

Mark A Cappelli

List of Publications by Year in descending order

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130
papers

2,743
citations

165694

29
h-index

223255

46
g-index

137
all docs

137
docs citations

137
times ranked

1835
citing authors

#	ARTICLE	IF	CITATIONS
1	Experimental detection of topological surface waves at a magnetized plasma interface in the Voigt configuration. <i>Applied Physics Letters</i> , 2024, 124, .	3.2	0
2	An electromagnetic scattering approach to identifying topological and non-topological unidirectional edge states at gyrotropic plasma interfaces. <i>Journal of Applied Physics</i> , 2023, 133, .	2.3	1
3	Tunable non-reciprocal waveguide using spoof plasmon polariton coupling to a gaseous magnetoplasmon. <i>Optics Letters</i> , 2023, 48, 3725.	3.3	3
4	Transition from retrograde to prograde drift instabilities in a magnetron microdischarge. <i>Journal of Applied Physics</i> , 2023, 134, .	2.3	2
5	Coherent fluctuations in a partially magnetized small magnetron discharge operating on molecular nitrogen. <i>Physics of Plasmas</i> , 2023, 30, .	1.9	1
6	High-pressure CO ₂ dissociation with nanosecond pulsed discharges. <i>Plasma Sources Science and Technology</i> , 2023, 32, 115012.	3.2	3
7	Quadruple Langmuir probe characterization of different fuel gases in a plasma deflagration accelerator. <i>Journal of Plasma Physics</i> , 2023, 89, .	2.1	0
8	Evidence of a free-space ion acceleration layer in the plume of a quad confinement plasma source. <i>Journal of Applied Physics</i> , 2022, 131, .	2.3	1
9	Experimental study of electromagnetic wave scattering from a gyrotropic gaseous plasma column. <i>Applied Physics Letters</i> , 2022, 120, .	3.2	8
10	Inverse design of plasma metamaterial devices with realistic elements. <i>Journal Physics D: Applied Physics</i> , 2022, 55, 465203.	2.9	3
11	Frequency-Selective MHz Power Amplifier for Dielectric Barrier Discharge Plasma Generation. <i>IEEE Open Journal of Power Electronics</i> , 2022, 3, 846-855.	5.9	2
12	A characterization of plasma properties of a heterogeneous magnetized low pressure discharge column. <i>AIP Advances</i> , 2022, 12, .	1.3	2
13	A tunable microwave circulator based on a magnetized plasma as an active gyrotropic element. <i>Physics of Plasmas</i> , 2022, 29, 112114.	1.9	1
14	Tunable guided resonance in twisted bilayer photonic crystal. <i>Science Advances</i> , 2022, 8, .	10.9	14
15	Developing α -inverted-corona β -fusion targets as high-fluence neutron sources. <i>Review of Scientific Instruments</i> , 2021, 92, 033544.	1.4	6
16	Reconfigurable plasma-dielectric hybrid photonic crystal as a platform for electromagnetic wave manipulation and computing. <i>Physics of Plasmas</i> , 2021, 28, .	1.9	13
17	Tunable surface plasmon resonance in laser-induced plasma spheroids. <i>Plasma Sources Science and Technology</i> , 2021, 30, 045010.	3.2	1
18	Laser absorption measurements of electron density in nanosecond-scale atmospheric pressure pulsed plasmas. <i>Physics of Plasmas</i> , 2021, 28, .	1.9	8

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19	Inverse Design of Plasma Metamaterial Devices for Optical Computing. Physical Review Applied, 2021, 16, .	3.8	30
20	Extended channel Hall thruster for air-breathing electric propulsion. Journal of Applied Physics, 2021, 130, .	2.3	19
21	Dual mode operation of a hydromagnetic plasma thruster to achieve tunable thrust and specific impulse. Journal of Applied Physics, 2021, 130, .	2.3	4
22	Time-synchronized laser-induced fluorescence in the near-field of a 600Watt Hall thruster. Journal of Applied Physics, 2021, 130, 183305.	2.3	3
23	Kinetic mix at gas-shell interface in inverted corona fusion targets. Physics of Plasmas, 2021, 28, .	1.9	2
24	Plasma-fixated nitrogen as fertilizer for turf grass. RSC Advances, 2021, 11, 37886-37895.	3.7	4
25	Schlieren diagnostic for cinematic visualization of dense plasma jets at Alfvénic timescales. Experiments in Fluids, 2020, 61, 1.	2.3	4
26	Physics of E ₀ discharges relevant to plasma propulsion and similar technologies. Physics of Plasmas, 2020, 27, .	1.9	108
27	The dynamics of coherent modes of gradient drift instabilities in a small magnetron discharge plasma. Journal of Applied Physics, 2020, 127, .	2.3	10
28	Interpenetration and kinetic effects in converging, high-energy plasma jets. High Energy Density Physics, 2020, 37, 100861.	1.6	5
29	A tunable double negative device consisting of a plasma array and a negative-permeability metamaterial. Physics of Plasmas, 2020, 27, .	1.9	24
30	Editorial conclusions to the special issue on electrical discharges for aerospace applications. Journal Physics D: Applied Physics, 2020, 53, 410201.	2.9	0
31	Ion plume investigation of a Hall effect thruster operating with Xe/N ₂ and Xe/air mixtures. Journal Physics D: Applied Physics, 2019, 52, 464003.	2.9	14
32	3D woodpile structure tunable plasma photonic crystal. Plasma Sources Science and Technology, 2019, 28, 02LT01.	3.2	25
33	Effects of flow collisionality on ELM replication in plasma guns. Fusion Engineering and Design, 2019, 144, 97-106.	1.9	2
34	OpenEM – Electromagnetic field mapping robot for microwave and RF measurements. HardwareX, 2019, 5, e00062.	2.3	3
35	Electron number density measurements from the frequency shift of a plasma defect state in a one-dimensional photonic crystal. European Physical Journal D, 2019, 73, 1.	1.3	1
36	Dynamic formation of stable current-driven plasma jets. Scientific Reports, 2019, 9, 2588.	3.4	21

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37	Broadband cw-terahertz spectroscopy for characterizing reactive plasmas. Journal Physics D: Applied Physics, 2019, 52, 195202.	2.9	5
38	Millimeter wave control using a plasma filled photonic crystal resonator. Journal Physics D: Applied Physics, 2019, 52, 055202.	2.9	10
39	Computational and experimental investigation of plasma deflagration jets and detonation shocks in coaxial plasma accelerators. Plasma Sources Science and Technology, 2018, 27, 025016.	3.2	13
40	The gaseous plasmonic response of a one-dimensional photonic crystal composed of striated plasma layers. Physics of Plasmas, 2018, 25, 031902.	1.9	7
41	Enhanced attenuation due to lattice resonances in a two-dimensional plasma photonic crystal. Physics of Plasmas, 2018, 25, .	1.9	19
42	Laser-produced gaseous plasmonic resonators. Physics of Plasmas, 2018, 25, .	1.9	5
43	Time-resolved laser-induced fluorescence diagnostics for electric propulsion and their application to breathing mode dynamics. Plasma Sources Science and Technology, 2018, 27, 094004.	3.2	29
44	Predictive modeling of plasmas for gaseous plasmonics. Plasma Sources Science and Technology, 2018, 27, 075005.	3.2	3
45	A plasma deflagration accelerator as a platform for laboratory astrophysics. High Energy Density Physics, 2017, 23, 73-80.	1.6	28
46	A microstrip photonic crystal bandgap device with a switchable negative epsilon plasma element. Microwave and Optical Technology Letters, 2017, 59, 3097-3101.	1.5	6
47	Plasma flow reactor for steady state monitoring of physical and chemical processes at high temperatures. Review of Scientific Instruments, 2017, 88, 093506.	1.4	20
48	Plasma modification of spoof plasmon propagation along metamaterial-air interfaces. Applied Physics Letters, 2017, 111, .	3.2	12
49	A plasma photonic crystal bandgap device. Applied Physics Letters, 2016, 108, .	3.2	102
50	Radial magnetic compression in the expelled jet of a plasma deflagration accelerator. Applied Physics Letters, 2016, 108, .	3.2	26
51	Waveguiding and bending modes in a plasma photonic crystal bandgap device. AIP Advances, 2016, 6, .	1.3	34
52	Tunable microwave pulse generation using discharge plasmas. Applied Physics Letters, 2016, 109, .	3.2	6
53	Damage Morphologies in Targets Exposed to a New Plasma Deflagration Accelerator for ELM Simulation. IEEE Transactions on Plasma Science, 2016, 44, 1534-1540.	1.4	16
54	Evidence of Branching Phenomena in Current-Driven Ionization Waves. Physical Review Letters, 2015, 115, 175001.	8.0	27

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55	Self-organization in planar magnetron microdischarge plasmas. Applied Physics Letters, 2015, 106, .	3.2	44
56	Time-resolved laser-induced fluorescence measurement of ion and neutral dynamics in a Hall thruster during ionization oscillations. Journal of Applied Physics, 2015, 118, .	2.3	33
57	A tunable microwave plasma photonic crystal filter. Applied Physics Letters, 2015, 107, .	3.2	85
58	A fast rise-rate, adjustable-mass-bit gas puff valve for energetic pulsed plasma experiments. Review of Scientific Instruments, 2015, 86, 063503.	1.4	17
59	Characterization of a plasma deflagration accelerator as an ELM replicator for PFC testing. , 2015, , .		0
60	Excited state population dynamics of a xenon ac discharge. Plasma Sources Science and Technology, 2015, 24, 055013.	3.2	7
61	Numerical studies of nitric oxide formation in nanosecond-pulsed discharge-stabilized flames of premixed methane/air. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2015, 373, 20140331.	3.5	2
62	A 2-D Hybrid Hall Thruster Simulation That Resolves the $E \times B$ Electron Drift Direction. IEEE Transactions on Plasma Science, 2015, 43, 86-94.	1.4	20
63	Ion Velocimetry Measurements and Particle-In-Cell Simulation of a Cylindrical Cusped Plasma Accelerator. IEEE Transactions on Plasma Science, 2015, 43, 54-63.	1.4	10
64	Nanosecond-pulsed discharge plasma splitting of carbon dioxide. IEEE Transactions on Plasma Science, 2015, 43, 1002-1007.	1.4	48
65	A Reduced Set of Air Plasma Reactions for Nanosecond Pulsed Plasmas. IEEE Transactions on Plasma Science, 2015, 43, 995-1001.	1.4	9
66	Implementation of an Entropy Closure Model for 2-D Hybrid Hall Thruster Simulations. IEEE Transactions on Plasma Science, 2015, 43, 5-11.	1.4	4
67	Ion dynamics in an $E \times B$ Hall plasma accelerator. Applied Physics Letters, 2015, 106, .	3.2	19
68	Time-synchronized continuous wave laser-induced fluorescence axial velocity measurements in a diverging cusped field thruster. Journal Physics D: Applied Physics, 2014, 47, 115204.	2.9	23
69	High-Velocity Neutral Plasma Jet Formed by Dense Plasma Deflagration. IEEE Transactions on Plasma Science, 2014, 42, 2500-2501.	1.4	13
70	Plasma Actuator Control of a Lifted Ethane Turbulent Jet Diffusion Flame. IEEE Transactions on Plasma Science, 2013, 41, 3293-3298.	1.4	2
71	Induced Flow and Optical Emission Generated by a Pulsed 13.56 MHz \sim 5 kHz Plasma Actuator. IEEE Transactions on Plasma Science, 2013, 41, 3275-3278.	1.4	4
72	Dielectric Barrier Discharge-Induced Vortex Generation With Discharge-Actuated Boundary Layer Bleed. IEEE Transactions on Plasma Science, 2013, 41, 3245-3253.	1.4	0

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73	Studies on the stability limit extension of premixed and jet diffusion flames of methane, ethane, and propane using nanosecond repetitive pulsed discharge plasmas. <i>Combustion and Flame</i> , 2013, 160, 2396-2403.	5.3	41
74	Simulations of nanosecond-pulsed dielectric barrier discharges in atmospheric pressure air. <i>Journal of Applied Physics</i> , 2013, 113, .	2.3	20
75	A study of flow induced by laser induced breakdown-enhanced dielectric barrier discharges in air. <i>Applied Physics Letters</i> , 2013, 103, .	3.2	4
76	Optically pumped cesium plasma neutralization of space charge in photon-enhanced thermionic energy converters. <i>Applied Physics Letters</i> , 2012, 101, .	3.2	33
77	Nanoparticle production in arc generated fireballs of granular silicon powder. <i>AIP Advances</i> , 2012, 2, .	1.3	6
78	A Simulation of the Effects of Varying Repetition Rate and Pulse Width of Nanosecond Discharges on Premixed Lean Methane-Air Combustion. <i>Journal of Combustion</i> , 2012, 2012, 1-11.	1.0	2
79	Dielectric barrier discharge induced boundary layer suction. <i>Applied Physics Letters</i> , 2012, 100, 264103.	3.2	4
80	Time-synchronized continuous wave laser-induced fluorescence on an oscillatory xenon discharge. <i>Review of Scientific Instruments</i> , 2012, 83, 113506.	1.4	20
81	Ion velocity and plasma potential measurements of a cylindrical cusped field thruster. <i>Journal of Applied Physics</i> , 2012, 111, .	2.3	35
82	Visualizing supersonic inlet duct unstart using planar laser Rayleigh scattering. <i>Experiments in Fluids</i> , 2011, 50, 1651-1657.	2.3	72
83	The influence of boundary layers on supersonic inlet flow unstart induced by mass injection. <i>Experiments in Fluids</i> , 2011, 51, 679-691.	2.3	83
84	On the quenching of excited electronic states of molecular nitrogen in nanosecond pulsed discharges in atmospheric pressure air. <i>Applied Physics Letters</i> , 2011, 98, 011502.	3.2	37
85	The Structure of Nanosecond Repetitively Pulsed Spark Discharges in Air. <i>IEEE Transactions on Plasma Science</i> , 2011, 39, 2258-2259.	1.4	24
86	Dielectric barrier discharge control of a turbulent boundary layer in a supersonic flow. <i>Applied Physics Letters</i> , 2010, 97, .	3.2	53
87	Single particle simulations of electron transport in the near-field of Hall thrusters. <i>Journal Physics D: Applied Physics</i> , 2010, 43, 045203.	2.9	15
88	On the role of fluctuations, cathode placement, and collisions on the transport of electrons in the near-field of Hall thrusters. <i>Physics of Plasmas</i> , 2010, 17, .	1.9	10
89	Energetic neutrals in the cathode sheath of argon direct-current discharges. <i>Journal of Applied Physics</i> , 2009, 106, 023305.	2.3	3
90	Electrostatic probe disruption of drift waves in magnetized microdischarges. <i>Applied Physics Letters</i> , 2009, 94, 211501.	3.2	25

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91	Time and space-correlated plasma potential measurements in the near field of a coaxial Hall plasma discharge. <i>Physics of Plasmas</i> , 2009, 16, .	1.9	30
92	The Hall effect and rocket flight. <i>Physics Today</i> , 2009, 62, 76-77.	0.4	12
93	A Study of Plasma-Stabilized Diffusion Flames at Elevated Ambient Temperatures. <i>IEEE Transactions on Plasma Science</i> , 2008, 36, 2898-2904.	1.4	27
94	Jet Flame Ignition in a Supersonic Crossflow Using a Pulsed Nonequilibrium Plasma Discharge. <i>IEEE Transactions on Plasma Science</i> , 2008, 36, 2918-2923.	1.4	43
95	Growth of resistive instabilities in E \tilde{A} -B plasma discharge simulations. <i>Physics of Plasmas</i> , 2008, 15, .	1.9	46
96	Shear-Based Model for Electron Transport in Hybrid Hall Thruster Simulations. <i>IEEE Transactions on Plasma Science</i> , 2008, 36, 2058-2068.	1.4	18
97	Cross-talk in multiple dielectric barrier discharge actuators. <i>Applied Physics Letters</i> , 2008, 92, .	3.2	33
98	Formation and role of cool flames in plasma-assisted premixed combustion. <i>Applied Physics Letters</i> , 2008, 92, .	3.2	31
99	High speed images of drift waves and turbulence in magnetized microplasmas. <i>IEEE Transactions on Plasma Science</i> , 2008, 36, 1228-1229.	1.4	10
100	Experimental Characterization of a Micro-Hall Thruster. <i>Journal of Propulsion and Power</i> , 2007, 23, 1068-1074.	2.3	45
101	On the production of energetic neutrals in the cathode sheath of direct-current discharges. <i>Applied Physics Letters</i> , 2007, 90, 101503.	3.2	10
102	Simulating Plasma-Induced Hall Thruster Wall Erosion With a Two-Dimensional Hybrid Model. <i>IEEE Transactions on Plasma Science</i> , 2007, 35, 1379-1387.	1.4	26
103	On the role of oxygen in dielectric barrier discharge actuation of aerodynamic flows. <i>Applied Physics Letters</i> , 2007, 91, .	3.2	64
104	The Magnetic Interference Hall Accelerator. , 2006, , .		1
105	Plasma-Discharge Stabilization of Jet Diffusion Flames. <i>IEEE Transactions on Plasma Science</i> , 2006, 34, 2545-2551.	1.4	90
106	Comparison of hybrid Hall thruster model to experimental measurements. <i>Physics of Plasmas</i> , 2006, 13, 083505.	1.9	59
107	Aerodynamic modification of flow over bluff objects by plasma actuation. <i>Experiments in Fluids</i> , 2006, 41, 479-486.	2.3	83
108	Millimetre wave plasma interferometry in the near field of a Hall plasma accelerator. <i>Journal Physics D: Applied Physics</i> , 2006, 39, 4582-4588.	2.9	13

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109	Low-power magnetized microdischarge ion source. Applied Physics Letters, 2006, 89, 061501.	3.2	17
110	Ion Energy Distributions in the Cathode Sheath of an Argon DC Microdischarge. IEEE International Conference on Plasma Science, 2005, , .	0.0	0
111	Kinetic and Surface Mechanisms to Growth of Hexagonal Boron Nitride. Materials Research Society Symposia Proceedings, 2002, 750, 1.	0.1	2
112	Anomalous electron mobility in a coaxial Hall discharge plasma. Physical Review E, 2001, 63, 026410.	2.1	172
113	Parametric study of the vacuum ultraviolet emission and electrical characteristics of a He-Xe microdischarge. Journal of Applied Physics, 2001, 89, 4719-4726.	2.3	11
114	Stability of a magnetized Hall plasma discharge. Journal of Applied Physics, 2001, 89, 3099-3107.	2.3	27
115	Methyl Concentration Measurements During Microwave Plasma-Assisted Diamond Deposition. Plasma Chemistry and Plasma Processing, 2000, 20, 1-12.	2.5	18
116	A low-power, linear-geometry Hall plasma source with an open electron-drift. Plasma Sources Science and Technology, 2000, 9, 68-76.	3.2	43
117	Vacuum emission and breakdown characteristics of a planar He-Xe microdischarge. Applied Physics Letters, 2000, 76, 544-546.	3.2	16
118	In Situ Plasma Analysis, Fluorine Incorporation, Thermostability, Stress, and Hardness Comparison of Fluorinated Amorphous Carbon and Hydrogenated Amorphous Carbon Thin Films Deposited on Si by Plasma Enhanced Chemical Vapor Deposition. Materials Research Society Symposia Proceedings, 1999, 565, 285.	0.1	0
119	Characterization and Dielectric Properties of Fluorinated Amorphous Carbon Measured by Capacitance-Voltage Response and Spectroscopic Ellipsometry. Materials Research Society Symposia Proceedings, 1999, 593, 341.	0.1	0
120	Arcjet nozzle flow-field characterization by laser-induced fluorescence. Applied Optics, 1998, 37, 486.	2.1	10
121	Temperature measurements in low-pressure, diamond-forming, premixed flames. Journal of Applied Physics, 1998, 84, 4595-4602.	2.3	25
122	The structure of an expanding hydrogen arcjet plasma. Physics of Plasmas, 1998, 5, 4488-4497.	1.9	6
123	Low Energy Ion Impact-enhanced Growth of Cubic Boron Nitride in a Supersonic Nitrogen/argon Plasma Flow. Journal of Materials Research, 1997, 12, 2014-2026.	2.6	37
124	CH ₃ detection in a low-density supersonic arcjet plasma during diamond synthesis. Applied Physics Letters, 1997, 70, 1052-1054.	3.2	24
125	Stark broadening corrections to laser-induced fluorescence temperature measurements in a hydrogen arcjet plume. Applied Optics, 1996, 35, 4913.	2.1	16
126	GaN Film Growth by a Supersonic Arcjet Plasma. Materials Research Society Symposia Proceedings, 1996, 423, 359.	0.1	1

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127	Fluorescence velocity measurements in the interior of a hydrogen arcjet nozzle. AIAA Journal, 1996, 34, 853-855.	2.6	16
128	An experimental study of the temperature and stoichiometry dependence of diamond growth in low pressure flat flames. Journal of Materials Research, 1995, 10, 149-157.	2.6	29
129	Laser-induced fluorescence diagnostic for temperature and velocity measurements in a hydrogen arcjet plume. Applied Optics, 1993, 32, 6117.	2.1	63
130	Two-temperature fluid model for high-pressure plasmas in contact with cooled electrodes. Journal of Applied Physics, 1993, 73, 3172-3182.	2.3	19