

Michael A Lieberman

List of Publications by Year in descending order

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87
papers

8,129
citations

109321

35
h-index

98798

67
g-index

88
all docs

88
docs citations

88
times ranked

3663
citing authors

#	ARTICLE	IF	CITATIONS
1	Global model of Ar, O ₂ , Cl ₂ , and Ar/O ₂ high-density plasma discharges. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1995, 13, 368-380.	2.1	469
2	Standing wave and skin effects in large-area, high-frequency capacitive discharges. Plasma Sources Science and Technology, 2002, 11, 283-293.	3.1	324
3	Model of plasma immersion ion implantation. Journal of Applied Physics, 1989, 66, 2926-2929.	2.5	279
4	Spatially averaged (global) model of time modulated high density argon plasmas. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1995, 13, 2498-2507.	2.1	248
5	Global Model of Plasma Chemistry in a High Density Oxygen Discharge. Journal of the Electrochemical Society, 1994, 141, 1546-1555.	2.9	211
6	Model of plasma immersion ion implantation for voltage pulses with finite rise and fall times. Journal of Applied Physics, 1991, 70, 3481-3487.	2.5	168
7	Enhancement of Ohmic and Stochastic Heating by Resonance Effects in Capacitive Radio Frequency Discharges: A Theoretical Approach. Physical Review Letters, 2008, 101, 085004.	7.8	160
8	Role of etch products in polysilicon etching in a high-density chlorine discharge. Plasma Chemistry and Plasma Processing, 1996, 16, 99-120.	2.4	158
9	Stochastic heating in single and dual frequency capacitive discharges. Physics of Plasmas, 2006, 13, 053506.	1.9	150
10	Capacitive RF discharges modelled by particle-in-cell Monte Carlo simulation. II. Comparisons with laboratory measurements of electron energy distribution functions. Plasma Sources Science and Technology, 1993, 2, 273-278.	3.1	101
11	Self-consistent nonlinear transmission line model of standing wave effects in a capacitive discharge. Physics of Plasmas, 2004, 11, 1775-1785.	1.9	99
12	Radial current distribution at a planar magnetron cathode. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1988, 6, 1827-1831.	2.1	97
13	Measurements of pulsed-power modulated argon plasmas in an inductively coupled plasma source. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1996, 14, 391-397.	2.1	95
14	Spherical shell model of an asymmetric rf discharge. Journal of Applied Physics, 1989, 65, 4186-4191.	2.5	90
15	The effects of nonlinear series resonance on Ohmic and stochastic heating in capacitive discharges. Physics of Plasmas, 2008, 15, .	1.9	87
16	Macroscopic modeling of radio-frequency plasma discharges. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1989, 7, 1007-1013.	2.1	85
17	Modeling electromagnetic effects in capacitive discharges. Plasma Sources Science and Technology, 2008, 17, 015018.	3.1	82
18	Self-consistent stochastic electron heating in radio frequency discharges. Journal of Applied Physics, 1988, 64, 4375-4383.	2.5	78

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19	A benchmark study of a capacitively coupled oxygen discharge of the oopd1 particle-in-cell Monte Carlo code. <i>Plasma Sources Science and Technology</i> , 2013, 22, 035011.	3.1	77
20	Effect of Ar addition to an O ₂ plasma in an inductively coupled, traveling wave driven, large area plasma source: O ₂ /Ar mixture plasma modeling and photoresist etching. <i>Journal of Applied Physics</i> , 2001, 90, 3205-3211.	2.5	73
21	Internal sheaths in electronegative discharges. <i>Journal of Applied Physics</i> , 1999, 86, 4142-4153.	2.5	71
22	Axial distribution of optical emission in a planar magnetron discharge. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 1988, 6, 2960-2964.	2.1	66
23	Instabilities in low-pressure inductive discharges with attaching gases. <i>Applied Physics Letters</i> , 1999, 75, 3617-3619.	3.3	63
24	Oxidation of silicon in an electron cyclotron resonance oxygen plasma: Kinetics, physicochemical, and electrical properties. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 1990, 8, 2924-2930.	2.1	62
25	Inductive Heating and E to H Transitions in Capacitive Discharges. <i>Physical Review Letters</i> , 2005, 95, 205001.	7.8	58
26	Spatial structure of a planar magnetron discharge. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 1990, 8, 902-907.	2.1	57
27	Inductive heating and E to H transitions in high frequency capacitive discharges. <i>Plasma Sources Science and Technology</i> , 2006, 15, S130-S136.	3.1	55
28	Electron beam probe measurements of electric fields in rf discharges. <i>Journal of Applied Physics</i> , 1990, 68, 6117-6124.	2.5	54
29	Analytical-numerical global model of atmospheric-pressure radio-frequency capacitive discharges. <i>Plasma Sources Science and Technology</i> , 2012, 21, 035013.	3.1	51
30	Shielding of moving test particles in warm, isotropic plasma. <i>Journal of Plasma Physics</i> , 1973, 9, 311-324.	2.1	47
31	Fast 2D hybrid fluid-analytical simulation of inductive/capacitive discharges. <i>Plasma Sources Science and Technology</i> , 2011, 20, 035009.	3.1	47
32	Sheath voltage ratio for asymmetric rf discharges. <i>Journal of Applied Physics</i> , 1991, 69, 3823-3829.	2.5	42
33	Kinetics of photoresist etching in an electron cyclotron resonance plasma. <i>Journal of Applied Physics</i> , 1990, 68, 1859-1865.	2.5	38
34	Observation of Nonlinear Standing Waves Excited by Plasma-Series-Resonance-Enhanced Harmonics in Capacitive Discharges. <i>Physical Review Letters</i> , 2019, 122, 185002.	7.8	38
35	Theory of a double-layer in an expanding electronegative plasma. <i>Physics of Plasmas</i> , 2007, 14, .	1.9	37
36	Self-consistent discharge characteristics of collisional helicon plasmas. <i>Physics of Plasmas</i> , 2003, 10, 882-890.	1.9	34

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37	Nonlinear standing wave excitation by series resonance-enhanced harmonics in low pressure capacitive discharges. Plasma Sources Science and Technology, 2015, 24, 055011.	3.1	34
38	Self-consistent electron cyclotron resonance absorption in a plasma with varying parameters. Journal of Applied Physics, 1992, 72, 3924-3933.	2.5	31
39	Dynamics of steady and unsteady operation of inductive discharges with attaching gases. Journal of Applied Physics, 2003, 94, 831-843.	2.5	31
40	Radical dynamics in unstable CF ₄ inductive discharges. Journal of Applied Physics, 2003, 94, 76-84.	2.5	31
41	Magnetic induction and plasma impedance in a planar inductive discharge. Plasma Sources Science and Technology, 1998, 7, 83-95. $\frac{v_{Ar}}{v_{Xe}} + \frac{v_{Xe}}{v_{Ar}}$	3.1	30
42	Velocities near the Presheath-Sheath Boundary in an Fast 2D fluid-analytical simulation of ion energy distributions and electromagnetic effects in multi-frequency capacitive discharges. Plasma Sources Science and Technology, 2014, 23, 064003.	2.8	30
43	Fast 2D fluid-analytical simulation of ion energy distributions and electromagnetic effects in multi-frequency capacitive discharges. Plasma Sources Science and Technology, 2014, 23, 064003.	3.1	29
44	Nonlinear series resonance and standing waves in dual-frequency capacitive discharges. Plasma Sources Science and Technology, 2017, 26, 015007.	3.1	28
45	Analytic model of the ion angular distribution in a collisional sheath. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1993, 11, 1275-1282.	2.1	26
46	Particle-in-cell and global simulations of ν_{\pm} to ν^3 transition in atmospheric pressure Penning-dominated capacitive discharges. Plasma Sources Science and Technology, 2014, 23, 035014.	3.1	26
47	Electron heating in low pressure capacitive discharges revisited. Physics of Plasmas, 2014, 21, 123505.	1.9	24
48	Benchmarked and upgraded particle-in-cell simulations of a capacitive argon discharge at intermediate pressure: the role of metastable atoms. Plasma Sources Science and Technology, 2021, 30, 105009.	3.1	24
49	Linear electromagnetic excitation of an asymmetric low pressure capacitive discharge with unequal sheath widths. Physics of Plasmas, 2016, 23, .	1.9	22
50	A nonlinear electromagnetics model of an asymmetrically-driven, low pressure capacitive discharge. Physics of Plasmas, 2017, 24, .	1.9	21
51	Experimental investigation of standing wave effect in dual-frequency capacitively coupled argon discharges: role of a low-frequency source. Plasma Sources Science and Technology, 2018, 27, 055017.	3.1	20
52	Analytical model of atmospheric pressure, helium/trace gas radio-frequency capacitive Penning discharges. Plasma Sources Science and Technology, 2015, 24, 025009.	3.1	16
53	Grounded radio-frequency electrodes in contact with high density plasmas. Physics of Plasmas, 2005, 12, 103505.	1.9	15
54	Hybrid model of neutral diffusion, sheaths, and the ν_{\pm} to ν^3 transition in an atmospheric pressure He/H ₂ O bounded rf discharge. Journal Physics D: Applied Physics, 2014, 47, 305203.	2.8	15

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55	2D fluid-analytical simulation of electromagnetic effects in low pressure, high frequency electronegative capacitive discharges. Plasma Sources Science and Technology, 2016, 25, 035007.	3.1	14
56	Ion Energy and Angular Distribution in Biased Inductively Coupled Ar/O ₂ Discharges by Using a Hybrid Model. Plasma Processes and Polymers, 2017, 14, 1600100.	3.0	14
57	Effect of a dielectric layer on plasma uniformity in high frequency electronegative capacitive discharges. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2017, 35, .	2.1	14
58	Symmetry breaking in high frequency, symmetric capacitively coupled plasmas. Physics of Plasmas, 2018, 25, 093517.	1.9	14
59	Comparison of a hybrid model with experiments in atmospheric pressure helium and argon capacitive rf discharges. Plasma Sources Science and Technology, 2014, 23, 065048.	3.1	13
60	Modeling a metal-vapor buffer-gas hollow cathode discharge. Journal of Applied Physics, 2000, 87, 7191-7197.	2.5	12
61	Instability-enhanced transport in low temperature magnetized plasma. Physics of Plasmas, 2019, 26, .	1.9	12
62	Particle-in-cell simulations and passive bulk model of collisional capacitive discharge. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2020, 38, .	2.1	11
63	Standing striations due to ionization instability in atmospheric pressure He/H ₂ O radio frequency capacitive discharges. Plasma Sources Science and Technology, 2016, 25, 054009.	3.1	10
64	Plasma Immersion Ion Implantation for Impurity Gettering in Silicon. Materials Research Society Symposia Proceedings, 1989, 147, 91.	0.1	9
65	High frequency reactive ion etching of silylated photoresist. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 1994, 12, 1351.	1.6	9
66	Two-dimensional particle-in-cell simulations of transport in a magnetized electronegative plasma. Journal of Applied Physics, 2010, 108, 103305.	2.5	9
67	Particle-in-cell simulations of the alpha and gamma modes in collisional nitrogen capacitive discharges. Plasma Sources Science and Technology, 2021, 30, 035001.	3.1	9
68	Surface effects in a capacitive argon discharge in the intermediate pressure regime. Plasma Sources Science and Technology, 2021, 30, 125011.	3.1	9
69	Photoresist etching in an inductively coupled, traveling wave driven, large area plasma source. Journal of Applied Physics, 2001, 89, 869-877.	2.5	8
70	Nonlinear harmonic excitations in collisional, asymmetrically-driven capacitive discharges. Plasma Sources Science and Technology, 2021, 30, 045017.	3.1	8
71	Double layer formation in a two-region electronegative plasma. Physics of Plasmas, 2009, 16, 122114.	1.9	7
72	Ionization instability induced striations in low frequency and pulsed He/H ₂ O atmospheric pressure plasmas. Physics of Plasmas, 2018, 25, .	1.9	7

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73	Selective Copper Plating in Silicon Dioxide Trenches with Metal Plasma Immersion Ion Implantation. Materials Research Society Symposia Proceedings, 1991, 223, 377.	0.1	7
74	Effect of ion energy on photoresist etching in an inductively coupled, traveling wave driven, large area plasma source. Journal of Applied Physics, 2001, 89, 5318-5321.	2.5	6
75	Ionization instability induced striations in atmospheric pressure He/H ₂ O RF and DC discharges. Journal Physics D: Applied Physics, 2017, 50, 145204.	2.8	5
76	Cavity perturbation measurement of plasma density in complex geometry rf discharges. Journal of Applied Physics, 1989, 66, 1618-1621.	2.5	4
77	Hybrid model of atmospheric pressure Ar/O ₂ /TiCl ₄ radio-frequency capacitive discharge for TiO ₂ deposition. Journal of Applied Physics, 2014, 115, .	2.5	4
78	Production of Alkali Plasmas by Photoionization. Review of Scientific Instruments, 1973, 44, 35-37.	1.3	3
79	Waves in expanding electronegative plasmas containing double layers. Journal of Applied Physics, 2010, 107, 123301.	2.5	3
80	Nonlinear transmission line (NTL) model study of electromagnetic effects in high-frequency asymmetrically driven capacitive discharges. Physics of Plasmas, 2022, 29, 013508.	1.9	3
81	Narrow gap electronegative capacitive discharges. Physics of Plasmas, 2013, 20, 101603.	1.9	2
82	Multi-mode ionization instability induced striations in RF driven He/H ₂ O atmospheric pressure plasma (APP) discharges. Physics of Plasmas, 2019, 26, 093506.	1.9	2
83	Low impedance intense electron beam device. Review of Scientific Instruments, 1975, 46, 1399-1401.	1.3	1
84	Structural and Interfacial Characteristics of thin (<10 nm) SiO ₂ Films Grown by Electron Cyclotron Resonance Plasma Oxidation on [100] Si Substrates. Materials Research Society Symposia Proceedings, 1991, 223, 75.	0.1	1
85	Stochasticity and resonances in the two beam accelerator. AIP Conference Proceedings, 1987, , .	0.4	0
86	Many-dimensional Hamiltonian systems. , 1987, , .		0
87	Electron beam time-of-flight plasma potential diagnostic. Review of Scientific Instruments, 1988, 59, 128-131.	1.3	0