

Willie John Padilla

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/1309565/publications.pdf>

Version: 2024-02-01

187
papers

37,717
citations

16451

64
h-index

13379

130
g-index

196
all docs

196
docs citations

196
times ranked

15566
citing authors

#	ARTICLE	IF	CITATIONS
1	Metamaterial Electromagnetic Wave Absorbers. Synthesis Lectures on Electromagnetics, 2022, 3, 1-199.	1.3	0
2	Imaging with metamaterials. Nature Reviews Physics, 2022, 4, 85-100.	26.6	64
3	Inverse deep learning methods and benchmarks for artificial electromagnetic material design. Nanoscale, 2022, 14, 3958-3969.	5.6	21
4	Learning the Physics of All-dielectric Metamaterials with Deep Lorentz Neural Networks. Advanced Optical Materials, 2022, 10, .	7.3	13
5	Fabrication of Metamaterial Perfect Absorbers. Synthesis Lectures on Electromagnetics, 2022, , 93-123.	1.3	1
6	Metamaterial Perfect Absorbers and Performance. Synthesis Lectures on Electromagnetics, 2022, , 29-91.	1.3	1
7	Neural-adjoint method for the inverse design of all-dielectric metasurfaces. Optics Express, 2021, 29, 7526.	3.4	43
8	Infrared all-dielectric Kerker metasurfaces. Optics Express, 2021, 29, 10518.	3.4	16
9	A Triple-Mode Midinfrared Modulator for Radiative Heat Management of Objects with Various Emissivity. Nano Letters, 2021, 21, 4106-4114.	9.1	36
10	Deep Learning the Electromagnetic Properties of Metamaterials—A Comprehensive Review. Advanced Functional Materials, 2021, 31, 2101748.	14.9	70
11	Strain Mapping with THz Metamaterial Composites. , 2021, , .		0
12	Surface-wave-assisted nonreciprocity in spatio-temporally modulated metasurfaces. Nature Communications, 2020, 11, 1469.	12.8	72
13	Ultrathin Metasurface Wavelength-Selective Mirror for Millimeter/Terahertz Wave Fabry-Perot Cavities. Journal of Infrared, Millimeter, and Terahertz Waves, 2020, 41, 365-374.	2.2	2
14	Liquid crystal programmable metasurface for terahertz beam steering. Applied Physics Letters, 2020, 116, .	3.3	169
15	Strain Sensing with THz Metamaterial Composites. , 2020, , .		0
16	Machine Learning for Exotic Metasurfaces. , 2020, , .		0
17	Strain Mapping with THz Metamaterial Composites. , 2020, , .		0
18	Accelerated Terahertz Metasurface Design with Deep Learning. , 2020, , .		2

#	ARTICLE	IF	CITATIONS
19	Deep learning for accelerated all-dielectric metasurface design. Optics Express, 2019, 27, 27523.	3.4	278
20	A Zero-Order Rank, Maximum Nullity Perfect Electromagnetic Wave Absorber. Advanced Optical Materials, 2019, 7, 1801632.	7.3	33
21	Multiple Epsilon-Near-Zero Resonances in Multilayered Cadmium Oxide: Designing Metamaterial-Like Optical Properties in Monolithic Materials. ACS Photonics, 2019, 6, 1139-1145.	6.6	33
22	Strain Sensing with Metamaterial Composites. Advanced Optical Materials, 2019, 7, 1801397.	7.3	11
23	Dynamic bound states in the continuum. Optica, 2019, 6, 169.	9.3	116
24	Ultrathin tunable terahertz absorbers based on electrostatically actuated metamaterial. , 2019, , .		0
25	Phototunable Dielectric Huygens' Metasurfaces. Advanced Materials, 2018, 30, e1800278.	21.0	89
26	Preface to Special Topic: Frontiers on THz photonic devices. APL Photonics, 2018, 3, 051501.	5.7	1
27	Role of loss in all-dielectric metasurfaces. Optics Express, 2018, 26, 17669.	3.4	28
28	All-Dielectric Metasurfaces for THz Imaging and Sensing. , 2018, , .		1
29	Resonance-domain diffractive lens for the terahertz region. Optics Letters, 2018, 43, 2384.	3.3	5
30	Temporal coupled mode theory for all-dielectric perfect absorbers. , 2018, , .		2
31	Terahertz chiral structures with large optical activity (Conference Presentation). , 2017, , .		0
32	Properties of dynamical electromagnetic metamaterials. Journal of Optics (United Kingdom), 2017, 19, 084003.	2.2	9
33	Ultrathin tunable terahertz absorber based on MEMS-driven metamaterial. Microsystems and Nanoengineering, 2017, 3, 17033.	7.0	84
34	Strong Broadband Terahertz Optical Activity through Control of the Blaschke Phase with Chiral Metasurfaces. Physical Review Applied, 2017, 8, .	3.8	16
35	Experimental realization of a terahertz all-dielectric metasurface absorber. Optics Express, 2017, 25, 191.	3.4	273
36	Ultra-thin infrared metamaterial detector for multicolor imaging applications. Optics Express, 2017, 25, 23343.	3.4	66

#	ARTICLE	IF	CITATIONS
37	Degenerate critical coupling in all-dielectric metasurface absorbers. Optics Express, 2017, 25, 24658.	3.4	72
38	Graphene metamaterial spatial light modulator for infrared single pixel imaging. Optics Express, 2017, 25, 25318.	3.4	31
39	Multiplexed coded time domain sampling with metamaterials. Optics Express, 2017, 25, 25797.	3.4	0
40	Multifunctional metamaterial pyroelectric infrared detectors. Optica, 2017, 4, 276.	9.3	100
41	Reconfigurable room temperature metamaterial infrared emitter. Optica, 2017, 4, 430.	9.3	77
42	All-dielectric metasurface absorbers for uncooled terahertz imaging. Optica, 2017, 4, 601.	9.3	206
43	Fast Tunable Terahertz Absorber Based on a MEMS-driven Metamaterial. , 2017, , .		1
44	Frequency division multiplexing THz light field imaging. , 2017, , .		0
45	Mimicking Liquid Crystals with Metamaterials. , 2016, , .		0
46	Graphene metamaterial modulator for free-space thermal radiation. Optics Express, 2016, 24, 25189.	3.4	27
47	Tunable Metaâ€Liquid Crystals. Advanced Materials, 2016, 28, 1553-1558.	21.0	37
48	Superiority of terahertz over infrared transmission through bandages and burn wound ointments. Applied Physics Letters, 2016, 108, .	3.3	13
49	Role of surface electromagnetic waves in metamaterial absorbers. Optics Express, 2016, 24, 6783.	3.4	47
50	Frequency-division-multiplexed single-pixel imaging with metamaterials. Optica, 2016, 3, 133.	9.3	23
51	Single Pixel Quadrature Imaging with Metamaterials. Advanced Optical Materials, 2016, 4, 66-69.	7.3	16
52	Electronic and thermally tunable infrared metamaterial absorbers. Proceedings of SPIE, 2016, , .	0.8	3
53	Thermochromic Infrared Metamaterials. Advanced Materials, 2016, 28, 871-875.	21.0	86
54	Design and Fabrication of a Multispectral Infrared Metamaterial Detector. , 2016, , .		0

#	ARTICLE	IF	CITATIONS
55	Digital metamaterials for single pixel imaging in the Far Infrared. , 2015, , .		0
56	Flexible thin-film black gold membranes with ultrabroadband plasmonic nanofocusing for efficient solar vapour generation. Nature Communications, 2015, 6, 10103.	12.8	783
57	Taming blackbody radiation with MEMS metamaterials. , 2015, , .		1
58	Artificial electrochromic & thermochromic infrared metamaterials. , 2015, , .		1
59	Quadrature & frequency diverse terahertz imaging with metamaterials. , 2015, , .		0
60	Broadband and ultrahigh optical haze thin films with self-aggregated alumina nanowire bundles for photovoltaic applications. Energy and Environmental Science, 2015, 8, 2650-2656.	30.8	55
61	Metamaterial-based single pixel imaging system (Presentation Recording). , 2015, , .		0
62	Bi-layer metamaterials as fully functional near-perfect infrared absorbers. Applied Physics Letters, 2015, 107, .	3.3	35
63	Mechanically tunable bi-layer terahertz metamaterials. , 2015, , .		0
64	Dynamic electromagnetic metamaterials. Materials Today, 2015, 18, 39-50.	14.2	154
65	Sparse Imaging with Metamaterials at Terahertz Frequencies. , 2014, , .		0
66	Post-processing approach for tuning multi-layered metamaterials. Applied Physics Letters, 2014, 105, 151102.	3.3	16
67	Coded and compressive THz imaging with metamaterials. Proceedings of SPIE, 2014, , .	0.8	1
68	Terahertz properties of metallic checkerboard patterns and related structures. , 2014, , .		0
69	Terahertz compressive imaging with metamaterial spatial light modulators. Nature Photonics, 2014, 8, 605-609.	31.4	676
70	Stable high temperature metamaterial emitters for thermophotovoltaic applications. Applied Physics Letters, 2014, 104, .	3.3	56
71	Liquid Crystal Metamaterial Absorber Spatial Light Modulator for THz Applications. Advanced Optical Materials, 2014, 2, 275-279.	7.3	291
72	Plasmonic Resonance toward Terahertz Perfect Absorbers. ACS Photonics, 2014, 1, 625-630.	6.6	75

#	ARTICLE	IF	CITATIONS
73	THz imaging with metamaterials. , 2013, , .		0
74	Four-Color Metamaterial Absorber THz Spatial Light Modulator. Advanced Optical Materials, 2013, 1, 905-909.	7.3	84
75	Spin-Induced Optical Conductivity in the Spin-Liquid Candidate Herbertsmithite. Physical Review Letters, 2013, 111, 127401.	7.8	52
76	THz Wave Modulators: A Brief Review on Different Modulation Techniques. Journal of Infrared, Millimeter, and Terahertz Waves, 2013, 34, 1-27.	2.2	266
77	Broadband Light-Trapping Enhancement in an Ultrathin Film ϵ -Si Absorber Using Whispering Gallery Modes and Guided Wave Modes with Dielectric Surface-Textured Structures. Advanced Materials, 2013, 25, 2617-2623.	21.0	60
78	A Subwavelength Extraordinary-Optical-Transmission Channel in Babinet Metamaterials. Advanced Optical Materials, 2013, 1, 221-226.	7.3	22
79	Liquid Crystal Tunable Metamaterial Absorber. Physical Review Letters, 2013, 110, 177403.	7.8	490
80	Metamaterial-based imaging for potential security applications. , 2013, , .		2
81	Dynamic Manipulation of Infrared Radiation with MEMS Metamaterials. Advanced Optical Materials, 2013, 1, 559-562.	7.3	87
82	Interferometric direction finding with a metamaterial detector. Applied Physics Letters, 2013, 103, .	3.3	15
83	Terahertz single pixel imaging with an optically controlled dynamic spatial light modulator. Optics Express, 2013, 21, 12507.	3.4	192
84	Loss compensation in Metamaterials through embedding of active transistor based negative differential resistance circuits. Optics Express, 2012, 20, 22406.	3.4	23
85	Magnetic levitation of metamaterial bodies enhanced with magnetostatic surface resonances. Physical Review B, 2012, 85, .	3.2	15
86	Single-layer terahertz metamaterials with bulk optical constants. Physical Review B, 2012, 85, .	3.2	22
87	Experimental Realization of a Metamaterial Detector Focal Plane Array. Physical Review Letters, 2012, 109, 177401.	7.8	72
88	Taming the Blackbody with Metamaterials for Energy Harvesting Applications. , 2012, , .		0
89	Extremely subwavelength planar magnetic metamaterials. Physical Review B, 2012, 85, .	3.2	83
90	Metamaterial Electromagnetic Wave Absorbers. Advanced Materials, 2012, 24, OP98-120, OP181.	21.0	1,340

#	ARTICLE	IF	CITATIONS
91	Metamaterial Electromagnetic Wave Absorbers (Adv. Mater. 23/2012). Advanced Materials, 2012, 24, OP181.	21.0	43
92	Metamaterial based terahertz detector. , 2011, , .		1
93	Controlling Gigahertz and Terahertz Surface Electromagnetic Waves with Metamaterial Resonators. Physical Review X, 2011, 1, .	8.9	30
94	High speed terahertz modulation from metamaterials with embedded high electron mobility transistors. Optics Express, 2011, 19, 9968.	3.4	194
95	Microwave and terahertz wave sensing with metamaterials. Optics Express, 2011, 19, 21620.	3.4	127
96	Taming the Blackbody with Infrared Metamaterials as Selective Thermal Emitters. Physical Review Letters, 2011, 107, 045901.	7.8	1,250
97	Recent Progress in Electromagnetic Metamaterial Devices for Terahertz Applications. IEEE Journal of Selected Topics in Quantum Electronics, 2011, 17, 92-101.	2.9	158
98	MEMS Based Structurally Tunable Metamaterials at Terahertz Frequencies. Journal of Infrared, Millimeter, and Terahertz Waves, 2011, 32, 580-595.	2.2	89
99	Broadband Optical Antireflection Enhancement by Integrating Antireflective Nanoislands with Silicon Nanoconical Frustum Arrays. Advanced Materials, 2011, 23, 5796-5800.	21.0	89
100	Extreme subwavelength electric GHz metamaterials. Journal of Applied Physics, 2011, 110, .	2.5	26
101	Light-Matter Interactions. , 2011, , 3-37.		1
102	Percolation and polaritonic effects in periodic planar nanostructures evolving from holes to islands. Applied Physics Letters, 2010, 97, .	3.3	10
103	External modulators for TeraHertz Quantum Cascade Lasers based on electrically-driven active metamaterials. Metamaterials, 2010, 4, 83-88.	2.2	16
104	Possibility of magnetic-field-induced reconstruction of the Fermi surface in underdoped cuprates: Constraints from infrared magneto-optics. Physical Review B, 2010, 81, .	3.2	7
105	Towards a Two-Dimensional Superconducting State of $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ at a Moderate External Magnetic Field. Physical Review Letters, 2010, 104, 157002.	7.8	45
106	Metamaterials on parylene thin film substrates: Design, fabrication, and characterization at terahertz frequency. Applied Physics Letters, 2010, 96, 011906.	3.3	64
107	Infrared Spatial and Frequency Selective Metamaterial with Near-Unity Absorbance. Physical Review Letters, 2010, 104, 207403.	7.8	1,011
108	Embedded HEMT/metamaterial composite devices for active terahertz modulation. , 2010, , .		5

#	ARTICLE	IF	CITATIONS
109	High performance optical absorber based on a plasmonic metamaterial. Applied Physics Letters, 2010, 96, .	3.3	1,071
110	Elimination of phase singularity to achieve superresolution in lossy metamaterials. Optics Express, 2010, 18, 12269.	3.4	1
111	Performance enhancement of terahertz metamaterials on ultrathin substrates for sensing applications. Applied Physics Letters, 2010, 97, .	3.3	158
112	A dual band terahertz metamaterial absorber. Journal Physics D: Applied Physics, 2010, 43, 225102.	2.8	424
113	Magnetic field induced modification of superfluid density and interplane spectral weight in YBa ₂ Cu ₃ O _y . Physical Review B, 2009, 79, .	3.2	12
114	Metamaterial devices for the terahertz gap. , 2009, , .		1
115	Large-area metamaterials on thin membranes for multilayer and curved applications at terahertz and higher frequencies. Applied Physics Letters, 2009, 94, 161113.	3.3	42
116	Blackbody engineering with metamaterials. , 2009, , .		0
117	A metamaterial solid-state terahertz phase modulator. Nature Photonics, 2009, 3, 148-151.	31.4	864
118	Guiding light with conformal transformations. Optics Express, 2009, 17, 14872.	3.4	102
119	Terahertz metamaterials. , 2009, , .		1
120	Plasmonic waveguides and metamaterial components at terahertz frequencies. , 2009, , .		8
121	Reconfigurable Terahertz Metamaterials. Physical Review Letters, 2009, 103, 147401.	7.8	446
122	Design, theory, and measurement of a polarization-insensitive absorber for terahertz imaging. Physical Review B, 2009, 79, .	3.2	682
123	Terahertz Metamaterials with Simultaneously Negative Electric and Magnetic Resonance Responses based on Bimaterial Pop Up Structures. , 2009, , .		3
124	Flexible and reconfigurable terahertz metamaterials. , 2009, , .		1
125	A Broadband Terahertz Metamaterial Electrical Modulator. , 2009, , .		0
126	Flexible terahertz metamaterials: towards a terahertz metamaterial invisible cloak. , 2008, , .		10

#	ARTICLE	IF	CITATIONS
127	Experimental demonstration of frequency-agile terahertz metamaterials. Nature Photonics, 2008, 2, 295-298.	31.4	765
128	Perfect Metamaterial Absorber. Physical Review Letters, 2008, 100, 207402.	7.8	5,705
129	A metamaterial absorber for the terahertz regime: design, fabrication and characterization. Optics Express, 2008, 16, 7181.	3.4	1,243
130	Dual-band planar electric metamaterial in the terahertz regime. Optics Express, 2008, 16, 9746.	3.4	100
131	Planar wallpaper group metamaterials for novel terahertz applications. Optics Express, 2008, 16, 18565.	3.4	124
132	Hybrid metamaterials enable fast electrical modulation of freely propagating terahertz waves. Applied Physics Letters, 2008, 93, .	3.3	124
133	Metamaterials for the terahertz gap. , 2008, , .		0
134	Active THz metamaterials. , 2008, , .		0
135	Highly flexible wide angle of incidence terahertz metamaterial absorber: Design, fabrication, and characterization. Physical Review B, 2008, 78, .	3.2	749
136	A dual-resonant terahertz metamaterial based on single-particle electric-field-coupled resonators. Applied Physics Letters, 2008, 93, .	3.3	67
137	Sum Rules and Interlayer Infrared Response of the High Temperature $YBa_2Cu_3O_{7-x}$ Superconductor in an External Magnetic Field. Physical Review Letters, 2008, 101, 097008.		
138	Terahertz metamaterials on free-standing highly-flexible polyimide substrates. Journal Physics D: Applied Physics, 2008, 41, 232004.	2.8	140
139	Dual-band planar electric THz metamaterial with resonator yield analysis. , 2008, , .		1
140	Active Terahertz Metamaterial Devices. , 2008, , .		103
141	Flexible, large-area metamaterials fabricated on thin silicon nitride membranes. , 2008, , .		2
142	Properties of Novel Terahertz Electric Metamaterials. , 2007, , .		1
143	Active metamaterials: A novel approach to manipulate terahertz waves. , 2007, , .		0
144	Terahertz metamaterials for active, tunable, and dynamic devices. , 2007, , .		2

#	ARTICLE	IF	CITATIONS
145	Metamaterials and their THz applications. , 2007, , .		0
146	Terahertz plasmonic composites. Physical Review E, 2007, 75, 036614.	2.1	17
147	Electromagnetic characterization of planar metamaterials by oblique angle spectroscopic measurements. Physical Review B, 2007, 75, .	3.2	47
148	Interlayer electrodynamic and unconventional vortex state in YBa ₂ Cu ₃ O _y . Physical Review B, 2007, 76, .	3.2	16
149	Metamaterials for Novel Terahertz and Millimeter Wave Devices. , 2007, , .		1
150	Terahertz metamaterial devices. , 2007, , .		7
151	Ultrafast optical switching of terahertz metamaterials fabricated on ErAs/GaAs nanoisland superlattices. Optics Letters, 2007, 32, 1620.	3.3	250
152	Complementary planar terahertz metamaterials. Optics Express, 2007, 15, 1084.	3.4	307
153	Group theoretical description of artificial electromagnetic metamaterials. Optics Express, 2007, 15, 1639.	3.4	86
154	Electrically resonant terahertz metamaterials: Theoretical and experimental investigations. Physical Review B, 2007, 75, .	3.2	343
155	Terahertz Switch/Modulator Based on Metamaterials. , 2007, , .		1
156	Opto-electronic control of terahertz metamaterials. , 2007, , .		0
157	Electrical Control of Terahertz Metamaterials. , 2007, , .		0
158	A new class of metamaterials. Nature Materials, 2007, 6, 922-923.	27.5	5
159	Properties of Planar Electric Metamaterials for Novel TeraHertz Applications. Journal of Nanoelectronics and Optoelectronics, 2007, 2, 90-95.	0.5	30
160	Split-Ring Resonator Enhanced Terahertz Antenna. , 2007, , .		5
161	Dynamically Frequency Tunable Terahertz Metamaterials. , 2007, , .		0
162	Novel Terahertz Electric Metamaterials. , 2007, , .		0

#	ARTICLE	IF	CITATIONS
163	Dynamical Metamaterials at Terahertz Frequencies. , 2006, , .		2
164	Dynamical electric and magnetic metamaterial response at terahertz frequencies. , 2006, , .		11
165	Infrared probe of the anomalous magnetotransport of highly oriented pyrolytic graphite in the extreme quantum limit. Physical Review B, 2006, 74, .	3.2	49
166	Spectroscopy of metamaterials from infrared to optical frequencies. Journal of the Optical Society of America B: Optical Physics, 2006, 23, 404.	2.1	56
167	Negative refractive index metamaterials. Materials Today, 2006, 9, 28-35.	14.2	338
168	Active terahertz metamaterial devices. Nature, 2006, 444, 597-600.	27.8	2,066
169	Dynamical Electric and Magnetic Metamaterial Response at Terahertz Frequencies. Physical Review Letters, 2006, 96, 107401.	7.8	767
170	Calculation and measurement of bianisotropy in a split ring resonator metamaterial. Journal of Applied Physics, 2006, 100, 024507.	2.5	85
171	Infrared spectroscopy and ellipsometry of magnetic metamaterials. , 2005, , .		4
172	Electrodynamics of the nodal metal state in weakly doped high-Tccuprates. Physical Review B, 2005, 72, .	3.2	119
173	Strong-coupling effects in cuprate high-Tcsuperconductors by magneto-optical studies. Physical Review B, 2005, 72, .	3.2	9
174	Infrared signatures of hole and spin stripes inLa2âˆ™xSrxCuO4. Physical Review B, 2005, 72, .	3.2	34
175	Constant effective mass across the phase diagram of high-Tccuprates. Physical Review B, 2005, 72, .	3.2	120
176	Broadband multi-interferometer spectroscopy in high magnetic fields: From THz to visible. Review of Scientific Instruments, 2004, 75, 4710-4717.	1.3	23
177	Terahertz Magnetic Response from Artificial Materials. Science, 2004, 303, 1494-1496.	12.6	1,437
178	Ferromagnetic resonance in double perovskite Ba2FeMoO6. Journal of Magnetism and Magnetic Materials, 2003, 254-255, 583-585.	2.3	5
179	Terahertz plasmonic high pass filter. Applied Physics Letters, 2003, 83, 201-203.	3.3	197
180	Subterahertz spectroscopy at He-3 temperatures. Review of Scientific Instruments, 2003, 74, 4703-4710.	1.3	16

#	ARTICLE	IF	CITATIONS
181	Artificial Plasmonic Metamaterial Fabricated by Micro-Stereolithography. , 2003, , .		0
182	Searching for the Slater transition in the pyrochlore $\text{Cd}_2\text{Os}_2\text{O}_7$ with infrared spectroscopy. Physical Review B, 2002, 66, .	3.2	52
183	Composite Medium with Simultaneously Negative Permeability and Permittivity. Physical Review Letters, 2000, 84, 4184-4187.	7.8	7,665
184	Loop-wire medium for investigating plasmons at microwave frequencies. Applied Physics Letters, 1999, 75, 1425-1427.	3.3	128
185	Fabrication and characterization of THz plasmonic filter. , 0, , .		0
186	Perfect electromagnetic absorbers from microwave to optical. SPIE Newsroom, 0, , .	0.1	16
187	Mapping Active Strain Using Terahertz Metamaterial Laminates. APL Photonics, 0, , .	5.7	1