

Peng Zhang

List of Publications by Year in descending order

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132
papers

2,729
citations

159585

30
h-index

233421

45
g-index

134
all docs

134
docs citations

134
times ranked

1469
citing authors

#	ARTICLE	IF	CITATIONS
1	100 years of the physics of diodes. Applied Physics Reviews, 2017, 4, 011304.	11.3	168
2	Ultrashort-Pulse Child-Langmuir Law in the Quantum and Relativistic Regimes. Physical Review Letters, 2007, 98, 164802.	7.8	159
3	Space-charge limited current in nanodiodes: Ballistic, collisional, and dynamical effects. Journal of Applied Physics, 2021, 129, .	2.5	104
4	Relativistic plasma physics in supercritical fields. Physics of Plasmas, 2020, 27, .	1.9	81
5	Scaling for quantum tunneling current in nano- and subnano-scale plasmonic junctions. Scientific Reports, 2015, 5, 9826.	3.3	73
6	Electrical breakdown from macro to micro/nano scales: a tutorial and a review of the state of the art. Plasma Research Express, 2020, 2, 013001.	0.9	66
7	Multipactor susceptibility on a dielectric with a bias dc electric field and a background gas. Physics of Plasmas, 2011, 18, .	1.9	65
8	Ultrafast strong-field photoelectron emission from biased metal surfaces: exact solution to time-dependent Schrödinger Equation. Scientific Reports, 2016, 6, 19894.	3.3	62
9	Novel Scaling Laws for the Langmuir-Blodgett Solutions in Cylindrical and Spherical Diodes. Physical Review Letters, 2013, 110, 265007.	7.8	56
10	A generalized self-consistent model for quantum tunneling current in dissimilar metal-insulator-metal junction. AIP Advances, 2019, 9, .	1.3	44
11	Electric field distribution and current emission in a miniaturized geometrical diode. Journal of Applied Physics, 2017, 121, .	2.5	43
12	On the Spreading Resistance of Thin-Film Contacts. IEEE Transactions on Electron Devices, 2012, 59, 1936-1940.	3.0	42
13	The effect of nonlinear quantum electrodynamics on relativistic transparency and laser absorption in ultra-relativistic plasmas. New Journal of Physics, 2015, 17, 043051.	2.9	41
14	Coupling of sausage, kink, and magneto-Rayleigh-Taylor instabilities in a cylindrical liner. Physics of Plasmas, 2015, 22, .	1.9	40
15	Enhancement of coherent Smith-Purcell radiation at terahertz frequency by optimized grating, prebunched beams, and open cavity. Physical Review Special Topics: Accelerators and Beams, 2015, 18, .	1.8	39
16	Multipactor susceptibility on a dielectric with two carrier frequencies. Physics of Plasmas, 2018, 25, .	1.9	39
17	Field emission from carbon nanotube fibers in varying anode-cathode gap with the consideration of contact resistance. AIP Advances, 2017, 7, 125203.	1.3	38
18	Ultrafast and nanoscale diodes. Journal of Plasma Physics, 2016, 82, .	2.1	37

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19	The effects of multipactor on the quality of a complex signal propagating in a transmission line. <i>Physics of Plasmas</i> , 2019, 26, .	1.9	37
20	Paschen's curve in microgaps with an electrode surface protrusion. <i>Applied Physics Letters</i> , 2018, 113, .	3.3	35
21	Temporal multiparticle Monte Carlo simulation of dual frequency single surface multipactor. <i>Physics of Plasmas</i> , 2019, 26, .	1.9	35
22	Reducing Contact Resistance in Two-Dimensional-Material-Based Electrical Contacts by Roughness Engineering. <i>Physical Review Applied</i> , 2020, 13, .	3.8	35
23	Analysis of current crowding in thin film contacts from exact field solution. <i>Journal Physics D: Applied Physics</i> , 2015, 48, 475501.	2.8	34
24	Effects of magnetic shear on magneto-Rayleigh-Taylor instability. <i>Physics of Plasmas</i> , 2012, 19, .	1.9	33
25	Temperature Comparison of Looped and Vertical Carbon Nanotube Fibers during Field Emission. <i>Applied Sciences (Switzerland)</i> , 2018, 8, 1175.	2.5	33
26	Carbon Nanotube Fiber Field Emission Array Cathodes. <i>IEEE Transactions on Plasma Science</i> , 2019, 47, 2032-2038.	1.3	33
27	Evolution of sausage and helical modes in magnetized thin-foil cylindrical liners driven by a Z-pinch. <i>Physics of Plasmas</i> , 2018, 25, 056307.	1.9	32
28	Absolute Instability near the Band Edge of Traveling-Wave Amplifiers. <i>Physical Review Letters</i> , 2015, 115, 124801.	7.8	31
29	Gas breakdown and its scaling law in microgaps with multiple concentric cathode protrusions. <i>Applied Physics Letters</i> , 2019, 114, .	3.3	31
30	Suppression of single-surface multipactor discharges due to non-sinusoidal transverse electric field. <i>Physics of Plasmas</i> , 2019, 26, .	1.9	31
31	Analysis of radio-frequency absorption and electric and magnetic field enhancements due to surface roughness. <i>Journal of Applied Physics</i> , 2009, 105, .	2.5	30
32	Scaling laws for electrical contact resistance with dissimilar materials. <i>Journal of Applied Physics</i> , 2010, 108, .	2.5	30
33	Magneto-Rayleigh-Taylor experiments on a MegaAmpere linear transformer driver. <i>Physics of Plasmas</i> , 2012, 19, 032701.	1.9	30
34	Discrete helical modes in imploding and exploding cylindrical, magnetized liners. <i>Physics of Plasmas</i> , 2016, 23, .	1.9	30
35	A quantum model for photoemission from metal surfaces and its comparison with the three-step model and Fowlerâ€“DuBridge model. <i>Journal of Applied Physics</i> , 2020, 127, .	2.5	30
36	High-energy ballistic electrons in low-pressure radio-frequency plasmas. <i>Plasma Sources Science and Technology</i> , 2020, 29, 09LT01.	3.1	30

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37	Direct imaging of plasma waves using ultrafast electron microscopy. <i>Structural Dynamics</i> , 2020, 7, 064301.	2.3	29
38	Ultrafast strong-field photoelectron emission due to two-color laser fields. <i>Physical Review B</i> , 2018, 98, .	3.2	28
39	On relativistic space charge limited current in planar, cylindrical, and spherical diodes. <i>Physics of Plasmas</i> , 2016, 23, .	1.9	27
40	Gas breakdown in atmospheric pressure microgaps with a surface protrusion on the cathode. <i>Applied Physics Letters</i> , 2018, 112, .	3.3	27
41	Time-dependent physics of single-surface multipactor discharge with two carrier frequencies. <i>Physical Review E</i> , 2020, 102, 043201.	2.1	27
42	Plasmon-Enhanced Resonant Photoemission Using Atomically Thick Dielectric Coatings. <i>ACS Nano</i> , 2020, 14, 8806-8815.	14.6	27
43	Thin film contact resistance with dissimilar materials. <i>Journal of Applied Physics</i> , 2011, 109, .	2.5	25
44	Evaluating microgap breakdown mode transition with electric field non-uniformity. <i>Plasma Sources Science and Technology</i> , 2018, 27, 095014.	3.1	25
45	Analysis of two-color laser-induced electron emission from a biased metal surface using an exact quantum mechanical solution. <i>Physical Review Applied</i> , 2019, 12, .	3.8	25
46	Seeded and unseeded helical modes in magnetized, non-imploding cylindrical liner-plasmas. <i>Physics of Plasmas</i> , 2016, 23, .	1.9	24
47	Current flow in a 3-terminal thin film contact with dissimilar materials and general geometric aspect ratios. <i>Journal Physics D: Applied Physics</i> , 2013, 46, 065502.	2.8	23
48	An exact field solution of contact resistance and comparison with the transmission line model. <i>Applied Physics Letters</i> , 2014, 104, .	3.3	23
49	Temporal single-surface multipactor dynamics under obliquely incident linearly polarized electric field. <i>Physics of Plasmas</i> , 2019, 26, .	1.9	23
50	Few-cycle optical-field-induced photoemission from biased surfaces: An exact quantum theory. <i>Physical Review B</i> , 2021, 103, .	3.2	22
51	Theory of field emission from dielectric coated surfaces. <i>Physical Review Research</i> , 2020, 2, .	3.6	22
52	Temporal evolution of surface ripples on a finite plasma slab subject to the magneto-Rayleigh-Taylor instability. <i>Physics of Plasmas</i> , 2014, 21, .	1.9	19
53	Effects of temperature dependence of electrical and thermal conductivities on the Joule heating of a one dimensional conductor. <i>Journal of Applied Physics</i> , 2016, 120, .	2.5	19
54	Effect of surface protrusion on plasma sheath properties in atmospheric microdischarges. <i>Physics of Plasmas</i> , 2018, 25, .	1.9	19

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55	Empirical modeling and Monte Carlo simulation of secondary electron yield reduction of laser drilled microporous gold surfaces. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2020, 38, .	1.2	19
56	Similarity law and frequency scaling in low-pressure capacitive radio frequency plasmas. Applied Physics Letters, 2020, 117, .	3.3	19
57	Experimental validation of a higher dimensional theory of electrical contact resistance. Applied Physics Letters, 2009, 95, .	3.3	18
58	Passive mode control in the recirculating planar magnetron. Physics of Plasmas, 2013, 20, 033108.	1.9	18
59	Enhancement of high-order harmonic generation in intense laser interactions with solid density plasma by multiple reflections and harmonic amplification. Applied Physics Letters, 2015, 106, .	3.3	18
60	Quantum efficiency of photoemission from biased metal surfaces with laser wavelengths from UV to NIR. Journal of Applied Physics, 2021, 130, .	2.5	18
61	Minimization of thin film contact resistance. Applied Physics Letters, 2010, 97, .	3.3	17
62	Harmonic Content in the Beam Current in a Traveling-Wave Tube. IEEE Transactions on Electron Devices, 2015, 62, 4285-4292.	3.0	17
63	A Two Dimensional Tunneling Resistance Transmission Line Model for Nanoscale Parallel Electrical Contacts. Scientific Reports, 2019, 9, 14484.	3.3	17
64	Angular dependence of secondary electron yield from microporous gold surfaces. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2020, 38, .	1.2	17
65	Recent theory of traveling-wave tubes: a tutorial-review. Plasma Research Express, 2020, 2, 023001.	0.9	17
66	Constriction Resistance and Current Crowding in Vertical Thin Film Contact. IEEE Journal of the Electron Devices Society, 2013, 1, 83-90.	2.1	16
67	Frequency-Domain Analysis of Single-Surface Multipactor Discharge With Single- and Dual-Tone RF Electric Fields. IEEE Transactions on Plasma Science, 2020, 48, 1950-1958.	1.3	16
68	On the evaluation of Pierce parameters C and Q in a traveling wave tube. Physics of Plasmas, 2017, 24, .	1.9	15
69	Similarity of capacitive radio-frequency discharges in nonlocal regimes. Physics of Plasmas, 2020, 27, 113501.	1.9	15
70	Gas Breakdown in Microgaps With a Surface Protrusion On the Electrode. IEEE Transactions on Plasma Science, 2019, 47, 2011-2019.	1.3	14
71	An analytical model for ballistic diode based on asymmetric geometry. Journal of Applied Physics, 2014, 115, .	2.5	13
72	Interface Engineering of Electrical Contacts. Physical Review Applied, 2021, 15, .	3.8	13

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73	Observation of multilayer-structured discharge in plasma ionization breakdown. Applied Physics Letters, 2021, 119, .	3.3	13
74	Electromagnetic power absorption due to bumps and trenches on flat surfaces. Journal of Applied Physics, 2014, 116, .	2.5	12
75	Two surface multipactor discharge with two-frequency rf fields and space-charge effects. Physics of Plasmas, 2022, 29, .	1.9	12
76	Harmonic Generation in Multipactor Discharges. IEEE Transactions on Plasma Science, 2020, 48, 1959-1966.	1.3	11
77	Generalizing Similarity Laws for Radio-Frequency Discharge Plasmas across Nonlinear Transition Regimes. Physical Review Applied, 2021, 16, .	3.8	11
78	Constriction Resistance and Current Crowding in Electrically Pumped Semiconductor Nanolasers with the Presence of Undercut and Sidewall Tilt. IEEE Journal of Quantum Electronics, 2016, 52, 1-7.	1.9	10
79	The coherent THz Smith-Purcell radiation from a three-dimensional open holes array structure. AIP Advances, 2018, 8, .	1.3	10
80	Transition characteristics and electron kinetics in microhollow cathode discharges. Journal of Applied Physics, 2021, 129, .	2.5	10
81	Maximal charge injection of consecutive electron pulses with uniform temporal pulse separation. Physics of Plasmas, 2015, 22, 084504.	1.9	9
82	Direct current microplasma formation around microstructure arrays. Applied Physics Letters, 2021, 118, .	3.3	9
83	Ultrafast optical-field-induced photoelectron emission in a vacuum nanoscale gap: An exact analytical formulation. Applied Physics Letters, 2021, 119, .	3.3	9
84	Excitation of a slow wave structure. Physics of Plasmas, 2012, 19, .	1.9	8
85	Transition of low-temperature plasma similarity laws from low to high ionization degree regimes. Plasma Sources Science and Technology, 2019, 28, 095012.	3.1	8
86	Interference modulation of photoemission from biased metal cathodes driven by two lasers of the same frequency. AIP Advances, 2020, 10, .	1.3	8
87	A Review of Recent Studies on Two-Frequency RF Field-Induced Single-Surface Multipactor Discharge. IEEE Transactions on Plasma Science, 2021, 49, 3284-3292.	1.3	8
88	Review of recent studies on nanoscale electrical junctions and contacts: Quantum tunneling, current crowding, and interface engineering. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2022, 40, 030802.	2.1	8
89	Contact resistance and current crowding in tunneling type circular nano-contacts. Journal Physics D: Applied Physics, 2020, 53, 355301.	2.8	7
90	Current crowding and spreading resistance of electrical contacts with irregular contact edges. Journal Physics D: Applied Physics, 2020, 53, 485303.	2.8	6

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91	Theory of laser-induced photoemission from a metal surface with nanoscale dielectric coating. Journal of Applied Physics, 2022, 131, .	2.5	6
92	Optical-field-induced Electron Emission in a dc-Biased Nanogap. Physical Review Applied, 2022, 17, .	3.8	6
93	Short-pulse space-charge-limited electron flows in a drift space. Physics of Plasmas, 2008, 15, 063105.	1.9	5
94	Spreading Resistance of a Contact Spot on a Thin Film. , 2013, , .		5
95	Exact analytical theory for inverse tunneling of free vacuum electrons into a solid. AIP Advances, 2017, 7, .	1.3	5
96	Contact Resistance with Dissimilar Materials: Bulk Contacts and Thin Film Contacts. , 2011, , .		4
97	Time dependent Doppler shifts in high-order harmonic generation in intense laser interactions with solid density plasma and frequency chirped pulses. Physics of Plasmas, 2015, 22, .	1.9	4
98	Maximal charge injection of a uniform separated electron pulse train in a drift space. Physical Review Special Topics: Accelerators and Beams, 2015, 18, .	1.8	3
99	Space charge waves in a two-dimensional electron gas. Journal of Applied Physics, 2022, 131, .	2.5	3
100	Guest Editorial The Eighteenth Special Issue on High-Power Microwave and Millimeter-Wave Generation. IEEE Transactions on Plasma Science, 2020, 48, 1858-1859.	1.3	2
101	Recent advances on electrical contact resistance: Theory and experiment. , 2010, , .		1
102	Microplasma Formation Around a Microstructured Surface. , 2021, , .		1
103	Field emission from dielectric coated metallic cathode surfaces: a theoretical study. , 2021, , .		1
104	RF power absorption and electric and magnetic field enhancements due to surface roughness. , 2009, , .		0
105	Novel scaling laws for the Langmuir-Blodgett solutions in cylindrical and spherical diode. , 2013, , .		0
106	Multipactor-susceptible RF windows as power-tunable microwave limiters. , 2013, , .		0
107	A voltage scale for electro-thermal runaway. , 2013, , .		0
108	Two-Color Laser Induced Electron Emission. , 2018, , .		0

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109	Multilayer-Structured Discharge in Plasma Ionization Breakdown near a Dielectric Surface. , 2021, , .		0
110	Exact Analytical Solution for Pulsed Laser Induced Photoemission from Biased Surfaces. , 2021, , .		0
111	Engineered Electrical Contacts. , 2021, , .		0
112	Angular Momentum Effects in Coaxial Multipactor*. , 2021, , .		0
113	An exact quantum theory for photoemission from dielectric coated metal surfaces under a dc bias. , 2021, , .		0
114	On the scaling laws for low-temperature plasmas at macro and micro scales. Journal of Physics: Conference Series, 2021, 2064, 012037.	0.4	0
115	Quantitative Analysis of Single-Surface Dielectric Multipactor Susceptibility with Dual Carrier Frequencies. , 2020, , .		0
116	A General Empirical Model of Secondary Electron Yield and Its Application in Monte Carlo Simulation of a Microporous Gold Surface. , 2020, , .		0
117	Analysis of Single Surface Multipactor Discharge in the Frequency Domain. , 2020, , .		0
118	Multipactor Effects on Signal Quality in Transmission Lines with Impedance Mismatches. , 2020, , .		0
119	Two-Color Laser Induced Electron Emission from Biased Metal Surface. , 2020, , .		0
120	Plasmon-Enhanced Resonant Photoemission from Metal Surfaces Coated with Ultrathin Dielectric. , 2021, , .		0
121	The Effects of Angular Momentum on Multipactor in Coaxial Lines. , 2021, , .		0
122	Modeling and Interface Engineering of Electrical Contacts. , 2021, , .		0
123	Exact Analytical Theory for Pulsed Laser Induced Photoelectron Emission from Biased Surfaces. , 2021, , .		0
124	Multipactor Dynamics Near a Dielectric Due to Two-Frequency RF Fields. , 2021, , .		0
125	An exact theory for few-cycle optical-field-induced photoelectron emission from biased surfaces. , 2022, , .		0
126	Similarity And Scaling Laws For Radio Frequency Discharge Plasmas Across Nonlinear Transition Regimes. , 2022, , .		0

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127	Multipactor Mitigation Via Gaussian-Shape Transverse rf Electric Field Near a Dielectric Surface. , 2022, , .		0
128	A Discrete Cavity Analysis for Coupled-Cavity Travelling Wave Tubes. , 2022, , .		0
129	Non-Sinusoidal rf Field Induced Two-Surface Multipactor Discharge. , 2022, , .		0
130	Microscale Radio-Frequency Argon Discharges Via Particle-In-Cell Simulation Incorporating Self-Consistent Fluid Excited State Species. , 2022, , .		0
131	Interference of Quantum Pathways in Two-Color Laser Induced Photoemission with a Dc Bias. , 2022, , .		0
132	Smith-Purcell Radiation with Different Grating Parameters and Beam Bunching Frequencies. , 2022, , .		0