David A. Powell

List of Publications by Year
in descending order

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110 papers	3,068 citations	126907 33 h-index	168389 53 g-index
111 all docs	111 docs citations	111 times ranked	2873 citing authors

#	Article	IF	Citations
1	Magnetoelastic metamaterials. Nature Materials, 2012, 11, 30-33.	27.5	229
2	Liquid crystal based nonlinear fishnet metamaterials. Applied Physics Letters, 2012, 100, .	3.3	128
3	Metamaterial tuning by manipulation of near-field interaction. Physical Review B, 2010, 82, .	3.2	126
4	Electromagnetic wave analogue of an electronic diode. New Journal of Physics, 2011, 13, 033025.	2.9	111
5	Tunable fishnet metamaterials infiltrated by liquid crystals. Applied Physics Letters, 2010, 96, .	3.3	97
6	Self-tuning mechanisms of nonlinear split-ring resonators. Applied Physics Letters, 2007, 91, .	3.3	91
7	Polyaniline Nanofiber Based Surface Acoustic Wave Gas Sensorsâ€"Effect of Nanofiber Diameter on $hbox{H}_{2}$ Response. IEEE Sensors Journal, 2007, 7, 213-218.	4.7	84
8	Ultrathin tunable terahertz absorber based on MEMS-driven metamaterial. Microsystems and Nanoengineering, 2017, 3, 17033.	7.0	84
9	Hybrid nanoantennas for directional emission enhancement. Applied Physics Letters, 2014, 105, .	3.3	83
10	Huygensâ€™ Metadevices for Parametric Waves. Physical Review X, 2018, 8, .	8.9	79
11	Nonlinear electric metamaterials. Applied Physics Letters, 2009, 95, .	3.3	78
12	Near-field interaction of twisted split-ring resonators. Physical Review B, 2011, 83, .	3.2	66
13	Nonlinear control of tunneling through an epsilon-near-zero channel. Physical Review B, 2009, 79, .	3.2	65
14	Spontaneous chiral symmetry breaking in metamaterials. Nature Communications, 2014, 5, 4441.	12.8	64
15	Purcell effect in hyperbolic metamaterial resonators. Physical Review B, 2015, 92, .	3.2	62
16	Flexible Helices for Nonlinear Metamaterials. Advanced Materials, 2013, 25, 3409-3412.	21.0	61
17	Strong terahertz absorption in all-dielectric Huygensâ€™ metasurfaces. Nanotechnology, 2016, 27, 424003.	2.6	60
18	Acoustic meta-atom with experimentally verified maximum Willis coupling. Nature Communications, 2019, 10, 3148.	12.8	60

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19	Numerical calculation of SAW sensitivity: application to ZnO/LiTaO3 transducers. Sensors and Actuators A: Physical, 2004, 115, 456-461.	4.1	56
20	Broadband chiral metamaterials with large optical activity. Physical Review B, 2014, 89, .	3.2	56
21	Sound trapping in an open resonator. Nature Communications, 2021, 12, 4819.	12.8	56
22	Reconfigurable Acoustic Metagrating for High-Efficiency Anomalous Reflection. Physical Review Applied, 2020, 13, .	3.8	54
23	Tilted response of fishnet metamaterials at near-infrared optical wavelengths. Physical Review B, 2010, 81, .	3.2	49
24	Metamaterials with conformational nonlinearity. Scientific Reports, 2011, 1, 138.	3.3	49
25	Interference between the Modes of an All-Dielectric Meta-atom. Physical Review Applied, 2017, 7, .	3.8	49
26	Substrate-induced bianisotropy in metamaterials. Applied Physics Letters, 2010, 97, .	3.3	46
27	Circular dichroism of four-wave mixing in nonlinear metamaterials. Physical Review B, 2013, 88, .	3.2	41
28	Optical activity and coupling in twisted dimer meta-atoms. Applied Physics Letters, 2012, 100, 111114.	3.3	38
29	Tunable Metaâ€Liquid Crystals. Advanced Materials, 2016, 28, 1553-1558.	21.0	37
30	Nonlinear response via intrinsic rotation in metamaterials. Physical Review B, 2013, 87, .	3.2	36
31	Polarizationâ€Induced Chirality in Metamaterials via Optomechanical Interaction. Advanced Optical Materials, 2017, 5, 1600760.	7.3	36
32	Resonant dynamics of arbitrarily shaped meta-atoms. Physical Review B, 2014, 90, .	3.2	35
33	Asymmetric parametric amplification in nonlinear left-handed transmission lines. Applied Physics Letters, 2009, 94, .	3.3	34
34	Dispersionless optical activity in metamaterials. Applied Physics Letters, 2013, 102, 201121.	3.3	34
35	Topological Supercavity Resonances in the Finite System. Advanced Science, 2022, 9, e2200257.	11.2	34
36	Spatial dispersion of multilayer fishnet metamaterials. Optics Express, 2012, 20, 15100.	3.4	33

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37	Correcting the Fabry-Perot artifacts in metamaterial retrieval procedures. Physical Review B, 2011, 84, .	3.2	31
38	Temperature Control of Terahertz Metamaterials With Liquid Crystals. IEEE Transactions on Terahertz Science and Technology, 2013, 3, 827-831.	3.1	31
39	Terahertz focusing of multiple wavelengths by graphene metasurfaces. Applied Physics Letters, 2016, 108, .	3.3	28
40	Polarization properties of optical metasurfaces of different symmetries. Physical Review B, 2015, 91, .	3.2	27
41	Accurate Metasurface Synthesis Incorporating Near-Field Coupling Effects. Physical Review Applied, 2019, 11, .	3.8	26
42	Achromatic Huygensâ€™ Metalenses with Deeply Subwavelength Thickness. Advanced Optical Materials, 2020, 8, 2000754.	7.3	26
43	Scattering of electromagnetic waves in metamaterial superlattices. Applied Physics Letters, 2007, 90, 201919.	3.3	25
44	Deeply Subwavelength Metasurface Resonators for Terahertz Wavefront Manipulation. Advanced Optical Materials, 2019, 7, 1900736.	7.3	25
45	Comparison of layered based SAW sensors. Sensors and Actuators B: Chemical, 2003, 91, 303-308.	7.8	22
46	Self-oscillations in nonlinear torsional metamaterials. New Journal of Physics, 2013, 15, 073036.	2.9	22
47	Discrete dissipative localized modes in nonlinear magnetic metamaterials. Optics Express, 2011, 19, 26500.	3.4	21
48	Electrically tunable terahertz metamaterials with embedded large-area transparent thin-film transistor arrays. Scientific Reports, 2016, 6, 23486.	3.3	21
49	Cut-wire-pair structures as two-dimensional magnetic metamaterials. Optics Express, 2008, 16, 15185.	3.4	20
50	High-Efficiency Refracting Millimeter-Wave Metasurfaces. IEEE Transactions on Antennas and Propagation, 2020, 68, 5453-5462.	5.1	20
51	Scalable Metagrating for Efficient Ultrasonic Focusing. Physical Review Applied, 2021, 16, .	3.8	20
52	Nonlinear interaction of meta-atoms through optical coupling. Applied Physics Letters, 2014, 104, 014104.	3.3	19
53	Electromagnetic tuning of resonant transmission in magnetoelastic metamaterials. Applied Physics Letters, 2014, 104, .	3.3	17
54	Bandwidth and size limits of achromatic printed-circuit metasurfaces. Optics Express, 2018, 26, 29440.	3.4	17

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55	Post-processing approach for tuning multi-layered metamaterials. Applied Physics Letters, 2014, 105, 151102.	3.3	16
56	Strong Broadband Terahertz Optical Activity through Control of the Blaschke Phase with Chiral Metasurfaces. Physical Review Applied, 2017, 8, .	3.8	16
57	Dispersion extraction with near-field measurements in periodic waveguides. Optics Express, 2009, 17, 3716.	3.4	15
58	Elastic metamaterials for tuning circular polarization of electromagnetic waves. Scientific Reports, 2016, 6, 28273.	3.3	14
59	Multistability in nonlinear left-handed transmission lines. Applied Physics Letters, 2008, 92, .	3.3	13
60	Electroactive Tuning of Doubleâ€Layered Metamaterials Based on Ï€â€Conjugated Polymer Actuators. Advanced Optical Materials, 2016, 4, 135-140.	7.3	13
61	Measuring monopole and dipole polarizability of acoustic meta-atoms. Applied Physics Letters, 2018, 113, .	3.3	13
62	Pneumatically switchable graded index metamaterial lens. Applied Physics Letters, 2013, 102, 031904.	3.3	12
63	Bandwidth limit and synthesis approach for single resonance ultrathin metasurfaces. Journal Physics D: Applied Physics, 2020, 53, 495304.	2.8	12
64	Tuning the nonlinear response of coupled split-ring resonators. Applied Physics Letters, 2012, 100, .	3.3	11
65	Second harmonic generation with zero phase velocity waves. Applied Physics Letters, 2011, 98, 161111.	3.3	10
66	Chiral meta-atoms rotated by light. Applied Physics Letters, 2012, 101, 031105.	3.3	10
67	Influence of the substrate on negative index fishnet metamaterials. Optics Communications, 2010, 283, 4770-4774.	2.1	9
68	Huygens Metasurface Lens for W-Band Switched Beam Antenna Applications. IEEE Open Journal of Antennas and Propagation, 2020, 1, 290-299.	3.7	9
69	A study of CO sensors with oscillatory response. Sensors and Actuators B: Chemical, 2003, 96, 610-614.	7.8	7
70	Observation of tunneling of slow and fast electromagnetic modes in coupled periodic waveguides. Applied Physics Letters, 2011, 98, .	3.3	7
71	Comparison of Conductometric Gas Sensitivity of Surface Acoustic Wave Modes in Layered Structures. Sensor Letters, 2005, 3, 66-70.	0.4	7
72	Spatial Sensitivity Distribution of Surface Acoustic Wave Resonator Sensors. IEEE Sensors Journal, 2007, 7, 204-212.	4.7	6

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73	Dualâ€Region Resonant Meander Metamaterial. Advanced Optical Materials, 2020, 8, 1901658.	7.3	6
74	Printed Tapered Leaky-Wave Antennas for W-Band Frequencies. IEEE Transactions on Antennas and Propagation, 2022, 70, 900-910.	5.1	6
75	Microacoustic Metagratings at Ultraâ€High Frequencies Fabricated by Twoâ€Photon Lithography. Advanced Science, 2022, 9, e2200990.	11.2	6
76	Magnetoelastic metamaterials. , 2011, , .		5
77	Acoustic Wave Gas and Vapor Sensors. , 2009, , 1-44.		4
78	The sub-wavelength imaging performance of disordered wire media. Physics Letters, Section A: General, Atomic and Solid State Physics, 2008, 372, 3919-3921.	2.1	3
79	Tunable focusing by a flexible metasurface. Photonics and Nanostructures - Fundamentals and Applications, 2017, 26, 62-68.	2.0	3
80	Layered SAW nitrogen dioxide sensor with WO 3 selective layer. , 2003, , .		2
81	Characterization of Broadband Focusing Microwave Metasurfaces at Oblique Incidence. IEEE Transactions on Antennas and Propagation, 2022, 70, 2023-2032.	5.1	2
82	Tunable and nonlinear fishnet metamaterials based on liquid crystal infiltration. Proceedings of SPIE, 2012, , .	0.8	1
83	Symmetry properties of metamaterials at oblique incidence. , 2013, , .		1
84	Hybrid Metal-Dielectric Nanoantennas for Directional Emission Enhancement. , 2015, , .		1
85	Graphene metasurfaces for arbitrary wavefront control. , 2016, , .		1
86	Fast Tunable Terahertz Absorber Based on a MEMS-driven Metamaterial. , 2017, , .		1
87	Using electrically-small HPEM antenna array elements to divide power and shape aperture fields. , 2018, , .		1
88	Nonlinear Metamaterials. Advances in Dynamics, Patterns, Cognition, 2020, , 55-79.	0.3	1
89	Electrically tunable terahertz metamaterials with embedded large-area transparent thin-film transistor arrays. , 0, .		1
90	Beyond the Limits of Single Resonance Huygens' Metasurfaces. , 2021, , .		1

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91	Development of an Equivalent Circuit Model for the Design of Array of Electrically Small Antennas. IEEE Transactions on Antennas and Propagation, 2023, 71, 381-392.	5.1	1
92	Optimization of film thickness for thermoelectric micro-Peltier cooler. , 2005, , .		0
93	Experimental studies of binary metamaterials. , 2007, , .		0
94	Experimental observation of slow light tunneling in coupled periodic waveguides. , 2008, , .		0
95	Analysing and manipulating near-field interaction in metamaterials. , 2010, , .		0
96	Tuning linear and nonlinear properties of broadside-coupled resonators. , 2011, , .		0
97	Second harmonic generation in the zero-index regime. , 2011, , .		0
98	Linear and nonlinear coupling in metamaterials. , 2012, , .		0
99	Twists and shifts make nonlinear metamaterials. , 2013, , .		0
100	Polarization phenomena in periodic metasurfaces at oblique incidence. , 2014, , .		0
101	Coupled Electromagnetic and Elastic Dynamics in Metamaterials. Springer Series in Materials Science, 2015, , 59-87.	0.6	0
102	Mechanically tunable bi-layer terahertz metamaterials. , 2015, , .		0
103	Reconfigurable THz and microwave metamaterials based on Ï€-conjugated polymers. , 2016, , .		0
104	Time-varying metasurfaces for arbitrary parametric wave control. , 2018, , .		0
105	Realization of achromatic microwave metasurface lenses. , 2019, , .		0
106	A wide aperture metasurface for the control of high order diffraction. , 2020, , .		0
107	Ultrathin tunable terahertz absorbers based on electrostatically actuated metamaterial. , 2019, , .		0
108	Broadband Achromatic Printed-Circuit Metasurfaces. , 2020, , .		0

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109	Broadband Metasurfaces through First Order Approximation of Surface Impedances. , 2020, , .		0
110	A Terahertz gradient metasurface based on hybridized dipole andquadrupole resonances. Journal Physics D: Applied Physics, 0, , .	2.8	0