

# Rod W Boswell

## List of Publications by Year in descending order

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94  
papers

2,487  
citations

218677

26  
h-index

214800

47  
g-index

95  
all docs

95  
docs citations

95  
times ranked

1141  
citing authors

#	ARTICLE	IF	CITATIONS
1	Comparison of Submillinewton Thrust Measurements Between a Laser Interferometer and a Load Cell on a Pendulum Balance. <i>Frontiers in Space Technologies</i> , 2021, 2, .	1.4	0
2	Thermodynamic Analogy for Electrons Interacting with a Magnetic Nozzle. <i>Physical Review Letters</i> , 2020, 125, 165001.	7.8	24
3	Spectral measurements of inductively coupled and $m = +1, \hat{a}^{\sim}1$ helicon discharge modes of the constructed plasma source. <i>AIP Advances</i> , 2020, 10, 065312.	1.3	9
4	Physics of $E \times B$ discharges relevant to plasma propulsion and similar technologies. <i>Physics of Plasmas</i> , 2020, 27, .	1.9	89
5	Characterization and Control of an Ion-Acoustic Plasma Instability Downstream of a Diverging Magnetic Nozzle. <i>Frontiers in Physics</i> , 2020, 8, .	2.1	5
6	Evaluation of a novel parabolic plasma electrode advantage in a triode extraction system of a helicon ion source: simulation and experiment. <i>Journal Physics D: Applied Physics</i> , 2020, 53, 505204.	2.8	1
7	Inducing locally structured ion energy distributions in intermediate-pressure plasmas. <i>Physics of Plasmas</i> , 2019, 26, .	1.9	4
8	Non-local plasma generation in a magnetic nozzle. <i>Physics of Plasmas</i> , 2019, 26, 072107.	1.9	13
9	<i>In situ</i> electrostatic characterisation of ion beams in the region of ion acceleration. <i>Physics of Plasmas</i> , 2018, 25, .	1.9	12
10	Space micropropulsion systems for Cubesats and small satellites: From proximate targets to furthestmost frontiers. <i>Applied Physics Reviews</i> , 2018, 5, .	11.3	242
11	Adiabatic Expansion of Electron Gas in a Magnetic Nozzle. <i>Physical Review Letters</i> , 2018, 120, 045001.	7.8	39
12	Performance modelling of plasma microthruster nozzles in vacuum. <i>Journal of Applied Physics</i> , 2018, 123, .	2.5	12
13	An Integrated RF Power Delivery and Plasma Micro-Thruster System for Nano-Satellites. <i>Frontiers in Physics</i> , 2018, 6, .	2.1	12
14	Development of a new high-current triode extraction system for helicon ion source: design and simulation. <i>Laser and Particle Beams</i> , 2018, 36, 477-486.	1.0	3
15	Demonstrating a new technology for space debris removal using a bi-directional plasma thruster. <i>Scientific Reports</i> , 2018, 8, 14417.	3.3	37
16	Redefinition of the self-bias voltage in a dielectrically shielded thin sheath RF discharge. <i>Journal of Applied Physics</i> , 2018, 123, .	2.5	5
17	Separating the location of geometric and magnetic expansions in low-pressure expanding plasmas. <i>Plasma Sources Science and Technology</i> , 2018, 27, 075003.	3.1	10
18	Selective radial release of hot, magnetised electrons downstream of a low-pressure expanding plasma. <i>Journal Physics D: Applied Physics</i> , 2018, 51, 375204.	2.8	9

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19	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
20	High temperature electrons exhausted from rf plasma sources along a magnetic nozzle. Physics of Plasmas, 2017, 24, 084503.	1.9	55
21	A compact RF power inverter with reduced EMI for a CubeSat electrothermal micro-thruster. , 2017, , .		1
22	Effect of radial plasma transport at the magnetic throat on axial ion beam formation. Physics of Plasmas, 2016, 23, 083515.	1.9	11
23	Measurement of bi-directional ion acceleration along a convergent-divergent magnetic nozzle. Applied Physics Letters, 2016, 108, .	3.3	4
24	A POLYTROPIC MODEL FOR SPACE AND LABORATORY PLASMAS DESCRIBED BY BI-MAXWELLIAN ELECTRON DISTRIBUTIONS. Astrophysical Journal, 2016, 829, 10.	4.5	11
25	Thermodynamic Study on Plasma Expansion along a Divergent Magnetic Field. Physical Review Letters, 2016, 116, 025001.	7.8	41
26	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
27	Approximants to the Tonks-Langmuir theory for a collisionless annular plasma. Physical Review E, 2015, 92, 063103.	2.1	0
28	Electron energy probability function and L-p similarity in low pressure inductively coupled bounded plasma. Frontiers in Physics, 2015, 3, .	2.1	4
29	Non-local electron energy probability function in a plasma expanding along a magnetic nozzle. Frontiers in Physics, 2015, 3, .	2.1	31
30	Principle of radial transport in low temperature annular plasmas. Physics of Plasmas, 2015, 22, .	1.9	5
31	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
32	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
33	Effect of magnetic and physical nozzles on plasma thruster performance. Plasma Sources Science and Technology, 2014, 23, 044004.	3.1	36
34	Transport of ion beam in an annular magnetically expanding helicon double layer thruster. Physics of Plasmas, 2014, 21, .	1.9	7
35	Plume Characteristics of an Electrothermal Plasma Microthruster. IEEE Transactions on Plasma Science, 2014, 42, 2728-2729.	1.3	8
36	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

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37	Spatial evolution of EEPFs in a millimetre scale radio frequency argon plume. Journal Physics D: Applied Physics, 2013, 46, 365202.	2.8	2
38	Performance improvement of a permanent magnet helicon plasma thruster. Journal Physics D: Applied Physics, 2013, 46, 352001.	2.8	52
39	A Radio Frequency Plasma Micro-Thruster: Characterization of Various Discharge Gases Through Optical Diagnostics. , 2013, , .		0
40	Simulations of Electron Heating in a Capacitively Coupled Radio Frequency Micro-Thruster using Computational Fluid Dynamics. , 2013, , .		0
41	Axial force imparted by a current-free magnetically expanding plasma. Physics of Plasmas, 2012, 19, 083509.	1.9	39
42	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
43	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
44	Mode Transitions in the Helicon Double-Layer Thruster Prototype Operating in Xenon. IEEE Transactions on Plasma Science, 2011, 39, 2468-2469.	1.3	5
45	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
46	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
47	Performance characterization of a helicon double layer thruster using direct thrust measurements. Journal Physics D: Applied Physics, 2011, 44, 235201.	2.8	91
48	Plasma Expansion From a Radio Frequency Microdischarge. IEEE Transactions on Plasma Science, 2011, 39, 2512-2513.	1.3	24
49	Low temperature growth of nanocrystalline TiO <sub>2</sub> films with Ar/O <sub>2</sub> low-field helicon plasma. Surface and Coatings Technology, 2011, 205, 3939-3946.	4.8	21
50	Electron Diamagnetic Effect on Axial Force in an Expanding Plasma: Experiments and Theory. Physical Review Letters, 2011, 107, 235001.	7.8	132
51	Ion-Current Downstream of a Carbon Dioxide Helicon Double Layer. IEEE Transactions on Plasma Science, 2011, 39, 2446-2447.	1.3	0
52	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
53	Double-layer ion acceleration triggered by ion magnetization in expanding radiofrequency plasma sources. Applied Physics Letters, 2010, 97, 141503.	3.3	19
54	Magnetic Ion Beam Deflection in the Helicon Double-Layer Thruster. Journal of Propulsion and Power, 2010, 26, 1045-1052.	2.2	11

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55	Operating Radio Frequency Antennas Immersed in Vacuum: Implications for Ground-Testing Plasma Thrusters. <i>Journal of Propulsion and Power</i> , 2010, 26, 892-896.	2.2	16
56	Space Simulation Testing of the Helicon Double Layer Thruster Prototype. , 2010, , .		5
57	Transport of energetic electrons in a magnetically expanding helicon double layer plasma. <i>Applied Physics Letters</i> , 2009, 94, .	3.3	81
58	High density mode in xenon produced by a Helicon Double Layer Thruster. <i>Journal Physics D: Applied Physics</i> , 2009, 42, 245201.	2.8	30
59	Carbon/platinum nanotextured films produced by plasma sputtering. <i>Carbon</i> , 2009, 47, 209-214.	10.3	21
60	A high sensitivity momentum flux measuring instrument for plasma thruster exhausts and diffusive plasmas. <i>Review of Scientific Instruments</i> , 2009, 80, 053509.	1.3	26
61	Spatiotemporal Pattern Formation in an Atmospheric Plasma Discharge. <i>IEEE Transactions on Plasma Science</i> , 2008, 36, 964-965.	1.3	8
62	Three-Dimensional Mapping of Ion Density in a Double-Layer Helicon Plasma. <i>IEEE Transactions on Plasma Science</i> , 2008, 36, 1386-1387.	1.3	13
63	Operating the Helicon Double Layer Thruster in a Space Simulation Chamber. <i>IEEE Transactions on Plasma Science</i> , 2008, 36, 1196-1197.	1.3	17
64	Plasma Ionization in Low-Pressure Radio-Frequency Discharges. Part I: Optical Measurements. <i>IEEE Transactions on Plasma Science</i> , 2008, 36, 1382-1383.	1.3	14
65	Testing a Helicon Double Layer Thruster Immersed in a Space-Simulation Chamber. <i>Journal of Propulsion and Power</i> , 2008, 24, 134-141.	2.2	86
66	Effect of Exhaust Magnetic Field in a Helicon Double-Layer Thruster Operating in Xenon. <i>IEEE Transactions on Plasma Science</i> , 2008, 36, 2141-2146.	1.3	19
67	Synthesis of Carbon Nanofibers and Pt-Nanocluster-Based Electrochemical Microsystems by Combining Low-Pressure Helicon Plasma Techniques. <i>IEEE Transactions on Plasma Science</i> , 2008, 36, 882-883.	1.3	3
68	Transport and Deposition of Plasma-Sputtered Platinum Atoms: Comparison Between Experiments and Simulation. <i>IEEE Transactions on Plasma Science</i> , 2008, 36, 884-885.	1.3	2
69	Xenon Ion Beam Detachment From a Helicon Double Layer Thruster. <i>IEEE Transactions on Plasma Science</i> , 2008, 36, 1194-1195.	1.3	5
70	Radial characterization of the electron energy distribution in a helicon source terminated by a double layer. <i>Physics of Plasmas</i> , 2008, 15, 074505.	1.9	36
71	Plasma based platinum nanoaggregates deposited on carbon nanofibers improve fuel cell efficiency. <i>Applied Physics Letters</i> , 2007, 90, 223119.	3.3	50
72	Ion heating in the presheath. <i>Physics of Plasmas</i> , 2007, 14, 032104.	1.9	16

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73	Surface oxidation of Al masks for deep dry-etch of silica optical waveguides. Surface and Coatings Technology, 2007, 201, 4979-4983.	4.8	8
74	Low energy plasma treatment of Nafion® membranes for PEM fuel cells. Journal of Power Sources, 2007, 165, 41-48.	7.8	42
75	Helicon Double Layer Thrusters. , 2006, , .		13
76	Ion Detachment in the Helicon Double-Layer Thruster Exhaust Beam. Journal of Propulsion and Power, 2006, 22, 24-30.	2.2	39
77	The Innovative Dual-Stage 4-Grid Ion Thruster Concept - Theory And Experimental Results. , 2006, , .		6
78	Electron energy distribution functions in low-pressure inductively coupled bounded plasmas. Physics of Plasmas, 2006, 13, 092104.	1.9	52
79	The ion velocity distribution function in a current-free double layer. Physics of Plasmas, 2005, 12, 093502.	1.9	41
80	Generalization of the Langmuir-Blodgett laws for a nonzero potential gradient. Physics of Plasmas, 2005, 12, 033103.	1.9	9
81	Dry-etch of As <sub>2</sub> S <sub>3</sub> thin films for optical waveguide fabrication. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2005, 23, 1626-1632.	2.1	39
82	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
83	Observations of Ion-Beam Formation in a Current-Free Double Layer. Physical Review Letters, 2005, 95, 025004.	7.8	131
84	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
85	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
86	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
87	Cosmic waves in the lab. Nature, 2003, 425, 352-353.	27.8	3
88	Current-free double-layer formation in a high-density helicon discharge. Applied Physics Letters, 2003, 82, 1356-1358.	3.3	263
89	Modulated plasma potentials and cross field diffusion in a Helicon plasma. Physics of Plasmas, 2002, 9, 3171-3177.	1.9	27
90	Characterization of helicon waves in a magnetized inductive discharge. Physics of Plasmas, 1998, 5, 572-579.	1.9	24

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91	Plasma assisted evaporation of palladium. Plasma Sources Science and Technology, 1996, 5, 510-513.	3.1	11
92	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
93	New plasma-assisted deposition technique using helicon activated reactive evaporation. Review of Scientific Instruments, 1995, 66, 2908-2913.	1.3	24
94	<title>Progress of an advanced diffusion source plasma reactor</title>. , 1991, , .		4