

# Mengkun Liu

## List of Publications by Year in descending order

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79  
papers

4,560  
citations

147726

31  
h-index

98753

67  
g-index

84  
all docs

84  
docs citations

84  
times ranked

6680  
citing authors

#	ARTICLE	IF	CITATIONS
1	Terahertz-field-induced insulator-to-metal transition in vanadium dioxide metamaterial. <i>Nature</i> , 2012, 487, 345-348.	13.7	1,046
2	Silk-Based Conformal, Adhesive, Edible Food Sensors. <i>Advanced Materials</i> , 2012, 24, 1067-1072.	11.1	335
3	Metamaterials on Paper as a Sensing Platform. <i>Advanced Materials</i> , 2011, 23, 3197-3201.	11.1	210
4	Modern Scattering-Type Scanning Near-Field Optical Microscopy for Advanced Material Research. <i>Advanced Materials</i> , 2019, 31, e1804774.	11.1	205
5	Biaxial Strain in Graphene Adhered to Shallow Depressions. <i>Nano Letters</i> , 2010, 10, 6-10.	4.5	193
6	Active Optical Metasurfaces Based on Defect-Engineered Phase-Transition Materials. <i>Nano Letters</i> , 2016, 16, 1050-1055.	4.5	186
7	Performance enhancement of terahertz metamaterials on ultrathin substrates for sensing applications. <i>Applied Physics Letters</i> , 2010, 97, .	1.5	158
8	Ultrafast and Nanoscale Plasmonic Phenomena in Exfoliated Graphene Revealed by Infrared Pump-Probe Nanoscopy. <i>Nano Letters</i> , 2014, 14, 894-900.	4.5	158
9	The Use of Functionalized Silk Fibroin Films as a Platform for Optical Diffraction-Based Sensing Applications. <i>Advanced Materials</i> , 2017, 29, 1605471.	11.1	127
10	A review of non-linear terahertz spectroscopy with ultrashort tabletop-laser pulses. <i>Journal of Modern Optics</i> , 2015, 62, 1447-1479.	0.6	119
11	Cooperative photoinduced metastable phase control in strained manganite films. <i>Nature Materials</i> , 2016, 15, 956-960.	13.3	118
12	Nonlinear Terahertz Metamaterials via Field-Enhanced Carrier Dynamics in GaAs. <i>Physical Review Letters</i> , 2013, 110, 217404.	2.9	105
13	Ultrafast Dynamics of Surface Plasmons in InAs by Time-Resolved Infrared Nanospectroscopy. <i>Nano Letters</i> , 2014, 14, 4529-4534.	4.5	92
14	Phase transition in bulk single crystals and thin films of $V_2O_5$ by nanoscale infrared spectroscopy and imaging. <i>Physical Review B</i> , 2015, 91, .	1.1	88
15	Nanoscale probing of electron-regulated structural transitions in silk proteins by near-field IR imaging and nano-spectroscopy. <i>Nature Communications</i> , 2016, 7, 13079.	5.8	78
16	Terahertz Nanoimaging of Graphene. <i>ACS Photonics</i> , 2018, 5, 2645-2651.	3.2	78
17	Probing optical anisotropy of nanometer-thin van der waals microcrystals by near-field imaging. <i>Nature Communications</i> , 2017, 8, 1471.	5.8	74
18	Multicolor T-Ray Imaging Using Multispectral Metamaterials. <i>Advanced Science</i> , 2018, 5, 1700982.	5.6	64

#	ARTICLE	IF	CITATIONS
19	Nanoscale electrodynamic of strongly correlated quantum materials. Reports on Progress in Physics, 2017, 80, 014501.	8.1	58
20	THz Near-Field Imaging of Extreme Subwavelength Metal Structures. ACS Photonics, 2020, 7, 687-694.	3.2	58
21	A rewritable optical storage medium of silk proteins using near-field nano-optics. Nature Nanotechnology, 2020, 15, 941-947.	15.6	51
22	Protein Bricks: 2D and 3D Bio-Nanostructures with Shape and Function on Demand. Advanced Materials, 2018, 30, e1705919.	11.1	50
23	Rapid Transfer-Based Micropatterning and Dry Etching of Silk Microstructures. Advanced Materials, 2011, 23, 2015-2019.	11.1	47
24	Precise Protein Photolithography (P <sup>3</sup> ): High Performance Biopatterning Using Silk Fibroin Light Chain as the Resist. Advanced Science, 2017, 4, 1700191.	5.6	47
25	THz spectroscopy of VO <sub>2</sub> epitaxial films: controlling the anisotropic properties through strain engineering. New Journal of Physics, 2012, 14, 083026.	1.2	46
26	Phase-Change Hyperbolic Heterostructures for Nanopolaritonics: A Case Study of hBN/VO <sub>2</sub> . Advanced Materials, 2019, 31, e1900251.	11.1	43
27	Dynamic conductivity scaling in photoexcited $V_2O_3$ thin films. Physical Review B, 2015, 92, 080402.	1.1	42
28	Nano-Resolved Current-Induced Insulator-Metal Transition in the Mott Insulator $Ca_2VO_4$ . Physical Review X, 2019, 9, 011045.	2.8	40
29	Moiré engineering of electronic phenomena in correlated oxides. Nature Physics, 2020, 16, 631-635.	6.5	40
30	Symmetry breaking and geometric confinement in VO <sub>2</sub> : Results from a three-dimensional infrared nano-imaging. Applied Physics Letters, 2014, 104, 121905.	1.5	36
31	Ultrafast inter-layer coupling dynamics in VO <sub>2</sub> thin films. Physical Review B, 2017, 96, 080402.	1.1	32
32	Tunable Planar Focusing Based on Hyperbolic Phonon Polaritons in $\text{MoO}_3$ . Advanced Materials, 2022, 34, e2105590.	11.1	32
33	Radiation torque on a birefringent sphere caused by an electromagnetic wave. Physical Review E, 2005, 72, 056610.	0.8	31
34	Active control of micrometer plasmon propagation in suspended graphene. Nature Communications, 2022, 13, 1465.	5.8	31
35	Rigorous numerical modeling of scattering-type scanning near-field optical microscopy and spectroscopy. Applied Physics Letters, 2017, 111, .	1.5	29
36	Terahertz response of monolayer and few-layer WTe <sub>2</sub> at the nanoscale. Nature Communications, 2021, 12, 5594.	5.8	29

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37	Scattering of electromagnetic waves from a cone with conformal mapping: Application to scanning near-field optical microscope. <i>Physical Review B</i> , 2018, 97, .	1.1	28
38	Tunable Modal Birefringence in a Low-Loss Van Der Waals Waveguide. <i>Advanced Materials</i> , 2019, 31, e1807788.	11.1	27
39	Photo-induced terahertz near-field dynamics of graphene/InAs heterostructures. <i>Optics Express</i> , 2019, 27, 13611.	1.7	25
40	Near-field spectroscopic investigation of dual-band heavy fermion metamaterials. <i>Nature Communications</i> , 2017, 8, 2262.	5.8	24
41	Nano-spectroscopy of excitons in atomically thin transition metal dichalcogenides. <i>Nature Communications</i> , 2022, 13, 542.	5.8	23
42	Nanoimaging and Nanospectroscopy of Polaritons with Time Resolved <i>sNOM</i> . <i>Advanced Optical Materials</i> , 2020, 8, 1901042.	3.6	22
43	Hybrid Machine Learning for Scanning Near-Field Optical Spectroscopy. <i>ACS Photonics</i> , 2021, 8, 2987-2996.	3.2	22
44	3D Local Manipulation of the Metal-Insulator Transition Behavior in VO <sub>2</sub> Thin Film by Defect-Induced Lattice Engineering. <i>Advanced Materials Interfaces</i> , 2018, 5, 1701268.	1.9	19
45	Nanotextured Dynamics of a Light-Induced Phase Transition in VO <sub>2</sub> . <i>Nano Letters</i> , 2021, 21, 9052-9060.	4.5	14
46	Controlling phase separation in vanadium dioxide thin films via substrate engineering. <i>Physical Review B</i> , 2017, 96, .	1.1	13
47	Anomalous Nanoscale Optoacoustic Phonon Mixing in Nematic Mesogens. <i>Journal of Physical Chemistry Letters</i> , 2018, 9, 2546-2553.	2.1	13
48	Validity of Machine Learning in the Quantitative Analysis of Complex Scanning Near-Field Optical Microscopy Signals Using Simulated Data. <i>Physical Review Applied</i> , 2021, 15, .	1.5	13
49	Rapid simulations of hyperspectral near-field images of three-dimensional heterogeneous surfaces. <i>Optics Express</i> , 2021, 29, 39648.	1.7	12
50	Rapid simulations of hyperspectral near-field images of three-dimensional heterogeneous surfaces – part II. <i>Optics Express</i> , 2022, 30, 11228.	1.7	12
51	A Multibeam Interference Model for Analyzing Complex Near-Field Images of Polaritons in 2D van der Waals Microstructures. <i>Advanced Functional Materials</i> , 2019, 29, 1904662.	7.8	10
52	Deep Learning Analysis of Polaritonic Wave Images. <i>ACS Nano</i> , 2021, 15, 18182-18191.	7.3	10
53	Broadband terahertz time-domain polarimetry based on air plasma filament emissions and spinning electro-optic sampling in GaP. <i>Applied Physics Letters</i> , 2022, 120, 181107.	1.5	10
54	Probing subwavelength in-plane anisotropy with antenna-assisted infrared nano-spectroscopy. <i>Nature Communications</i> , 2021, 12, 2649.	5.8	9

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55	Scattering-type Scanning Near-Field Optical Microscopy of Polymer-Coated Gold Nanoparticles. ACS Omega, 2022, 7, 11353-11362.	1.6	9
56	Radiation torque on a spherical birefringent particle in the long wave length limit: analytical calculation. Optics Express, 2005, 13, 5192.	1.7	8
57	Scattering-type scanning near-field optical microscopy with Akiyama piezo-probes. Applied Physics Letters, 2022, 120, .	1.5	7
58	Photo-induced charge density distribution in metal surfaces and its extraction with apertureless near-field optics. Journal of Physics Condensed Matter, 2019, 31, 24LT01.	0.7	6
59	Laser-Induced Cooperative Transition in Molecular Electronic Crystal. Advanced Materials, 2021, 33, e2103000.	11.1	6
60	Scattering of Quasistatic Plasmons From One-Dimensional Junctions of Graphene: Transfer Matrices, Fresnel Relations, and Nonlocality. Physical Review Applied, 2020, 14, .	1.5	4
61	Bio-Nanostructures: Protein Bricks: 2D and 3D Bio-Nanostructures with Shape and Function on Demand (Adv. Mater. 20/2018). Advanced Materials, 2018, 30, 1870141.	11.1	3
62	Simultaneous scanning near-field optical and X-ray diffraction microscopy for correlative nanoscale structure-property characterization. Journal of Synchrotron Radiation, 2019, 26, 1790-1796.	1.0	3
63	Joule heating in Boltzmann theory of metals. Physical Review B, 2020, 102, .	1.1	3
64	Polariton Spectroscopy: Nanoimaging and Nanospectroscopy of Polaritons with Time Resolved s-SNOM (Advanced Optical Materials 5/2020). Advanced Optical Materials, 2020, 8, 2070019.	3.6	3
65	Partially Metal-Coated Tips for Near-Field Nanospectroscopy. Physical Review Applied, 2021, 15, .	1.5	3
66	Effect of sample anisotropy on scanning near-field optical microscope images. Journal of Applied Physics, 2021, 129, .	1.1	3
67	Ultrabroadband infrared near-field spectroscopy and imaging of local resonators in percolative gold films. Journal of the Optical Society of America B: Optical Physics, 2019, 36, 3315.	0.9	3
68	A near-field study of VO <sub>2</sub> /(100)TiO <sub>2</sub> film and its crack-induced strain relief. Applied Physics Letters, 2022, 121, .	1.5	3
69	An ultrafast plasmonic tuning knob. Nature Photonics, 2016, 10, 210-211.	15.6	2
70	Structural, transport, and ultrafast dynamic properties of V <sub>1-x</sub> Nb <sub>x</sub> O <sub>2</sub> thin films. Physical Review B, 2019, 99, .	1.1	2
71	Ultrafast photoexcitation dynamics of ZnTe crystals by femtosecond optical pump-probe and terahertz emission spectroscopy. Microwave and Optical Technology Letters, 2020, 62, 2656-2661.	0.9	2
72	Robust and tunable Weyl phases by coherent infrared phonons in ZrTe <sub>5</sub> . Npj Computational Materials, 2022, 8, .	3.5	2

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73	Multispectral Imaging: Multicolor Ray Imaging Using Multispectral Metamaterials (Adv. Sci. 7/2018). Advanced Science, 2018, 5, 1870044.	5.6	1
74	Modal Birefringence: Tunable Modal Birefringence in a Low-Loss Van Der Waals Waveguide (Adv. Mater. 33/2021). Advanced Materials, 2021, 33, .	11.1	1
75	Simulation of Scanning Near-Field Optical Microscopy Spectra of 1D Plasmonic Graphene Junctions. Optics Express, 2022, 30, 9000-9007.	1.7	1
76	Large strain-induced conductivity anisotropy in VO <sub>2</sub> thin films, probed by THz spectroscopy., 2011, .		0
77	Biopatterning: Precise Protein Photolithography (P <sup>3</sup> ): High Performance Biopatterning Using Silk Fibroin Light Chain as the Resist (Adv. Sci. 9/2017). Advanced Science, 2017, 4, .	5.6	0
78	Laser-Induced Cooperative Transition in Molecular Electronic Crystal (Adv. Mater. 39/2021). Advanced Materials, 2021, 33, .	11.1	0
79	Terahertz nano-imaging of metal-insulator transition in Cd(2)Os(2)O(7). Europhysics Letters, 0, , .	0.7	0