Alan Howling

List of Publications by Year
in descending order

107 papers	3,168 citations	117625 34 h-index	168389 53 g-index
108 all docs	108 docs citations	108 times ranked	1439 citing authors

#	Article	IF	Citations
1	Frequency effects in silane plasmas for plasma enhanced chemical vapor deposition. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1992, 10, 1080-1085.	2.1	157
2	Timeâ€resolved measurements of highly polymerized negative ions in radio frequency silane plasma deposition experiments. Journal of Applied Physics, 1994, 75, 1340-1353.	2.5	155
3	Improving plasma uniformity using lens-shaped electrodes in a large area very high frequency reactor. Journal of Applied Physics, 2004, 95, 4559-4564.	2.5	123
4	Diagnostics of particle genesis and growth in RF silane plasmas by ion mass spectrometry and light scattering. Plasma Sources Science and Technology, 1994, 3, 278-285.	3.1	119
5	Negative ion mass spectra and particulate formation in radio frequency silane plasma deposition experiments. Applied Physics Letters, 1993, 62, 1341-1343.	3.3	115
6	Plasma silane concentration as a determining factor for the transition from amorphous to microcrystalline silicon in SiH4/H2discharges. Plasma Sources Science and Technology, 2007, 16, 80-89.	3.1	111
7	Negative hydrogenated silicon ion clusters as particle precursors in RF silane plasma deposition experiments. Journal Physics D: Applied Physics, 1993, 26, 1003-1006.	2.8	106
8	Influences of a high excitation frequency (70 MHz) in the glow discharge technique on the process plasma and the properties of hydrogenated amorphous silicon. Journal of Applied Physics, 1992, 71, 5665-5674.	2.5	100
9	A voltage uniformity study in large-area reactors for RF plasma deposition. Plasma Sources Science and Technology, 1997, 6, 170-178.	3.1	98
10	Particle agglomeration study in rf silane plasmas:Insitustudy by polarizationâ€sensitive laser light scattering. Journal of Applied Physics, 1996, 80, 2069-2078.	2.5	92
11	Electromagnetic field nonuniformities in large area, high-frequency capacitive plasma reactors, including electrode asymmetry effects. Plasma Sources Science and Technology, 2006, 15, 302-313.	3.1	82
12	Anionic clusters in dusty hydrocarbon and silane plasmas. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1996, 14, 535-539.	2.1	75
13	Direct visual observation of powder dynamics in rf plasmaâ€assisted deposition. Applied Physics Letters, 1991, 59, 1409-1411.	3.3	71
14	The physics of plasma-enhanced chemical vapour deposition for large-area coating: industrial application to flat panel displays and solar cells. Plasma Physics and Controlled Fusion, 2000, 42, B353-B363.	2.1	71
15	Sheath impedance effects in very high frequency plasma experiments. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1996, 14, 132-138.	2.1	64
16	Spatiotemporal powder formation and trapping in radio frequency silane plasmas using twoâ€dimensional polarizationâ€sensitive laser scattering. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1995, 13, 918-926.	2.1	60
17	Powder dynamics in very high frequency silane plasmas. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1992, 10, 1048-1052.	2.1	55
18	Dependence of intrinsic stress in hydrogenated amorphous silicon on excitation frequency in a plasmaâ€enhanced chemical vapor deposition process. Journal of Applied Physics, 1992, 72, 3220-3222.	2.5	53

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19	Mechanisms of Plasma-Seed Treatments as a Potential Seed Processing Technology. Frontiers in Physics, 2021, 9, .	2.1	53
20	Nonuniform radio-frequency plasma potential due to edge asymmetry in large-area radio-frequency reactors. Journal of Applied Physics, 2004, 96, 5429-5440.	2.5	51
21	The role of metastable atoms in argon-diluted silane radiofrequency plasmas. Journal Physics D: Applied Physics, 1994, 27, 1406-1411.	2.8	50
22	R&D around a photoneutralizer-based NBI system (Siphore) in view of a DEMO Tokamak steady state fusion reactor. Nuclear Fusion, 2015, 55, 123020.	3.5	50
23	Silicon oxide particle formation in RF plasmas investigated by infrared absorption spectroscopy and mass spectrometry. Journal Physics D: Applied Physics, 1998, 31, 74-84.	2.8	48
24	Applications of the cavity ring-down technique to a large-area rf-plasma reactor. Plasma Sources Science and Technology, 1999, 8, 448-456.	3.1	47
25	VHF Plasma Deposition: A Comparative Overview. Materials Research Society Symposia Proceedings, 1992, 258, 15.	0.1	45
26	Anion reactions in silane plasma. Journal of Applied Physics, 2002, 91, 5571-5580.	2.5	45
27	High-efficiency p-i-n a-Si:H solar cells with low boron cross-contamination prepared in a large-area single-chamber PECVD reactor. Thin Solid Films, 2004, 451-452, 525-530.	1.8	45
28	Degree of dissociation measured by FTIR absorption spectroscopy applied to VHF silane plasmas. Plasma Sources Science and Technology, 1998, 7, 114-118.	3.1	41
29	From molecules to particles in silane plasmas. Pure and Applied Chemistry, 1996, 68, 1017-1022.	1.9	40
30	Partial-depth modulation study of anions and neutrals in low-pressure silane plasmas. Plasma Sources Science and Technology, 1996, 5, 210-215.	3.1	40
31	Fast equilibration of silane/hydrogen plasmas in large area RF capacitive reactors monitored by optical emission spectroscopy. Plasma Sources Science and Technology, 2007, 16, 679-696.	3.1	40
32	Negative ion source development for a photoneutralization based neutral beam system for future fusion reactors. New Journal of Physics, 2016, 18, 125005.	2.9	39
33	A gas flow uniformity study in large-area showerhead reactors for RF plasma deposition. Plasma Sources Science and Technology, 2000, 9, 205-209.	3.1	35
34	Microcrystalline silicon deposited at high rate on large areas from pure silane with efficient gas utilization. Solar Energy Materials and Solar Cells, 2007, 91, 495-502.	6.2	35
35	Direct current breakdown in gases for complex geometries from high vacuum to atmospheric pressure. Journal Physics D: Applied Physics, 2013, 46, 285205.	2.8	31
36	Visible photoluminescence from hydrogenated silicon particles suspended in a silane plasma. Journal of Applied Physics, 1995, 78, 61-66.	2.5	29

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37	Probe measurements of plasma potential nonuniformity due to edge asymmetry in large-area radio-frequency reactors: The telegraph effect. Journal of Applied Physics, 2005, 97, 123308.	2.5	27
38	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
39	Helicon wave-generated plasmas for negative ion beams for fusion. EPJ Web of Conferences, 2017, 157, 03014.	0.3	27
40	Application of the shaped electrode technique to a large area rectangular capacitively coupled plasma reactor to suppress standing wave nonuniformity. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2006, 24, 1425-1430.	2.1	25
41	Dust Particle Diagnostics in Rf Plasma Deposition of Silicon and Silicon Oxide Films (Invited). Materials Research Society Symposia Proceedings, 1998, 507, 547.	0.1	21
42	Plasma deposition in an ideal showerhead reactor: a two-dimensional analytical solution. Plasma Sources Science and Technology, 2012, 21, 015005.	3.1	21
43	Resonant RF network antennas for large-area and large-volume inductively coupled plasma sources. Plasma Sources Science and Technology, 2013, 22, 055021.	3.1	21
44	Cold Atmospheric Plasma Inactivation of Microbial Spores Compared on Reference Surfaces and Powder Particles. Food and Bioprocess Technology, 2020, 13, 827-837.	4.7	21
45	Optimization of the microcrystalline silicon deposition efficiency. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2007, 25, 1198-1202.	2.1	20
46	Highly Conductive Microcrystalline Silicon Layers for Tunnel Junctions in Stacked Amorphous Silicon based Solar Cells.. Materials Research Society Symposia Proceedings, 1991, 219, 469.	0.1	19
47	Fast Deposition of a-Si:H Layers and Solar Cells in a Large-Area (40Ã—40 cm²) VHF-GD Reactor. Materials Research Society Symposia Proceedings, 1999, 557, 121.	0.1	18
48	Reduction of the boron cross-contamination for plasma deposition of pâ€“iâ€“n devices in a single-chamber large area radio-frequency reactor. Thin Solid Films, 2004, 468, 222-225.	1.8	17
49	Entering the plasma agriculture field: An attempt to standardize protocols for plasma treatment of seeds. Plasma Processes and Polymers, 2022, 19, e2100152.	3.0	17
50	Central mass and current density measurements in Tokamaks using the discrete Alfven wave spectrum. Plasma Physics and Controlled Fusion, 1987, 29, 323-339.	2.1	16
51	Reconstruction of the time-averaged sheath potential profile in an argon radiofrequency plasma using the ion energy distribution. Plasma Sources Science and Technology, 1995, 4, 373-378.	3.1	16
52	Non-intrusive plasma diagnostics for the deposition of large area thin film silicon. Thin Solid Films, 2009, 517, 6218-6224.	1.8	16
53	Cavity ring-down spectroscopy to measure negative ion density in a helicon plasma source for fusion neutral beams. Review of Scientific Instruments, 2018, 89, 103504.	1.3	16
54	Latest experimental and theoretical advances in the production of negative ions in caesium-free plasmas. European Physical Journal D, 2021, 75, 1.	1.3	15

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55	Coherent mode activity in the edge of TOSCA Tokamak. Plasma Physics and Controlled Fusion, 1988, 30, 1863-1877.	2.1	14
56	Comment on â€œIon energy uniformity in high-frequency capacitive dischargesâ€•[Appl. Phys. Lett. 86, 021501 (2005)]. Applied Physics Letters, 2005, 87, 076101.	3.3	14
57	Negative ion characterization in a helicon plasma source for fusion neutral beams by cavity ring-down spectroscopy and Langmuir probe laser photodetachment. Nuclear Fusion, 2020, 60, 026007.	3.5	14
58	An In Situ FTIR Study of DBD Plasma Parameters for Accelerated Germination of Arabidopsis thaliana Seeds. International Journal of Molecular Sciences, 2021, 22, 11540.	4.1	14
59	First B-dot measurements in the RAID device, an alternative negative ion source for DEMO neutral beams. Fusion Engineering and Design, 2019, 146, 1140-1144.	1.9	13
60	Helicon wave plasma generated by a resonant birdcage antenna: magnetic field measurements and analysis in the RAID linear device. Plasma Sources Science and Technology, 2021, 30, 075023.	3.1	13
61	Electromagnetic sources of nonuniformity in large area capacitive reactors. Thin Solid Films, 2007, 515, 5059-5064.	1.8	12
62	Large Area Deposition of Amorphous and Microcrystalline Silicon by Very High Frequency Plasma. Materials Research Society Symposia Proceedings, 1998, 507, 541.	0.1	11
63	Plasma generation by inductive coupling with a planar resonant RF network antenna. Journal Physics D: Applied Physics, 2012, 45, 082001.	2.8	11
64	Analysis of resonant planar dissipative network antennas for rf inductively coupled plasma sources. Plasma Sources Science and Technology, 2014, 23, 015006.	3.1	11
65	Microstructure, Optoelectronic Properties and Saturated Defect Density of A-SL:H Prepared in VHF-Glow Discharge Using AR and XE Dilution. Materials Research Society Symposia Proceedings, 1992, 258, 135.	0.1	10
66	Global visualization of powder trapping in capacitive RF plasmas by two-dimensional laser scattering. IEEE Transactions on Plasma Science, 1996, 24, 101-102.	1.3	10
67	Ion heating and flows in a high power helicon source. Physics of Plasmas, 2017, 24, 063517.	1.9	10
68	Influence of higher deposition temperature on a-Si:H material properties, powder formation and light-induced degradation, using the VHF (70 MHz) glow discharge technique. Journal of Non-Crystalline Solids, 1993, 164-166, 59-62.	3.1	9
69	Measurements and consequences of nonuniform radio frequency plasma potential due to surface asymmetry in large area radio frequency capacitive reactors. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2005, 23, 922-926.	2.1	9
70	Resonant planar antenna as an inductive plasma source. Journal of Applied Physics, 2012, 111, 083305.	2.5	9
71	Advantages and Limitations of Surface Analysis Techniques on Plasma-Treated Arabidopsis thaliana Seeds. Frontiers in Materials, 2021, 8, .	2.4	9
72	Plasma diagnostics as a tool for process optimization: the case of microcrystalline silicon deposition. Plasma Physics and Controlled Fusion, 2007, 49, B411-B418.	2.1	8

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73	Uniformity of silicon microcrystallinity in large area RF capacitive reactors. Progress in Photovoltaics: Research and Applications, 2008, 16, 687-691.	8.1	8
74	Application of Thomson scattering to helicon plasma sources. Journal of Plasma Physics, 2020, 86, .	2.1	8
75	Experimental study of wakefields driven by a self-modulating proton bunch in plasma. Physical Review Accelerators and Beams, 2020, 23, .	1.6	8
76	Generation of Whistler-Wave Heated Discharges with Planar Resonant rf Networks. Physical Review Letters, 2013, 111, 125005.	7.8	7
77	Complex image method for RF antenna-plasma inductive coupling calculation in planar geometry. Part I: basic concepts. Plasma Sources Science and Technology, 2015, 24, 065014.	3.1	7
78	Input silane concentration effect on the a-Si:H to Î¼c-Si:H transition width. Solar Energy Materials and Solar Cells, 2010, 94, 432-435.	6.2	6
79	Hydrogen-dominated plasma, due to silane depletion, for microcrystalline silicon deposition. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2010, 28, 989-995.	2.1	6
80	Low ion energy RF reactor using an array of plasmas through a grounded grid. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2013, 31, .	2.1	6
81	Industrial plasmas in academia. Plasma Physics and Controlled Fusion, 2015, 57, 014010.	2.1	6
82	RNA Sequencing of Arabidopsis thaliana Seedlings after Non-Thermal Plasma-Seed Treatment Reveals Upregulation in Plant Stress and Defense Pathways. International Journal of Molecular Sciences, 2022, 23, 3070.	4.1	6
83	Radio frequency breakdown between structured parallel plate electrodes with a millimetric gap in low pressure gases. Physics of Plasmas, 2010, 17, 102111.	1.9	5
84	Funnelling of rf current via a plasmoid through a grid hole in an rf capacitive plasma reactor. Plasma Sources Science and Technology, 2013, 22, 055006.	3.1	5
85	Complex image method for RF antenna-plasma inductive coupling calculation in planar geometry. Part II: measurements on a resonant network. Plasma Sources Science and Technology, 2015, 24, 065015.	3.1	5
86	Proton Bunch Self-Modulation in Plasma with Density Gradient. Physical Review Letters, 2020, 125, 264801.	7.8	5
87	Development of a plasma electroacoustic actuator for active noise control applications. Journal Physics D: Applied Physics, 2020, 53, 495202.	2.8	5
88	Plasma generation by inductive coupling with a planar resonant RF network antenna. Journal Physics D: Applied Physics, 2012, 45, 409502.	2.8	4
89	Electromagnetic, complex image model of a large area RF resonant antenna as inductive plasma source. Plasma Sources Science and Technology, 2017, 26, 035010.	3.1	4
90	Two-fluid solutions for Langmuir probes in collisionless and isothermal plasma, over all space and bias potential. Physics of Plasmas, 2018, 25, 093519.	1.9	4

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91	Two-fluid plasma model for radial Langmuir probes as a converging nozzle with sonic choked flow, and sonic passage to supersonic flow. Physics of Plasmas, 2019, 26, 044502.	1.9	4
92	Negative hydrogen ion dynamics inside the plasma volume of a linear device: Estimates from particle-in-cell calculations. Physics of Plasmas, 2021, 28, 063503.	1.9	4
93	On the powder formation in industrial reactive RF plasmas. , 2000, , 169-176.		4
94	Rapid deposition of hydrogenated microcrystalline silicon by a high current DC discharge. Thin Solid Films, 2001, 383, 11-14.	1.8	3
95	Slip Ring Test Assembly With Increased Breakdown Voltage Limit for High-Voltage Bus Satellites. IEEE Aerospace and Electronic Systems Magazine, 2020, 35, 32-36.	1.3	3
96	Experimental study of extended timescale dynamics of a plasma wakefield driven by a self-modulated proton bunch. Physical Review Accelerators and Beams, 2021, 24, .	1.6	3
97	Gas Phase and Particle Diagnostic of Hmdso Plasmas by Infrared Absorption Spectroscopy. Materials Research Society Symposia Proceedings, 1998, 544, 65.	0.1	2
98	Gas breakdown mitigation in satellite slip rings. Aerospace Science and Technology, 2019, 85, 229-233.	4.8	2
99	A 1.5D fluidâ€"Monte Carlo model of a hydrogen helicon plasma. Plasma Physics and Controlled Fusion, 2022, 64, 055012.	2.1	2
100	The effect of Lower Hybrid Current Drive on the discrete Alfven wave spectrum. Plasma Physics and Controlled Fusion, 1987, 29, 1631-1636.	2.1	1
101	RF bias to suppress post-oxidation of Î¼c-Si:H films deposited by inductively-coupled plasma using a planar RF resonant antenna. Vacuum, 2018, 147, 58-64.	3.5	1
102	Magnetic field configurational study on a helicon-based plasma source for future neutral beam systems. Plasma Sources Science and Technology, 2019, 28, 095005.	3.1	1
103	Radio frequency inductively coupled discharges in thermal plasmas. , 0, , .		1
104	Power laws for the spatial dependence of electrical parameters in the high-voltage capacitive RF sheath. IEEE Transactions on Plasma Science, 2000, 28, 1713-1719.	1.3	0
105	Study of the microstructure transition width from amorphous to microcrystalline silicon as a function of the input silane concentration. , 2009, , .		0
106	RF breakdown in low pressure gases in small (millimetric) gaps with non-planar surfaces. , 2010, , .		0
107	Multiple dehydrogenation reactions of negative ions in low pressure silane plasma chemistry. Plasma Sources Science and Technology, 2020, 29, 105015.	3.1	0