenko	

<b>Development of a Bragg Spectrometer for Experiments with Highly Charged Ions at Storage Rings.....</b>	415
<i>D Banaś, P Jagodziński, M Pajek, Th Stöhlker, M Trassinelli, H F Beyer, R Reuschl, U Spillmann</i>	
<b>Progress at the Shanghai EBIT .....</b>	419
<i>Mianhong He, Yong Liu, Yang Yang, Shimin Wu, Weidong Chen, Wei Hu, Panlin Guo, Di Lu, Yunqing Fu, Min Huang, Xuemei Zhang, Roger Hutton, Leif Liljeby, Yaming Zou</i>	
<b>Highly Charged Ion Beam Diagnostics at the mVINIS Ion Source.....</b>	423
<i>B Popeskov, M Milivojevic, J Cvetic, T Nedeljkovic, I Draganic</i>	
<b>Multiply Charged Ions from Solid Substances with the mVINIS Ion Source .....</b>	427
<i>I Draganic, T Nedeljkovic, J Jovovic, M Siljegović, A Dobrosavljević</i>	
<b>The LPCTrap Facility: a Transparent Paul Trap for the Search of Exotic Couplings in the Beta Decay of Radioactive <math>{}^6\text{He}^+</math> Ions.....</b>	431
<i>X Fléchard, G Ban, J Blieck, D Durand, F Duval, M Herbane, M Labalme, Y Lemière, E Liénard, F Mauger, A Méry, O Naviliat-Cuncic, J C Thomas, D Rodríguez</i>	
<b>First Results from the Recently Developed, High-performance Next-generation 18GHz ECRIS-SECRAL.....</b>	435
<i>L T Sun, H W Zhao, X H Guo, X Z Zhang, Z M Zhang, P Yuan, W L Zhan, B W Wei, X H Cai, J Y Li, Y C Feng, W He, Y Cao, M T Song, X X Li, H Wang, B H Ma, W Lu, T Jin</i>	
<b>Radiation from K-shell Filling in Highly Charged Ions: a Driver for Resonant Combination Cancer Therapy?.....</b>	439
<i>A P Kavanagh, J D Gillaspy, D G Hirst, M H Mendenhall, N Nakamura, S Ohtani, H Watanabe, F J Currell</i>	
<b>Simulation of Charge Breeding for Trapped Ions.....</b>	443
<i>R Becker, O Kester, Th Stoehlker</i>	
<b>Advanced Photonics for SPARC Or Other FAIR Projects .....</b>	447
<i>Dietrich Habs</i>	
<b>The Potential of Highly Charged Ions: Possible Future Applications .....</b>	451
<i>J D Gillaspy, J M Pomeroy, A C Perrella, H Grube</i>	
<b>Author Index</b>	