Laurent Garrigues

List of Publications by Year
in descending order

86 papers	2,827 citations	186265 28 h-index	175258 52 g-index
86 all docs	86 docs citations	86 times ranked	1006 citing authors

#	Article	IF	Citations
1	Low frequency oscillations in a stationary plasma thruster. Journal of Applied Physics, 1998, 84, 3541-3554.	2.5	360
2	Space micropropulsion systems for Cubesats and small satellites: From proximate targets to furthermost frontiers. Applied Physics Reviews, 2018, 5, .	11.3	242
3	Two-dimensional model of a stationary plasma thruster. Journal of Applied Physics, 2002, 91, 5592-5598.	2.5	142
4	Perspectives, frontiers, and new horizons for plasma-based space electric propulsion. Physics of Plasmas, 2020, 27, .	1.9	140
5	Role of anomalous electron transport in a stationary plasma thruster simulation. Journal of Applied Physics, 2003, 93, 67-75.	2.5	114
6	Critical assessment of a two-dimensional hybrid Hall thruster model: Comparisons with experiments. Physics of Plasmas, 2004, 11, 3035-3046.	1.9	112
7	Model study of the influence of the magnetic field configuration on the performance and lifetime of a Hall thruster. Physics of Plasmas, 2003, 10, 4886-4892.	1.9	89
8	Eâ€‰Ã—â€‰B electron drift instability in Hall thrusters: Particle-in-cell simulations vs. theory. Physics of Plasmas, 2018, 25, .	1.9	86
9	Anomalous cross field electron transport in a Hall effect thruster. Applied Physics Letters, 2006, 89, 161503.	3.3	81
10	2D axial-azimuthal particle-in-cell benchmark for low-temperature partially magnetized plasmas. Plasma Sources Science and Technology, 2019, 28, 105010.	3.1	72
11	Physics, simulation and diagnostics of Hall effect thrusters. Plasma Physics and Controlled Fusion, 2008, 50, 124041.	2.1	70
12	A two-dimensional (azimuthal-axial) particle-in-cell model of a Hall thruster. Physics of Plasmas, 2014, 21, 023503.	1.9	66
13	Modeling of plasma transport and negative ion extraction in a magnetized radio-frequency plasma source. New Journal of Physics, 2017, 19, 015002.	2.9	61
14	Latest progress in Hall thrusters plasma modelling. Reviews of Modern Plasma Physics, 2019, 3, 1.	4.1	55
15	Expanding sheath in a bounded plasma in the context of the post-arc phase of a vacuum arc. Journal Physics D: Applied Physics, 2008, 41, 015203.	2.8	53
16	Physics of a magnetic filter for negative ion sources. I. Collisional transport across the filter in an ideal, 1D filter. Physics of Plasmas, 2012, 19, .	1.9	53
17	Hollow cathode modeling: I. A coupled plasma thermal two-dimensional model. Plasma Sources Science and Technology, 2017, 26, 055007.	3.1	47
18	2D radial-azimuthal particle-in-cell benchmark for E Ã— B discharges. Plasma Sources Science and Technology, 2021, 30, 075002.	3.1	44

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19	The PEGASES Gridded Ion-Ion Thruster Performance and Predictions. IEEE Transactions on Plasma Science, 2015, 43, 321-326.	1.3	43
20	Hybrid and particle-in-cell models of a stationary plasma thruster. Plasma Sources Science and Technology, 2000, 9, 219-226.	3.1	41
21	Modelling of a dipolar microwave plasma sustained by electron cyclotron resonance. Journal Physics D: Applied Physics, 2009, 42, 194019.	2.8	41
22	Computation of Hall Thruster Performance. Journal of Propulsion and Power, 2001, 17, 772-779.	2.2	38
23	Anomalous conductivity and secondary electron emission in Hall effect thrusters. Journal of Applied Physics, 2006, 100, 123301.	2.5	38
24	Hollow cathode modeling: II. Physical analysis and parametric study. Plasma Sources Science and Technology, 2017, 26, 055008.	3.1	38
25	Issues in the understanding of negative ion extraction for fusion. Plasma Sources Science and Technology, 2016, 25, 045010.	3.1	36
26	Sheath expansion and plasma dynamics in the presence of electrode evaporation: Application to a vacuum circuit breaker. Journal of Applied Physics, 2009, 106, .	2.5	29
27	Empirical electron cross-field mobility in a Hall effect thruster. Applied Physics Letters, 2009, 95, .	3.3	29
28	Spontaneous oscillations in a Hall thruster. IEEE Transactions on Plasma Science, 1999, 27, 98-99.	1.3	28
29	Modeling of breakdown during the post-arc phase of a vacuum circuit breaker. Plasma Sources Science and Technology, 2010, 19, 065020.	3.1	26
30	Electric propulsion: comparisons between different concepts. Plasma Physics and Controlled Fusion, 2011, 53, 124011.	2.1	26
31	Computational Study of Hall-Effect Thruster with Ambient Atmospheric Gas as Propellant. Journal of Propulsion and Power, 2012, 28, 344-354.	2.2	25
32	Two-Dimensional Simulation of the Post-Arc Phase of a Vacuum Circuit Breaker. IEEE Transactions on Plasma Science, 2008, 36, 1046-1047.	1.3	24
33	A comprehensive study on the atom flow in the cross-field discharge of a Hall thruster. Journal Physics D: Applied Physics, 2011, 44, 105203.	2.8	24
34	Physics and modeling of an end-Hall (gridless) ion source. Journal of Applied Physics, 2011, 109, .	2.5	24
35	Appropriate use of the particle-in-cell method in low temperature plasmas: Application to the simulation of negative ion extraction. Journal of Applied Physics, 2016, 120, .	2.5	24
36	Modeling of the plasma jet of a stationary plasma thruster. Journal of Applied Physics, 2002, 91, 9521.	2.5	23

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37	Method to obtain the electric field and the ionization frequency from laser induced fluorescence measurements. Plasma Sources Science and Technology, 2009, 18, 034008.	3.1	23
38	Modeling of negative ion extraction from a magnetized plasma source: Derivation of scaling laws and description of the origins of aberrations in the ion beam. Physics of Plasmas, 2018, 25, 023510.	1.9	21
39	Operation of a low-power Hall thruster: comparison between magnetically unshielded and shielded configuration. Plasma Sources Science and Technology, 2019, 28, 034003.	3.1	21
40	Electron transport in stationary plasma thrusters. Transport Theory and Statistical Physics, 1998, 27, 203-221.	0.4	18
41	Modelling of Stationary Plasma Thrusters. Contributions To Plasma Physics, 2004, 44, 529-535.	1.1	18
42	Model analysis of a double-stage Hall effect thruster with double-peaked magnetic field and intermediate electrode. Physics of Plasmas, 2007, 14, 113502.	1.9	16
43	Numerical simulation of electron transport in the channel region of a stationary plasma thruster. Plasma Sources Science and Technology, 2002, 11, 104-114.	3.1	15
44	Chemical composition of SF₆low-pressure plasma in magnetic field. Journal Physics D: Applied Physics, 2014, 47, 045205.	2.8	15
45	Modeling of an advanced concept of a double stage Hall effect thruster. Physics of Plasmas, 2008, 15, .	1.9	14
46	Computed versus measured ion velocity distribution functions in a Hall effect thruster. Journal of Applied Physics, 2012, 111, 113301.	2.5	14
47	Optimized atom injection in a Hall effect thruster. Applied Physics Letters, 2004, 85, 5460-5462.	3.3	13
48	Modeling of double stage Hall effect thruster. IEEE Transactions on Plasma Science, 2005, 33, 522-523.	1.3	13
49	Simulations of a Miniaturized Cylindrical Hall Thruster. IEEE Transactions on Plasma Science, 2008, 36, 2034-2042.	1.3	13
50	Negative ion extraction via particle simulation for fusion: critical assessment of recent contributions. Nuclear Fusion, 2017, 57, 014003.	3.5	13
51	Development and Testing of Hall Thruster with Flexible Magnetic Field Configuration. Journal of Propulsion and Power, 2015, 31, 1167-1174.	2.2	12
52	Electron properties of an emissive cathode: analysis with incoherent thomson scattering, fluid simulations and Langmuir probe measurements. Journal Physics D: Applied Physics, 2020, 53, 415202.	2.8	12
53	Performance Modeling of a Thrust Vectoring Device for Hall Effect Thrusters. Journal of Propulsion and Power, 2009, 25, 1003-1012.	2.2	10
54	Nonlinear ion dynamics in Hall thruster plasma source by ion transit-time instability. Plasma Sources Science and Technology, 2017, 26, 03LT01.	3.1	10

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55	Diffusion of low-pressure electronegative plasma in magnetic field. Europhysics Letters, 2013, 102, 55004.	2.0	9
56	ID-HALL, a new double stage Hall thruster design. I. Principle and hybrid model of ID-HALL. Physics of Plasmas, 2018, 25, .	1.9	9
57	Application of sparse grid combination techniques to low temperature plasmas particle-in-cell simulations. I. Capacitively coupled radio frequency discharges. Journal of Applied Physics, 2021, 129, .	2.5	8
58	Numerical study of the characteristics of the ion and fast atom beams in an end-Hall ion source. Journal of Applied Physics, 2012, 112, .	2.5	7
59	Time dependent behaviors of ion-ion plasmas exposed to various voltage waveforms in the kilohertz to megahertz frequency range. Physics of Plasmas, 2012, 19, .	1.9	7
60	Distinct discharge modes in micro Hall thruster plasmas. Plasma Sources Science and Technology, 2021, 30, 035004.	3.1	7
61	Plasma decay modeling during the post-arc phase of a vacuum circuit breaker. , 2008, , .		6
62	Transport of low pressure electronegative SF6 plasma through a localized magnetic filter. Physics of Plasmas, 2014, 21, 083505.	1.9	6
63	Application of sparse grid combination techniques to low temperature plasmas Particle-In-Cell simulations. II. Electron drift instability in a Hall thruster. Journal of Applied Physics, 2021, 129, .	2.5	6
64	Experimental investigation about energy balance of electron emission from materials under electron impacts at low energy: application to silver, graphite and SiO₂. Journal Physics D: Applied Physics, 2017, 50, 485204.	2.8	5
65	Magnetic cusp confinement in low-Î² plasmas revisited. Physics of Plasmas, 2020, 27, .	1.9	5
66	Progress in development of a combined device/plume model for Hall thrusters. , 2000, , .		4
67	Post-arc period of vacuum circuit breakers: New 2D simulation and experimental results. , 2010, , .		4
68	Ion properties in a Hall current thruster operating at high voltage. Journal of Applied Physics, 2016, 119, 163305.	2.5	4
69	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
70	Comparisons between hybrid and PIC models of a Stationary Plasma Thruster. , 1999, , .		3
71	Electron Trajectories in a Hall Effect Thruster Anomalous Transport Induced by an Azimuthal Wave. IEEE Transactions on Plasma Science, 2008, 36, 1212-1213.	1.3	3
72	Developpment of a hybrid MPI/OpenMP massivelly parallel 3D particle-in-cell model of a magnetized plasma source. , 2015, , .		3

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73	Measurements of electron emission under electron impact on BN sample for incident electron energy between 10â€ŠeV and 1000â€ŠeV. Europhysics Letters, 2019, 127, 23001.	2.0	3
74	Numerical Modeling of an End-Hall Ion Source. Advanced Materials Research, 0, 227, 144-147.	0.3	2
75	Reply to Comment on â€˜Issues in the understanding of negative ion extraction for fusionâ€™. Plasma Sources Science and Technology, 2017, 26, 058002.	3.1	2
76	Simulation of the microwave propagation through the plume of a Hall thruster integrated on small spacecraft. Journal of Applied Physics, 2022, 131, .	2.5	2
77	Understanding the conductivity in ion propulsion devices. , 0, , .		1
78	PPS-1350G in an Extended Operation Domain: Comparison Between Experimental and Simulation Results. , 2004, , .		1
79	Pitfalls in Modeling Walls and Neutrals Physics in Gas Discharges Using Parallel Particle-in-Cell Monte Carlo Collision Algorithms. Frontiers in Physics, 2018, 6, .	2.1	1
80	Modeling of a Magnetized Plasma: The Stationary Plasma Thruster. , 2002, , 85-100.		0
81	A flexible magnetic circuit dedicated to Hall effect Thruster experiment. , 2012, , .		0
82	Azimuthal micro-instability inside a wall-less hall thruster. , 2015, , .		0
83	Hollow cathodes for hall thrusters: Modelling and scaling trends. , 2015, , .		0
84	Characterization of negative ion beam extracted from a negative ion source with a particle-in-cell model. , 2015, , .		0
85	Sparse Grid Approach to Accelerate Particle-In-Cell Technique: Application to the Hall Thruster EÃ—B Instability *. , 2021, , .		0
86	Missions du futur et nouveaux concepts en propulsion plasma. , 2021, , 24-30.	0.1	0