Dirk WÃ¼nderlich

List of Publications by Year
in descending order

134 papers	3,638 citations	147801 31 h-index	155660 55 g-index
135 all docs	135 docs citations	135 times ranked	1242 citing authors

#	Article	IF	Citations
1	Overview of the RF source development programme at IPP Garching. Nuclear Fusion, 2006, 46, S220-S238.	3.5	356
2	Spectroscopyâ€"a powerful diagnostic tool in source development. Nuclear Fusion, 2006, 46, S297-S306.	3.5	171
3	Progress of the development of the IPP RF negative ion source for the ITER neutral beam system. Nuclear Fusion, 2007, 47, 264-270.	3.5	140
4	Design of the â€œhalf-sizeâ€• ITER neutral beam source for the test facility ELISE. Fusion Engineering and Design, 2009, 84, 915-922.	1.9	113
5	Physical performance analysis and progress of the development of the negative ion RF source for the ITER NBI system. Nuclear Fusion, 2009, 49, 125007.	3.5	110
6	Franckâ€"Condon factors, transition probabilities, and radiative lifetimes for hydrogen molecules and their isotopomeres. Atomic Data and Nuclear Data Tables, 2006, 92, 853-973.	2.4	106
7	Negative ion RF sources for ITER NBI: status of the development and recent achievements. Plasma Physics and Controlled Fusion, 2007, 49, B563-B580.	2.1	101
8	Towards large and powerful radio frequency driven negative ion sources for fusion. New Journal of Physics, 2017, 19, 015001.	2.9	98
9	Development of negative hydrogen ion sources for fusion: Experiments and modelling. Chemical Physics, 2012, 398, 7-16.	1.9	93
10	PIC code for the plasma sheath in large caesiated RF sources for negative hydrogen ions. Plasma Sources Science and Technology, 2009, 18, 045031.	3.1	92
11	A novel diagnostic technique for Hâˆ'(Dâˆ') densities in negative hydrogen ion sources. New Journal of Physics, 2006, 8, 301-301.	2.9	85
12	Application of a collisional radiative model to atomic hydrogen for diagnostic purposes. Journal of Quantitative Spectroscopy and Radiative Transfer, 2009, 110, 62-71.	2.3	74
13	Magnetic filter field dependence of the performance of the RF driven IPP prototype source for negative hydrogen ions. Plasma Physics and Controlled Fusion, 2011, 53, 115006.	2.1	68
14	The development of the radio frequency driven negative ion source for neutral beam injectors (invited). Review of Scientific Instruments, 2012, 83, 02B104.	1.3	67
15	Plasma expansion across a transverse magnetic field in a negative hydrogen ion source for fusion. Plasma Sources Science and Technology, 2014, 23, 044002.	3.1	57
16	Progress of the ELISE test facility: results of caesium operation with low RF power. Nuclear Fusion, 2015, 55, 053005.	3.5	56
17	Negative hydrogen ion transport in RF-driven ion sources for ITER NBI. Plasma Physics and Controlled Fusion, 2009, 51, 045005.	2.1	48
18	Evaluation of State-Resolved Reaction Probabilities and Their Application in Population Models for He, H, and H2. Atoms, 2016, 4, 26.	1.6	48

#	ARTICLE	IF	CITATIONS
19	Low pressure and high power rf sources for negative hydrogen ions for fusion applications (ITER) Tj ETQq1 1 0.784314 rgBT /Overlock	1.3	45
20	On the road to ITER NBIs: SPIDER improvement after first operation and MITICA construction progress. Fusion Engineering and Design, 2021, 168, 112622.	1.9	44
21	Quantification of the VUV radiation in low pressure hydrogen and nitrogen plasmas. Plasma Sources Science and Technology, 2016, 25, 045006.	3.1	43
22	The ITER Neutral Beam Test Facility towards SPIDER operation. Nuclear Fusion, 2017, 57, 086027.	3.5	43
23	Towards 20 A negative hydrogen ion beams for up to 1 h: Achievements of the ELISE test facility (invited). Review of Scientific Instruments, 2016, 87, 02B307.	1.3	40
24	Development of a RF-driven ion source for the ITER NBI system. Fusion Engineering and Design, 2009, 84, 265-268.	1.9	39
25	Commissioning and first results of the ITER-relevant negative ion beam test facility ELISE. Fusion Engineering and Design, 2013, 88, 3132-3140.	1.9	39
26	Towards powerful negative ion beams at the test facility ELISE for the ITER and DEMO NBI systems. Nuclear Fusion, 2017, 57, 116007.	3.5	39
27	Neutral depletion in an H^{â^'}source operated at high RF power and low input gas flow. Plasma Sources Science and Technology, 2011, 20, 045005.	3.1	36
28	Magnetic filter field for ELISEâ€"â€"Concepts and design. Fusion Engineering and Design, 2013, 88, 1015-1019.	1.9	36
29	RADIâ€"A RF source size-scaling experiment towards the ITER neutral beam negative ion source. Fusion Engineering and Design, 2007, 82, 407-423.	1.9	34
30	Towards a realistic 3D simulation of the extraction region in ITER NBI relevant ion source. Nuclear Fusion, 2015, 55, 033011.	3.5	32
31	Influence of the magnetic field topology on the performance of the large area negative hydrogen ion source test facility ELISE. Plasma Physics and Controlled Fusion, 2016, 58, 125005.	2.1	32
32	Dynamics of the transport of ionic and atomic cesium in radio frequency-driven ion sources for ITER neutral beam injection. Plasma Physics and Controlled Fusion, 2011, 53, 105014.	2.1	31
33	On the proton flux toward the plasma grid in a RF-driven negative hydrogen ion source for ITER NBI. Plasma Physics and Controlled Fusion, 2012, 54, 125002.	2.1	31
34	Optical emission spectroscopy at the large RF driven negative ion test facility ELISE: Instrumental setup and first results. Review of Scientific Instruments, 2013, 84, 093102.	1.3	31
35	Fluid-model analysis on discharge structuring in the RF-driven prototype ion-source for ITER NBI. Plasma Sources Science and Technology, 2018, 27, 125008.	3.1	31
36	Multi-view fast-ion D-alpha spectroscopy diagnostic at ASDEX Upgrade. Review of Scientific Instruments, 2013, 84, 113502.	1.3	30

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37	Overview of the TCV tokamak experimental programme. Nuclear Fusion, 2022, 62, 042018.	3.5	30
38	Formation of large negative deuterium ion beams at ELISE. Review of Scientific Instruments, 2019, 90, 113304.	1.3	29
39	Deuterium results at the negative ion source test facility ELISE. Review of Scientific Instruments, 2018, 89, 052102.	1.3	28
40	Achievement of ITER-relevant accelerated negative hydrogen ion current densities over 1000â€‰s at the ELISE test facility. Nuclear Fusion, 2019, 59, 084001.	3.5	28
41	First results of the ITER-relevant negative ion beam test facility ELISE (invited). Review of Scientific Instruments, 2014, 85, 02B305.	1.3	27
42	Spectroscopic characterization of H ₂ and D ₂ helicon plasmas generated by a resonant antenna for neutral beam applications in fusion. Nuclear Fusion, 2017, 57, 036024.	3.5	27
43	A comparison of hydrogen and deuterium plasmas in the IPP prototype ion source for fusion. AIP Conference Proceedings, 2013, , .	0.4	26
44	Performance of multi-aperture grid extraction systems for an ITER-relevant RF-driven negative hydrogen ion source. Nuclear Fusion, 2011, 51, 073035.	3.5	25
45	Latest achievements of the negative ion beam test facility ELISE. Fusion Engineering and Design, 2018, 136, 569-574.	1.9	25
46	Yacora on the Web: Online collisional radiative models for plasmas containing H, H2 or He. Journal of Quantitative Spectroscopy and Radiative Transfer, 2020, 240, 106695.	2.3	25
47	On the electron extraction in a large RF-driven negative hydrogen ion source for the ITER NBI system. Plasma Physics and Controlled Fusion, 2014, 56, 025007.	2.1	24
48	On the meniscus formation and the negative hydrogen ion extraction from ITER neutral beam injection relevant ion source. Plasma Physics and Controlled Fusion, 2014, 56, 105001.	2.1	23
49	Review of particle-in-cell modeling for the extraction region of large negative hydrogen ion sources for fusion. Review of Scientific Instruments, 2018, 89, 052001.	1.3	22
50	0D model of magnetized hydrogenâ€“helium wall conditioning plasmas. Plasma Physics and Controlled Fusion, 2011, 53, 125003.	2.1	21
51	Modelling the ion source for ITER NBI: from the generation of negative hydrogen ions to their extraction. Plasma Sources Science and Technology, 2014, 23, 015008.	3.1	21
52	Negative Hydrogen Ion Sources for Fusion: From Plasma Generation to Beam Properties. Frontiers in Physics, 2021, 9, .	2.1	21
53	A novel hydrogenic spectroscopic technique for inferring the role of plasmaâ€“molecule interaction on power and particle balance during detached conditions. Plasma Physics and Controlled Fusion, 2021, 63, 035018.	2.1	20
54	Massive parallel 3D PIC simulation of negative ion extraction. Journal of Applied Physics, 2017, 122, .	2.5	19

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55	3D-PIC modelling of a low temperature plasma sheath with wall emission of negative particles and its application to NBI sources. Journal Physics D: Applied Physics, 2019, 52, 235202.	2.8	19
56	NNBI for ITER: status of long pulses in deuterium at the test facilities BATMAN Upgrade and ELISE. Nuclear Fusion, 2021, 61, 096023.	3.5	19
57	Simulation of cesium injection and distribution in rf-driven ion sources for negative hydrogen ion generation. Review of Scientific Instruments, 2010, 81, 02A706.	1.3	18
58	Spatial distribution of the plasma parameters in the RF negative ion source prototype for fusion. AIP Conference Proceedings, 2015, , .	0.4	18
59	Modelling of caesium dynamics in the negative ion sources at BATMAN and ELISE. AIP Conference Proceedings, 2017, , .	0.4	18
60	Transport of negative hydrogen and deuterium ions in RF-driven ion sources. Plasma Physics and Controlled Fusion, 2010, 52, 045017.	2.1	17
61	Achievements of the ELISE test facility in view of the ITER NBI. Fusion Engineering and Design, 2019, 146, 455-459.	1.9	17
62	Isotope exchange experiments on TEXTOR and TORE SUPRA using Ion Cyclotron Wall Conditioning and Glow Discharge Conditioning. Journal of Nuclear Materials, 2011, 415, S1033-S1036.	2.7	16
63	Initial caesium conditioning in deuterium of the ELISE negative ion source. Plasma Physics and Controlled Fusion, 2018, 60, 085007.	2.1	16
64	Achievement of the ITER NBI ion source parameters for hydrogen at the test facility ELISE and present Status for deuterium. Fusion Engineering and Design, 2020, 156, 111609.	1.9	16
65	Application of molecular convergent close-coupling cross sections in a collisional radiative model for the triplet system of molecular hydrogen. Journal Physics D: Applied Physics, 2021, 54, 115201.	2.8	16
66	Using the radiation of hydrogen molecules for electron temperature diagnostics of divertor plasmas. Plasma Physics and Controlled Fusion, 2001, 43, 907-918.	2.1	15
67	The IPP RF Source: A High Power, Low Pressure Negative Ion Source For The Neutral Beam Injection System Of ITER. AIP Conference Proceedings, 2008, , .	0.4	15
68	Progress of the ELISE test facility: towards one hour pulses in hydrogen. Nuclear Fusion, 2016, 56, 106004.	3.5	15
69	Photon efficiency (S+D)/XB of hydrogen molecules at low electron temperatures. Journal of Nuclear Materials, 2003, 313-316, 743-747.	2.7	14
70	Influence of Magnetic Fields and Biasing on the Plasma of a RF Driven Negative Ion Source. AIP Conference Proceedings, 2007, , .	0.4	14
71	Franckâ€“Condon factors for moleculeâ€“ion reactions of and its isotopomers. Atomic Data and Nuclear Data Tables, 2011, 97, 152-185.	2.4	14
72	Size scaling of negative hydrogen ion sources for fusion. AIP Conference Proceedings, 2015, , .	0.4	14

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73	Comparison of ONIX simulation results with experimental data from the BATMAN testbed for the study of negative ion extraction. Nuclear Fusion, 2016, 56, 106025.	3.5	14
74	Beam characterization by means of emission spectroscopy in the ELISE test facility. Plasma Physics and Controlled Fusion, 2017, 59, 055017.	2.1	14
75	Studies of Cs dynamics in large ion sources using the CsFlow3D code. AIP Conference Proceedings, 2018, , .	0.4	14
76	Plasma And Beam Homogeneity Of The RF-Driven Negative Hydrogen Ion Source For ITER NBI. , 2009, , .		13
77	Influence of the configuration of the magnetic filter field on the discharge structure in the RF driven negative ion source prototype for fusion. AIP Conference Proceedings, 2017, , .	0.4	13
78	Cavity ring-down spectroscopy system for the evaluation of negative hydrogen ion density at the ELISE test facility. Review of Scientific Instruments, 2020, 91, 013510.	1.3	13
79	Long Pulse H[sup â^’] Beam Extraction With A RF Driven Ion Source With Low Fraction Of Co-Extracted Electrons. , 2009, , .		12
80	Vibrationally resolved ionization cross sections for the ground state and electronically excited states of the hydrogen molecule. Chemical Physics, 2011, 390, 75-82.	1.9	11
81	Spectroscopic characterisation of the PSI-2 plasma in the ionising and recombining state. Journal of Nuclear Materials, 2013, 438, S1249-S1252.	2.7	11
82	The particle tracking code BBCNI for large negative ion beams and their diagnostics. Plasma Physics and Controlled Fusion, 2019, 61, 105012.	2.1	11
83	A collisional radiative model for low-pressure hydrogenâ€“caesium plasmas and its application to an RF source for negative hydrogen ions. Journal of Quantitative Spectroscopy and Radiative Transfer, 2014, 149, 360-371.	2.3	10
84	Concepts of magnetic filter fields in powerful negative ion sources for fusion. Review of Scientific Instruments, 2016, 87, 02B315.	1.3	10
85	Long pulse operation at ELISE: Approaching the ITER parameters. AIP Conference Proceedings, 2018, , .	0.4	10
86	Spatial structure of detached plasmas in the ULS divertor simulator. Journal of Nuclear Materials, 2005, 337-339, 232-236.	2.7	9
87	Atomic and Molecular Collisional Radiative Modeling for Spectroscopy of Low Temperature and Magnetic Fusion Plasmas. , 2011, , .		9
88	Commissioning of the negative ion testbed ELISE. AIP Conference Proceedings, 2013, , .	0.4	9
89	Tomography feasibility study on the optical emission spectroscopy diagnostic for the negative ion source of the ELISE test facility. Plasma Physics and Controlled Fusion, 2014, 56, 015006.	2.1	9
90	3D numerical simulations of negative hydrogen ion extraction using realistic plasma parameters, geometry of the extraction aperture and full 3D magnetic field map. Review of Scientific Instruments, 2014, 85, 02B301.	1.3	9

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91	Long pulse, high power operation of the ELISE test facility. AIP Conference Proceedings, 2017, , .	0.4	9
92	Effects of the magnetic field topology on the co-extracted electron current in a negative ion source for fusion. Journal of Applied Physics, 2021, 130, .	2.5	9
93	Reconstruction of the large multi-aperture beam via IR calorimetry technique and beam emission spectroscopy at the ELISE test facility. Nuclear Fusion, 2020, 60, 066025.	3.5	9
94	Simulations for the generation and extraction of negative hydrogen ions in RF-driven ion sources. , 2009, , .		8
95	Advanced ion beam calorimetry for the test facility ELISE. AIP Conference Proceedings, 2015, , .	0.4	8
96	Impact of vibrationally resolved H₂ on particle balance in Eirene simulations. Contributions To Plasma Physics, 2022, 62, .	1.1	8
97	Using the Radiation of Hydrogen Atoms and Molecules to Determine Electron Density and Temperature in the Linear Plasma Device PSI-2. Fusion Science and Technology, 2013, 63, 201-204.	1.1	7
98	BATMAN beam properties characterization by the beam emission spectroscopy diagnostic. AIP Conference Proceedings, 2015, , .	0.4	7
99	Operation of large RF sources for Hâˆ’: Lessons learned at ELISE. AIP Conference Proceedings, 2017, , .	0.4	7
100	On the vertical uniformity of an ITER-like large beam. Fusion Engineering and Design, 2020, 159, 111760.	1.9	7
101	Operation of Large RF Driven Negative Ion Sources for Fusion at Pressures below 0.3 Pa. Plasma, 2021, 4, 172-182.	1.8	7
102	Modeling the particle transport and ion production in a RF driven negative hydrogen ion source for ITER NBI. , 2013, , .		6
103	Kinetic sheath in presence of multiple positive ions, negative ions, and particle wall emission. Journal of Applied Physics, 2020, 127, .	2.5	6
104	Emission spectroscopy of negative hydrogen ion sources: From VUV to IR. Review of Scientific Instruments, 2021, 92, 123510.	1.3	6
105	First hydrogen operation of NIO1: Characterization of the source plasma by means of an optical emission spectroscopy diagnostic. Review of Scientific Instruments, 2016, 87, 02B319.	1.3	4
106	The particle tracking code BBCNI for negative ion beams and its application to BATMAN upgrade. AIP Conference Proceedings, 2018, , .	0.4	4
107	Influence of external magnets and the potential rods on the plasma symmetry in the ELISE ion source. AIP Conference Proceedings, 2018, , .	0.4	4
108	Vibrationally resolved ionization cross sections for the ground state and electronically excited states of the hydrogen molecule and its isotopomeres. Atomic Data and Nuclear Data Tables, 2021, 140, 101424.	2.4	4

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109	Optical emission spectroscopy of the Linac4 and superconducting proton Linac plasma generators. Review of Scientific Instruments, 2012, 83, 02A729.	1.3	3
110	Status of the ELISE test facility. AIP Conference Proceedings, 2015, , .	0.4	3
111	Beam calorimetry at the large negative ion source test facility ELISE: Experimental setup and latest results. Fusion Engineering and Design, 2016, 109-111, 673-677.	1.9	3
112	Comment on â€˜Issues in the understanding of negative ion extraction for fusionâ€™. Plasma Sources Science and Technology, 2017, 26, 058001.	3.1	3
113	Uniformity of the large beam of ELISE during Cs conditioning. AIP Conference Proceedings, 2018, , .	0.4	3
114	On the effect of biased surfaces in the vicinity of the large extraction area of the ELISE test facility. Journal of Physics: Conference Series, 2022, 2244, 012050.	0.4	3
115	Beam Formation Studies on the CERN IS03b H Source. Journal of Physics: Conference Series, 2022, 2244, 012036.	0.4	3
116	Experimental investigation of beam-target neutron emission at the ELISE neutral beam test facility. Fusion Engineering and Design, 2017, 123, 843-846.	1.9	2
117	Characterisation of the SNIF ion source. AIP Conference Proceedings, 2017, , .	0.4	2
118	Neutron measurements at the ELISE neutral beam test facility and implications for neutron based diagnostics at SPIDER. Review of Scientific Instruments, 2018, 89, 10I139.	1.3	2
119	Overview of the beam physics investigation at the ELISE test facility. AIP Conference Proceedings, 2018, , .	0.4	2
120	Transferring knowledge gained for pulsed extraction at the ELISE test facility to ITER-relevant CW extraction. AIP Conference Proceedings, 2021, , .	0.4	2
121	Ion source developments at IPP: On the road towards achieving the ITER-NBI targets and preparing concepts for DEMO. Journal of Physics: Conference Series, 2022, 2244, 012049.	0.4	2
122	RF Negative Ion Source Development at IPP Garching. AIP Conference Proceedings, 2007, , .	0.4	1
123	Modelling of Ion Cyclotron Wall Conditioning plasmas. , 2011, , .		1
124	Dependence of the Performance of the Long Pulse RF Driven Negative Ion Source on the Magnetic Filter Field. AIP Conference Proceedings, 2011, , .	0.4	1
125	Neutral depletion in an H-source operated at high RF power and low input gas flow. Plasma Sources Science and Technology, 2011, 20, 049801-049801.	3.1	1
126	Development of a large RF ion source for the ITER neutral beam injector: Project overview and first results of ELISE. , 2013, , .		1

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127	Installation of spectrally selective imaging system in RF negative ion source. Review of Scientific Instruments, 2016, 87, 02B113.	1.3	1
128	Beam characterization at BATMAN for variation of the Cs evaporation asymmetry and comparing two driver geometries. AIP Conference Proceedings, 2017, , .	0.4	1
129	Simulation of Beam Formation in the CERN Negative Ion Source for the Linac4 Accelerator. Journal of Physics: Conference Series, 2022, 2244, 012042.	0.4	1
130	A collisional radiative model for caesium and its application to an RF source for negative hydrogen ions. AIP Conference Proceedings, 2015, , .	0.4	0
131	ONIX results: Comparison of grid geometry (BATMAN - ELISE - flat grid). AIP Conference Proceedings, 2017, , .	0.4	0
132	Influence of the magnetic filter field topology on the beam divergence at the ELISE test facility. AIP Conference Proceedings, 2017, , .	0.4	0
133	NIBS 2020 reference sheets. AIP Conference Proceedings, 2021, , .	0.4	0
134	Towards the optimization of the Cs evaporation configuration for long pulse operation of negative ion sources. Journal of Physics: Conference Series, 2022, 2244, 012057.	0.4	0