

# Xiaodong Pi

## 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.

122  
papers

3,627  
citations

35  
h-index

57  
g-index

133  
ext. papers

4,325  
ext. citations

6.4  
avg, IF

5.5  
L-index

#	Paper	IF	Citations
122	Deformation of 4H-SiC: The role of dopants. <i>Applied Physics Letters</i> , <b>2022</b> , 120, 052105	3.4	2
121	Compensation of p-type doping in Al-doped 4H-SiC. <i>Journal of Applied Physics</i> , <b>2022</b> , 131, 185703	2.5	2
120	Doping-dependent nucleation of basal plane dislocations in 4H-SiC. <i>Journal Physics D: Applied Physics</i> , <b>2022</b> , 55, 334002	3	1
119	Low-temperature processed Tantalum/ Niobium co-doped TiO <sub>2</sub> electron transport layer for high-performance planar perovskite solar cells. <i>Nanotechnology</i> , <b>2021</b> ,	3.4	8
118	Toward Wafer-Scale Production of 2D Transition Metal Chalcogenides. <i>Advanced Electronic Materials</i> , <b>2021</b> , 7, 2100278	6.4	1
117	CKAP4 Antibody-Conjugated Si Quantum Dot Micelles for Targeted Imaging of Lung Cancer. <i>Nanoscale Research Letters</i> , <b>2021</b> , 16, 124	5	3
116	Optoelectronic Synaptic Devices for Neuromorphic Computing. <i>Advanced Intelligent Systems</i> , <b>2021</b> , 3, 2000099	6	42
115	Silicon-based inorganic-organic hybrid optoelectronic synaptic devices simulating cross-modal learning. <i>Science China Information Sciences</i> , <b>2021</b> , 64, 1	3.4	4
114	Recent Progress on the Scanning Tunneling Microscopy and Spectroscopy Study of Semiconductor Heterojunctions. <i>Small</i> , <b>2021</b> , e2100655	11	1
113	Highly efficient and stable inorganic CsPbBr <sub>3</sub> perovskite solar cells via vacuum co-evaporation. <i>Applied Surface Science</i> , <b>2021</b> , 562, 150153	6.7	6
112	Enhanced photoluminescence of silicon quantum dots in the presence of both energy transfer enhancement and emission enhancement mechanisms assisted by the double plasmon modes of gold nanorods. <i>Nanoscale Advances</i> , <b>2021</b> , 3, 4810-4815	5.1	1
111	Numerical Simulation of a Novel Method for PVT Growth of SiC by Adding a Graphite Block. <i>Crystals</i> , <b>2021</b> , 11, 1581	2.3	0
110	Theoretical Study of Interfacial and Electronic Properties of Transition Metal Dichalcogenides and Organic Molecules Based van der Waals Heterostructures. <i>Advanced Theory and Simulations</i> , <b>2020</b> , 3, 2000045	3.5	8
109	Cera alba-assisted ultraclean graphene transfer for high-performance Pbl UV photodetectors. <i>Nanotechnology</i> , <b>2020</b> , 31, 365204	3.4	2
108	Silicon-based optoelectronic synaptic devices. <i>Chinese Physics B</i> , <b>2020</b> , 29, 070703	1.2	10
107	Optically Stimulated Synaptic Devices Based on the Hybrid Structure of Silicon Nanomembrane and Perovskite. <i>Nano Letters</i> , <b>2020</b> , 20, 3378-3387	11.5	46
106	Zero-power optoelectronic synaptic devices. <i>Nano Energy</i> , <b>2020</b> , 73, 104790	17.1	44

105	Recent progress on optoelectronic synaptic devices. <i>Scientia Sinica Informationis</i> , <b>2020</b> , 50, 892-912	2.3	5
104	Perovskite-Enhanced Silicon-Nanocrystal Optoelectronic Synaptic Devices for the Simulation of Biased and Correlated Random-Walk Learning. <i>Research</i> , <b>2020</b> , 2020, 7538450	7.8	4
103	Ink Engineering of Inkjet Printing Perovskite. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2020</b> , 12, 39082-39091	9.1	33
102	Plasmon-Coupled Förster Resonance Energy Transfer between Silicon Quantum Dots. <i>Journal of Physical Chemistry C</i> , <b>2019</b> , 123, 23604-23609	3.8	8
101	Developing near-infrared quantum-dot light-emitting diodes to mimic synaptic plasticity. <i>Science China Materials</i> , <b>2019</b> , 62, 1470-1478	7.1	15
100	Interfacial Properties for a Monolayer CrS <sub>2</sub> Contact with Metal: A Theoretical Perspective. <i>Physica Status Solidi (B): Basic Research</i> , <b>2019</b> , 256, 1800597	1.3	4
99	Trap-Free Heterostructure of PbS Nanoplatelets on InP(001) by Chemical Epitaxy. <i>ACS Nano</i> , <b>2019</b> , 13, 1961-1967	16.7	6
98	Silicon nanocrystals: unfading silicon materials for optoelectronics. <i>Materials Science and Engineering Reports</i> , <b>2019</b> , 138, 85-117	30.9	41
97	Synaptic silicon-nanocrystal phototransistors for neuromorphic computing. <i>Nano Energy</i> , <b>2019</b> , 63, 103859	5.1	51
96	Spontaneous symmetry lowering of Si (001) towards two-dimensional ferro/antiferroelectric behavior. <i>Physical Review Materials</i> , <b>2019</b> , 3,	3.2	5
95	Colloidal Silicon Quantum Dots and Solar Cells <b>2019</b> , 933-958		
94	Resolving the Controversial Existence of Silicene and Germanene Nanosheets Grown on Graphite. <i>ACS Nano</i> , <b>2018</b> , 12, 4754-4760	16.7	27
93	Al <sub>2</sub> O <sub>3</sub> -Interlayer-Enhanced Performance of All-Inorganic Silicon-Quantum-Dot Near-Infrared Light-Emitting Diodes. <i>IEEE Transactions on Electron Devices</i> , <b>2018</b> , 65, 577-583	2.9	12
92	Light-Emitting Diodes Based on Colloidal Silicon Quantum Dots with Octyl and Phenylpropyl Ligands. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2018</b> , 10, 5959-5966	9.5	51
91	A review of theoretical study of graphene chemical vapor deposition synthesis on metals: nucleation, growth, and the role of hydrogen and oxygen. <i>Reports on Progress in Physics</i> , <b>2018</b> , 81, 036501	14.4	30
90	Light-emitting diodes based on colloidal silicon quantum dots. <i>Journal of Semiconductors</i> , <b>2018</b> , 39, 061003	0.3	13
89	A Silicon Cluster Based Single Electron Transistor with Potential Room-Temperature Switching. <i>Chinese Physics Letters</i> , <b>2018</b> , 35, 037301	1.8	12
88	Broadband optoelectronic synaptic devices based on silicon nanocrystals for neuromorphic computing. <i>Nano Energy</i> , <b>2018</b> , 52, 422-430	17.1	97

87	High and Fast Response of a Graphene/Silicon Photodetector Coupled with 2D Fractal Platinum Nanoparticles. <i>Advanced Optical Materials</i> , <b>2018</b> , 6, 1700793	8.1	22
86	Boron nanocrystals as high-energy-density fuels. <i>Journal Physics D: Applied Physics</i> , <b>2018</b> , 51, 025305	3	4
85	Electronic and thermoelectric properties of atomically thin CSi/C and CGe/C superlattices. <i>Nanotechnology</i> , <b>2018</b> , 29, 045402	3.4	4
84	Hybrid Structure of Silicon Nanocrystals and 2D WSe <sub>2</sub> for Broadband Optoelectronic Synaptic Devices <b>2018</b> ,		10
83	Electroluminescent synaptic devices with logic functions. <i>Nano Energy</i> , <b>2018</b> , 54, 383-389	17.1	51
82	Perovskite/Organic Bulk-Heterojunction Integrated Ultrasensitive Broadband Photodetectors with High Near-Infrared External Quantum Efficiency over 70. <i>Small</i> , <b>2018</b> , 14, e1802349	11	33
81	Formation, Stability, Geometry and Band Structure of Organically Surface-Modified Germanane. <i>Journal of Materials Science and Technology</i> , <b>2017</b> , 33, 59-64	9.1	11
80	Constructing submicron textures on mc-Si solar cells via copper-catalyzed chemical etching. <i>Applied Physics Letters</i> , <b>2017</b> , 110, 093901	3.4	19
79	Density functional theory study on the B doping and B/P codoping of Si nanocrystals embedded in SiO <sub>2</sub> . <i>Physical Review B</i> , <b>2017</b> , 95,	3.3	20
78	Silicon-Quantum-Dot Light-Emitting Diodes With Interlayer-Enhanced Hole Transport. <i>IEEE Photonics Journal</i> , <b>2017</b> , 9, 1-10	1.8	21
77	Electronic and magnetic properties of graphene, silicene and germanene with varying vacancy concentration. <i>AIP Advances</i> , <b>2017</b> , 7, 045308	1.5	38
76	A self-powered high-performance graphene/silicon ultraviolet photodetector with ultra-shallow junction: breaking the limit of silicon?. <i>Npj 2D Materials and Applications</i> , <b>2017</b> , 1,	8.8	144
75	Fully Transparent Quantum Dot Light-Emitting Diode with a Laminated Top Graphene Anode. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2017</b> , 9, 24005-24010	9.5	28
74	A Broadband Fluorographene Photodetector. <i>Advanced Materials</i> , <b>2017</b> , 29, 1700463	24	72
73	Plasmonic Silicon Quantum Dots Enabled High-Sensitivity Ultrabroadband Photodetection of Graphene-Based Hybrid Phototransistors. <i>ACS Nano</i> , <b>2017</b> , 11, 9854-9862	16.7	209
72	Fully radiative relaxation of silicon nanocrystals in colloidal ensemble revealed by advanced treatment of decay kinetics. <i>Journal of Applied Physics</i> , <b>2017</b> , 122, 034304	2.5	31
71	Reduction in Modulus of Suspended Sub-2 nm Single Crystalline Silicon Nanomembranes. <i>Advanced Materials Interfaces</i> , <b>2017</b> , 4, 1700529	4.6	2
70	Density functional theory study on the boron and phosphorus doping of germanium quantum dots. <i>RSC Advances</i> , <b>2017</b> , 7, 50935-50941	3.7	0

69	Graphene/silicon-quantum-dots/Si Schottky-PN cascade heterojunction for short-wavelength infrared photodetection <b>2017</b> ,		5
68	Colloidal Silicon Quantum Dots and Solar Cells <b>2017</b> , 1-27		0
67	Silicon nanocrystals doped with boron and phosphorous. <i>Series in Materials Science and Engineering</i> , <b>2017</b> , 341-366		
66	Graphene Coupled with Silicon Quantum Dots for High-Performance Bulk-Silicon-Based Schottky-Junction Photodetectors. <i>Advanced Materials</i> , <b>2016</b> , 28, 4912-9	24	163
65	Size-Dependent Structures and Optical Absorption of Boron-Hyperdoped Silicon Nanocrystals. <i>Advanced Optical Materials</i> , <b>2016</b> , 4, 700-707	8.1	49
64	Efficient silicon quantum dots light emitting diodes with an inverted device structure. <i>Journal of Materials Chemistry C</i> , <b>2016</b> , 4, 673-677	7.1	48
63	Ligand-Free, Colloidal, and Plasmonic Silicon Nanocrystals Heavily Doped with Boron. <i>ACS Photonics</i> , <b>2016</b> , 3, 415-422	6.3	58
62	Structures, Oxidation, and Charge Transport of Phosphorus-Doped Germanium Nanocrystals. <i>Particle and Particle Systems Characterization</i> , <b>2016</b> , 33, 271-278	3.1	19
61	Silicon Nanocrystals: Size-Dependent Structures and Optical Absorption of Boron-Hyperdoped Silicon Nanocrystals (Advanced Optical Materials 5/2016). <i>Advanced Optical Materials</i> , <b>2016</b> , 4, 646-646	8.1	2
60	Silicon-nanocrystal-incorporated ternary hybrid solar cells. <i>Nano Energy</i> , <b>2016</b> , 26, 305-312	17.1	31
59	Formation, Structures and Electronic Properties of Silicene Oxides on Ag(111). <i>Journal of Materials Science and Technology</i> , <b>2016</b> ,	9.1	7
58	Observation of van Hove Singularities in Twisted Silicene Multilayers. <i>ACS Central Science</i> , <b>2016</b> , 2, 517-216.8	216.8	28
57	Optimum Quantum Yield of the Light Emission from 2 to 10 nm Hydrosilylated Silicon Quantum Dots. <i>Particle and Particle Systems Characterization</i> , <b>2016</b> , 33, 44-52	3.1	65
56	Quasi-Two-Dimensional SiC and SiC <sub>2</sub> : Interaction of Silicon and Carbon at Atomic Thin Lattice Plane. <i>Journal of Physical Chemistry C</i> , <b>2015</b> , 119, 19772-19779	3.8	74
55	Density functional theory study on organically surface-modified silicene. <i>RSC Advances</i> , <b>2015</b> , 5, 33831-33837	33837	19
54	Regulation of bifurcated cytokine induction by surface charge of nanoparticles during interaction between CpG oligodeoxynucleotides and toll-like receptor 9. <i>Journal of Drug Delivery Science and Technology</i> , <b>2015</b> , 29, 251-260	4.5	2
53	Freestanding doped silicon nanocrystals synthesized by plasma. <i>Journal Physics D: Applied Physics</i> , <b>2015</b> , 48, 314006	3	26
52	Density functional theory study on boron- and phosphorus-doped hydrogen-passivated silicene. <i>Physical Chemistry Chemical Physics</i> , <b>2015</b> , 17, 4146-51	3.6	26

51	Twinned silicon and germanium nanocrystals: Formation, stability and quantum confinement. <i>AIP Advances</i> , <b>2015</b> , 5, 037140	1.5	5
50	Boron- and Phosphorus-Hyperdoped Silicon Nanocrystals. <i>Particle and Particle Systems Characterization</i> , <b>2015</b> , 32, 213-221	3.1	57
49	Silicon nanocrystals synthesized using very high frequency non-thermal plasma and their application in photovoltaics. <i>Journal Physics D: Applied Physics</i> , <b>2015</b> , 48, 314011	3	2
48	Comparative study on the localized surface plasmon resonance of boron- and phosphorus-doped silicon nanocrystals. <i>ACS Nano</i> , <b>2015</b> , 9, 378-86	16.7	110
47	Facile synthesis of highly fluorescent gelatin/Si nanocrystals composite thin films for optical detection of amines in water. <i>Journal of Materials Chemistry C</i> , <b>2014</b> , 2, 1971	7.1	4
46	Doping Si nanocrystals embedded in SiO <sub>2</sub> with P in the framework of density functional theory. <i>Physical Review B</i> , <b>2014</b> , 89,	3.3	33
45	Tuning the band gap in silicene by oxidation. <i>ACS Nano</i> , <b>2014</b> , 8, 10019-25	16.7	147
44	Silicon nanocrystal conjugated polymer hybrid solar cells with improved performance. <i>Nano Energy</i> , <b>2014</b> , 9, 25-31	17.1	46
43	Density Functional Theory Study on the Oxidation of Hydrosilylated Silicon Nanocrystals. <i>Journal of Materials Science and Technology</i> , <b>2014</b> , 30, 639-643	9.1	6
42	Low-resistivity bulk silicon prepared by hot-pressing boron- and phosphorus-hyperdoped silicon nanocrystals. <i>AIP Advances</i> , <b>2014</b> , 4, 127108	1.5	5
41	Ab initio study on the effect of structural relaxation on the electronic and optical properties of P-doped Si nanocrystals. <i>Journal of Applied Physics</i> , <b>2014</b> , 116, 194304	2.5	8
40	Doped silicon nanocrystals from organic dopant precursor by a SiCl <sub>4</sub> -based high frequency nonthermal plasma. <i>Applied Physics Letters</i> , <b>2014</b> , 105, 183110	3.4	19
39	A parametric study of non-thermal plasma synthesis of silicon nanoparticles from a chlorinated precursor. <i>Journal Physics D: Applied Physics</i> , <b>2014</b> , 47, 485202	3	14
38	Water-Dispersible Silicon-Quantum-Dot-Containing Micelles Self-Assembled from an Amphiphilic Polymer. <i>Particle and Particle Systems Characterization</i> , <b>2014</b> , 31, 751-756	3.1	30
37	Tight-binding calculations of the optical response of optimally P-doped Si nanocrystals: a model for localized surface plasmon resonance. <i>Physical Review Letters</i> , <b>2013</b> , 111, 177402	7.4	53
36	Optical properties of free-standing gelatin-Si nanoparticle composite films and gelatin-Si-Au nanoparticle composite films. <i>Physical Chemistry Chemical Physics</i> , <b>2013</b> , 15, 20140-6	3.6	5
35	Doping Silicon Wafers with Boron by Use of Silicon Paste. <i>Journal of Materials Science and Technology</i> , <b>2013</b> , 29, 652-654	9.1	10
34	Surface modification of chlorine-passivated silicon nanocrystals. <i>Physical Chemistry Chemical Physics</i> , <b>2013</b> , 15, 1815-20	3.6	25

33	Silicene oxides: formation, structures and electronic properties. <i>Scientific Reports</i> , <b>2013</b> , 3, 3507	4.9	60
32	Defects in TiO <sub>2</sub> films on p+-Si studied by positron annihilation spectroscopy. <i>Materials Science and Engineering B: Solid-State Materials for Advanced Technology</i> , <b>2012</b> , 177, 625-628	3.1	1
31	Density functional theory study on a 1.4 nm silicon nanocrystal coated with carbon. <i>RSC Advances</i> , <b>2012</b> , 2, 11227	3.7	11
30	Fluorine-Passivated Silicon Nanocrystals: Surface Chemistry versus Quantum Confinement. <i>Journal of Physical Chemistry C</i> , <b>2012</b> , 116, 5401-5406	3.8	35
29	First-Principles Study on the Surface Chemistry of 1.4 nm Silicon Nanocrystals: Case of Hydrosilylation. <i>Journal of Physical Chemistry C</i> , <b>2012</b> , 116, 19434-19443	3.8	49
28	Enhancing the Efficiency of Multicrystalline Silicon Solar Cells by the Inkjet Printing of Silicon-Quantum-Dot Ink. <i>Journal of Physical Chemistry C</i> , <b>2012</b> , 116, 21240-21243	3.8	92
27	Lightly boron and phosphorus co-doped silicon nanocrystals. <i>Journal of Nanoparticle Research</i> , <b>2012</b> , 14, 1	2.3	14
26	Doping Silicon Nanocrystals with Boron and Phosphorus. <i>Journal of Nanomaterials</i> , <b>2012</b> , 2012, 1-9	3.2	20
25	Optical absorption and emission of nitrogen-doped silicon nanocrystals. <i>Nanoscale</i> , <b>2011</b> , 3, 4584-8	7.7	10
24	First-Principles Study of 2.2 nm Silicon Nanocrystals Doped with Boron. <i>Journal of Physical Chemistry C</i> , <b>2011</b> , 115, 9838-9843	3.8	50
23	Spin-coating silicon-quantum-dot ink to improve solar cell efficiency. <i>Solar Energy Materials and Solar Cells</i> , <b>2011</b> , 95, 2941-2945	6.4	103
22	Theoretical Study of Chlorine for Silicon Nanocrystals. <i>Journal of Physical Chemistry C</i> , <b>2011</b> , 115, 12822-12825	3.8	38
21	Critical Role of Dopant Location for P-Doped Si Nanocrystals. <i>Journal of Physical Chemistry C</i> , <b>2011</b> , 115, 661-666	3.8	50
20	Enhanced field emission from carbon nanotubes by electroplating of silver nanoparticles. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , <b>2011</b> , 29, 041003	1.3	11
19	Silicon nanocrystals doped with substitutional or interstitial manganese. <i>Applied Physics Letters</i> , <b>2011</b> , 99, 193108	3.4	8
18	CdSe Quantum Dots Sensitized Mesoporous TiO <sub>2</sub> Solar Cells with CuSCN as Solid-State Electrolyte. <i>Journal of Nanomaterials</i> , <b>2011</b> , 2011, 1-5	3.2	4
17	Silicon and Germanium Nanocrystal Inks for Low-Cost Solar Cells <b>2010</b> ,		1
16	Bonding of Oxygen at the Oxide/Nanocrystal Interface of Oxidized Silicon Nanocrystals: An Ab Initio Study. <i>Journal of Physical Chemistry C</i> , <b>2010</b> , 114, 8774-8781	3.8	39

15	Chemical synthesis of Cu(In) metal inks to prepare CuInS <sub>2</sub> thin films and solar cells. <i>Journal of Alloys and Compounds</i> , <b>2010</b> , 507, 317-321	5.7	14
14	Growth of In <sub>2</sub> O <sub>3</sub> Nanowires Catalyzed by Cu via a Solid-Liquid-Solid Mechanism. <i>Nanoscale Research Letters</i> , <b>2010</b> , 5, 898-903	5	9
13	Reflectivity of porous-pyramids structured silicon surface. <i>Applied Surface Science</i> , <b>2010</b> , 257, 472-475	6.7	25
12	Nonthermal plasma synthesized freestanding silicon-germanium alloy nanocrystals. <i>Nanotechnology</i> , <b>2009</b> , 20, 295602	3.4	54
11	Enhancement of electroluminescence from TiO <sub>2</sub> /p+-Si heterostructure-based devices through engineering of oxygen vacancies in TiO <sub>2</sub> . <i>Applied Physics Letters</i> , <b>2009</b> , 95, 252102	3.4	20
10	Air-stable full-visible-spectrum emission from silicon nanocrystals synthesized by an all-gas-phase plasma approach. <i>Nanotechnology</i> , <b>2008</b> , 19, 245603	3.4	112
9	Doping Effects in Co-deposited Mixed Phase Films of Hydrogenated Amorphous Silicon Containing Nanocrystalline Inclusions. <i>Materials Research Society Symposia Proceedings</i> , <b>2008</b> , 1066, 1		1
8	Doping efficiency, dopant location, and oxidation of Si nanocrystals. <i>Applied Physics Letters</i> , <b>2008</b> , 92, 123102	3.4	179
7	Fluorine in silicon: diffusion, trapping, and precipitation. <i>Physical Review Letters</i> , <b>2003</b> , 90, 155901	7.4	58
6	Intrinsic gettering of Czochralski silicon annealed in argon and nitrogen atmosphere. <i>Physica B: Condensed Matter</i> , <b>2001</b> , 307, 40-44	2.8	7
5	Electrical Activity of Nitrogen-Oxygen Complexes in Silicon. <i>Physica Status Solidi (B): Basic Research</i> , <b>2000</b> , 221, 641-645	1.3	2
4	Optical-switched proton logic gate: Indocyanine green decorated HSB-W5 MOFs nanosheets. <i>Science China Materials</i> , 1	7.1	1
3	Dual-Modal Optoelectronic Synaptic Devices with Versatile Synaptic Plasticity. <i>Advanced Functional Materials</i> , 2107973	15.6	12
2	Bioinspired molecules design for bilateral synergistic passivation in buried interfaces of planar perovskite solar cells. <i>Nano Research</i> , 1	10	15
1	Theoretical study on the improvement of the doping efficiency of Al in 4H-SiC by co-doping group-IVB elements. <i>Chinese Physics B</i> ,	1.2	3