Francesco Taccogna

List of Publications by Year
in descending order

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99	2,527	201674	214800
papers	citations	27	47
		h-index	g-index

101	101	101	1582
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Space micropropulsion systems for Cubesats and small satellites: From proximate targets to furthermost frontiers. Applied Physics Reviews, 2018, 5, .	11.3	242
2	The Particleâ€înâ€Cell Method. Contributions To Plasma Physics, 2007, 47, 563-594.	1.1	214
3	Perspectives, frontiers, and new horizons for plasma-based space electric propulsion. Physics of Plasmas, 2020, 27, .	1.9	140
4	Laser Ablation of Graphite in Water in a Range of Pressure from 1 to 146 atm Using Single and Double Pulse Techniques for the Production of Carbon Nanostructures. Journal of Physical Chemistry C, 2011, 115, 5123-5130.	3.1	103
5	Particle in Cell Simulation of Low Temperature Laboratory Plasmas. Contributions To Plasma Physics, 2007, 47, 595-634.	1.1	96
6	Experimental investigation and modelling of double pulse laser induced plasma spectroscopy under water. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2005, 60, 975-985.	2.9	92
7	Physics of Eâ€‰Ã—â€‰B discharges relevant to plasma propulsion and similar technologies. Physics of Plasmas, 2020, 27, .	1.9	89
8	Kinetic simulations of a plasma thruster. Plasma Sources Science and Technology, 2008, 17, 024003.	3.1	57
9	Plasma-surface interaction model with secondary electron emission effects. Physics of Plasmas, 2004, 11, 1220-1228.	1.9	55
10	Latest progress in Hall thrusters plasma modelling. Reviews of Modern Plasma Physics, 2019, 3, 1.	4.1	55
11	Self-similarity in Hall plasma discharges: Applications to particle models. Physics of Plasmas, 2005, 12, 053502.	1.9	52
12	Plasma sheaths in Hall discharge. Physics of Plasmas, 2005, 12, 093506.	1.9	52
13	Modeling of a negative ion source. III. Two-dimensional structure of the extraction region. Physics of Plasmas, 2010, 17, .	1.9	48
14	Anomalous transport induced by sheath instability in Hall effect thrusters. Applied Physics Letters, 2009, 94, .	3.3	46
15	Three-dimensional structure of the extraction region of a hybrid negative ion source. Plasma Sources Science and Technology, 2013, 22, 045019.	3.1	45
16	2D radial-azimuthal particle-in-cell benchmark for E Ã— B discharges. Plasma Sources Science and Technology, 2021, 30, 075002.	3.1	44
17	Non-equilibrium in low-temperature plasmas. European Physical Journal D, 2016, 70, 1.	1.3	42
18	High-Temperature Thermodynamic Properties of Mars-Atmosphere Components. Journal of Spacecraft and Rockets, 2005, 42, 980-989.	1.9	38

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19	Modeling of a negative ion source. II. Plasma-gas coupling in the extraction region. Physics of Plasmas, 2008, 15, .	1.9	33
20	Numerical studies of the ExB electron drift instability in Hall thrusters. Plasma Sources Science and Technology, 2019, 28, 064002.	3.1	33
21	Modeling of a negative ion source. I. Gas kinetics and dynamics in the expansion region. Physics of Plasmas, 2007, 14, 073503.	1.9	32
22	Particleâ€inâ€Cell Simulation of Stationary Plasma Thruster. Contributions To Plasma Physics, 2007, 47, 635-656.	1.1	32
23	Selfâ€Consistent Simulations of the Plasmaâ€Wall Transition Layer. Contributions To Plasma Physics, 2008, 48, 121-125.	1.1	31
24	On the growth mechanism of nanoparticles in plasma during pulsed laser ablation in liquids. Plasma Sources Science and Technology, 2017, 26, 045002.	3.1	31
25	First experiments with the negative ion source NIO1. Review of Scientific Instruments, 2016, 87, 02B320.	1.3	30
26	Particle-in-Cell with Monte Carlo Simulation of SPT-100 Exhaust Plumes. Journal of Spacecraft and Rockets, 2002, 39, 409-419.	1.9	29
27	PIC modeling of negative ion sources for fusion. New Journal of Physics, 2017, 19, 015012.	2.9	29
28	Plasma flow in a Hall thruster. Physics of Plasmas, 2005, 12, 043502.	1.9	28
29	Negative-Ion-Source Modeling: From Expansion to Extraction Region. IEEE Transactions on Plasma Science, 2008, 36, 1589-1599.	1.3	27
30	Kinetic Simulations of SPT and HEMP Thrusters Including the Near-Field Plume Region. IEEE Transactions on Plasma Science, 2010, 38, 2274-2280.	1.3	27
31	Three-dimensional particle-in-cell model of Hall thruster: The discharge channel. Physics of Plasmas, 2018, 25, .	1.9	26
32	Stationary plasma thruster simulation. Computer Physics Communications, 2004, 164, 160-170.	7.5	25
33	Plasma kinetics in molecular plasmas and modeling of reentry plasmas. Plasma Physics and Controlled Fusion, 2011, 53, 124007.	2.1	25
34	Particle modelling of the hybrid negative ion source. Plasma Sources Science and Technology, 2011, 20, 024009.	3.1	25
35	Non-classical plasma sheaths: space-charge-limited and inverse regimes under strong emission from surfaces. European Physical Journal D, 2014, 68, 1.	1.3	25
36	Surfaceâ€Driven Asymmetry and Instability in the Acceleration Region of Hall Thruster. Contributions To Plasma Physics, 2008, 48, 375-386.	1.1	24

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37	PIC Model of the Ion Collection by a Langmuir Probe. Contributions To Plasma Physics, 2004, 44, 594-600.	1.1	23
38	Start-Up Transient in a Hall Thruster. Contributions To Plasma Physics, 2006, 46, 781-786.	1.1	23
39	Very-near-field plume simulation of a stationary plasma thruster. EPJ Applied Physics, 2004, 28, 113-122.	0.7	22
40	Monte Carlo Collision method for low temperature plasma simulation. Journal of Plasma Physics, 2015, 81, .	2.1	21
41	Particleâ€inâ€Cell Simulations for Ion Thrusters. Contributions To Plasma Physics, 2009, 49, 655-661.	1.1	20
42	Nucleation and growth of nanoparticles in a plasma by laser ablation in liquid. Journal of Plasma Physics, 2015, 81, .	2.1	20
43	A particle-in-cell/Monte Carlo model of the Ar+ion collection in He gas by a cylindrical Langmuir probe in the transition regime. EPJ Applied Physics, 2003, 22, 29-39.	0.7	19
44	Numerical experiment to estimate the validity of negative ion diagnostic using photo-detachment combined with Langmuir probing. Physics of Plasmas, 2015, 22, .	1.9	19
45	Three-dimensional plume simulation of multi-channel thruster configuration. Plasma Sources Science and Technology, 2014, 23, 065034.	3.1	17
46	Numerical Study of Electron Cyclotron Drift Instability: Application to Hall Thruster. Frontiers in Physics, 2019, 7, .	2.1	17
47	Numerical simulations used for a validity check on the laser induced photo-detachment diagnostic method in electronegative plasmas. Physics of Plasmas, 2014, 21, .	1.9	15
48	Latest experimental and theoretical advances in the production of negative ions in caesium-free plasmas. European Physical Journal D, 2021, 75, 1.	1.3	15
49	Plasmaâ€Neutral Interaction in Kinetic Models for the Divertor Region. Contributions To Plasma Physics, 2008, 48, 147-152.	1.1	14
50	Dust in Plasma I. Particle Size and Ionâ€Neutral Collision Effects. Contributions To Plasma Physics, 2012, 52, 744-755.	1.1	14
51	Particle modeling of radial electron dynamics in a controlled discharge of a Hall thruster. Plasma Sources Science and Technology, 2018, 27, 064006.	3.1	14
52	Effects of secondary electron emission from a floating surface on the plasma sheath. Vacuum, 2004, 73, 89-92.	3.5	13
53	Finite size effect of dust charging in the magnetized edge plasma. Journal of Nuclear Materials, 2007, 363-365, 458-461.	2.7	12
54	Vibrational excitation and dissociation of deuterium molecule by electron impact. Plasma Physics and Controlled Fusion, 2021, 63, 085006.	2.1	12

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55	Negative ion production near a divertor plate. Journal of Nuclear Materials, 2007, 363-365, 437-442.	2.7	11
56	Parametric study of the radial plasma-wall interaction in a Hall thruster. Journal Physics D: Applied Physics, 2019, 52, 474003.	2.8	11
57	Photo-detachment signal analysis to accurately determine electronegativity, electron temperature, and charged species density. Applied Physics Letters, 2016, 109, .	3.3	11
58	Ionâ€Neutral Collision Effects in Langmuir Probe Theory. Contributions To Plasma Physics, 2008, 48, 509-514.	1.1	10
59	Kinetic divertor modeling. Chemical Physics, 2012, 398, 27-32.	1.9	10
60	Negative ion extraction from hydrogen plasma bulk. Physics of Plasmas, 2013, 20, 103506.	1.9	10
61	Dust in Plasma II. Effects of Secondary Electrons: Ionization and Surface Emission. Contributions To Plasma Physics, 2014, 54, 877-888.	1.1	10
62	Improvements of the versatile multiaperture negative ion source NIO1. AIP Conference Proceedings, 2017, , .	0.4	8
63	Application of a Gridâ€Free Kinetic Model to the Collisionless Sheath. Contributions To Plasma Physics, 2008, 48, 116-120.	1.1	7
64	Physics of Hall-effect thruster by particle model. AIP Conference Proceedings, 2012, , .	0.4	7
65	How to Build PIC-MCC Models for Hall Microthrusters. IEEE Transactions on Plasma Science, 2018, 46, 219-224.	1.3	7
66	Beam and installation improvements of the NIO1 ion source. Review of Scientific Instruments, 2020, 91, 013316.	1.3	7
67	Plasma grid shape and size effects on the extraction of negative ions. AIP Conference Proceedings, 2013, , .	0.4	6
68	Particle model of full-size ITER-relevant negative ion source. Review of Scientific Instruments, 2016, 87, 02B306.	1.3	6
69	Particle kinetic modelling of rarefied gases and plasmas. Plasma Sources Science and Technology, 2003, 12, S89-S97.	3.1	5
70	Ion orbits in a cylindrical Langmuir probe. Physics of Plasmas, 2006, 13, 043501.	1.9	5
71	Modeling of surface-dominated plasmas: From electric thruster to negative ion source. Review of Scientific Instruments, 2008, 79, 02B903.	1.3	5
72	The characterization and optimization of NIO1 ion source extraction aperture using a 3D particle-in-cell code. Review of Scientific Instruments, 2016, 87, 02B145.	1.3	5

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73	Kinetics of a plasma streamer ionization front. Journal Physics D: Applied Physics, 2018, 51, 064001.	2.8	5
74	Experimental and numerical investigation on the asymmetry of the current density extracted through a plasma meniscus in negative ion accelerator. Plasma Sources Science and Technology, 2020, 29, 075012.	3.1	5
75	Fully kinetic 2D{r,theta} model of a Hall discharge. , 2007, , .		4
76	Electronegative plasma diagnostic by laser photo-detachment combined with negatively biased Langmuir probe. Physics of Plasmas, 2018, 25, 053510.	1.9	4
77	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
78	Negative ion extraction by particle model. Review of Scientific Instruments, 2014, 85, 02B106.	1.3	3
79	High-Temperature Thermodynamic Properties of Mars-Atmosphere Components. , 2004, , .		2
80	Effect of surface roughness on secondary electron emission in a Hall discharge. , 2006, , .		2
81	Study of volume and surface effects in pure hydrogen discharges. AIP Conference Proceedings, 2007, , .	0.4	2
82	Experimental and numerical studies of microwave-plasma interaction in a MWPECVD reactor. AIP Advances, 2016, 6, 125001.	1.3	2
83	Code-to-code benchmark tests for 3D simulation models dedicated to the extraction region in negative ion sources. AIP Conference Proceedings, 2017, , .	0.4	2
84	Negative ion beam source as a complex system: identification of main processes and key interdependence. Rendiconti Lincei, 2019, 30, 277-285.	2.2	2
85	Multiscale Simulation of Hall Discharge. International Journal for Multiscale Computational Engineering, 2006, v4, 243-254.	1.2	2
86	Laser photo-detachment combined with Langmuir probe in magnetized electronegative plasma: how the probe size affects the plasma dynamic?. Plasma Sources Science and Technology, 0, , .	3.1	2
87	A 1.5D fluidâ€"Monte Carlo model of a hydrogen helicon plasma. Plasma Physics and Controlled Fusion, 2022, 64, 055012.	2.1	2
88	The H multiaperture source NIO1: gas conditioning and first cesiations. Journal of Physics: Conference Series, 2022, 2244, 012052.	0.4	2
89	Plasma Structure in the Extraction Region of a Hybrid Negative Ion Source. , 2009, , .		1
90	About the Extraction of Surface Produced Ions in Negative Ion Sources. AIP Conference Proceedings, 2011, , .	0.4	1

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91	Particle model of a cylindrical inductively coupled ion source. AIP Conference Proceedings, 2017, , .	0.4	1
92	Guest Editorial Special Issue on Micropropulsion and Cubesats. IEEE Transactions on Plasma Science, 2018, 46, 210-213.	1.3	1
93	Alternative concept of an efficient negative ion source for neutral beams. AIP Conference Proceedings, 2018, , .	0.4	1
94	Particle in cell/Monte Carlo model of an electric thruster. , 2000, , .		0
95	Geometrical Scaling of Hall Thruster Particle Model. AIP Conference Proceedings, 2005, , .	0.4	0
96	Dust charging under surface electron emission. , 2015, , .		0
97	Plasma characterization of a Hall effect thruster for a negative ion source concept. AIP Conference Proceedings, 2018, , .	0.4	0
98	Extraction of many Hâ^' beamlets from ion source NIO1. AIP Conference Proceedings, 2018, , .	0.4	0
99	RF Negative Ion Sources and Polarized Ion Sources. Springer Proceedings in Physics, 2016, , 145-152.	0.2	0