Mikhail A Kats

List of Publications by Year
in descending order

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127 papers	19,864 citations	66234 42 h-index	48187 88 g-index
132 all docs	132 docs citations	132 times ranked	12599 citing authors

#	Article	IF	Citations
1	Light Propagation with Phase Discontinuities: Generalized Laws of Reflection and Refraction. Science, 2011, 334, 333-337.	6.0	7,240
2	Aberration-Free Ultrathin Flat Lenses and Axicons at Telecom Wavelengths Based on Plasmonic Metasurfaces. Nano Letters, 2012, 12, 4932-4936.	4.5	1,528
3	A Broadband, Background-Free Quarter-Wave Plate Based on Plasmonic Metasurfaces. Nano Letters, 2012, 12, 6328-6333.	4.5	1,065
4	Multiwavelength achromatic metasurfaces by dispersive phase compensation. Science, 2015, 347, 1342-1345.	6.0	868
5	Nanometre optical coatings based on strong interference effects in highly absorbing media. Nature Materials, 2013, 12, 20-24.	13.3	841
6	Electrically Tunable Metasurface Perfect Absorbers for Ultrathin Mid-Infrared Optical Modulators. Nano Letters, 2014, 14, 6526-6532.	4.5	657
7	Broad Electrical Tuning of Graphene-Loaded Plasmonic Antennas. Nano Letters, 2013, 13, 1257-1264.	4.5	558
8	Ultra-thin perfect absorber employing a tunable phase change material. Applied Physics Letters, 2012, 101, .	1.5	519
9	Out-of-Plane Reflection and Refraction of Light by Anisotropic Optical Antenna Metasurfaces with Phase Discontinuities. Nano Letters, 2012, 12, 1702-1706.	4.5	506
10	Ultra-thin plasmonic optical vortex plate based on phase discontinuities. Applied Physics Letters, 2012, 100, .	1.5	451
11	Achromatic Metasurface Lens at Telecommunication Wavelengths. Nano Letters, 2015, 15, 5358-5362.	4.5	367
12	Giant optical anisotropy in a quasi-one-dimensional crystal. Nature Photonics, 2018, 12, 392-396.	15.6	269
13	Nanophotonic engineering of far-field thermal emitters. Nature Materials, 2019, 18, 920-930.	13.3	261
14	Designer spoof surface plasmon structures collimate terahertz laser beams. Nature Materials, 2010, 9, 730-735.	13.3	260
15	Flat Optics: Controlling Wavefronts With Optical Antenna Metasurfaces. IEEE Journal of Selected Topics in Quantum Electronics, 2013, 19, 4700423-4700423.	1.9	258
16	Holographic detection of the orbital angular momentum of light with plasmonic photodiodes. Nature Communications, 2012, 3, 1278.	5.8	252
17	Nanostructured Holograms for Broadband Manipulation of Vector Beams. Nano Letters, 2013, 13, 4269-4274.	4.5	246
18	Large Enhancement of Nonlinear Optical Phenomena by Plasmonic Nanocavity Gratings. Nano Letters, 2010, 10, 4880-4883.	4.5	207

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19	Thermal tuning of mid-infrared plasmonic antenna arrays using a phase change material. Optics Letters, 2013, 38, 368.	1.7	196
20	Optical absorbers based on strong interference in ultraâ€thin films. Laser and Photonics Reviews, 2016, 10, 735-749.	4.4	194
21	Single-shot on-chip spectral sensors based on photonic crystal slabs. Nature Communications, 2019, 10, 1020.	5.8	190
22	Active Optical Metasurfaces Based on Defect-Engineered Phase-Transition Materials. Nano Letters, 2016, 16, 1050-1055.	4.5	186
23	Giant birefringence in optical antenna arrays with widely tailorable optical anisotropy. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 12364-12368.	3.3	176
24	Aberrations of flat lenses and aplanatic metasurfaces. Optics Express, 2013, 21, 31530.	1.7	163
25	Wide Wavelength Tuning of Optical Antennas on Graphene with Nanosecond Response Time. Nano Letters, 2014, 14, 214-219.	4.5	151
26	Spoof plasmon analogue of metal-insulator-metal waveguides. Optics Express, 2011, 19, 14860.	1.7	145
27	Vanadium Dioxide as a Natural Disordered Metamaterial: Perfect Thermal Emission and Large Broadband Negative Differential Thermal Emittance. Physical Review X, 2013, 3, .	2.8	136
28	On the Optical Properties of Thinâ€Film Vanadium Dioxide from the Visible to the Far Infrared. Annalen Der Physik, 2019, 531, 1900188.	0.9	135
29	Effect of radiation damping on the spectral response of plasmonic components. Optics Express, 2011, 19, 21748.	1.7	129
30	Patterning the Tips of Optical Fibers with Metallic Nanostructures Using Nanoskiving. Nano Letters, 2011, 11, 632-636.	4.5	121
31	Modeling nanoscale V-shaped antennas for the design of optical phased arrays. Physical Review B, 2012, 85, .	1.1	96
32	Evolution of Metallicity in Vanadium Dioxide by Creation of Oxygen Vacancies. Physical Review Applied, 2017, 7, .	1.5	88
33	Epsilon-Near-Zero Substrate Engineering for Ultrathin-Film Perfect Absorbers. Physical Review Applied, 2017, 8, .	1.5	88
34	Vapor condensation with daytime radiative cooling. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	86
35	Enhancement of absorption and color contrast in ultra-thin highly absorbing optical coatings. Applied Physics Letters, 2013, 103, .	1.5	81
36	Temperature-independent thermal radiation. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 26402-26406.	3.3	69

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37	How to organize an online conference. Nature Reviews Materials, 2020, 5, 253-256.	23.3	62
38	Fabrication and Replication of Arrays of Single- or Multicomponent Nanostructures by Replica Molding and Mechanical Sectioning. ACS Nano, 2010, 4, 4017-4026.	7.3	55
39	Near-Field Imaging of Phased Array Metasurfaces. Nano Letters, 2015, 15, 3851-3858.	4.5	55
40	Reflection and refraction of light from metasurfaces with phase discontinuities. Journal of Nanophotonics, 2012, 6, 063532.	0.4	50
41	Inverse Design of Metasurfaces Based on Coupled-Mode Theory and Adjoint Optimization. ACS Photonics, 2021, 8, 2265-2273.	3.2	45
42	Thin-Film Interference in Lossy, Ultra-Thin Layers. Optics and Photonics News, 2014, 25, 40.	0.4	44
43	Limiting Optical Diodes Enabled by the Phase Transition of Vanadium Dioxide. ACS Photonics, 2018, 5, 2688-2692.	3.2	43
44	Ultra-thin optical interference coatings on rough and flexible substrates. Applied Physics Letters, 2014, 105, .	1.5	39
45	Current-modulated optical properties of vanadium dioxide thin films in the phase transition region. Applied Physics Letters, 2014, 105, .	1.5	39
46	Spoof surface plasmon waveguide forces. Optics Letters, 2014, 39, 517.	1.7	38
47	Generation of two-dimensional plasmonic bottle beams. Optics Express, 2013, 21, 10295.	1.7	37
48	Self-Stabilizing Laser Sails Based on Optical Metasurfaces. ACS Photonics, 2019, 6, 2032-2040.	3.2	35
49	Terahertz plasmonics. Electronics Letters, 2010, 46, S52.	0.5	30
50	Multi-wavelength mid-infrared plasmonic antennas with single nanoscale focal point. Optics Express, 2011, 19, 22113.	1.7	29
51	Dipolar modeling and experimental demonstration of multi-beam plasmonic collimators. New Journal of Physics, 2011, 13, 053057.	1.2	29
52	Measuring Thermal Emission Near Room Temperature Using Fourier-Transform Infrared Spectroscopy. Physical Review Applied, 2019, 11, .	1.5	29
53	Nanosecond mid-infrared pulse generation via modulated thermal emissivity. Light: Science and Applications, 2019, 8, 51.	7.7	28
54	Precision Measurements of Temperatureâ€Dependent and Nonequilibrium Thermal Emitters. Laser and Photonics Reviews, 2020, 14, 1900443.	4.4	26

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55	Optical absorbers based on strong interference in ultraâ€thin films (Laser Photonics Rev. 10(5)/2016). Laser and Photonics Reviews, 2016, 10, 699-699.	4.4	25
56	Multi-beam multi-wavelength semiconductor lasers. Applied Physics Letters, 2009, 95, .	1.5	21
57	Radiative Thermal Runaway Due to Negative-Differential Thermal Emission Across a Solid-Solid Phase Transition. Physical Review Applied, 2018, 10, .	1.5	20
58	Wide-Angle Spectrally Selective Absorbers and Thermal Emitters Based on Inverse Opals. ACS Photonics, 2019, 6, 2607-2611.	3.2	20
59	Ultrathin Broadband Reflective Optical Limiter. Laser and Photonics Reviews, 2021, 15, 2100001.	4.4	20
60	Accounting for inhomogeneous broadening in nano-optics by electromagnetic modeling based on Monte Carlo methods. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, E639-E644.	3.3	17
61	Energy limits imposed by two-photon absorption for pulse amplification in high-power semiconductor optical amplifiers. Optics Letters, 2008, 33, 1041.	1.7	15
62	Mid-infrared Optics Using Dielectrics with Refractive Indices Below Unity. Physical Review Applied, 2018, 10, .	1.5	15
63	Switchable Induced-Transmission Filters Enabled by Vanadium Dioxide. Nano Letters, 2022, 22, 6-13.	4.5	15
64	High-power low-divergence tapered quantum cascade lasers with plasmonic collimators. Applied Physics Letters, 2013, 102, .	1.5	14
65	Adjoint-optimized nanoscale light extractor for nitrogen-vacancy centers in diamond. Nanophotonics, 2020, 10, 393-401.	2.9	13
66	Giant Hall Photoconductivity in Narrow-Gapped Dirac Materials. Nano Letters, 2016, 16, 7346-7351.	4.5	12
67	Flat Optical and Plasmonic Devices Using Areaâ€Selective Ionâ€Beam Doping of Silicon. Advanced Optical Materials, 2018, 6, 1701027.	3.6	12
68	Impact of corrosion on the emissivity of advanced reactor structural alloys. Journal of Nuclear Materials, 2018, 508, 465-471.	1.3	11
69	Super-Planckian emission cannot really be â€˜thermalâ€™. Nature Photonics, 2022, 16, 397-401.	15.6	11
70	Optical Metasurface Based on the Resonant Scattering in Electronic Transitions. ACS Photonics, 2017, 4, 1279-1285.	3.2	10
71	Tuning carrier density and phase transitions in oxide semiconductors using focused ion beams. Nanophotonics, 2022, 11, 3923-3932.	2.9	10
72	Enhancement of optical processes in coupled plasmonic nanocavities [Invited]. Applied Optics, 2011, 50, G56.	2.1	9

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73	Accelerating vapor condensation with daytime radiative cooling. , 2019, , .		9
74	Design considerations for the enhancement of human color vision by breaking binocular redundancy. Scientific Reports, 2018, 8, 11971.	1.6	8
75	Depth Thermography: Noninvasive 3D Temperature Profiling Using Infrared Thermal Emission. ACS Photonics, 2020, 7, 853-860.	3.2	8
76	Efficient generation of optical bottle beams. Nanophotonics, 2021, 10, 2893-2901.	2.9	7
77	Orientation-Controlled Anisotropy in Single Crystals of Quasi-1D BaTiS₃. Chemistry of Materials, 2022, 34, 5680-5689.	3.2	6
78	Thermal Runaway of Siliconâ€Based Laser Sails. Advanced Optical Materials, 0, , 2102835.	3.6	6
79	Broad electrical tuning of graphene-loaded optical antennas. , 2013, , .		5
80	Achromatic metasurfaces by dispersive phase compensation. , 2015, , .		5
81	Dark field on a chip. Nature Photonics, 2020, 14, 266-267.	15.6	5
82	Hyperspectral interference tomography of nacre. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	5
83	Thermally tunable VO2-SiO2 nanocomposite thin-film capacitors. Journal of Applied Physics, 2018, 123, .	1.1	4
84	Passive frequency conversion of ultraviolet images into the visible using perovskite nanocrystals. Journal of Optics (United Kingdom), 2021, 23, 054001.	1.0	4
85	Infrared Polarizer Based on Direct Coupling to Surface Plasmon Polaritons. Nano Letters, 2020, 20, 8483-8486.	4.5	3
86	Using Bottom-Up Lithography and Optical Nonlocality to Create Short-Wave Infrared Plasmonic Resonances in Graphene. ACS Photonics, 2021, 8, 1277-1285.	3.2	3
87	High-Density Covalent Grafting of Spin-Active Molecular Moieties to Diamond Surfaces. Langmuir, 2021, 37, 9222-9231.	1.6	3
88	Zero-Differential Thermal Emission Using Thermochromic Samarium Nickelate. , 2017, , .		2
89	Planck Spectroscopy. Laser and Photonics Reviews, 2021, 15, 2100121.	4.4	2
90	Achromatic metasurfaces enable multi-wavelength flat optical components: demonstration of a dispersion-less beam deflector. , 2015, , .		1

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91	Embedded Optics: Flat Optical and Plasmonic Devices Using Areaâ€Selective Ionâ€Beam Doping of Silicon (Advanced Optical Materials 5/2018). Advanced Optical Materials, 2018, 6, 1870019.	3.6	1
92	Nanosecond Mid-Infrared Pulse Generation via Modulated Thermal Emission. , 2018, , .		1
93	Peculiarities of near-room-temperature thermal-emission measurements using FTIR spectroscopy. , 2018, , .		1
94	Optical Paleothermometry Using Nacre. , 2018, , .		1
95	Adjoint-optimized nanoscale light extractor for enhanced luminescence from color centers in diamond. , 2020, , .		1
96	Decoupling of temperature and thermal radiation. , 2019, , .		1
97	Comment on â€œElectromagnetic force on structured metallic surfacesâ€• Physical Review B, 2022, 105, .	1.1	1
98	Amplification of high energy picosecond pulses using slab-coupled waveguide amplifiers at 1550 nm. , 2008, , .		0
99	Large area multi-material plasmonic nanostructures fabricated by replica molding and mechanical sectioning. , 2010, , .		0
100	Wavefront engineering of semiconductor lasers using plasmonics. , 2010, , .		0
101	Coupled Nanocavity-Grating Resonances: Large Plasmonic Enhancement of Nonlinear Optical Phenomena. , 2011, , .		0
102	Off-axis and multi-directional plasmonic lenses. , 2011, , .		0
103	Broadband Birefringent Metainterfaces. , 2012, , .		0
104	Broadband wavefront engineering with optical resonator arrays. , 2012, , .		0
105	Out of plane reflection and refraction of light by plasmonic interfaces with phase discontinuities. , 2012, , .		0
106	Phase elements for surface optics. , 2012, , .		0
107	Doubly-corrugated spoof-insulator-spoof waveguides. , 2012, , .		0
108	Ultra-Compact Mid-IR Modulators Based on Electrically Tunable Optical Antennas. , 2014, , .		0

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109	Characterization of near-room-temperature thermal emitters. , 2017, , .		0
110	Monolithic Doped-Semiconductor Platform for Optical Devices in the Infrared. , 2018, , .		0
111	Ultrafast pulse generation in the mid-infrared via modulated emissivity. , 2018, , .		0
112	Optical components based on multi-refractive-index metamaterials. Journal Physics D: Applied Physics, 2020, 53, 015108.	1.3	0
113	Thinking Systematically About the Online Academic Experience [Highlights]. IEEE Nanotechnology Magazine, 2020, 14, 3-5.	0.9	0
114	Tunable Infrared Optics Enabled by Defect-Engineering of Vanadium Dioxide Using Focused Ion Beam. , 2021, , .		0
115	Planck Spectroscopy. , 2021, , .		0
116	Quantum Cascade Lasers with Integrated Multi-Beam Plasmonic Collimators. , 2011, , .		0
117	Plasmonic-based techniques to generate and detect optical vortex beams. , 2012, , .		0
118	Negative differential thermal emitter. , 2013, , .		0
119	Depth thermography enabled by precise thermal-emission measurements. , 2019, , .		0
120	Nonlinear optical isolators based on thin-film vanadium dioxide and metallic frequency-selective surfaces. , 2020, , .		0
121	Optical Characterization of A1+xBX3 Crystals. , 2021, , .		0
122	Measuring non-equilibrium and temperature-dependent thermal emitters. , 2020, , .		0
123	Optical power limiters based on frequency-selective surfaces and phase-transition materials. , 2020, , .		0
124	Toward Frequency-Selective Surfaces via Doping of Zinc Oxide with a Focused Ion Beam. , 2020, , .		0
125	Low-cost mid-infrared polarizer based on direct coupling to surface-plasmon polaritons. , 2020, , .		0
126	Engineering Optical Materials Using Focused Ion Beams. , 2021, , .		0

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127	Feature issue introduction: Materials and Devices for Engineering of Thermal Light. Optical Materials Express, 0, , .	1.6	0