Rod W Boswell

List of Publications by Year
in descending order

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94	2,487	218677	214800
papers	citations	26 h-index	47 g-index

95	95	95	1141
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Current-free double-layer formation in a high-density helicon discharge. Applied Physics Letters, 2003, 82, 1356-1358.	3.3	263
2	Space micropropulsion systems for Cubesats and small satellites: From proximate targets to furthermost frontiers. Applied Physics Reviews, 2018, 5, .	11.3	242
3	Electron Diamagnetic Effect on Axial Force in an Expanding Plasma: Experiments and Theory. Physical Review Letters, 2011, 107, 235001.	7.8	132
4	Observations of Ion-Beam Formation in a Current-Free Double Layer. Physical Review Letters, 2005, 95, 025004.	7.8	131
5	Performance characterization of a helicon double layer thruster using direct thrust measurements. Journal Physics D: Applied Physics, 2011, 44, 235201.	2.8	91
6	Physics of Eâ€‰Ã—â€‰B discharges relevant to plasma propulsion and similar technologies. Physics of Plasmas, 2020, 27, .	1.9	89
7	Testing a Helicon Double Layer Thruster Immersed in a Space-Simulation Chamber. Journal of Propulsion and Power, 2008, 24, 134-141.	2.2	86
8	Transport of energetic electrons in a magnetically expanding helicon double layer plasma. Applied Physics Letters, 2009, 94, .	3.3	81
9	One-dimensional particle-in-cell simulation of a current-free double layer in an expanding plasma. Physics of Plasmas, 2005, 12, 052317.	1.9	63
10	High temperature electrons exhausted from rf plasma sources along a magnetic nozzle. Physics of Plasmas, 2017, 24, 084503.	1.9	55
11	Electron energy distribution functions in low-pressure inductively coupled bounded plasmas. Physics of Plasmas, 2006, 13, 092104.	1.9	52
12	Performance improvement of a permanent magnet helicon plasma thruster. Journal Physics D: Applied Physics, 2013, 46, 352001.	2.8	52
13	Plasma based platinum nanoaggregates deposited on carbon nanofibers improve fuel cell efficiency. Applied Physics Letters, 2007, 90, 223119.	3.3	50
14	Low energy plasma treatment of NafionÂ® membranes for PEM fuel cells. Journal of Power Sources, 2007, 165, 41-48.	7.8	42
15	The ion velocity distribution function in a current-free double layer. Physics of Plasmas, 2005, 12, 093502.	1.9	41
16	Thermodynamic Study on Plasma Expansion along a Divergent Magnetic Field. Physical Review Letters, 2016, 116, 025001.	7.8	41
17	Dry-etch of As2S3 thin films for optical waveguide fabrication. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2005, 23, 1626-1632.	2.1	39
18	Ion Detachment in the Helicon Double-Layer Thruster Exhaust Beam. Journal of Propulsion and Power, 2006, 22, 24-30.	2.2	39

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19	Axial force imparted by a current-free magnetically expanding plasma. Physics of Plasmas, 2012, 19, 083509.	1.9	39
20	Adiabatic Expansion of Electron Gas in a Magnetic Nozzle. Physical Review Letters, 2018, 120, 045001.	7.8	39
21	Demonstrating a new technology for space debris removal using a bi-directional plasma thruster. Scientific Reports, 2018, 8, 14417.	3.3	37
22	Radial characterization of the electron energy distribution in a helicon source terminated by a double layer. Physics of Plasmas, 2008, 15, 074505.	1.9	36
23	Effect of magnetic and physical nozzles on plasma thruster performance. Plasma Sources Science and Technology, 2014, 23, 044004.	3.1	36
24	Non-local electron energy probability function in a plasma expanding along a magnetic nozzle. Frontiers in Physics, 2015, 3, .	2.1	31
25	High density mode in xenon produced by a Helicon Double Layer Thruster. Journal Physics D: Applied Physics, 2009, 42, 245201.	2.8	30
26	Modulated plasma potentials and cross field diffusion in a Helicon plasma. Physics of Plasmas, 2002, 9, 3171-3177.	1.9	27
27	A high sensitivity momentum flux measuring instrument for plasma thruster exhausts and diffusive plasmas. Review of Scientific Instruments, 2009, 80, 053509.	1.3	26
28	An Experimental and Analytical Study of an Asymmetric Capacitively Coupled Plasma Used for Plasma Polymerization. Plasma Processes and Polymers, 2014, 11, 833-841.	3.0	25
29	New plasmaâ€assisted deposition technique using helicon activated reactive evaporation. Review of Scientific Instruments, 1995, 66, 2908-2913.	1.3	24
30	Characterization of helicon waves in a magnetized inductive discharge. Physics of Plasmas, 1998, 5, 572-579.	1.9	24
31	Plasma Expansion From a Radio Frequency Microdischarge. IEEE Transactions on Plasma Science, 2011, 39, 2512-2513.	1.3	24
32	Thermodynamic Analogy for Electrons Interacting with a Magnetic Nozzle. Physical Review Letters, 2020, 125, 165001.	7.8	24
33	Carbon/platinum nanotextured films produced by plasma sputtering. Carbon, 2009, 47, 209-214.	10.3	21
34	Characterization of the temperature of free electrons diffusing from a magnetically expanding current-free double layer plasma. Journal Physics D: Applied Physics, 2010, 43, 162001.	2.8	21
35	Low temperature growth of nanocrystalline TiO2 films with Ar/O2 low-field helicon plasma. Surface and Coatings Technology, 2011, 205, 3939-3946.	4.8	21
36	Effect of Exhaust Magnetic Field in a Helicon Double-Layer Thruster Operating in Xenon. IEEE Transactions on Plasma Science, 2008, 36, 2141-2146.	1.3	19

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37	Double-layer ion acceleration triggered by ion magnetization in expanding radiofrequency plasma sources. Applied Physics Letters, 2010, 97, 141503.	3.3	19
38	Operating the Helicon Double Layer Thruster in a Space Simulation Chamber. IEEE Transactions on Plasma Science, 2008, 36, 1196-1197.	1.3	17
39	Ion heating in the presheath. Physics of Plasmas, 2007, 14, 032104.	1.9	16
40	Operating Radio Frequency Antennas Immersed in Vacuum: Implications for Ground-Testing Plasma Thrusters. Journal of Propulsion and Power, 2010, 26, 892-896.	2.2	16
41	Plasma Ionization in Low-Pressure Radio-Frequency Discharges. Part I: Optical Measurements. IEEE Transactions on Plasma Science, 2008, 36, 1382-1383.	1.3	14
42	Investigation of silicon transport in the neutral background of a plasma activated reactive evaporation system. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 1995, 13, 192.	1.6	13
43	Helicon Double Layer Thrusters. , 2006, , .		13
44	Three-Dimensional Mapping of Ion Density in a Double-Layer Helicon Plasma. IEEE Transactions on Plasma Science, 2008, 36, 1386-1387.	1.3	13
45	Non-local plasma generation in a magnetic nozzle. Physics of Plasmas, 2019, 26, 072107.	1.9	13
46	In situ electrostatic characterisation of ion beams in the region of ion acceleration. Physics of Plasmas, 2018, 25, .	1.9	12
47	Performance modelling of plasma microthruster nozzles in vacuum. Journal of Applied Physics, 2018, 123, .	2.5	12
48	An Integrated RF Power Delivery and Plasma Micro-Thruster System for Nano-Satellites. Frontiers in Physics, 2018, 6, .	2.1	12
49	Plasma assisted evaporation of palladium. Plasma Sources Science and Technology, 1996, 5, 510-513.	3.1	11
50	Magnetic Ion Beam Deflection in the Helicon Double-Layer Thruster. Journal of Propulsion and Power, 2010, 26, 1045-1052.	2.2	11
51	Effect of radial plasma transport at the magnetic throat on axial ion beam formation. Physics of Plasmas, 2016, 23, 083515.	1.9	11
52	A POLYTROPIC MODEL FOR SPACE AND LABORATORY PLASMAS DESCRIBED BY BI-MAXWELLIAN ELECTRON DISTRIBUTIONS. Astrophysical Journal, 2016, 829, 10.	4.5	11
53	Separating the location of geometric and magnetic expansions in low-pressure expanding plasmas. Plasma Sources Science and Technology, 2018, 27, 075003.	3.1	10
54	Deposition and characterization of silica-based films by helicon-activated reactive evaporation applied to optical waveguide fabrication. Applied Optics, 2004, 43, 2978.	2.1	9

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55	Generalization of the Langmuirâ€“Blodgett laws for a nonzero potential gradient. Physics of Plasmas, 2005, 12, 033103.	1.9	9
56	Selective radial release of hot, magnetised electrons downstream of a low-pressure expanding plasma. Journal Physics D: Applied Physics, 2018, 51, 375204.	2.8	9
57	Spectral measurements of inductively coupled and m = +1, â^'1 helicon discharge modes of the constructed plasma source. AIP Advances, 2020, 10, 065312.	1.3	9
58	Comparison between experiment and two simulation strategies for the extraction of focused ion beams. Review of Scientific Instruments, 2004, 75, 2379-2386.	1.3	8
59	Particle-in-cell simulation of an electron shock wave in a rapid rise time plasma immersion ion implantation process. Physics of Plasmas, 2005, 12, 043503.	1.9	8
60	Surface oxidation of Al masks for deep dry-etch of silica optical waveguides. Surface and Coatings Technology, 2007, 201, 4979-4983.	4.8	8
61	Spatiotemporal Pattern Formation in an Atmospheric Plasma Discharge. IEEE Transactions on Plasma Science, 2008, 36, 964-965.	1.3	8
62	Plume Characteristics of an Electrothermal Plasma Microthruster. IEEE Transactions on Plasma Science, 2014, 42, 2728-2729.	1.3	8
63	Platinum nanocluster growth on vertically aligned carbon nanofiber arrays: Sputtering experiments and molecular dynamics simulations. Applied Surface Science, 2012, 263, 352-356.	6.1	7
64	Transport of ion beam in an annular magnetically expanding helicon double layer thruster. Physics of Plasmas, 2014, 21, .	1.9	7
65	The Innovative Dual-Stage 4-Grid Ion Thruster Concept - Theory And Experimental Results. , 2006, , .		6
66	Xenon Ion Beam Detachment From a Helicon Double Layer Thruster. IEEE Transactions on Plasma Science, 2008, 36, 1194-1195.	1.3	5
67	Space Simulation Testing of the Helicon Double Layer Thruster Prototype. , 2010, , .		5
68	Mode Transitions in the Helicon Double-Layer Thruster Prototype Operating in Xenon. IEEE Transactions on Plasma Science, 2011, 39, 2468-2469.	1.3	5
69	Principle of radial transport in low temperature annular plasmas. Physics of Plasmas, 2015, 22, .	1.9	5
70	Redefinition of the self-bias voltage in a dielectrically shielded thin sheath RF discharge. Journal of Applied Physics, 2018, 123, .	2.5	5
71	Characterization and Control of an Ion-Acoustic Plasma Instability Downstream of a Diverging Magnetic Nozzle. Frontiers in Physics, 2020, 8, .	2.1	5
72	<title>Progress of an advanced diffusion source plasma reactor</title>. , 1991, , .		4

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73	Induced Flow and Optical Emission Generated by a Pulsed 13.56 MHzâ€“5 kHz Plasma Actuator. IEEE Transactions on Plasma Science, 2013, 41, 3275-3278.	1.3	4
74	Electron energy probability function and L-p similarity in low pressure inductively coupled bounded plasma. Frontiers in Physics, 2015, 3, .	2.1	4
75	Measurement of bi-directional ion acceleration along a convergent-divergent magnetic nozzle. Applied Physics Letters, 2016, 108, .	3.3	4
76	Inducing locally structured ion energy distributions in intermediate-pressure plasmas. Physics of Plasmas, 2019, 26, .	1.9	4
77	Cosmic waves in the lab. Nature, 2003, 425, 352-353.	27.8	3
78	Synthesis of Carbon Nanofibers and Pt-Nanocluster-Based Electrochemical Microsystems by Combining Low-Pressure Helicon Plasma Techniques. IEEE Transactions on Plasma Science, 2008, 36, 882-883.	1.3	3
79	Investigation of effect of excitation frequency on electron energy distribution functions in low pressure radio frequency bounded plasmas. Physics of Plasmas, 2011, 18, 072102.	1.9	3
80	Development of a new high-current triode extraction system for helicon ion source: design and simulation. Laser and Particle Beams, 2018, 36, 477-486.	1.0	3
81	Transport and Deposition of Plasma-Sputtered Platinum Atoms: Comparison Between Experiments and Simulation. IEEE Transactions on Plasma Science, 2008, 36, 884-885.	1.3	2
82	Spatial evolution of EEPFs in a millimetre scale radio frequency argon plume. Journal Physics D: Applied Physics, 2013, 46, 365202.	2.8	2
83	Characterization of an annular helicon plasma source powered by an outer or inner RF antenna. Plasma Sources Science and Technology, 2016, 25, 015007.	3.1	2
84	Cross-field transport of electrons at the magnetic throat in an annular plasma reactor. Journal Physics D: Applied Physics, 2017, 50, 015205.	2.8	2
85	Three-Dimensional Magnetic Field Mapping of the Magnetically Steered Helicon Double-Layer Thruster. IEEE Transactions on Plasma Science, 2011, 39, 2460-2461.	1.3	1
86	Experimental Identification of Thrust Components Imparted by an Electrodeless Helicon Plasma Thruster. Transactions of the Japan Society for Aeronautical and Space Sciences Aerospace Technology Japan, 2014, 12, Pb_1-Pb_6.	0.2	1
87	A compact RF power inverter with reduced EMI for a CubeSat electrothermal micro-thruster. , 2017, , .		1
88	Evaluation of a novel parabolic plasma electrode advantage in a triode extraction system of a helicon ion source: simulation and experiment. Journal Physics D: Applied Physics, 2020, 53, 505204.	2.8	1
89	Propagation Structure of a 13.56-MHz Asymmetric Surface Barrier Discharge Plasma in Atmospheric-Pressure Air. IEEE Transactions on Plasma Science, 2011, 39, 2082-2083.	1.3	0
90	Ion-Current Downstream of a Carbon Dioxide Helicon Double Layer. IEEE Transactions on Plasma Science, 2011, 39, 2446-2447.	1.3	0

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91	A Radio Frequency Plasma Micro-Thruster: Characterization of Various Discharge Gases Through Optical Diagnostics. , 2013, , .		0
92	Simulations of Electron Heating in a Capacitively Coupled Radio Frequency Micro-Thruster using Computational Fluid Dynamics. , 2013, , .		0
93	Approximants to the Tonks-Langmuir theory for a collisionless annular plasma. Physical Review E, 2015, 92, 063103.	2.1	0
94	Comparison of Submillinewton Thrust Measurements Between a Laser Interferometer and a Load Cell on a Pendulum Balance. Frontiers in Space Technologies, 2021, 2, .	1.4	0