

# Zhaowei Liu

## List of Publications by Year in descending order

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Version: 2024-02-01

152  
papers

12,310  
citations

44069

48  
h-index

24258

110  
g-index

154  
all docs

154  
docs citations

154  
times ranked

9472  
citing authors

#	ARTICLE	IF	CITATIONS
1	Nonlinear Computational Edge Detection Metalens. <i>Advanced Functional Materials</i> , 2022, 32, .	14.9	19
2	Fourier Optical Spin Splitting Microscopy. <i>Physical Review Letters</i> , 2022, 129, .	7.8	16
3	Two-dimensional optical spatial differentiation and high-contrast imaging. <i>National Science Review</i> , 2021, 8, nwaal176.	9.5	74
4	Kerr Metasurface Enabled by Metallic Quantum Wells. <i>Nano Letters</i> , 2021, 21, 330-336.	9.1	8
5	Unprecedented Fluorophore Photostability Enabled by Low- $\epsilon$ Loss Organic Hyperbolic Materials. <i>Advanced Materials</i> , 2021, 33, e2006496.	21.0	17
6	Imaging of Cell Morphology Changes via Metamaterial-Assisted Photobleaching Microscopy. <i>Nano Letters</i> , 2021, 21, 1716-1721.	9.1	14
7	Metamaterial assisted illumination nanoscopy via random super-resolution speckles. <i>Nature Communications</i> , 2021, 12, 1559.	12.8	32
8	Highly-efficient electrically-driven localized surface plasmon source enabled by resonant inelastic electron tunneling. <i>Nature Communications</i> , 2021, 12, 3111.	12.8	22
9	LED control of gene expression in a nanobiosystem composed of metallic nanoparticles and a genetically modified <i>E. coli</i> strain. <i>Journal of Nanobiotechnology</i> , 2021, 19, 190.	9.1	4
10	Influence of Hafnium Defects on the Optical and Structural Properties of Zirconium Nitride. <i>Physica Status Solidi - Rapid Research Letters</i> , 2021, 15, 2100372.	2.4	2
11	Organic Hyperbolic Material Assisted Illumination Nanoscopy. <i>Advanced Science</i> , 2021, 8, e2102230.	11.2	10
12	Metasurface enabled quantum edge detection. <i>Science Advances</i> , 2020, 6, .	10.3	103
13	SECOND-ORDER NONLINEAR SUSCEPTIBILITY ENHANCEMENT IN GALLIUM NITRIDE NANOWIRES (INVITED). <i>Progress in Electromagnetics Research</i> , 2020, 168, 25-30.	4.4	10
14	Low- $\epsilon$ Loss Organic Hyperbolic Materials in the Visible Spectral Range: A Joint Experimental and First-Principles Study. <i>Advanced Materials</i> , 2020, 32, e2002387.	21.0	13
15	Anomalous Nonlinear Optical Selection Rules in Metallic Quantum Wells. <i>Advanced Functional Materials</i> , 2020, 30, 2000829.	14.9	1
16	Metamaterial-Assisted Photobleaching Microscopy with Nanometer Scale Axial Resolution. <i>Nano Letters</i> , 2020, 20, 6038-6044.	9.1	9
17	Large second-order nonlinearity in asymmetric metallic quantum wells. <i>Applied Physics Letters</i> , 2020, 116, 241105.	3.3	0
18	Imaging of Nanoscale Light Confinement in Plasmonic Nanoantennas by Brownian Optical Microscopy. <i>ACS Nano</i> , 2020, 14, 7666-7672.	14.6	18

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19	Nanoscale optical pulse limiter enabled by refractory metallic quantum wells. <i>Science Advances</i> , 2020, 6, eaay3456.	10.3	16
20	A spin controlled wavefront shaping metasurface with low dispersion in visible frequencies. <i>Nanoscale</i> , 2019, 11, 17111-17119.	5.6	14
21	Plasmonically Enhanced Amorphous Silicon Photodetector With Internal Gain. <i>IEEE Photonics Technology Letters</i> , 2019, 31, 959-962.	2.5	8
22	Large optical nonlinearity enabled by coupled metallic quantum wells. <i>Light: Science and Applications</i> , 2019, 8, 13.	16.6	41
23	Photothermal Modulation of Propagating Surface Plasmons on Silver Nanowires. <i>ACS Photonics</i> , 2019, 6, 2133-2140.	6.6	28
24	Optical edge detection based on high-efficiency dielectric metasurface. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 11137-11140.	7.1	251
25	Organic Bulk Heterojunction Infrared Photodiodes for Imaging Out to 1300 nm. <i>ACS Applied Electronic Materials</i> , 2019, 1, 660-666.	4.3	28
26	Array atomic force microscopy for real-time multiparametric analysis. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 5872-5877.	7.1	18
27	Localized plasmonic structured illumination microscopy with gaps in spatial frequencies. <i>Optics Letters</i> , 2019, 44, 2915.	3.3	14
28	Engineering the dispersion properties of multilayered periodic segmented waveguides and nanowire waveguides. <i>Optical Engineering</i> , 2019, 58, 1.	1.0	0
29	Nanostructuring Multilayer Hyperbolic Metamaterials for Ultrafast and Bright Green InGaN Quantum Wells. <i>Advanced Materials</i> , 2018, 30, e1706411.	21.0	49
30	Surface wave resonance and chirality in a tubular cavity with metasurface design. <i>Optics Communications</i> , 2018, 417, 42-45.	2.1	3
31	Controlled Homoepitaxial Growth of Hybrid Perovskites. <i>Advanced Materials</i> , 2018, 30, e1705992.	21.0	82
32	Positively charged and flexible SiO <sub>2</sub> @ZrO <sub>2</sub> nanofibrous membranes and their application in adsorption and separation. <i>RSC Advances</i> , 2018, 8, 13018-13025.	3.6	20
33	Asymmetrically Curved Hyperbolic Metamaterial Structure with Gradient Thicknesses for Enhanced Directional Spontaneous Emission. <i>ACS Applied Materials &amp; Interfaces</i> , 2018, 10, 7704-7708.	8.0	13
34	Nonlinear Metasurface Based on Giant Optical Kerr Response of Gold Quantum Wells. <i>ACS Photonics</i> , 2018, 5, 1654-1659.	6.6	20
35	Metamaterial-assisted illumination nanoscopy. <i>National Science Review</i> , 2018, 5, 141-143.	9.5	15
36	Broadband Photonic Spin Hall Meta-Lens. <i>ACS Nano</i> , 2018, 12, 82-88.	14.6	79

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37	Nonlinear Optics: Enhanced Second Harmonic Generation in Double-Resonance Colloidal Metasurfaces (Adv. Funct. Mater. 51/2018). Advanced Functional Materials, 2018, 28, 1870367.	14.9	0
38	Optimization of Nanopatterned Multilayer Hyperbolic Metamaterials for Spontaneous Light Emission Enhancement. Physica Status Solidi (A) Applications and Materials Science, 2018, 215, 1800263.	1.8	6
39	Experimental Demonstration of Hyperbolic Metamaterial Assisted Illumination Nanoscopy. ACS Nano, 2018, 12, 11316-11322.	14.6	20
40	Enhanced Second Harmonic Generation in Double-Resonance Colloidal Metasurfaces. Advanced Functional Materials, 2018, 28, 1803019.	14.9	33
41	Localized Plasmonic Structured Illumination Microscopy. , 2018, , .		0
42	Anomalous scaling laws of hyperbolic metamaterials in a tubular geometry. Journal of the Optical Society of America B: Optical Physics, 2018, 35, 391.	2.1	5
43	Multi-layer nanoarrays sandwiched by anodized aluminium oxide membranes: an approach to an inexpensive, reproducible, highly sensitive SERS substrate. Nanoscale, 2018, 10, 16278-16283.	5.6	20
44	Efficient light generation from enhanced inelastic electron tunnelling. Nature Photonics, 2018, 12, 485-488.	31.4	100
45	High Spatiotemporal Resolution Imaging with Localized Plasmonic Structured Illumination Microscopy. ACS Nano, 2018, 12, 8248-8254.	14.6	45
46	Design and Analysis of Blue InGaN/GaN Plasmonic LED for High-Speed, High-Efficiency Optical Communications. ACS Photonics, 2018, 5, 3557-3564.	6.6	22
47	Realization of the spin-dependent manipulation of structured light by tailoring the polarization. , 2018, , .		0
48	Near-perfect broadband absorption from hyperbolic metamaterial nanoparticles. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 1264-1268.	7.1	59
49	Etalon Array Reconstructive Spectrometry. Scientific Reports, 2017, 7, 40693.	3.3	53
50	Optical Observation of Plasmonic Nonlocal Effects in a 2D Superlattice of Ultrasmall Gold Nanoparticles. Nano Letters, 2017, 17, 2234-2239.	9.1	33
51	Experimental Demonstration of Localized Plasmonic Structured Illumination Microscopy. ACS Nano, 2017, 11, 5344-5350.	14.6	76
52	Hyperbolic metamaterials for dispersion-assisted directional light emission. Nanoscale, 2017, 9, 9034-9048.	5.6	43
53	Adsorption and separation properties of positively charged ZrO <sub>2</sub> nanofibrous membranes fabricated by electrospinning. RSC Advances, 2017, 7, 42505-42512.	3.6	18
54	Three-dimensional nanoscale imaging by plasmonic Brownian microscopy. Nanophotonics, 2017, 7, 489-495.	6.0	1

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55	Super-resolution imaging by metamaterial-based compressive spatial-to-spectral transformation. <i>Nanoscale</i> , 2017, 9, 18268-18274.	5.6	26
56	Localized plasmonic structured illumination microscopy with an optically trapped microlens. <i>Nanoscale</i> , 2017, 9, 14907-14912.	5.6	47
57	Investigation of the light generation from crystalline Ag-cubes based metal-insulator-metal tunnel junctions. , 2017, , .		2
58	High-Speed Super-Resolution Microscopy for Biological Imaging. , 2017, , .		0
59	Plasmonic Structured Illumination Microscopy. , 2017, , 127-163.		0
60	High-Quality, Ultraconformal Aluminum-Doped Zinc Oxide Nanoplasmonic and Hyperbolic Metamaterials. <i>Small</i> , 2016, 12, 892-901.	10.0	37
61	Copper-alloyed spinel black oxides and tandem-structured solar absorbing layers for high-temperature concentrating solar power systems. <i>Solar Energy</i> , 2016, 132, 257-266.	6.1	49
62	Highly stretchable, printable nanowire array optical polarizers. <i>Nanoscale</i> , 2016, 8, 15850-15856.	5.6	7
63	Propagation properties of metallic dielectric cladde waveguides. , 2016, , .		2
64	Direction Modulated Brachytherapy for Treatment of Cervical Cancer. II: Comparative Planning Study With Intracavitary and Intracavitaryâ€“Interstitial Techniques. <i>International Journal of Radiation Oncology Biology Physics</i> , 2016, 96, 440-448.	0.8	35
65	Three-dimensional fluorescent microscopy via simultaneous illumination and detection at multiple planes. <i>Scientific Reports</i> , 2016, 6, 31445.	3.3	18
66	Giant Kerr response of ultrathin gold films from quantum size effect. <i>Nature Communications</i> , 2016, 7, 13153.	12.8	89
67	Ultrafast Imaging using Spectral Resonance Modulation. <i>Scientific Reports</i> , 2016, 6, 25240.	3.3	12
68	Robustness of the far-field response of nonlocal plasmonic ensembles. <i>Scientific Reports</i> , 2016, 6, 28441.	3.3	26
69	Tubular optical microcavities of indefinite medium for sensitive liquid refractometers. <i>Lab on A Chip</i> , 2016, 16, 182-187.	6.0	28
70	Plasmon-Enhanced Two-Photon Absorption in Photoluminescent Semiconductor Nanocrystals. <i>ACS Photonics</i> , 2016, 3, 526-531.	6.6	52
71	Quantum Electrostatic Model for Optical Properties of Nanoscale Gold Films. <i>Nanophotonics</i> , 2015, 4, 413-418.	6.0	19
72	Light emission enhancement by using patterned multilayer hyperbolic metamaterials. , 2015, , .		0

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73	Anomalous Weak Scattering in Metal-Semiconductor Multilayer Hyperbolic Metamaterials. <i>Physical Review X</i> , 2015, 5, .	8.9	21
74	External occulter edge scattering control using metamaterials for exoplanet detection. <i>Proceedings of SPIE</i> , 2015, , .	0.8	0
75	NiO <sub>x</sub> -Fe <sub>2</sub> O <sub>3</sub> -coated p-Si photocathodes for enhanced solar water splitting in neutral pH water. <i>Nanoscale</i> , 2015, 7, 4900-4905.	5.6	17
76	Black oxide nanoparticles as durable solar absorbing material for high-temperature concentrating solar power system. <i>Solar Energy Materials and Solar Cells</i> , 2015, 134, 417-424.	6.2	68
77	Coherent Four-Fold Super-Resolution Imaging with Composite Photonicâ€“Plasmonic Structured Illumination. <i>ACS Photonics</i> , 2015, 2, 341-348.	6.6	29
78	Numerical study of hyperlenses for three-dimensional imaging and lithography. <i>Optics Express</i> , 2015, 23, 18501.	3.4	11
79	Hyperbolic metamaterials and their applications. <i>Progress in Quantum Electronics</i> , 2015, 40, 1-40.	7.0	535
80	Tandem structured spectrally selective coating layer of copper oxide nanowires combined with cobalt oxide nanoparticles. <i>Nano Energy</i> , 2015, 11, 247-259.	16.0	30
81	Enhanced spontaneous emission from the inside of a multilayer hyperbolic metamaterial (presentation) Tj ETQq1 1 0.784314 <sub>0</sub> rgBT /O		
82	Localized plasmon assisted structured illumination microscopy (presentation video). <i>Proceedings of SPIE</i> , 2014, , .	0.8	0
83	Enhanced spontaneous emission inside hyperbolic metamaterials. <i>Optics Express</i> , 2014, 22, 4301.	3.4	76
84	TIRF microscopy with ultra-short penetration depth. <i>Optics Express</i> , 2014, 22, 10728.	3.4	17
85	Localized surface plasmon assisted contrast microscopy for ultrathin transparent specimens. <i>Applied Physics Letters</i> , 2014, 105, 163102.	3.3	0
86	Ultralow Thermal Conductivity of Multilayers with Highly Dissimilar Debye Temperatures. <i>Nano Letters</i> , 2014, 14, 2448-2455.	9.1	77
87	Enhancing spontaneous emission rates of molecules using nanopatterned multilayer hyperbolic metamaterials. <i>Nature Nanotechnology</i> , 2014, 9, 48-53.	31.5	428
88	From Fano-like interference to superscattering with a single metallic nanodisk. <i>Nanoscale</i> , 2014, 6, 9093-9102.	5.6	39
89	High performance multi-scaled nanostructured spectrally selective coating for concentrating solar power. <i>Nano Energy</i> , 2014, 8, 238-246.	16.0	110
90	Localized plasmon assisted structured illumination microscopy for wide-field high-speed dispersion-independent super resolution imaging. <i>Nanoscale</i> , 2014, 6, 5807-5812.	5.6	61

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91	Si boride-coated Si nanoparticles with improved thermal oxidation resistance. Nano Energy, 2014, 9, 32-40.	16.0	10
92	Wide Field Super-Resolution Surface Imaging through Plasmonic Structured Illumination Microscopy. Nano Letters, 2014, 14, 4634-4639.	9.1	130
93	Nanopatterned Multilayer Hyperbolic Metamaterials for Enhancing Spontaneous Light Emission. , 2014, , .		0
94	Enhanced spontaneous emission by embedding light emitters inside hyperbolic metamaterials. , 2014, , .		0
95	Three-dimensional ZnO/Si broom-like nanowire heterostructures as photoelectrochemical anodes for solar energy conversion. Physica Status Solidi (A) Applications and Materials Science, 2013, 210, 2561-2568.	1.8	9
96	Control the dispersive properties of compound plasmonic lenses. Optics Communications, 2013, 291, 390-394.	2.1	3
97	Motion-Map constrained image reconstruction (MCIR): Application to four-dimensional cone-beam computed tomography. Medical Physics, 2013, 40, 121710.	3.0	19
98	Fast compressed sensing-based CBCT reconstruction using Barzilai-Borwein formulation for application to on-line IGRT. Medical Physics, 2012, 39, 1207-1217.	3.0	125
99	Organic light-emitting-diode-based plasmonic dark-field microscopy. Optics Letters, 2012, 37, 4359.	3.3	5
100	Liver motion during cone beam computed tomography guided stereotactic body radiation therapy. Medical Physics, 2012, 39, 6431-6442.	3.0	93
101	Strongly Enhanced Fluorescence Decay Rates on Multilayered Plasmonic Metamaterials. , 2012, , .		0
102	Breaking the imaging symmetry in negative refraction lenses. Optics Express, 2012, 20, 2581.	3.4	12
103	3D branched nanowire heterojunction photoelectrodes for high-efficiency solar water splitting and H <sub>2</sub> generation. Nanoscale, 2012, 4, 1515.	5.6	167
104	Hyperlenses and metalenses for far-field super-resolution imaging. Nature Communications, 2012, 3, 1205.	12.8	468
105	Design, fabrication and characterization of indefinite metamaterials of nanowires. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2011, 369, 3434-3446.	3.4	41
106	Metamaterial based lenses with distinctive imaging properties in forward and backward directions. , 2011, , .		0
107	Direct observation of plasmonic index ellipsoids on a deep-subwavelength metallic grating. Applied Optics, 2011, 50, G1.	2.1	12
108	Metamaterials for Enhanced Polarization Conversion in Plasmonic Excitation. ACS Nano, 2011, 5, 5100-5106.	14.6	30

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109	Four-dimensional cone-beam computed tomography and digital tomosynthesis reconstructions using respiratory signals extracted from transcutaneously inserted metal markers for liver SBRT. <i>Medical Physics</i> , 2011, 38, 1028-1036.	3.0	36
110	Extraordinary light focusing and Fourier transform properties of gradient-index metalenses. <i>Physical Review B</i> , 2011, 84, .	3.2	36
111	Tunable surface plasmon polaritons in Ag composite films by adding dielectrics or semiconductors. <i>Applied Physics Letters</i> , 2011, 98, 243114.	3.3	26
112	Ultra-Fast Digital Tomosynthesis Reconstruction Using General-Purpose GPU Programming for Image-Guided Radiation Therapy. <i>Technology in Cancer Research and Treatment</i> , 2011, 10, 295-306.	1.9	24
113	Spherical hyperlens for two-dimensional sub-diffractive imaging at visible frequencies. <i>Nature Communications</i> , 2010, 1, 143.	12.8	366
114	Advances in the hyperlens. <i>Science Bulletin</i> , 2010, 55, 2618-2624.	1.7	23
115	A super resolution metalens with phase compensation mechanism. <i>Applied Physics Letters</i> , 2010, 96, .	3.3	89
116	Form birefringence metal and its plasmonic anisotropy. <i>Applied Physics Letters</i> , 2010, 96, 041112.	3.3	21
117	Plasmonic dark field microscopy. <i>Applied Physics Letters</i> , 2010, 96, .	3.3	44
118	Combined Surface Plasmon and Classical Waveguiding through Metamaterial Fiber Design. <i>Nano Letters</i> , 2010, 10, 1-5.	9.1	103
119	Plasmonic Structured Illumination Microscopy. <i>Nano Letters</i> , 2010, 10, 2531-2536.	9.1	146
120	Focusing surface waves with an inhomogeneous metamaterial lens. <i>Applied Optics</i> , 2010, 49, A18.	2.1	5
121	Focusing light into deep subwavelength using metamaterial immersion lenses. <i>Optics Express</i> , 2010, 18, 4838.	3.4	51
122	Application of Anisotropic Metamaterials: Imaging Visible Light with Slab Lens. , 2010, , .		0
123	A simple design of flat hyperlens for lithography and imaging with half-pitch resolution down to 20 nm. <i>Applied Physics Letters</i> , 2009, 94, .	3.3	101
124	Plasmonic imaging beyond the diffraction limit. , 2009, , .		0
125	Imaging visible light using anisotropic metamaterial slab lens. <i>Optics Express</i> , 2009, 17, 22380.	3.4	44
126	Broad Band Two-Dimensional Manipulation of Surface Plasmons. <i>Nano Letters</i> , 2009, 9, 462-466.	9.1	93



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127	Bulky Nanowire Metamaterials for Negative Refraction at Broadband Frequencies from Visible to NIR. , 2009, , .		1
128	Design, fabrication and characterization of a Far-field Superlens. Solid State Communications, 2008, 146, 202-207.	1.9	12
129	Optical Negative Refraction in Bulk Metamaterials of Nanowires. Science, 2008, 321, 930-930.	12.6	798
130	Superlenses to overcome the diffraction limit. Nature Materials, 2008, 7, 435-441.	27.5	1,133
131	Projecting deep-subwavelength patterns from diffraction-limited masks using metal-dielectric multilayers. Applied Physics Letters, 2008, 93, .	3.3	90
132	Super-Resolution Imaging by Random Adsorbed Molecule Probes. Nano Letters, 2008, 8, 1159-1162.	9.1	33
133	Ray Optics at a Deep-Subwavelength Scale: A Transformation Optics Approach. Nano Letters, 2008, 8, 4243-4247.	9.1	79
134	Near-field Moiré effect mediated by surface plasmon polariton excitation. Optics Letters, 2007, 32, 629.	3.3	34
135	Experimental studies of far-field superlens for sub-diffractive optical imaging. Optics Express, 2007, 15, 6947.	3.4	74
136	Tuning the far-field superlens: from UV to visible. Optics Express, 2007, 15, 7095.	3.4	40
137	Development of optical hyperlens for imaging below the diffraction limit. Optics Express, 2007, 15, 15886.	3.4	192
138	Far-Field Optical Hyperlens Magnifying Sub-Diffraction-Limited Objects. Science, 2007, 315, 1686-1686.	12.6	1,895
139	Far-Field Optical Superlens. Nano Letters, 2007, 7, 403-408.	9.1	372
140	All Optical Interface for Parallel, Remote, and Spatiotemporal Control of Neuronal Activity. Nano Letters, 2007, 7, 3859-3863.	9.1	67
141	Two-Dimensional Imaging by Far-Field Superlens at Visible Wavelengths. Nano Letters, 2007, 7, 3360-3365.	9.1	148
142	Negative group velocity of surface plasmons on thin metallic films. , 2006, 6323, 224.		9
143	Surface plasmon beats formed on thin metal films. , 2006, 6323, 215.		2
144	Theory of optical imaging beyond the diffraction limit with a far-field superlens. , 2006, 6323, 207.		3

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145	Theory of the transmission properties of an optical far-field superlens for imaging beyond the diffraction limit. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2006, 23, 2383.	2.1	138
146	Resonant and non-resonant generation and focusing of surface plasmons with circular gratings. <i>Optics Express</i> , 2006, 14, 5664.	3.4	131
147	Tuning the focus of a plasmonic lens by the incident angle. <i>Applied Physics Letters</i> , 2006, 88, 171108.	3.3	106
148	Focusing Surface Plasmons with a Plasmonic Lens. <i>Nano Letters</i> , 2005, 5, 1726-1729.	9.1	539
149	Large positive and negative lateral optical beam displacements due to surface plasmon resonance. <i>Applied Physics Letters</i> , 2004, 85, 372-374.	3.3	230
150	Regenerating evanescent waves from a silver superlens. <i>Optics Express</i> , 2003, 11, 682.	3.4	115
151	Rapid growth of evanescent wave by a silver superlens. <i>Applied Physics Letters</i> , 2003, 83, 5184-5186.	3.3	162
152	Ultrathin Layered Hyperbolic Metamaterial-Assisted Illumination Nanoscopy. <i>Nano Letters</i> , 0, , .	9.1	2