

# Fengnian Xia

## List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

136  
papers

28,933  
citations

66  
h-index

170  
g-index

181  
ext. papers

33,045  
ext. citations

14  
avg, IF

7.38  
L-index

#	Paper	IF	Citations
136	Intelligent infrared sensing enabled by tunable moiré quantum geometry.. <i>Nature</i> , <b>2022</b> , 604, 266-272	50.4	7
135	Ultrafast Silicon Nanomembrane Microbolometer for Long-Wavelength Infrared Light Detection. <i>Nano Letters</i> , <b>2021</b> , 21, 8385-8392	11.5	3
134	A wavelength-scale black phosphorus spectrometer. <i>Nature Photonics</i> , <b>2021</b> , 15, 601-607	33.9	28
133	Probing interlayer interaction via chiral phonons in layered honeycomb materials. <i>Physical Review B</i> , <b>2021</b> , 103,	3.3	4
132	Strong mid-infrared photoresponse in small-twist-angle bilayer graphene. <i>Nature Photonics</i> , <b>2020</b> , 14, 549-553	33.9	37
131	Emergent quantum materials. <i>MRS Bulletin</i> , <b>2020</b> , 45, 340-347	3.2	7
130	Artificial Metaphotonics Born Naturally in Two Dimensions. <i>Chemical Reviews</i> , <b>2020</b> , 120, 6197-6246	68.1	42
129	Room Temperature Graphene Mid-Infrared Bolometer with a Broad Operational Wavelength Range. <i>ACS Photonics</i> , <b>2020</b> , 7, 1206-1215	6.3	19
128	Semimetals for high-performance photodetection. <i>Nature Materials</i> , <b>2020</b> , 19, 830-837	27	70
127	Widely tunable mid-infrared light emission in thin-film black phosphorus. <i>Science Advances</i> , <b>2020</b> , 6, eaay6134	61.34	42
126	Black Phosphorus High-Frequency Transistors with Local Contact Bias. <i>ACS Nano</i> , <b>2020</b> , 14, 2118-2125	16.7	14
125	Moiré Band Topology in Twisted Bilayer Graphene. <i>Nano Letters</i> , <b>2020</b> , 20, 6076-6083	11.5	12
124	Electrically tunable physical properties of two-dimensional materials. <i>Nano Today</i> , <b>2019</b> , 27, 99-119	17.9	22
123	Plasmonics in Atomically Thin Crystalline Silver Films. <i>ACS Nano</i> , <b>2019</b> , 13, 7771-7779	16.7	50
122	Black phosphorus and its isoelectronic materials. <i>Nature Reviews Physics</i> , <b>2019</b> , 1, 306-317	23.6	107
121	Bright Mid-Infrared Photoluminescence from Thin-Film Black Phosphorus. <i>Nano Letters</i> , <b>2019</b> , 19, 1488-1493	14.93	58
120	Graphene Schottky Varactor Diodes for High-Performance Photodetection. <i>ACS Photonics</i> , <b>2019</b> , 6, 191061915	1915	7

119	Symmetry-Controlled Electron-Phonon Interactions in van der Waals Heterostructures. <i>ACS Nano</i> , <b>2019</b> , 13, 552-559	16.7	10
118	Revealing the Contribution of Individual Factors to Hydrogen Evolution Reaction Catalytic Activity. <i>Advanced Materials</i> , <b>2018</b> , 30, e1706076	24	54
117	Synthesis of Crystalline Black Phosphorus Thin Film on Sapphire. <i>Advanced Materials</i> , <b>2018</b> , 30, 1703748	24	67
116	Large-Velocity Saturation in Thin-Film Black Phosphorus Transistors. <i>ACS Nano</i> , <b>2018</b> , 12, 5003-5010	16.7	32
115	Air-Stable Room-Temperature Mid-Infrared Photodetectors Based on hBN/Black Arsenic Phosphorus/hBN Heterostructures. <i>Nano Letters</i> , <b>2018</b> , 18, 3172-3179	11.5	87
114	Photothermal Engineering of Graphene Plasmons. <i>Physical Review Letters</i> , <b>2018</b> , 121, 057404	7.4	15
113	Progress on Black Phosphorus Photonics. <i>Advanced Optical Materials</i> , <b>2018</b> , 6, 1800365	8.1	29
112	Valley-Selective Linear Dichroism in Layered Tin Sulfide. <i>ACS Photonics</i> , <b>2018</b> , 5, 3814-3819	6.3	18
111	Efficient electrical detection of mid-infrared graphene plasmons at room temperature. <i>Nature Materials</i> , <b>2018</b> , 17, 986-992	27	84
110	Efficient electrical control of thin-film black phosphorus bandgap. <i>Nature Communications</i> , <b>2017</b> , 8, 14474	17.4	183
109	Electrothermal Control of Graphene Plasmon-Phonon Polaritons. <i>Advanced Materials</i> , <b>2017</b> , 29, 1700566	24	20
108	Protective molecular passivation of black phosphorus. <i>Npj 2D Materials and Applications</i> , <b>2017</b> , 1,	8.8	46
107	Black phosphorous optoelectronic devices <b>2017</b> ,		1
106	Single-crystalline germanium nanomembrane photodetectors on foreign nanocavities. <i>Science Advances</i> , <b>2017</b> , 3, e1602783	14.3	51
105	Infrared Nanophotonics Based on Graphene Plasmonics. <i>ACS Photonics</i> , <b>2017</b> , 4, 2989-2999	6.3	70
104	Enabling novel device functions with black phosphorus/MoS2 van der Waals heterostructures. <i>Science Bulletin</i> , <b>2017</b> , 62, 1557-1558	10.6	5
103	Widely tunable black phosphorus mid-infrared photodetector. <i>Nature Communications</i> , <b>2017</b> , 8, 1672	17.4	191
102	Stable Graphene-Two-Dimensional Multiphase Perovskite Heterostructure Phototransistors with High Gain. <i>Nano Letters</i> , <b>2017</b> , 17, 7330-7338	11.5	63

101	Feature issue introduction: two-dimensional materials for photonics and optoelectronics. <i>Optical Materials Express</i> , <b>2016</b> , 6, 2458	2.6	1
100	Solution-processed titanium carbide MXene films examined as highly transparent conductors. <i>Nanoscale</i> , <b>2016</b> , 8, 16371-16378	7.7	165
99	A Dynamically Reconfigurable Ambipolar Black Phosphorus Memory Device. <i>ACS Nano</i> , <b>2016</b> , 10, 10428-10435	16.7	72
98	Black Phosphorus Mid-Infrared Photodetectors with High Gain. <i>Nano Letters</i> , <b>2016</b> , 16, 4648-55	11.5	476
97	Anisotropic Black Phosphorus Synaptic Device for Neuromorphic Applications. <i>Advanced Materials</i> , <b>2016</b> , 28, 4991-7	24	217
96	Black Phosphorus Optoelectronics <b>2016</b> ,		1
95	Coupling-Enhanced Broadband Mid-infrared Light Absorption in Graphene Plasmonic Nanostructures. <i>ACS Nano</i> , <b>2016</b> , 10, 11172-11178	16.7	46
94	Optoelectronic devices based on two-dimensional transition metal dichalcogenides. <i>Nano Research</i> , <b>2016</b> , 9, 1543-1560	10	136
93	Titanium Carbide MXene Flakes as Novel 2D Metallic Solution-Processed Films. <i>ECS Transactions</i> , <b>2016</b> , 75, 37-41	1	2
92	Tunable Plasmon-Phonon Polaritons in Layered Graphene-Hexagonal Boron Nitride Heterostructures. <i>ACS Photonics</i> , <b>2015</b> , 2, 907-912	6.3	57
91	Synthesis of thin-film black phosphorus on a flexible substrate. <i>2D Materials</i> , <b>2015</b> , 2, 031002	5.9	96
90	Highly anisotropic and robust excitons in monolayer black phosphorus. <i>Nature Nanotechnology</i> , <b>2015</b> , 10, 517-21	28.7	999
89	The renaissance of black phosphorus. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2015</b> , 112, 4523-30	11.5	900
88	Interlayer interactions in anisotropic atomically thin rhenium diselenide. <i>Nano Research</i> , <b>2015</b> , 8, 3651-3661	16.7	133
87	Recent Advances in Two-Dimensional Materials beyond Graphene. <i>ACS Nano</i> , <b>2015</b> , 9, 11509-39	16.7	1581
86	Strong light-matter coupling in two-dimensional atomic crystals. <i>Nature Photonics</i> , <b>2015</b> , 9, 30-34	33.9	619
85	Graphene Plasmonic Metasurfaces to Steer Infrared Light. <i>Scientific Reports</i> , <b>2015</b> , 5, 12423	4.9	165
84	Abnormal cubic-tetragonal phase transition of barium strontium titanate nanoparticles studied by in situ Raman spectroscopy and transmission electron microscopy heating experiments. <i>Applied Physics Letters</i> , <b>2015</b> , 107, 182902	3.4	8

83	Black Arsenic-Phosphorus: Layered Anisotropic Infrared Semiconductors with Highly Tunable Compositions and Properties. <i>Advanced Materials</i> , <b>2015</b> , 27, 4423-4429	24	282
82	Two-dimensional materials for nanophotonics application. <i>Nanophotonics</i> , <b>2015</b> , 4, 128-142	6.3	76
81	Introduction to the issue on graphene optoelectronics. <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , <b>2014</b> , 20, 6-8	3.8	3
80	Electronic transport and device prospects of monolayer molybdenum disulphide grown by chemical vapour deposition. <i>Nature Communications</i> , <b>2014</b> , 5, 3087	17.4	327
79	Black phosphorus radio-frequency transistors. <i>Nano Letters</i> , <b>2014</b> , 14, 6424-9	11.5	270
78	Tunable optical properties of multilayer black phosphorus thin films. <i>Physical Review B</i> , <b>2014</b> , 90,	3.3	496
77	Rediscovering black phosphorus as an anisotropic layered material for optoelectronics and electronics. <i>Nature Communications</i> , <b>2014</b> , 5, 4458	17.4	2389
76	Novel midinfrared plasmonic properties of bilayer graphene. <i>Physical Review Letters</i> , <b>2014</b> , 112, 116801	7.4	42
75	Plasmons and screening in monolayer and multilayer black phosphorus. <i>Physical Review Letters</i> , <b>2014</b> , 113, 106802	7.4	405
74	Tunable phonon-induced transparency in bilayer graphene nanoribbons. <i>Nano Letters</i> , <b>2014</b> , 14, 4581-6	11.5	109
73	Approaching total absorption at near infrared in a large area monolayer graphene by critical coupling. <i>Applied Physics Letters</i> , <b>2014</b> , 105, 181105	3.4	83
72	Two-dimensional material nanophotonics. <i>Nature Photonics</i> , <b>2014</b> , 8, 899-907	33.9	1805
71	Photoconductivity of biased graphene. <i>Nature Photonics</i> , <b>2013</b> , 7, 53-59	33.9	382
70	Damping pathways of mid-infrared plasmons in graphene nanostructures. <i>Nature Photonics</i> , <b>2013</b> , 7, 394-399	33.9	682
69	The Interaction of Light and Graphene: Basics, Devices, and Applications. <i>Proceedings of the IEEE</i> , <b>2013</b> , 101, 1717-1731	14.3	77
68	Photocurrent in graphene harnessed by tunable intrinsic plasmons. <i>Nature Communications</i> , <b>2013</b> , 4, 1951	17.4	242
67	. <i>Proceedings of the IEEE</i> , <b>2013</b> , 101, 1620-1637	14.3	75
66	Graphene applications in electronics and photonics. <i>MRS Bulletin</i> , <b>2012</b> , 37, 1225-1234	3.2	144

65	Hierarchical magnetic yolk-shell microspheres with mixed barium silicate and barium titanium oxide shells for microwave absorption enhancement. <i>Journal of Materials Chemistry</i> , <b>2012</b> , 22, 9277		76
64	Infrared spectroscopy of tunable Dirac terahertz magneto-plasmons in graphene. <i>Nano Letters</i> , <b>2012</b> , 12, 3766-71	11.5	198
63	Plasmonics of coupled graphene micro-structures. <i>New Journal of Physics</i> , <b>2012</b> , 14, 125001	2.9	66
62	Slow light enhancement of four-wave mixing in coupled silicon-on-insulator microrings <b>2012</b> ,		1
61	Microwave absorption enhancement of multifunctional composite microspheres with spinel Fe <sub>3</sub> O <sub>4</sub> Cores and Anatase TiO <sub>2</sub> shells. <i>Small</i> , <b>2012</b> , 8, 1214-21	11	621
60	State-of-the-art graphene high-frequency electronics. <i>Nano Letters</i> , <b>2012</b> , 12, 3062-7	11.5	318
59	Quantum behavior of graphene transistors near the scaling limit. <i>Nano Letters</i> , <b>2012</b> , 12, 1417-23	11.5	62
58	Tunable infrared plasmonic devices using graphene/insulator stacks. <i>Nature Nanotechnology</i> , <b>2012</b> , 7, 330-4	28.7	935
57	Telecommunications-band heralded single photons from a silicon nanophotonic chip. <i>Applied Physics Letters</i> , <b>2012</b> , 100, 261104	3.4	103
56	Low-power continuous-wave four-wave mixing in silicon coupled-resonator optical waveguides. <i>Optics Letters</i> , <b>2011</b> , 36, 2964-6	3	15
55	The origins and limits of metal-graphene junction resistance. <i>Nature Nanotechnology</i> , <b>2011</b> , 6, 179-84	28.7	640
54	High-frequency, scaled graphene transistors on diamond-like carbon. <i>Nature</i> , <b>2011</b> , 472, 74-8	50.4	727
53	Infrared spectroscopy of wafer-scale graphene. <i>ACS Nano</i> , <b>2011</b> , 5, 9854-60	16.7	159
52	Microwave absorption enhancement and electron microscopy characterization of BaTiO <sub>3</sub> nano-torus. <i>Nanoscale</i> , <b>2011</b> , 3, 3860-7	7.7	102
51	Graphene Nanophotonics. <i>IEEE Photonics Journal</i> , <b>2011</b> , 3, 293-295	1.8	8
50	Reinventing germanium avalanche photodetector for nanophotonic on-chip optical interconnects. <i>Nature</i> , <b>2010</b> , 464, 80-4	50.4	410
49	Graphene photodetectors for high-speed optical communications. <i>Nature Photonics</i> , <b>2010</b> , 4, 297-301	33.9	1782
48	(Invited) Integration of Germanium Avalanche Photodetectors on Silicon for On-Chip Optical Interconnects. <i>ECS Transactions</i> , <b>2010</b> , 33, 749-756	1	

47	High on-off ratio Bilayer Graphene complementary field effect transistors <b>2010</b> ,		3
46	RF performance of short channel graphene field-effect transistor <b>2010</b> ,		21
45	Graphene field-effect transistors with high on/off current ratio and large transport band gap at room temperature. <i>Nano Letters</i> , <b>2010</b> , 10, 715-8	11.5	1034
44	Graphene-based fast electronics and optoelectronics <b>2010</b> ,		7
43	CMOS-integrated high-speed MSM germanium waveguide photodetector. <i>Optics Express</i> , <b>2010</b> , 18, 4986-99	3.9	135
42	Statistics of light transport in 235-ring silicon coupled-resonator optical waveguides. <i>Optics Express</i> , <b>2010</b> , 18, 26505-16	3.3	57
41	Waveguide dispersion effects in silicon-on-insulator coupled-resonator optical waveguides. <i>Optics Letters</i> , <b>2010</b> , 35, 3030-2	3	27
40	235-ring Coupled-Resonator Optical Waveguides <b>2010</b> ,		2
39	CMOS-Integrated Optical Receivers for On-Chip Interconnects. <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , <b>2010</b> , 16, 1376-1385	3.8	63
38	CMOS-Integrated 40GHz Germanium Waveguide Photodetector for On-chip Optical Interconnects <b>2009</b> ,		16
37	Ultrafast graphene photodetector. <i>Nature Nanotechnology</i> , <b>2009</b> , 4, 839-43	28.7	2309
36	Utilization of a buffered dielectric to achieve high field-effect carrier mobility in graphene transistors. <i>Nano Letters</i> , <b>2009</b> , 9, 4474-8	11.5	310
35	Role of contacts in graphene transistors: A scanning photocurrent study. <i>Physical Review B</i> , <b>2009</b> , 79,	3.3	319
34	Photocurrent imaging and efficient photon detection in a graphene transistor. <i>Nano Letters</i> , <b>2009</b> , 9, 1039-44	11.5	486
33	Communication technologies for exascale systems <b>2009</b> ,		4
32	A microcavity-controlled, current-driven, on-chip nanotube emitter at infrared wavelengths. <i>Nature Nanotechnology</i> , <b>2008</b> , 3, 609-13	28.7	75
31	High-throughput silicon nanophotonic wavelength-insensitive switch for on-chip optical networks. <i>Nature Photonics</i> , <b>2008</b> , 2, 242-246	33.9	346
30	Ultrahigh-Bandwidth Silicon Photonic Nanowire Waveguides for On-Chip Networks. <i>IEEE Photonics Technology Letters</i> , <b>2008</b> , 20, 398-400	2.2	109

29	Nonlinear-optical phase modification in dispersion-engineered Si photonic wires. <i>Optics Express</i> , <b>2008</b> , 16, 1280-99	3-3	73
28	High-Throughput Silicon Nanophotonic Deflection Switch for On-Chip Optical Networks <b>2008</b> ,		2
27	Silicon micro-resonators for on-chip optical networks <b>2008</b> ,		3
26	Carbon nanotubes and optical confinement: controlling light emission in nanophotonic devices <b>2008</b> ,		3
25	Silicon photonic wire circuits for on-chip optical interconnects <b>2008</b> ,		1
24	Ultracompact optical buffers on a silicon chip. <i>Nature Photonics</i> , <b>2007</b> , 1, 65-71	33-9	814
23	Demonstration of 300 Gbps Error-Free Transmission of WDM Data Stream in Silicon Photonic Wires <b>2007</b> ,		2
22	Ultra-compact silicon WDM optical filters with flat - top response for on-chip optical interconnects <b>2007</b> ,		2
21	Ultra-compact high order ring resonator filters using submicron silicon photonic wires for on-chip optical interconnects. <i>Optics Express</i> , <b>2007</b> , 15, 11934-41	3-3	307
20	Supercontinuum generation in silicon photonic wires. <i>Optics Express</i> , <b>2007</b> , 15, 15242-9	3-3	142
19	Coupled resonator optical waveguides based on silicon-on-insulator photonic wires. <i>Applied Physics Letters</i> , <b>2006</b> , 89, 041122	3-4	73
18	Group index and group velocity dispersion in silicon-on-insulator photonic wires. <i>Optics Express</i> , <b>2006</b> , 14, 3853-63	3-3	200
17	Mode conversion losses in silicon-on-insulator photonic wire based racetrack resonators. <i>Optics Express</i> , <b>2006</b> , 14, 3872-86	3-3	95
16	Group index and group velocity dispersion in silicon-on-insulator photonic wires: errata. <i>Optics Express</i> , <b>2006</b> , 14, 6372	3-3	3
15	A monolithically integrated optical heterodyne receiver. <i>IEEE Photonics Technology Letters</i> , <b>2005</b> , 17, 1716-1718	2-2	3
14	Photonic integration using asymmetric twin-waveguide (ATG) technology: part II-devices. <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , <b>2005</b> , 11, 30-42	3-8	26
13	Photonic integration using asymmetric twin-waveguide (ATG) technology: part I-concepts and theory. <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , <b>2005</b> , 11, 17-29	3-8	29
12	A monolithically integrated long-wavelength balanced photodiode using asymmetric twin-waveguide technology. <i>IEEE Photonics Technology Letters</i> , <b>2004</b> , 16, 236-238	2-2	20



11	An asymmetric twin waveguide eight-channel polarization-independent arrayed waveguide grating with an integrated photodiode array. <i>IEEE Photonics Technology Letters</i> , <b>2004</b> , 16, 1170-1172	2.2	12
10	Reduction of absorption loss in asymmetric twin waveguide laser tapers using argon plasma-enhanced quantum-well intermixing. <i>IEEE Photonics Technology Letters</i> , <b>2004</b> , 16, 2221-2223	2.2	8
9	Nonreciprocity of counterpropagating signals in a monolithically integrated Sagnac interferometer. <i>Optics Letters</i> , <b>2004</b> , 29, 513-5	3	15
8	Nonreciprocity of counterpropagating signals in a monolithically integrated Sagnac interferometer: erratum. <i>Optics Letters</i> , <b>2004</b> , 29, 1156	3	
7	All-optical wavelength conversion using a regrowth-free monolithically integrated Sagnac interferometer. <i>IEEE Photonics Technology Letters</i> , <b>2003</b> , 15, 254-256	2.2	41
6	Monolithic integration of a semiconductor optical amplifier and a high bandwidth p-i-n photodiode using asymmetric twin-waveguide technology. <i>IEEE Photonics Technology Letters</i> , <b>2003</b> , 15, 452-454	2.2	23
5	High T0 long-wavelength InGaAsN quantum-well lasers grown by GSMBE using a solid arsenic source. <i>IEEE Photonics Technology Letters</i> , <b>2002</b> , 14, 597-599	2.2	40
4	A high-responsivity high-bandwidth asymmetric twin-waveguide coupled InGaAs-InP-InAlAs avalanche photodiode. <i>IEEE Photonics Technology Letters</i> , <b>2002</b> , 14, 1590-1592	2.2	35
3	An asymmetric twin-waveguide high-bandwidth photodiode using a lateral taper coupler. <i>IEEE Photonics Technology Letters</i> , <b>2001</b> , 13, 845-847	2.2	65
2	Asymmetric twin-waveguide 1.55- $\mu\text{m}$ wavelength laser with a distributed Bragg reflector. <i>IEEE Photonics Technology Letters</i> , <b>2000</b> , 12, 468-470	2.2	16
1	Integrated photonics using asymmetric twin-waveguide structures		2