Debabrata Biswas

List of Publications by Year
in descending order

51 papers	**613** citations	567281 **15** h-index	642732 **23** g-index
53 all docs	**53** docs citations	**53** times ranked	**177** citing authors

#	Article	IF	Citations
1	A universal formula for the field enhancement factor. Physics of Plasmas, 2018, 25, .	1.9	52
2	Shielding effects in random large area field emitters, the field enhancement factor distribution, and current calculation. Physics of Plasmas, 2018, 25, .	1.9	39
3	Field-emission from parabolic tips: Current distributions, the net current, and effective emission area. Physics of Plasmas, 2018, 25, .	1.9	36
4	Generalization of the Child–Langmuir law for nonzero injection velocities in a planar diode. Physics of Plasmas, 2004, 11, 1178-1186.	1.9	35
5	Modeling field emitter arrays using nonlinear line charge distribution. Journal of Applied Physics, 2016, 120, .	2.5	33
6	Variation of field enhancement factor near the emitter tip. Ultramicroscopy, 2018, 185, 1-4.	1.9	31
7	A one-dimensional basic oscillator model of the vircator. Physics of Plasmas, 2009, 16, .	1.9	26
8	The cosine law of field enhancement factor variation: Generic emitter shapes. Physica E: Low-Dimensional Systems and Nanostructures, 2019, 109, 179-182.	2.7	24
9	Curvature correction to the field emission current. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2019, 37, .	1.2	23
10	The anode proximity effect for generic smooth field emitters. Physics of Plasmas, 2019, 26, 073106.	1.9	20
11	Verification of shielding effect predictions for large area field emitters. AIP Advances, 2019, 9, 125207.	1.3	20
12	Efficiency Enhancement of the Axial VIRCATOR. IEEE Transactions on Plasma Science, 2007, 35, 369-378.	1.3	17
13	Electrostatic shielding versus anode-proximity effect in large area field emitters. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2020, 38, 023207.	1.2	16
14	Improved transfer matrix methods for calculating quantum transmission coefficient. Physical Review E, 2014, 90, 013301.	2.1	15
15	Validation of current formula for a metallic nanotipped field emitter. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2019, 37, 040603.	1.2	15
16	Power loss in open cavity diodes and a modified Child-Langmuir law. Physics of Plasmas, 2005, 12, 093102.	1.9	14
17	Microwave Power Enhancement in the Simulation of a Resonant Coaxial Vircator. IEEE Transactions on Plasma Science, 2010, 38, 1313-1317.	1.3	13
18	The image-charge correction for curved field emitters. Physics of Plasmas, 2017, 24, 073107.	1.9	13

#	Article	IF	Citations
19	The tunneling potential for field emission from nanotips. Physics of Plasmas, 2018, 25, .	1.9	12
20	Enhanced space charge limited current for curved electron emitters. Physics of Plasmas, 2020, 27, .	1.9	12
21	Electrostatic field enhancement on end-caps of cylindrical field-emitters. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2019, 37, .	1.2	11
22	Higher order curvature corrections to the field emission current density. Journal of Applied Physics, 2021, 129, 194303.	2.5	10
23	A Uniform, Pulsed Magnetic Field Coil for Gigawatt Operation of Relativistic Backward-Wave Oscillator. IEEE Transactions on Plasma Science, 2018, 46, 2834-2839.	1.3	9
24	Hybrid approach to modeling large area field emitters. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2020, 38, .	1.2	9
25	The Child-Langmuir law in the quantum domain. Europhysics Letters, 2013, 102, 58002.	2.0	8
26	Schottky conjecture and beyond. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2020, 38, 023208.	1.2	8
27	Predicting space-charge affected field emission current from curved tips. Journal of Applied Physics, 2021, 130, .	2.5	8
28	Enhancement of field emission performance of graphene nanowalls: the role of compound-cathode architecture and anode proximity effect. Carbon Trends, 2021, 2, 100008.	3.0	7
29	Approximate universality in the electric field variation on a field-emitter tip in the presence of space charge. Physics of Plasmas, 2021, 28, .	1.9	7
30	Sensitive Dependence of Efficiency on Cathode-Wall Position in a Coaxial Vircatorâ€"Numerical Studies. IEEE Transactions on Plasma Science, 2011, 39, 1573-1576.	1.3	6
31	Simulating multi-scale gated field emittersâ€"A hybrid approach. Physics of Plasmas, 2021, 28, 013111.	1.9	6
32	Approximate universality in the tunneling potential for curved field emittersâ€"A line charge model approach. Journal of Applied Physics, 2021, 129, .	2.5	5
33	Measuring billiard eigenfunctions with arbitrary trajectories. Physical Review E, 2003, 67, 026208.	2.1	4
34	Absence of saturation for finite injected currents in axially symmetric cavity diode. Physics of Plasmas, 2003, 10, 4521-4529.	1.9	4
35	Comment on â€œNew Scaling of Child-Langmuir Law in the Quantum Regimeâ€ Physical Review Letters, 2012, 109, 219801; discussion 219802.	7.8	4
36	Boundary conditions for the solution of the three-dimensional Poisson equation in open metallic enclosures. Physics of Plasmas, 2015, 22, .	1.9	4

#	Article	IF	Citations
37	The notional emission area for cylindrical posts and its variation with local electric field. , 2021, , .		4
38	Classical Projected Phase Space Density of Billiards and Its Relation to the Quantum Neumann Spectrum. Physical Review Letters, 2004, 93, 204102.	7.8	3
39	The limiting current in a one-dimensional situation: Transition from a space charge limited to magnetically limited flow. Physics of Plasmas, 2008, 15, 023101.	1.9	3
40	Radiation from a space charge dominated linear electron beam. Physics of Plasmas, 2008, 15, 013103.	1.9	3
41	Calculating field emission current in nanodiodesâ€"A multi-group formalism with space charge and exchange-correlation effects. Journal of Applied Physics, 2014, 115, 114302.	2.5	3
42	Scaling in large area field emitters and the emission dimension. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2021, 39, .	1.2	3
43	Interpreting the field emission equation for large area field emitters. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2022, 40, 023201.	1.2	3
44	Evolution of classical projected phase space density in billiards. Pramana - Journal of Physics, 2005, 64, 563-575.	1.8	2
45	Response to â€œComment on â€˜Relation between space charge limited current and power loss in open drift tubes' â€•[Phys Plasmas 14, 094705 (2007)]. Physics of Plasmas, 2007, 14, .	1.9	2
46	Non-uniform guiding magnetic field for efficiency enhancement of RBWO. Physics of Plasmas, 2020, 27, .	1.9	2
47	Gamow factors and current densities in cold field emission theory: A comparative study. Journal of Applied Physics, 2022, 131, 154301.	2.5	2
48	EVOLUTION OF LIOUVILLE DENSITY IN BILLIARDS: THE QUANTUM CONNECTION. Modern Physics Letters B, 2006, 20, 795-813.	1.9	1
49	Simulation study of modified coaxial vircator for improved power efficiency. , 2011, , .		1
50	Semi-analytical theory of emission and transport in a LAFE-based diode. Physics of Plasmas, 2022, 29, 073102.	1.9	1
51	Liouville density evolution in billiards and the quantum connection. , 2006, , .		0