

John

List of Publications by Year in descending order

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118
papers

2,774
citations

257450

24
h-index

206112

48
g-index

119
all docs

119
docs citations

119
times ranked

2287
citing authors

#	ARTICLE	IF	CITATIONS
1	Plasma physics and related challenges of millimeter-wave-to-terahertz and high power microwave generation. <i>Physics of Plasmas</i> , 2008, 15, .	1.9	540
2	Modern Microwave and Millimeter-Wave Power Electronics. , 2005, , .		278
3	Understanding and Controlling the Work Function of Perovskite Oxides Using Density Functional Theory. <i>Advanced Functional Materials</i> , 2016, 26, 5471-5482.	14.9	127
4	Material Discovery and Design Principles for Stable, High Activity Perovskite Cathodes for Solid Oxide Fuel Cells. <i>Advanced Energy Materials</i> , 2018, 8, 1702708.	19.5	125
5	Terahertz Conductivity of Copper Surfaces. <i>IEEE Transactions on Terahertz Science and Technology</i> , 2015, 5, 1012-1020.	3.1	104
6	Microfabrication and Characterization of a Selectively Metallized W-Band Meander-Line TWT Circuit. <i>IEEE Transactions on Electron Devices</i> , 2009, 56, 730-737.	3.0	100
7	Mechanisms for nonthermal effects on ionic mobility during microwave processing of crystalline solids. <i>Journal of Materials Research</i> , 1992, 7, 495-501.	2.6	87
8	Microwave enhanced reaction kinetics in ceramics. <i>Materials Research Innovations</i> , 1997, 1, 77-84.	2.3	78
9	Impact of Random Fabrication Errors on Fundamental Forward-Wave Small-Signal Gain and Bandwidth in Traveling-Wave Tubes With Finite-Space-Charge Electron Beams. <i>IEEE Transactions on Electron Devices</i> , 2013, 60, 1221-1227.	3.0	74
10	Two-plane focusing of high-space-charge sheet electron beams using periodically cusped magnetic fields. <i>Journal of Applied Physics</i> , 1999, 85, 6313-6322.	2.5	73
11	Frontiers in Thermionic Cathode Research. <i>IEEE Transactions on Electron Devices</i> , 2018, 65, 2061-2071.	3.0	70
12	<i>Ab initio</i> investigation of barium-scandium-oxygen coatings on tungsten for electron emitting cathodes. <i>Physical Review B</i> , 2010, 81, .	3.2	57
13	Work function and surface stability of tungsten-based thermionic electron emission cathodes. <i>APL Materials</i> , 2017, 5, .	5.1	52
14	Metamaterial-Inspired Vacuum Electron Devices and Accelerators. <i>IEEE Transactions on Electron Devices</i> , 2019, 66, 207-218.	3.0	48
15	Schottky's conjecture on multiplication of field enhancement factors. <i>Journal of Applied Physics</i> , 2009, 106, 104903.	2.5	47
16	Experimental and theoretical investigations of a rectangular grating structure for low-voltage traveling wave tube amplifiers. <i>Physics of Plasmas</i> , 1997, 4, 2707-2715.	1.9	43
17	Wideband Transmitarrays Based on Polarization- Rotating Miniaturized-Element Frequency Selective Surfaces. <i>IEEE Transactions on Antennas and Propagation</i> , 2020, 68, 2128-2137.	5.1	38
18	Design of Overmoded Interaction Circuit for 1-kW 95-GHz TWT. <i>IEEE Transactions on Electron Devices</i> , 2009, 56, 713-720.	3.0	36

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19	Atmospheric Attenuation of 400 GHz Radiation Due to Water Vapor. IEEE Transactions on Terahertz Science and Technology, 2012, 2, 355-360.	3.1	36
20	A Wideband, Single-Layer Reflectarray Exploiting a Polarization Rotating Unit Cell. IEEE Transactions on Antennas and Propagation, 2019, 67, 872-883.	5.1	34
21	<i>Ab initio</i> investigation of the surface properties of dispenser B-type and scandate thermionic emission cathodes. Applied Physics Letters, 2009, 94, .	3.3	33
22	Effect of Nonuniform Emission on Miram Curves. IEEE Transactions on Plasma Science, 2020, 48, 146-155.	1.3	32
23	Theoretical and Empirical Evaluation of Surface Roughness Effects on Conductivity in the Terahertz Regime. IEEE Transactions on Terahertz Science and Technology, 2014, 4, 368-375.	3.1	28
24	A High-Q Terahertz Resonator for the Measurement of Electronic Properties of Conductors and Low-Loss Dielectrics. IEEE Transactions on Terahertz Science and Technology, 2012, 2, 449-459.	3.1	27
25	Metamaterial-Enhanced Resistive Wall Amplifiers: Theory and Particle-in-Cell Simulations. IEEE Transactions on Plasma Science, 2015, 43, 2123-2131.	1.3	27
26	Electron Emission Energy Barriers and Stability of Sc ₂ O ₃ with Adsorbed Ba and Ba ¹⁶ O. Journal of Physical Chemistry C, 2014, 118, 19742-19758.	3.1	24
27	Exploiting Mechanical Flexure as a Means of Tuning the Responses of Large-Scale Periodic Structures. IEEE Transactions on Antennas and Propagation, 2016, 64, 933-943.	5.1	24
28	Mechanically Reconfigurable, Beam-Scanning Reflectarray and Transmitarray Antennas: A Review. Applied Sciences (Switzerland), 2021, 11, 6890.	2.5	24
29	Wideband, Beam-Steerable Reflectarrays Based on Minimum-Switch Topology, Polarization-Rotating Unit Cells. IEEE Access, 2019, 7, 36568-36578.	4.2	20
30	Understanding the interplay of surface structure and work function in oxides: A case study on SrTiO ₃ . APL Materials, 2020, 8, .	5.1	20
31	Impact of Nonuniform Thermionic Emission on the Transition Behavior Between Temperature-and Space-Charge-Limited Emission. IEEE Transactions on Electron Devices, 2021, 68, 3576-3581.	3.0	20
32	Intrinsic defects and conduction characteristics of Sc O in thermionic cathode systems. Physical Review B, 2012, 86, .	3.2	19
33	One-dimensional combined field and thermionic emission model and comparison with experimental results. Journal of Vacuum Science & Technology B, 2008, 26, 770-777.	1.3	18
34	Metamaterial-Enhanced Resistive Wall Amplifier Design Using Periodically Spaced Inductive Meandered Lines. IEEE Transactions on Plasma Science, 2016, 44, 2476-2484.	1.3	18
35	Wideband, Beam-Steerable Reflectarray Antennas Exploiting Electronically Reconfigurable Polarization-Rotating Phase Shifters. IEEE Transactions on Antennas and Propagation, 2022, 70, 4414-4425.	5.1	17
36	2-Bit Phase Quantization Using Mixed Polarization-Rotation/Non-Polarization- Rotation Reflection Modes for Beam-Steerable Reflectarrays. IEEE Transactions on Antennas and Propagation, 2020, 68, 7937-7946.	5.1	15

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37	Discovery and engineering of low work function perovskite materials. Journal of Materials Chemistry C, 2021, 9, 12778-12790.	5.5	15
38	A Low-Profile, Risley-Prism-Based, Beam-Steerable Antenna Employing a Single Flat Prism. IEEE Transactions on Antennas and Propagation, 2022, 70, 6646-6658.	5.1	15
39	Cationic Peptide Exposure Enhances Pulsed-Electric-Field-Mediated Membrane Disruption. PLoS ONE, 2014, 9, e92528.	2.5	14
40	A mechanically based magneto-inductive transmitter with electrically modulated reluctance. PLoS ONE, 2018, 13, e0199934.	2.5	14
41	Work Function Trends and New Low-Work-Function Boride and Nitride Materials for Electron Emission Applications. Journal of Physical Chemistry C, 2021, 125, 17400-17410.	3.1	13
42	A selectively metallized, microfabricated W-band meander line TWT circuit. , 2008, , .		12
43	Surface chemical analysis and ab initio investigations of CsI coated C fiber cathodes for high power microwave sources. Journal of Applied Physics, 2010, 107, 044903.	2.5	12
44	Effect of sputtered lanthanum hexaboride film thickness on field emission from metallic knife edge cathodes. Journal of Applied Physics, 2012, 111, .	2.5	12
45	Effect of synthesis and acid purification methods on the microwave dielectric properties of single-walled carbon nanotube aqueous dispersions. Applied Physics Letters, 2013, 103, 133114.	3.3	11
46	Investigating the Physics of Simultaneous Breakdown Events in High-Power-Microwave (HPM) Metamaterials With Multiresonant Unit Cells and Discrete Nonlinear Responses. IEEE Transactions on Plasma Science, 2014, 42, 1255-1264.	1.3	11
47	Inductive Meandered Metal Line Metamaterial for Rectangular Waveguide Linings. IEEE Transactions on Plasma Science, 2017, 45, 654-664.	1.3	11
48	A Multibeam Tapered Cylindrical Luneburg Lens. IEEE Transactions on Antennas and Propagation, 2021, 69, 5060-5065.	5.1	11
49	A Dual-Band, Polarization-Rotating Reflectarray With Independent Phase Control at Each Band. IEEE Transactions on Antennas and Propagation, 2021, 69, 5546-5558.	5.1	11
50	Modeling of cold emission cathode by inclusion of combined field and thermionic emission processes. Journal of Applied Physics, 2007, 102, 056107.	2.5	10
51	Minimizing Spectral Leakage of Nonideal LINC Transmitters by Analysis of Component Impairments. IEEE Transactions on Vehicular Technology, 2007, 56, 445-458.	6.3	10
52	Frequency Step-Tuning Characteristics of Traveling-Wave Tube Regenerative Oscillators. IEEE Transactions on Electron Devices, 2010, 57, 1152-1159.	3.0	10
53	Mechanical Super-Low Frequency (SLF) Transmitter Using Electrically-Modulated Reluctance. , 2018, , .		10
54	Ultrawideband, high-power, microstripline test setup for experimental study and characterization of multipactor. Review of Scientific Instruments, 2021, 92, 084706.	1.3	10

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55	Novel method for measuring intense microwave radiation effects on ionic transport in ceramic materials. Review of Scientific Instruments, 1995, 66, 3606-3609.	1.3	9
56	Observations of Memory Effects and Reduced Breakdown Delay via Penning Gas Mixtures in High-Power Microwave Dielectric Window Discharges. IEEE Transactions on Plasma Science, 2016, 44, 15-24.	1.3	9
57	Calculating multipactor susceptibility chart using a semi-analytic approach with improved accuracy. Physics of Plasmas, 2020, 27, .	1.9	9
58	Solid-phase epitaxial growth of the correlated-electron transparent conducting oxide SrVO_3 . Physical Review Materials, 2021, 5, .	2.4	9
59	X-band, mechanically steerable lens antenna exploiting the Risley prism concept. IET Microwaves, Antennas and Propagation, 2020, 14, 1902-1908.	1.4	9
60	Studies of Nonthermal Effects During Intense Microwave Heating of Crystalline Solids. Materials Research Society Symposia Proceedings, 1992, 269, 137.	0.1	8
61	Collective single pass gain in a tunable rectangular grating amplifier. Physics of Plasmas, 1998, 5, 2797-2805.	1.9	8
62	The dielectric properties of normal and malignant breast tissue at microwave frequencies: analysis, conclusions, and implications from the wisconsin/calgary study. , 2007, , .		8
63	Experimental Verification of Multipactor Suppression in Microstripline Using High Porosity Surfaces. IEEE Transactions on Plasma Science, 2022, 50, 43-49.	1.3	8
64	Impact of random fabrication errors on backward-wave small-signal gain in traveling wave tubes with finite space charge electron beams. Journal of Applied Physics, 2013, 113, .	2.5	7
65	Ionomycin-Induced Changes in Membrane Potential Alter Electroporation Outcomes in HL-60 Cells. Biophysical Journal, 2018, 114, 2875-2886.	0.5	6
66	Microwave Absorption in NaCl Crystals with Various Controlled Defect Conditions. Materials Research Society Symposia Proceedings, 1994, 347, 467.	0.1	5
67	Active, Ultra-Wideband, Electrically Small Antennas for High-Power Transmission in the HF Band. IEEE Transactions on Antennas and Propagation, 2022, 70, 1600-1611.	5.1	5
68	Narrowband, infrared absorbing metasurface using polystyrene thin films. Journal of Applied Physics, 2020, 127, .	2.5	4
69	Microwave Sensing for Estimating Cranberry Crop Yield: A Pilot Study Using Simulated Canopies and Field Measurement Testbeds. IEEE Transactions on Geoscience and Remote Sensing, 2022, 60, 1-11.	6.3	4
70	Micromachined step-tapered high frequency waveguide inserts and antennas. , 2008, , .		3
71	Examination of cathode emission area variation with applied electric field. Journal of Applied Physics, 2009, 105, 096102.	2.5	3
72	Functionalized carbon nanotube theranostic agents for microwave diagnostic imaging and thermal therapy of tumors. , 2014, , .		3

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73	Low-cost phased-array antenna technology enabled by MAcro-Electro-Mechanical Systems (MÃ†MS). , 2015, , .		3
74	Statistical Model of Non-Uniform Emission/rom Polycrystalline Tungsten Cathodes. , 2019, , .		3
75	Wideband, Electronically Reconfigurable Reflectarrays With 1- and 2-Bit Phase Quantization. , 2022, , .		3
76	Investigations of Microwave Absorption in Insulating Dielectric Ionic Crystals Including the Role of Point Defects and Dislocations. Materials Research Society Symposia Proceedings, 1996, 430, 397.	0.1	2
77	11.4: Examination of field emission from copper knife edge cathodes with low-work function coatings. , 2010, , .		2
78	In vivo microwave dielectric spectroscopy of breast tumor xenografts with intra-tumoral injections of SWCNT dispersions. , 2013, , .		2
79	Perovskite electron emitters: Computational prediction and preliminary experimental assessment of novel low work function cathodes. , 2018, , .		2
80	Combining theory and experiment to model electron emission from polycrystalline tungsten cathode surfaces. , 2018, , .		2
81	A Dual-Band Transmitarray Antenna Employing Ultra-Thin, Polarization-Rotating Spatial Phase Shifters. IEEE Transactions on Antennas and Propagation, 2022, 70, 11132-11137.	5.1	2
82	Potential use of UNCD membranes as broadband vacuum windows at W-band frequencies. , 2008, , .		1
83	Measurement and analysis of advanced field emitting cold cathodes. , 2009, , .		1
84	17.2: Ab initio models of dispenser B-type, scandate, and alloy cathode surfaces. , 2010, , .		1
85	Investigation of the attenuating effects of atmospheric water content at 400 GHz. , 2011, , .		1
86	Analysis of atmospheric attenuation due to water content at 400 and 650 GHz. , 2011, , .		1
87	Surface resistance of copper from 400 to 850 GHz. , 2013, , .		1
88	Investigating failure mechanisms in high-power microwave frequency selective surfaces. , 2014, , .		1
89	Doped strontium vanadate: Computational design of a stable, low work function material. , 2016, , .		1
90	High-throughput computational screening for low work function perovskite electron emitters. , 2017, , .		1

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91	Inductive meandered line metamaterial for metamaterial-enhanced resistive wall amplifiers. , 2017, , .		1
92	Effective-Medium Modeling of a Meanderline Metamaterial-Enhanced Resistive Wall Amplifier Circuit for Particle-in-Cell Simulations. IEEE Transactions on Plasma Science, 2021, 49, 2700-2708.	1.3	1
93	Experimental and Numerical Studies of Molecular Uptake Dynamics in HL-60 Cells Induced by Pulsed Electric Fields. , 2007, , .		0
94	New Insights in the Modification of the Work Function of Cathode Materials due to Thin Surface Coatings using Ab-initio Modelling. , 2007, , .		0
95	Selective Metallization for a W-band Meander Line TWT. , 2007, , .		0
96	Field enhancement on knife-edge cathodes. , 2008, , .		0
97	Material analysis and characterization of cesium iodide (CsI) coated C fibers for field emission applications. , 2008, , .		0
98	An ab-initio molecular model of the Scandate cathode. , 2008, , .		0
99	Fundamental electronic properties of materials for terahertz vacuum electron devices. , 2008, , .		0
100	Field emission from low-work function cathode coatings. , 2010, , .		0
101	15.1: Transient and steady state operation of traveling wave tube regenerative oscillators. , 2010, , .		0
102	Experimental results of feedback attenuation in traveling wave tube regenerative oscillators. , 2011, , .		0
103	Measurement of surface roughness effects on conductivity in the terahertz regime with a high-Q quasioptical resonator. , 2011, , .		0
104	Electromagnetic attenuation due to water vapor measured at 400 GHz. , 2012, , .		0
105	Advances in fabrication error analysis for a mm-wave ring-bar TWT circuit. , 2012, , .		0
106	Emission energy barriers of scandate surfaces with adsorbed Ba and Ba-O using density functional theory. , 2013, , .		0
107	Investigating the impact metamaterials have on breakdown delay in plasma formation in high power microwave experiments. , 2014, , .		0
108	Strontium vanadate: An ultra-low work function electron emission material. , 2015, , .		0

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109	Metamaterial-enhanced resistive wall amplifiers. , 2015, , .		0
110	Gridded vacuum tube use in transmitting wideband non-foster electrically small antennas. , 2016, , .		0
111	Metamaterial design for a metamaterial-enhanced resistive wall amplifier. , 2016, , .		0
112	Toward a statistical model of electron emission from tungsten cathode surfaces. , 2017, , .		0
113	Work function and stability of adsorbed Ba, O, and Ba-O species on an array of tungsten surfaces. , 2018, , .		0
114	A 2-Bit Phase-Shifting Unit Cell Design for Beam-Steerable Reflectarrays. , 2020, , .		0
115	First-Principles Model of Miram Curve from Polycrystalline Tungsten Cathodes. , 2020, , .		0
116	Experimental Investigation of Bulk and Thin Film Perovskite SrVO ₃ as a Thermionic Cathode Material. , 2020, , .		0
117	Including the Effects of Spatially Varying Work Functions in Electron Gun Design. , 2021, , .		0
118	The Importance of Patch Fields in Accurately Modeling Miram Curves. , 2021, , .		0