Koray Aydin

List of Publications by Year
in descending order

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149 papers	10,343 citations	53660 45 h-index	32761 100 g-index
150 all docs	150 docs citations	150 times ranked	9189 citing authors

#	Article	IF	Citations
1	Broadband polarization-independent resonant light absorption using ultrathin plasmonic super absorbers. Nature Communications, 2011, 2, 517.	5.8	1,464
2	Negative refraction by photonic crystals. Nature, 2003, 423, 604-605.	13.7	675
3	Frequency tunable near-infrared metamaterials based on VO_2 phase transition. Optics Express, 2009, 17, 18330.	1.7	485
4	Large-Area, Lithography-Free Super Absorbers and Color Filters at Visible Frequencies Using Ultrathin Metallic Films. ACS Photonics, 2015, 2, 183-188.	3.2	414
5	Highly Strained Compliant Optical Metamaterials with Large Frequency Tunability. Nano Letters, 2010, 10, 4222-4227.	4.5	367
6	Enhanced Light Emission from Large-Area Monolayer MoS₂ Using Plasmonic Nanodisc Arrays. Nano Letters, 2015, 15, 2700-2704.	4.5	346
7	Subwavelength Resolution in a Two-Dimensional Photonic-Crystal-Based Superlens. Physical Review Letters, 2003, 91, 207401.	2.9	334
8	Investigation of magnetic resonances for different split-ring resonator parameters and designs. New Journal of Physics, 2005, 7, 168-168.	1.2	270
9	Ultranarrow Band Absorbers Based on Surface Lattice Resonances in Nanostructured Metal Surfaces. ACS Nano, 2014, 8, 8242-8248.	7.3	265
10	Localized Surface Plasmons in Nanostructured Monolayer Black Phosphorus. Nano Letters, 2016, 16, 3457-3462.	4.5	252
11	Visible-Frequency Metasurfaces for Broadband Anomalous Reflection and High-Efficiency Spectrum Splitting. Nano Letters, 2015, 15, 1615-1621.	4.5	246
12	Equivalent-Circuit Models for the Design of Metamaterials Based on Artificial Magnetic Inclusions. IEEE Transactions on Microwave Theory and Techniques, 2007, 55, 2865-2873.	2.9	224
13	Determination of the effective constitutive parameters of bianisotropic metamaterials from reflection and transmission coefficients. Physical Review E, 2009, 79, 026610.	0.8	203
14	Transmission properties of composite metamaterials in free space. Applied Physics Letters, 2002, 81, 120-122.	1.5	200
15	Compliant Metamaterials for Resonantly Enhanced Infrared Absorption Spectroscopy and Refractive Index Sensing. ACS Nano, 2011, 5, 8167-8174.	7.3	198
16	Building superlattices from individual nanoparticles via template-confined DNA-mediated assembly. Science, 2018, 359, 669-672.	6.0	195
17	Subwavelength resolution with a negative-index metamaterial superlens. Applied Physics Letters, 2007, 90, 254102.	1.5	185
18	Experimental observation of true left-handed transmission peaks in metamaterials. Optics Letters, 2004, 29, 2623.	1.7	160

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19	Thermal tuning of infrared resonant absorbers based on hybrid gold-VO2 nanostructures. Applied Physics Letters, 2015, 106, .	1.5	150
20	Symmetry breaking and strong coupling in planar optical metamaterials. Optics Express, 2010, 18, 13407.	1.7	145
21	Capacitor-loaded split ring resonators as tunable metamaterial components. Journal of Applied Physics, 2007, 101, 024911.	1.1	139
22	Strong Coupling between Plasmonic Gap Modes and Photonic Lattice Modes in DNA-Assembled Gold Nanocube Arrays. Nano Letters, 2015, 15, 4699-4703.	4.5	128
23	Chiral-Selective Plasmonic Metasurface Absorbers Operating at Visible Frequencies. IEEE Photonics Technology Letters, 2017, 29, 295-298.	1.3	127
24	Omnidirectional, broadband light absorption using large-area, ultrathin lossy metallic film coatings. Scientific Reports, 2015, 5, 15137.	1.6	125
25	Observation of negative refraction and negative phase velocity in left-handed metamaterials. Applied Physics Letters, 2005, 86, 124102.	1.5	108
26	Experimental demonstration of a left-handed metamaterial operating at100GHz. Physical Review B, 2006, 73, .	1.1	108
27	Split-Ring-Resonator-Coupled Enhanced Transmission through a Single Subwavelength Aperture. Physical Review Letters, 2009, 102, 013904.	2.9	105
28	Transmission and reflection properties of composite double negative metamaterials in free space. IEEE Transactions on Antennas and Propagation, 2003, 51, 2592-2595.	3.1	104
29	Unidirectional Lasing from Template-Stripped Two-Dimensional Plasmonic Crystals. ACS Nano, 2015, 9, 11582-11588.	7.3	95
30	Multi-gap individual and coupled split-ring resonator structures. Optics Express, 2008, 16, 18131.	1.7	92
31	Intensity tunable infrared broadband absorbers based on VO2 phase transition using planar layered thin films. Scientific Reports, 2015, 5, 13384.	1.6	89
32	Effect of disorder on magnetic resonance band gap of split-ring resonator structures. Optics Express, 2004, 12, 5896.	1.7	80
33	Focusing of electromagnetic waves by a left-handed metamaterial flat lens. Optics Express, 2005, 13, 8753.	1.7	75
34	Spectral negative refraction and focusing analysis of a two-dimensional left-handed photonic crystal lens. Physical Review B, 2004, 70, .	1.1	70
35	Inverse design of an ultra-compact broadband optical diode based on asymmetric spatial mode conversion. Scientific Reports, 2016, 6, 32577.	1.6	70
36	Inverse Design and 3D Printing of a Metalens on an Optical Fiber Tip for Direct Laser Lithography. Nano Letters, 2021, 21, 2422-2428.	4.5	70

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37	Reduced near-infrared absorption using ultra-thin lossy metals in Fabry-Perot cavities. Scientific Reports, 2015, 5, 8157.	1.6	69
38	Structurally tunable resonant absorption bands in ultrathin broadband plasmonic absorbers. Optics Express, 2014, 22, 19457.	1.7	64
39	Compact size highly directive antennas based on the SRR metamaterial medium. New Journal of Physics, 2005, 7, 223-223.	1.2	63
40	Dynamically controlled plasmonic nano-antenna phased array utilizing vanadium dioxide [Invited]. Optical Materials Express, 2015, 5, 2513.	1.6	57
41	Inverse-Designed Broadband All-Dielectric Electromagnetic Metadevices. Scientific Reports, 2018, 8, 1358.	1.6	54
42	Lithography-free IR polarization converters via orthogonal in-plane phonons in Î±-MoO3 flakes. Nature Communications, 2020, 11, 5771.	5.8	54
43	Metamaterials with negative permeability and negative refractive index: experiments and simulations. Journal of Optics, 2007, 9, S301-S307.	1.5	53
44	Physics-Based Approach for a Neural Networks Enabled Design of All-Dielectric Metasurfaces. ACS Photonics, 2020, 7, 1957-1964.	3.2	51
45	Physics and applications of photonic crystals. Photonics and Nanostructures - Fundamentals and Applications, 2004, 2, 87-95.	1.0	50
46	Highly Efficient Light Absorption of Monolayer Graphene by Quasi-Bound State in the Continuum. Nanomaterials, 2021, 11, 484.	1.9	47
47	Touching Gold Nanoparticle Chain Based Plasmonic Antenna Arrays and Optical Metamaterials. ACS Photonics, 2014, 1, 228-234.	3.2	45
48	Broadband asymmetric light transmission through tapered metallic gratings at visible frequencies. Scientific Reports, 2016, 6, 39166.	1.6	45
49	Negative phase advance in polarization independent, multi-layer negative-index metamaterials. Optics Express, 2008, 16, 8835.	1.7	43
50	Transmission characteristics of bianisotropic metamaterials based on omega shaped metallic inclusions. New Journal of Physics, 2007, 9, 326-326.	1.2	41
51	Quantifying Plasmon-Enhanced Light Absorption in Monolayer WS₂ Films. ACS Applied Materials & Interfaces, 2017, 9, 15044-15051.	4.0	41
52	Biaxial hyperbolic metamaterials using anisotropic few-layer black phosphorus. Optics Express, 2018, 26, 5469.	1.7	40
53	Anisotropic localized surface plasmons in borophene. Optics Express, 2020, 28, 16725.	1.7	40
54	Omnidirectional and broadband absorption enhancement from trapezoidal Mie resonators in semiconductor metasurfaces. Scientific Reports, 2016, 6, 31451.	1.6	38

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55	Time-Varying Metasurfaces Based on Graphene Microribbon Arrays. ACS Photonics, 2016, 3, 2035-2039.	3.2	33
56	Left-handed metamaterial based superlens for subwavelength imaging of electromagnetic waves. Applied Physics A: Materials Science and Processing, 2007, 87, 137-141.	1.1	31
57	Enhanced transmission through a subwavelength aperture using metamaterials. Applied Physics Letters, 2009, 95, 052103.	1.5	31
58	Narrow band absorber based on a dielectric nanodisk array on silver film. Journal of Optics (United) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50	1.0	31
59	DNA-Mediated Size-Selective Nanoparticle Assembly for Multiplexed Surface Encoding. Nano Letters, 2018, 18, 2645-2649.	4.5	30
60	Tunable polaritonic metasurface absorbers in mid-IR based on hexagonal boron nitride and vanadium dioxide layers. Journal Physics D: Applied Physics, 2019, 52, 164002.	1.3	30
61	Polarization Reflector/Color Filter at Visible Frequencies via Anisotropic Î±â€MoO₃. Advanced Optical Materials, 2020, 8, 2000088.	3.6	30
62	Identifying magnetic response of split-ring resonators at microwave frequencies. Opto-electronics Review, 2006, 14, .	2.4	29
63	Dynamic infrared thin-film absorbers with tunable absorption level based on VO₂ phase transition. Optical Materials Express, 2018, 8, 2151.	1.6	29
64	Mie-Resonant Three-Dimensional Metacrystals. Nano Letters, 2020, 20, 8096-8101.	4.5	28
65	Phonon-polariton assisted broadband resonant absorption in anisotropic Î±-phase <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>Mo</mml:mi><mml:msub><mml:mi mathvariant="normal">O</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:mrow></mml:math> nanostructures. Physical Review B, 2020, 102, .	1.1	27
66	Device-quality, reconfigurable metamaterials from shape-directed nanocrystal assembly. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 21052-21057.	3.3	26
67	Tunable multi-wavelength absorption in mid-IR region based on a hybrid patterned graphene-hBN structure. Optics Express, 2019, 27, 23576.	1.7	26
68	Compact, Highâ€resolution Inverseâ€Designed Onâ€Chip Spectrometer Based on Tailored Disorder Modes. Laser and Photonics Reviews, 2021, 15, 2000556.	4.4	25
69	Inverse-designed stretchable metalens with tunable focal distance. Applied Physics Letters, 2018, 112, .	1.5	24
70	Tunable Fluorescence from Dyeâ€Modified DNAâ€Assembled Plasmonic Nanocube Arrays. Advanced Materials, 2019, 31, e1904448.	11.1	24
71	Negative refraction through an impedance-matched left-handed metamaterial slab. Journal of the Optical Society of America B: Optical Physics, 2006, 23, 415.	0.9	23
72	Ultrawide Angle, Directional Spectrum Splitting with Visibleâ€Frequency Versatile Metasurfaces. Advanced Optical Materials, 2016, 4, 953-958.	3.6	23

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73	Enhanced radiative emission from monolayer MoS2 films using a single plasmonic dimer nanoantenna. Applied Physics Letters, 2017, 111, .	1.5	23
74	Optically Active 1D MoS₂ Nanobelts. ACS Applied Materials & Interfaces, 2018, 10, 6799-6804.	4.0	23
75	Highly directional emission from photonic crystals with a wide bandwidth. Applied Physics Letters, 2007, 91, 121105.	1.5	22
76	Adaptive tuning of infrared emission using VO2 thin films. Scientific Reports, 2020, 10, 11544.	1.6	22
77	Tuning of Optical Phonons in Î±-MoO₃â€“VO₂ Multilayers. ACS Applied Materials & Interfaces, 2021, 13, 48981-48987.	4.0	22
78	Asymmetric Light Absorption and Reflection in Freestanding Nanostructured Metallic Membranes. ACS Photonics, 2015, 2, 1652-1657.	3.2	21
79	Nanostructured silicon success. Nature Photonics, 2015, 9, 353-355.	15.6	20
80	Experimental and numerical study of omega type bianisotropic metamaterials combined with a negative permittivity medium. Photonics and Nanostructures - Fundamentals and Applications, 2008, 6, 116-121.	1.0	17
81	Identifying Excitation and Emission Rate Contributions to Plasmon-Enhanced Photoluminescence from Monolayer MoS₂ Using a Tapered Gold Nanoantenna. ACS Photonics, 2017, 4, 1602-1606.	3.2	17
82	Characterization of the tunable response of highly strained compliant optical metamaterials. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2011, 369, 3447-3455.	1.6	16
83	Twoâ€Photon Direct Laser Writing of Inverseâ€Designed Freeâ€Form Nearâ€Infrared Polarization Beamsplitter. Advanced Optical Materials, 2019, 7, 1900513.	3.6	16
84	Super-resolution imaging by one-dimensional, microwave left-handed metamaterials with an effective negative index. Journal of Physics Condensed Matter, 2008, 20, 304216.	0.7	15
85	Physics and applications of photonic nanocrystals. International Journal of Nanotechnology, 2004, 1, 379.	0.1	14
86	Electromagnetic wave focusing from sources inside a two-dimensional left-handed material superlens. New Journal of Physics, 2006, 8, 221-221.	1.2	14
87	Extrinsic polarization-controlled optical anisotropy in plasmon-black phosphorus coupled system. Nanotechnology, 2018, 29, 285202.	1.3	14
88	Negative refraction and imaging beyond the diffraction limit by a two-dimensional left-handed metamaterial. Photonics and Nanostructures - Fundamentals and Applications, 2008, 6, 108-115.	1.0	13
89	Phase engineering and optical properties of 2D MoSe2: Promise and pitfalls. Materials Chemistry and Physics, 2019, 225, 219-226.	2.0	13
90	Retrieval of effective parameters for bianisotropic metamaterials with omega shaped metallic inclusions. Photonics and Nanostructures - Fundamentals and Applications, 2012, 10, 329-336.	1.0	12

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91	Stimuli-Responsive DNA-Linked Nanoparticle Arrays as Programmable Surfaces. Nano Letters, 2019, 19, 4535-4542.	4.5	12
92	Thermally Tuning Infrared Light Scattering Using Planar Layered Thin Films and Space Gradient Metasurface. IEEE Journal of Selected Topics in Quantum Electronics, 2019, 25, 1-7.	1.9	12
93	Polarization dependent, plasmon-enhanced infrared transmission through gold nanoslits on monolayer black phosphorus. Journal of the Optical Society of America B: Optical Physics, 2019, 36, F109.	0.9	12
94	Effect of heating/cooling dynamics in the hysteresis loop and tunable IR emissivity of VO₂ thin films. Optics Express, 2020, 28, 39203.	1.7	12
95	Negative refraction, subwavelength focusing and beam formation by photonic crystals. Journal Physics D: Applied Physics, 2007, 40, 2652-2658.	1.3	11
96	Enhanced infrared transmission through gold nanoslit arrays via surface plasmons in continuous graphene. Optics Express, 2016, 24, 27882.	1.7	11
97	Exceptional adaptable MWIR thermal emission for ordinary objects covered with thin VO2 film. Journal of Quantitative Spectroscopy and Radiative Transfer, 2021, 262, 107500.	1.1	11
98	Ultraâ€Thin Infrared Optical Gain Medium and Opticallyâ€Pumped Stimulated Emission in PbS Colloidal Quantum Dot LEDs. Advanced Functional Materials, 2022, 32, .	7.8	11
99	Lithography-free transmission filters at ultraviolet frequencies using ultra-thin aluminum films. Journal of Optics (United Kingdom), 2016, 18, 065006.	1.0	10
100	Unveiling the optical parameters of vanadium dioxide in the phase transition region: a hybrid modeling approach. RSC Advances, 2020, 10, 29945-29955.	1.7	10
101	Experimental investigation of reflection characteristics of left-handed metamaterials in free space. IET Microwaves, Antennas and Propagation, 2007, 1, 89.	0.7	9
102	Experimental and numerical analyses of the resonances of split ring resonators. Physica Status Solidi (B): Basic Research, 2007, 244, 1197-1201.	0.7	9
103	Tuning and hybridization of surface phonon polaritons in Î±-MoO₃ based metamaterials. Optics Express, 2022, 30, 12788.	1.7	9
104	Enhanced Interaction of Optical Phonons in h-BN with Plasmonic Lattice and Cavity Modes. ACS Applied Materials & Interfaces, 2021, 13, 25224-25233.	4.0	8
105	Resonance Couplings in Si@MoS₂ Coreâ€“Shell Architectures. Small, 2022, 18, e2200413.	5.2	8
106	Experimental analysis of true left-handed behaviour and transmission properties of composite metamaterials. Photonics and Nanostructures - Fundamentals and Applications, 2005, 3, 75-78.	1.0	7
107	Two-dimensional Left-handed Metamaterial with a Negative Refractive Index. Journal of Physics: Conference Series, 2006, 36, 6-11.	0.3	7
108	Theoretical and experimental analysis of magnetic inclusions for the realization of metamaterials at different frequencies. IEEE MTT-S International Microwave Symposium Digest IEEE MTT-S International Microwave Symposium, 2007, , .	0.0	7

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109	Neural networks enabled forward and inverse design of reconfigurable metasurfaces. Optics Express, 2021, 29, 27219.	1.7	7
110	Extrinsic Chirality and Circular Dichroism at Visible Frequencies Enabled by Birefringent Î±-MoO₃ Nanoscale-Thick Films: Implications for Chiro-Optical Control. ACS Applied Nano Materials, 2022, 5, 5609-5616.	2.4	7
111	Transmission spectra and the effective parameters for planar metamaterials with omega shaped metallic inclusions. Optics Communications, 2010, 283, 2547-2551.	1.0	6
112	Broadband metasurfaces for anomalous transmission and spectrum splitting at visible frequencies. EPJ Applied Metamaterials, 2015, 2, 2.	0.8	6
113	Wideband zero-index metacrystal with high transmission at visible frequencies. Journal of the Optical Society of America B: Optical Physics, 2017, 34, D13.	0.9	6
114	Reconfigurable Holograms Using VO₂-Based Tunable Metasurface. IEEE Journal of Selected Topics in Quantum Electronics, 2021, 27, 1-8.	1.9	6
115	Oneâ€Pot Bioâ€Assisted Synthesis of Stable Agâ€“AgCl System Using Jellyfishâ€Based Scaffold for Plasmonic Photocatalysis Applications. Advanced Sustainable Systems, 2021, 5, 2100099.	2.7	6
116	NEGATIVE REFRACTION AND SUBWAVELENGTH FOCUSING USING PHOTONIC CRYSTALS. Modern Physics Letters B, 2004, 18, 1275-1291.	1.0	5
117	Observation of Negative Refraction and Focusing in Two-Dimensional Photonic Crystals. Japanese Journal of Applied Physics, 2006, 45, 6064-6070.	0.8	5
118	Verification of impedance matching at the surface of left-handed materials. Microwave and Optical Technology Letters, 2006, 48, 2548-2552.	0.9	5
119	Wide bandwidth directional beaming via waveguide ports in photonic crystals. Journal Physics D: Applied Physics, 2008, 41, 155115.	1.3	5
120	Enhanced transmission of electromagnetic waves through split-ring resonator-shaped apertures. Journal of Nanophotonics, 2011, 5, 051812.	0.4	5
121	Large-Area, Highly Crystalline DNA-Assembled Metasurfaces Exhibiting Widely Tunable Epsilon-Near-Zero Behavior. ACS Nano, 2021, 15, 18289-18296.	7.3	5
122	Functional metal-insulator-metal top contacts for Si-based color photodetectors. Journal of Applied Physics, 2016, 120, 223102.	1.1	4
123	Ferroelectric based tuneable SRR based metamaterial for microwave applications. , 2007, , .		3
124	Inverse-designed all-dielectric waveguide bend. Proceedings of SPIE, 2016, , .	0.8	3
125	A hybrid light source with integrated inorganic light-emitting diode and organic polymer distributed feedback grating. Nanotechnology, 2008, 19, 195202.	1.3	2
126	Increased cell efficiency in InGaAs thin film solar cells with dielectric and metal back reflectors. , 2009, , .		2

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127	Probing the Optical Response and Local Dielectric Function of an Unconventional Si@MoS₂ Coreâ€“Shell Architecture. Nano Letters, 2022, 22, 4848-4853.	4.5	2
128	Experimental study of subwavelength focusing by left-handed metamaterials with a negative refractive index. Journal of Nanophotonics, 2007, 1, 011695.	0.4	1
129	Study of the field emitted by a source placed inside a two-dimensional left-handed metamaterial. Optics Letters, 2007, 32, 850.	1.7	1
130	Negative refraction and subwavelength focusing using left-handed composite metamaterials. Proceedings of SPIE, 2008, , .	0.8	1
131	Active plasmonic devices and optical metamaterials. , 2009, , .		1
132	ENHANCED TRANSMISSION THROUGH SUB-WAVELENGTH APERTURES BY USING METAMATERIALS. , 2011, , 453-477.		1
133	Observation of negative refraction and negative phase velocity in true left-handed metamaterials (Invited Paper). , 2005, 5840, 240.		0
134	Negative refraction and subwavelength focusing using photonic crystals. , 2005, 5733, 39.		0
135	Experimental demonstration of negative refraction and subwavelength imaging by left-handed composite metamaterials. Materials Research Society Symposia Proceedings, 2006, 919, 6.	0.1	0
136	Transmission properties of various split-ring resonator systems. , 2006, , .		0
137	Negative refraction and focusing by a left-handed material slab in free space. , 2006, , .		0
138	Review of experimental studies on microwave left-handed metamaterials. AIP Conference Proceedings, 2007, , .	0.3	0
139	Negative refraction and subwavelength focusing using left-handed composite metamaterials. Proceedings of SPIE, 2008, , .	0.8	0
140	Publisherâ€™s Note: Subwavelength Resolution in a Two-Dimensional Photonic-Crystal-Based Superlens [Phys. Rev. Lett.91, 207401 (2003)]. Physical Review Letters, 2008, 101, .	2.9	0
141	Active and Tunable Plasmonics and Metamaterials. , 2011, , .		0
142	Enhanced infrared transmission from gold wire-grid arrays via surface plasmons in continuous graphene (Presentation Recording). , 2015, , .		0
143	Large-area lithography-free perfect absorbers, color filters, and photodetectors at visible frequencies using ultra-thin silver or amorphous silicon films (Presentation Recording). , 2015, , .		0
144	Visible-frequency metasurfaces for broadband anomalous reflection and high-efficiency spectrum splitting (Presentation Recording). , 2015, , .		0

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145	Visible-frequency broadband asymmetric transmission of linear polarized light through a tapered grating. , 2016, , .		0
146	Ultra-wide angle, directional spectrum splitting with visible-frequency versatile metasurfaces. , 2016, , .		0
147	Localized surface plasmons in nanostructured monolayer black phosphorus. , 2016, , .		0
148	Inverse-designed all-dielectric optical diode. , 2016, , .		0
149	Composite Metamaterials, Negative Refraction, and Focusing. , 2009, , .		0