Laurent Garrigues

List of Publications by Year
in descending order

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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	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
2	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
3	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
4	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
5	2D radial-azimuthal particle-in-cell benchmark for E Ã— B discharges. Plasma Sources Science and Technology, 2021, 30, 075002.	3.1	44
6	Distinct discharge modes in micro Hall thruster plasmas. Plasma Sources Science and Technology, 2021, 30, 035004.	3.1	7
7	Sparse Grid Approach to Accelerate Particle-In-Cell Technique: Application to the Hall Thruster EÃ—B Instability *. , 2021, , .		0
8	Missions du futur et nouveaux concepts en propulsion plasma. , 2021, , 24-30.	0.1	0
9	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
10	Perspectives, frontiers, and new horizons for plasma-based space electric propulsion. Physics of Plasmas, 2020, 27, .	1.9	140
11	Magnetic cusp confinement in low-Î² plasmas revisited. Physics of Plasmas, 2020, 27, .	1.9	5
12	Latest progress in Hall thrusters plasma modelling. Reviews of Modern Plasma Physics, 2019, 3, 1.	4.1	55
13	2D axial-azimuthal particle-in-cell benchmark for low-temperature partially magnetized plasmas. Plasma Sources Science and Technology, 2019, 28, 105010.	3.1	72
14	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
15	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
16	Space micropropulsion systems for Cubesats and small satellites: From proximate targets to furthermost frontiers. Applied Physics Reviews, 2018, 5, .	11.3	242
17	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
18	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

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19	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
20	Eâ€‰Ã—â€‰B electron drift instability in Hall thrusters: Particle-in-cell simulations vs. theory. Physics of Plasmas, 2018, 25, .	1.9	86
21	Nonlinear ion dynamics in Hall thruster plasma source by ion transit-time instability. Plasma Sources Science and Technology, 2017, 26, 03LT01.	3.1	10
22	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
23	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
24	Hollow cathode modeling: II. Physical analysis and parametric study. Plasma Sources Science and Technology, 2017, 26, 055008.	3.1	38
25	Hollow cathode modeling: I. A coupled plasma thermal two-dimensional model. Plasma Sources Science and Technology, 2017, 26, 055007.	3.1	47
26	Negative ion extraction via particle simulation for fusion: critical assessment of recent contributions. Nuclear Fusion, 2017, 57, 014003.	3.5	13
27	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
28	Ion properties in a Hall current thruster operating at high voltage. Journal of Applied Physics, 2016, 119, 163305.	2.5	4
29	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
30	Issues in the understanding of negative ion extraction for fusion. Plasma Sources Science and Technology, 2016, 25, 045010.	3.1	36
31	Azimuthal micro-instability inside a wall-less hall thruster. , 2015, , .		0
32	The PEGASES Gridded Ion-Ion Thruster Performance and Predictions. IEEE Transactions on Plasma Science, 2015, 43, 321-326.	1.3	43
33	Developpment of a hybrid MPI/OpenMP massively parallel 3D particle-in-cell model of a magnetized plasma source. , 2015, , .		3
34	Development and Testing of Hall Thruster with Flexible Magnetic Field Configuration. Journal of Propulsion and Power, 2015, 31, 1167-1174.	2.2	12
35	Hollow cathodes for hall thrusters: Modelling and scaling trends. , 2015, , .		0
36	Characterization of negative ion beam extracted from a negative ion source with a particle-in-cell model. , 2015, , .		0

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37	A two-dimensional (azimuthal-axial) particle-in-cell model of a Hall thruster. Physics of Plasmas, 2014, 21, 023503.	1.9	66
38	Transport of low pressure electronegative SF6 plasma through a localized magnetic filter. Physics of Plasmas, 2014, 21, 083505.	1.9	6
39	Chemical composition of SF₆low-pressure plasma in magnetic field. Journal Physics D: Applied Physics, 2014, 47, 045205.	2.8	15
40	Diffusion of low-pressure electronegative plasma in magnetic field. Europhysics Letters, 2013, 102, 55004.	2.0	9
41	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
42	Computational Study of Hall-Effect Thruster with Ambient Atmospheric Gas as Propellant. Journal of Propulsion and Power, 2012, 28, 344-354.	2.2	25
43	A flexible magnetic circuit dedicated to Hall effect Thruster experiment. , 2012, , .		0
44	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
45	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
46	Computed versus measured ion velocity distribution functions in a Hall effect thruster. Journal of Applied Physics, 2012, 111, 113301.	2.5	14
47	Electric propulsion: comparisons between different concepts. Plasma Physics and Controlled Fusion, 2011, 53, 124011.	2.1	26
48	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
49	Physics and modeling of an end-Hall (gridless) ion source. Journal of Applied Physics, 2011, 109, .	2.5	24
50	Modeling of breakdown during the post-arc phase of a vacuum circuit breaker. Plasma Sources Science and Technology, 2010, 19, 065020.	3.1	26
51	Post-arc period of vacuum circuit breakers: New 2D simulation and experimental results. , 2010, , .		4
52	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
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	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

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55	Empirical electron cross-field mobility in a Hall effect thruster. Applied Physics Letters, 2009, 95, .	3.3	29
56	Modelling of a dipolar microwave plasma sustained by electron cyclotron resonance. Journal Physics D: Applied Physics, 2009, 42, 194019.	2.8	41
57	Physics, simulation and diagnostics of Hall effect thrusters. Plasma Physics and Controlled Fusion, 2008, 50, 124041.	2.1	70
58	Simulations of a Miniaturized Cylindrical Hall Thruster. IEEE Transactions on Plasma Science, 2008, 36, 2034-2042.	1.3	13
59	Plasma decay modeling during the post-arc phase of a vacuum circuit breaker. , 2008, , .		6
60	Modeling of an advanced concept of a double stage Hall effect thruster. Physics of Plasmas, 2008, 15, .	1.9	14
61	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
62	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
63	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
64	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
65	Anomalous conductivity and secondary electron emission in Hall effect thrusters. Journal of Applied Physics, 2006, 100, 123301.	2.5	38
66	Anomalous cross field electron transport in a Hall effect thruster. Applied Physics Letters, 2006, 89, 161503.	3.3	81
67	Modeling of double stage Hall effect thruster. IEEE Transactions on Plasma Science, 2005, 33, 522-523.	1.3	13
68	Modelling of Stationary Plasma Thrusters. Contributions To Plasma Physics, 2004, 44, 529-535.	1.1	18
69	Optimized atom injection in a Hall effect thruster. Applied Physics Letters, 2004, 85, 5460-5462.	3.3	13
70	Critical assessment of a two-dimensional hybrid Hall thruster model: Comparisons with experiments. Physics of Plasmas, 2004, 11, 3035-3046.	1.9	112
71	PPS-1350G in an Extended Operation Domain: Comparison Between Experimental and Simulation Results. , 2004, , .		1
72	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

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73	Role of anomalous electron transport in a stationary plasma thruster simulation. Journal of Applied Physics, 2003, 93, 67-75.	2.5	114
74	Modeling of the plasma jet of a stationary plasma thruster. Journal of Applied Physics, 2002, 91, 9521.	2.5	23
75	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
76	Modeling of a Magnetized Plasma: The Stationary Plasma Thruster. , 2002, , 85-100.		0
77	Two-dimensional model of a stationary plasma thruster. Journal of Applied Physics, 2002, 91, 5592-5598.	2.5	142
78	Computation of Hall Thruster Performance. Journal of Propulsion and Power, 2001, 17, 772-779.	2.2	38
79	Progress in development of a combined device/plume model for Hall thrusters. , 2000, , .		4
80	Hybrid and particle-in-cell models of a stationary plasma thruster. Plasma Sources Science and Technology, 2000, 9, 219-226.	3.1	41
81	Spontaneous oscillations in a Hall thruster. IEEE Transactions on Plasma Science, 1999, 27, 98-99.	1.3	28
82	Comparisons between hybrid and PIC models of a Stationary Plasma Thruster. , 1999, , .		3
83	Low frequency oscillations in a stationary plasma thruster. Journal of Applied Physics, 1998, 84, 3541-3554.	2.5	360
84	Electron transport in stationary plasma thrusters. Transport Theory and Statistical Physics, 1998, 27, 203-221.	0.4	18
85	Understanding the conductivity in ion propulsion devices. , 0, , .		1
86	Numerical Modeling of an End-Hall Ion Source. Advanced Materials Research, 0, 227, 144-147.	0.3	2