John D Joannopoulos

List of Publications by Year
in descending order

98 papers	15,246 citations	47006 47 h-index	46799 89 g-index
103 all docs	103 docs citations	103 times ranked	11968 citing authors

#	Article	IF	Citations
1	Topological photonics. Nature Photonics, 2014, 8, 821-829.	31.4	2,492
2	Bound states in the continuum. Nature Reviews Materials, 2016, 1, .	48.7	1,774
3	A Dielectric Omnidirectional Reflector. , 1998, 282, 1679-1682.		1,148
4	Experimental observation of Weyl points. Science, 2015, 349, 622-624.	12.6	833
5	What is â€" and what is not â€" an optical isolator. Nature Photonics, 2013, 7, 579-582.	31.4	712
6	Spawning rings of exceptional points out of Dirac cones. Nature, 2015, 525, 354-358.	27.8	610
7	Nanophotonic particle simulation and inverse design using artificial neural networks. Science Advances, 2018, 4, eaar4206.	10.3	574
8	Weyl points and line nodes in gyroid photonic crystals. Nature Photonics, 2013, 7, 294-299.	31.4	560
9	Observation of bulk Fermi arc and polarization half charge from paired exceptional points. Science, 2018, 359, 1009-1012.	12.6	438
10	Topological states in photonic systems. Nature Physics, 2016, 12, 626-629.	16.7	271
11	Enhanced coupling to vertical radiation using a two-dimensional photonic crystal in a semiconductor light-emitting diode. Applied Physics Letters, 2001, 78, 563-565.	3.3	254
12	Symmetry-protected topological photonic crystal in three dimensions. Nature Physics, 2016, 12, 337-340.	16.7	245
13	Metallic Photonic Crystal Absorberâ€Emitter for Efficient Spectral Control in Highâ€Temperature Solar Thermophotovoltaics. Advanced Energy Materials, 2014, 4, 1400334.	19.5	230
14	Probing topological protection using a designer surface plasmon structure. Nature Communications, 2016, 7, 11619.	12.8	210
15	Near-field thermal radiation transfer controlled by plasmons in graphene. Physical Review B, 2012, 85, .	3.2	194
16	Transparent displays enabled by resonant nanoparticle scattering. Nature Communications, 2014, 5, 3152.	12.8	186
17	Shrinking light to allow forbidden transitions on the atomic scale. Science, 2016, 353, 263-269.	12.6	185
18	Bloch surface eigenstates within the radiation continuum. Light: Science and Applications, 2013, 2, e84-e84.	16.6	163

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19	Self-assembly lights up. Nature, 2001, 414, 257-258.	27.8	158
20	Tailoring high-temperature radiation and the resurrection of the incandescent source. Nature Nanotechnology, 2016, 11, 320-324.	31.5	153
21	All-angle negative refraction of highly squeezed plasmon and phonon polaritons in grapheneâ€“boron nitride heterostructures. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 6717-6721.	7.1	144
22	Recent developments in high-temperature photonic crystals for energy conversion. Energy and Environmental Science, 2012, 5, 8815.	30.8	132
23	Structural Colors from Fano Resonances. ACS Photonics, 2015, 2, 27-32.	6.6	114
24	Low-Loss Plasmonic Dielectric Nanoresonators. Nano Letters, 2017, 17, 3238-3245.	9.1	113
25	Towards graphene plasmon-based free-electron infrared to X-ray sources. Nature Photonics, 2016, 10, 46-52.	31.4	112
26	Topological magnetoplasmon. Nature Communications, 2016, 7, 13486.	12.8	108
27	A general theoretical and experimental framework for nanoscale electromagnetism. Nature, 2019, 576, 248-252.	27.8	103
28	Negative effective permeability in polaritonic photonic crystals. Applied Physics Letters, 2004, 85, 543-545.	3.3	101
29	Maximal spontaneous photon emission and energy loss from free electrons. Nature Physics, 2018, 14, 894-899.	16.7	100
30	Formation mechanism of guided resonances and bound states in the continuum in photonic crystal slabs. Scientific Reports, 2016, 6, 31908.	3.3	98
31	Controlling Cherenkov angles with resonance transition radiation. Nature Physics, 2018, 14, 816-821.	16.7	88
32	Microfluidic directional emission control of an azimuthally polarized radial fibre laser. Nature Photonics, 2012, 6, 229-233.	31.4	80
33	Efficient plasmonic emission by the quantum ÄŒerenkov effect from hot carriers in graphene. Nature Communications, 2016, 7, ncomms11880.	12.8	78
34	Splashing transients of 2D plasmons launched by swift electrons. Science Advances, 2017, 3, e1601192.	10.3	69
35	Heuristic recurrent algorithms for photonic Ising machines. Nature Communications, 2020, 11, 249.	12.8	69
36	Integrated fibres for self-monitored opticalÂtransport. Nature Materials, 2005, 4, 820-825.	27.5	68

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37	Synthesis and observation of non-Abelian gauge fields in real space. Science, 2019, 365, 1021-1025.	12.6	65
38	Guiding 1.5 Î¼m light in photonic crystals based on dielectric rods. Applied Physics Letters, 2004, 85, 6110-6112.	3.3	64
39	Crystalline silicon core fibres from aluminium core preforms. Nature Communications, 2015, 6, 6248.	12.8	62
40	Casimir forces in the time domain: Theory. Physical Review A, 2009, 80, .	2.5	60
41	An animal-to-human scaling law for blast-induced traumatic brain injury risk assessment. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 15310-15315.	7.1	60
42	Broadband angular selectivity of light at the nanoscale: Progress, applications, and outlook. Applied Physics Reviews, 2016, 3, 011103.	11.3	59
43	A framework for scintillation in nanophotonics. Science, 2022, 375, eabm9293.	12.6	59
44	Broadband surface-wave transformation cloak. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 7635-7638.	7.1	58
45	Predictive and generative machine learning models for photonic crystals. Nanophotonics, 2020, 9, 4183-4192.	6.0	58
46	Towards integrated tunable all-silicon free-electron light sources. Nature Communications, 2019, 10, 3176.	12.8	55
47	Superlight inverse Doppler effect. Nature Physics, 2018, 14, 1001-1005.	16.7	54
48	Optoelectronic Fibers via Selective Amplification of Inâ€Fiber Capillary Instabilities. Advanced Materials, 2017, 29, 1603033.	21.0	52
49	Metamaterial broadband angular selectivity. Physical Review B, 2014, 90, .	3.2	45
50	Making two-photon processes dominate one-photon processes using mid-IR phonon polaritons. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 13607-13612.	7.1	44
51	Casimir forces in the time domain: Applications. Physical Review A, 2010, 81, .	2.5	42
52	Limits to the Optical Response of Graphene and Two-Dimensional Materials. Nano Letters, 2017, 17, 5408-5415.	9.1	40
53	Confined in-fiber solidification and structural control of silicon and siliconâˆ'germanium microparticles. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 7240-7245.	7.1	39
54	Laser-Induced Linear-Field Particle Acceleration in Free Space. Scientific Reports, 2017, 7, 11159.	3.3	39

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55	Kilometer-Long Ordered Nanophotonic Devices by Preform-to-Fiber Fabrication. IEEE Journal of Selected Topics in Quantum Electronics, 2006, 12, 1202-1213.	2.9	36
56	Thermally-drawn fibers with spatially-selective porous domains. Nature Communications, 2017, 8, 364.	12.8	34
57	Control of quantum electrodynamical processes by shaping electron wavepackets. Nature Communications, 2021, 12, 1700.	12.8	34
58	Control of semiconductor emitter frequency by increasing polariton momenta. Nature Photonics, 2018, 12, 423-429.	31.4	32
59	Controlling Directionality and Dimensionality of Radiation by Perturbing Separable Bound States in the Continuum. Scientific Reports, 2016, 6, 33394.	3.3	30
60	Microstructure effects for Casimir forces in chiral metamaterials. Physical Review B, 2010, 82, .	3.2	29
61	Fabrication and characterization of fibers with built-in liquid crystal channels and electrodes for transverse incident-light modulation. Applied Physics Letters, 2012, 101, .	3.3	28
62	Ovonic Memory Switching in Multimaterial Fibers. Advanced Functional Materials, 2011, 21, 1095-1101.	14.9	26
63	Direct imaging of isofrequency contours in photonic structures. Science Advances, 2016, 2, e1601591.	10.3	25
64	Invisible metallic mesh. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 2568-2572.	7.1	24
65	A high-efficiency regime for gas-phase terahertz lasers. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 6614-6619.	7.1	24
66	Toward 3D-Printed Inverse-Designed Metaoptics. ACS Photonics, 2022, 9, 43-51.	6.6	23
67	Light emission based on nanophotonic vacuum forces. Nature Physics, 2019, 15, 1284-1289.	16.7	21
68	Casimir Light in Dispersive Nanophotonics. Physical Review Letters, 2021, 127, 053603.	7.8	21
69	Sputtered Tantalum Photonic Crystal Coatings for High-Temperature Energy Conversion Applications. IEEE Nanotechnology Magazine, 2016, 15, 303-309.	2.0	19
70	Controlling spins with surface magnon polaritons. Physical Review B, 2019, 100, .	3.2	19
71	Fabrication and characterization of thermally drawn fiber capacitors. Applied Physics Letters, 2013, 102, .	3.3	18
72	Digital design of multimaterial photonic particles. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 6839-6844.	7.1	17

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73	Quasi-normal mode theory of the scattering matrix, enforcing fundamental constraints for truncated expansions. Physical Review Research, 2021, 3, .	3.6	16
74	Non-Abelian generalizations of the Hofstadter model: spinâ€“orbit-coupled butterfly pairs. Light: Science and Applications, 2020, 9, 177.	16.6	15
75	Narrowband Metamaterial Absorber for Terahertz Secure Labeling. Journal of Infrared, Millimeter, and Terahertz Waves, 2017, 38, 1120-1129.	2.2	15
76	Plasmonics in argentene. Physical Review Materials, 2020, 4, .	2.4	15
77	Optically Thin Metallic Films for High-Radiative-Efficiency Plasmonics. Nano Letters, 2016, 16, 4110-4117.	9.1	14
78	Constructing â€œDesigner Atomsâ€•via Resonant Graphene-Induced Lamb Shifts. ACS Photonics, 2017, 4, 3098-3105.	6.6	14
79	Controlling two-photon emission from superluminal and accelerating index perturbations. Nature Physics, 2022, 18, 67-74.	16.7	13
80	Structural anisotropy and orientation-induced Casimir repulsion in fluids. Physical Review A, 2011, 83, .	2.5	12
81	Substrate-Independent Light Confinement in Bioinspired All-Dielectric Surface Resonators. ACS Photonics, 2016, 3, 532-536.	6.6	9
82	Nonperturbative Quantum Electrodynamics in the Cherenkov Effect. Physical Review X, 2018, 8, .	8.9	9
83	Analytical Criteria for Designing Multiresonance Filters in Scattering Systems, with Application to Microwave Metasurfaces. Physical Review Applied, 2022, 17, .	3.8	6
84	Enabling Manufacturable Optical Broadband Angular-Range Selective Films. ACS Nano, 2021, 15, 19917-19923.	14.6	3
85	Minding the gap. Nature, 1995, 375, 278-278.	27.8	2
86	Three-dimensional non-Abelian generalizations of the Hofstadter model: Spin-orbit-coupled butterfly trios. Physical Review B, 2021, 104, .	3.2	2
87	The Color of Shock Waves in Photonic Crystals. AIP Conference Proceedings, 2004, , .	0.4	1
88	Sputtered tantalum photonic crystal coatings for high-temperature energy conversion applications. , 2015, , .		1
89	Enhanced Emission from a Light-Emitting Diode Modified by a Photonic Crystal. Materials Research Society Symposia Proceedings, 2000, 637, E2.8.1.	0.1	0
90	Structural and Mechanical Properties of Boron Nanotubes. Materials Research Society Symposia Proceedings, 2003, 791, 346.	0.1	0

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91	First-principles Calculation of Electron Mobilities in Ultrathin SOI MOSFETs. Materials Research Society Symposia Proceedings, 2004, 829, 326.	0.1	0
92	Negative Refraction and Subwavelength Imaging in Photonic Crystals. , 2005, , 269-312.		0
93	Multimaterial piezoelectric fibres — Fibers that can hear and sing. , 2011, , .		0
94	Acoustics: Piezoelectric Fibers for Conformal Acoustics (Adv. Mater. 39/2012). Advanced Materials, 2012, 24, 5400-5400.	21.0	0
95	Artificial faraday rotation using active metamaterials. , 2013, , .		0
96	Front-electrode design for efficient near-field ThermoPhotoVoltaics. , 2018, , .		0
97	Plasmonic meta-surfaces dispersionless both temporally and spatially. , 2018, , .		0
98	Observation of non-Abelian Aharonov-Bohm Effect with synthetic gauge fields. , 2020, , .		0