

Xiaodong Pi

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122
papers

3,627
citations

35
h-index

57
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133
ext. papers

4,325
ext. citations

6.4
avg, IF

5.5
L-index

#	Paper	IF	Citations
122	Plasmonic Silicon Quantum Dots Enabled High-Sensitivity Ultrabroadband Photodetection of Graphene-Based Hybrid Phototransistors. <i>ACS Nano</i> , 2017 , 11, 9854-9862	16.7	209
121	Doping efficiency, dopant location, and oxidation of Si nanocrystals. <i>Applied Physics Letters</i> , 2008 , 92, 123102	3.4	179
120	Graphene Coupled with Silicon Quantum Dots for High-Performance Bulk-Silicon-Based Schottky-Junction Photodetectors. <i>Advanced Materials</i> , 2016 , 28, 4912-9	24	163
119	Tuning the band gap in silicene by oxidation. <i>ACS Nano</i> , 2014 , 8, 10019-25	16.7	147
118	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> , 2017 , 1,	8.8	144
117	Air-stable full-visible-spectrum emission from silicon nanocrystals synthesized by an all-gas-phase plasma approach. <i>Nanotechnology</i> , 2008 , 19, 245603	3.4	112
116	Comparative study on the localized surface plasmon resonance of boron- and phosphorus-doped silicon nanocrystals. <i>ACS Nano</i> , 2015 , 9, 378-86	16.7	110
115	Spin-coating silicon-quantum-dot ink to improve solar cell efficiency. <i>Solar Energy Materials and Solar Cells</i> , 2011 , 95, 2941-2945	6.4	103
114	Broadband optoelectronic synaptic devices based on silicon nanocrystals for neuromorphic computing. <i>Nano Energy</i> , 2018 , 52, 422-430	17.1	97
113	Enhancing the Efficiency of Multicrystalline Silicon Solar Cells by the Inkjet Printing of Silicon-Quantum-Dot Ink. <i>Journal of Physical Chemistry C</i> , 2012 , 116, 21240-21243	3.8	92
112	Quasi-Two-Dimensional SiC and SiC ₂ : Interaction of Silicon and Carbon at Atomic Thin Lattice Plane. <i>Journal of Physical Chemistry C</i> , 2015 , 119, 19772-19779	3.8	74
111	A Broadband Fluorographene Photodetector. <i>Advanced Materials</i> , 2017 , 29, 1700463	24	72
110	Optimum Quantum Yield of the Light Emission from 2 to 10 nm Hydrosilylated Silicon Quantum Dots. <i>Particle and Particle Systems Characterization</i> , 2016 , 33, 44-52	3.1	65
109	Silicene oxides: formation, structures and electronic properties. <i>Scientific Reports</i> , 2013 , 3, 3507	4.9	60
108	Ligand-Free, Colloidal, and Plasmonic Silicon Nanocrystals Heavily Doped with Boron. <i>ACS Photonics</i> , 2016 , 3, 415-422	6.3	58
107	Fluorine in silicon: diffusion, trapping, and precipitation. <i>Physical Review Letters</i> , 2003 , 90, 155901	7.4	58
106	Boron- and Phosphorus-Hyperdoped Silicon Nanocrystals. <i>Particle and Particle Systems Characterization</i> , 2015 , 32, 213-221	3.1	57

105	Nonthermal plasma synthesized freestanding silicon-germanium alloy nanocrystals. <i>Nanotechnology</i> , 2009 , 20, 295602	3.4	54
104	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> , 2013 , 111, 177402	7.4	53
103	Light-Emitting Diodes Based on Colloidal Silicon Quantum Dots with Octyl and Phenylpropyl Ligands. <i>ACS Applied Materials & Interfaces</i> , 2018 , 10, 5959-5966	9.5	51
102	Synaptic silicon-nanocrystal phototransistors for neuromorphic computing. <i>Nano Energy</i> , 2019 , 63, 103859	17.1	51
101	Electroluminescent synaptic devices with logic functions. <i>Nano Energy</i> , 2018 , 54, 383-389	17.1	51
100	First-Principles Study of 2.2 nm Silicon Nanocrystals Doped with Boron. <i>Journal of Physical Chemistry C</i> , 2011 , 115, 9838-9843	3.8	50
99	Critical Role of Dopant Location for P-Doped Si Nanocrystals. <i>Journal of Physical Chemistry C</i> , 2011 , 115, 661-666	3.8	50
98	Size-Dependent Structures and Optical Absorption of Boron-Hyperdoped Silicon Nanocrystals. <i>Advanced Optical Materials</i> , 2016 , 4, 700-707	8.1	49
97	First-Principles Study on the Surface Chemistry of 1.4 nm Silicon Nanocrystals: Case of Hydrosilylation. <i>Journal of Physical Chemistry C</i> , 2012 , 116, 19434-19443	3.8	49
96	Efficient silicon quantum dots light emitting diodes with an inverted device structure. <i>Journal of Materials Chemistry C</i> , 2016 , 4, 673-677	7.1	48
95	Optically Stimulated Synaptic Devices Based on the Hybrid Structure of Silicon Nanomembrane and Perovskite. <i>Nano Letters</i> , 2020 , 20, 3378-3387	11.5	46
94	Silicon nanocrystal conjugated polymer hybrid solar cells with improved performance. <i>Nano Energy</i> , 2014 , 9, 25-31	17.1	46
93	Zero-power optoelectronic synaptic devices. <i>Nano Energy</i> , 2020 , 73, 104790	17.1	44
92	Optoelectronic Synaptic Devices for Neuromorphic Computing. <i>Advanced Intelligent Systems</i> , 2021 , 3, 2000099	6	42
91	Silicon nanocrystals: unfading silicon materials for optoelectronics. <i>Materials Science and Engineering Reports</i> , 2019 , 138, 85-117	30.9	41
90	Bonding of Oxygen at the Oxide/Nanocrystal Interface of Oxidized Silicon Nanocrystals: An Ab Initio Study. <i>Journal of Physical Chemistry C</i> , 2010 , 114, 8774-8781	3.8	39
89	Electronic and magnetic properties of graphene, silicene and germanene with varying vacancy concentration. <i>AIP Advances</i> , 2017 , 7, 045308	1.5	38
88	Theoretical Study of Chlorine for Silicon Nanocrystals. <i>Journal of Physical Chemistry C</i> , 2011 , 115, 12822-12825	3.8	38

87	Fluorine-Passivated Silicon Nanocrystals: Surface Chemistry versus Quantum Confinement. <i>Journal of Physical Chemistry C</i> , 2012 , 116, 5401-5406	3.8	35
86	Doping Si nanocrystals embedded in SiO ₂ with P in the framework of density functional theory. <i>Physical Review B</i> , 2014 , 89,	3.3	33
85	Ink Engineering of Inkjet Printing Perovskite. <i>ACS Applied Materials & Interfaces</i> , 2020 , 12, 39082-39091	9.1	33
84	Perovskite/Organic Bulk-Heterojunction Integrated Ultrasensitive Broadband Photodetectors with High Near-Infrared External Quantum Efficiency over 70. <i>Small</i> , 2018 , 14, e1802349	11	33
83	Fully radiative relaxation of silicon nanocrystals in colloidal ensemble revealed by advanced treatment of decay kinetics. <i>Journal of Applied Physics</i> , 2017 , 122, 034304	2.5	31
82	Silicon-nanocrystal-incorporated ternary hybrid solar cells. <i>Nano Energy</i> , 2016 , 26, 305-312	17.1	31
81	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> , 2018 , 81, 036501	14.4	30
80	Water-Dispersible Silicon-Quantum-Dot-Containing Micelles Self-Assembled from an Amphiphilic Polymer. <i>Particle and Particle Systems Characterization</i> , 2014 , 31, 751-756	3.1	30
79	Fully Transparent Quantum Dot Light-Emitting Diode with a Laminated Top Graphene Anode. <i>ACS Applied Materials & Interfaces</i> , 2017 , 9, 24005-24010	9.5	28
78	Observation of van Hove Singularities in Twisted Silicene Multilayers. <i>ACS Central Science</i> , 2016 , 2, 517-521	16.8	28
77	Resolving the Controversial Existence of Silicene and Germanene Nanosheets Grown on Graphite. <i>ACS Nano</i> , 2018 , 12, 4754-4760	16.7	27
76	Freestanding doped silicon nanocrystals synthesized by plasma. <i>Journal Physics D: Applied Physics</i> , 2015 , 48, 314006	3	26
75	Density functional theory study on boron- and phosphorus-doped hydrogen-passivated silicene. <i>Physical Chemistry Chemical Physics</i> , 2015 , 17, 4146-51	3.6	26
74	Surface modification of chlorine-passivated silicon nanocrystals. <i>Physical Chemistry Chemical Physics</i> , 2013 , 15, 1815-20	3.6	25
73	Reflectivity of porous-pyramids structured silicon surface. <i>Applied Surface Science</i> , 2010 , 257, 472-475	6.7	25
72	High and Fast Response of a Graphene/Silicon Photodetector Coupled with 2D Fractal Platinum Nanoparticles. <i>Advanced Optical Materials</i> , 2018 , 6, 1700793	8.1	22
71	Silicon-Quantum-Dot Light-Emitting Diodes With Interlayer-Enhanced Hole Transport. <i>IEEE Photonics Journal</i> , 2017 , 9, 1-10	1.8	21
70	Density functional theory study on the B doping and B/P codoping of Si nanocrystals embedded in SiO ₂ . <i>Physical Review B</i> , 2017 , 95,	3.3	20

69	Doping Silicon Nanocrystals with Boron and Phosphorus. <i>Journal of Nanomaterials</i> , 2012 , 2012, 1-9	3.2	20
68	Enhancement of electroluminescence from TiO ₂ /p+-Si heterostructure-based devices through engineering of oxygen vacancies in TiO ₂ . <i>Applied Physics Letters</i> , 2009 , 95, 252102	3.4	20
67	Constructing submicron textures on mc-Si solar cells via copper-catalyzed chemical etching. <i>Applied Physics Letters</i> , 2017 , 110, 093901	3.4	19
66	Density functional theory study on organically surface-modified silicene. <i>RSC Advances</i> , 2015 , 5, 33831-33837	3.7	19
65	Doped silicon nanocrystals from organic dopant precursor by a SiCl ₄ -based high frequency nonthermal plasma. <i>Applied Physics Letters</i> , 2014 , 105, 183110	3.4	19
64	Structures, Oxidation, and Charge Transport of Phosphorus-Doped Germanium Nanocrystals. <i>Particle and Particle Systems Characterization</i> , 2016 , 33, 271-278	3.1	19
63	Developing near-infrared quantum-dot light-emitting diodes to mimic synaptic plasticity. <i>Science China Materials</i> , 2019 , 62, 1470-1478	7.1	15
62	Bioinspired molecules design for bilateral synergistic passivation in buried interfaces of planar perovskite solar cells. <i>Nano Research</i> , 1	10	15
61	A parametric study of non-thermal plasma synthesis of silicon nanoparticles from a chlorinated precursor. <i>Journal Physics D: Applied Physics</i> , 2014 , 47, 485202	3	14
60	Lightly boron and phosphorus co-doped silicon nanocrystals. <i>Journal of Nanoparticle Research</i> , 2012 , 14, 1	2.3	14
59	Chemical synthesis of Cu(In) metal inks to prepare CuInS ₂ thin films and solar cells. <i>Journal of Alloys and Compounds</i> , 2010 , 507, 317-321	5.7	14
58	Light-emitting diodes based on colloidal silicon quantum dots. <i>Journal of Semiconductors</i> , 2018 , 39, 061008	10.8	13
57	Al ₂ O ₃ -Interlayer-Enhanced Performance of All-Inorganic Silicon-Quantum-Dot Near-Infrared Light-Emitting Diodes. <i>IEEE Transactions on Electron Devices</i> , 2018 , 65, 577-583	2.9	12
56	A Silicon Cluster Based Single Electron Transistor with Potential Room-Temperature Switching. <i>Chinese Physics Letters</i> , 2018 , 35, 037301	1.8	12
55	Dual-Modal Optoelectronic Synaptic Devices with Versatile Synaptic Plasticity. <i>Advanced Functional Materials</i> , 2107973	15.6	12
54	Formation, Stability, Geometry and Band Structure of Organically Surface-Modified Germanane. <i>Journal of Materials Science and Technology</i> , 2017 , 33, 59-64	9.1	11
53	Density functional theory study on a 1.4 nm silicon nanocrystal coated with carbon. <i>RSC Advances</i> , 2012 , 2, 11227	3.7	11
52	Enhanced field emission from carbon nanotubes by electroplating of silver nanoparticles. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , 2011 , 29, 041003	1.3	11

51	Silicon-based optoelectronic synaptic devices. <i>Chinese Physics B</i> , 2020 , 29, 070703	1.2	10
50	Doping Silicon Wafers with Boron by Use of Silicon Paste. <i>Journal of Materials Science and Technology</i> , 2013 , 29, 652-654	9.1	10
49	Optical absorption and emission of nitrogen-doped silicon nanocrystals. <i>Nanoscale</i> , 2011 , 3, 4584-8	7.7	10
48	Hybrid Structure of Silicon Nanocrystals and 2D WSe ₂ for Broadband Optoelectronic Synaptic Devices 2018 ,		10
47	Growth of In ₂ O ₃ Nanowires Catalyzed by Cu via a Solid-Liquid-Solid Mechanism. <i>Nanoscale Research Letters</i> , 2010 , 5, 898-903	5	9
46	Plasmon-Coupled Förster Resonance Energy Transfer between Silicon Quantum Dots. <i>Journal of Physical Chemistry C</i> , 2019 , 123, 23604-23609	3.8	8
45	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> , 2020 , 3, 2000045	3.5	8
44	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> , 2014 , 116, 194304	2.5	8
43	Silicon nanocrystals doped with substitutional or interstitial manganese. <i>Applied Physics Letters</i> , 2011 , 99, 193108	3.4	8
42	Low-temperature processed Tantalum/ Niobium co-doped TiO ₂ electron transport layer for high-performance planar perovskite solar cells. <i>Nanotechnology</i> , 2021 ,	3.4	8
41	Intrinsic gettering of Czochralski silicon annealed in argon and nitrogen atmosphere. <i>Physica B: Condensed Matter</i> , 2001 , 307, 40-44	2.8	7
40	Formation, Structures and Electronic Properties of Silicene Oxides on Ag(111). <i>Journal of Materials Science and Technology</i> , 2016 ,	9.1	7
39	Trap-Free Heterostructure of PbS Nanoplatelets on InP(001) by Chemical Epitaxy. <i>ACS Nano</i> , 2019 , 13, 1961-1967	16.7	6
38	Density Functional Theory Study on the Oxidation of Hydrosilylated Silicon Nanocrystals. <i>Journal of Materials Science and Technology</i> , 2014 , 30, 639-643	9.1	6
37	Highly efficient and stable inorganic CsPbBr ₃ perovskite solar cells via vacuum co-evaporation. <i>Applied Surface Science</i> , 2021 , 562, 150153	6.7	6
36	Low-resistivity bulk silicon prepared by hot-pressing boron- and phosphorus-hyperdoped silicon nanocrystals. <i>AIP Advances</i> , 2014 , 4, 127108	1.5	5
35	Optical properties of free-standing gelatin-Si nanoparticle composite films and gelatin-Si-Au nanoparticle composite films. <i>Physical Chemistry Chemical Physics</i> , 2013 , 15, 20140-6	3.6	5
34	Graphene/silicon-quantum-dots/Si Schottky-PN cascade heterojunction for short-wavelength infrared photodetection 2017 ,		5

33	Twinned silicon and germanium nanocrystals: Formation, stability and quantum confinement. <i>AIP Advances</i> , 2015 , 5, 037140	1.5	5
32	Spontaneous symmetry lowering of Si (001) towards two-dimensional ferro/antiferroelectric behavior. <i>Physical Review Materials</i> , 2019 , 3,	3.2	5
31	Recent progress on optoelectronic synaptic devices. <i>Scientia Sinica Informationis</i> , 2020 , 50, 892-912	2.3	5
30	Interfacial Properties for a Monolayer CrS ₂ Contact with Metal: A Theoretical Perspective. <i>Physica Status Solidi (B): Basic Research</i> , 2019 , 256, 1800597	1.3	4
29	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> , 2014 , 2, 1971	7.1	4
28	CdSe Quantum Dots Sensitized Mesoporous TiO ₂ Solar Cells with CuSCN as Solid-State Electrolyte. <i>Journal of Nanomaterials</i> , 2011 , 2011, 1-5	3.2	4
27	Perovskite-Enhanced Silicon-Nanocrystal Optoelectronic Synaptic Devices for the Simulation of Biased and Correlated Random-Walk Learning. <i>Research</i> , 2020 , 2020, 7538450	7.8	4
26	Silicon-based inorganic-organic hybrid optoelectronic synaptic devices simulating cross-modal learning. <i>Science China Information Sciences</i> , 2021 , 64, 1	3.4	4
25	Boron nanocrystals as high-energy-density fuels. <i>Journal Physics D: Applied Physics</i> , 2018 , 51, 025305	3	4
24	Electronic and thermoelectric properties of atomically thin CSi/C and CGe/C superlattices. <i>Nanotechnology</i> , 2018 , 29, 045402	3.4	4
23	CKAP4 Antibody-Conjugated Si Quantum Dot Micelles for Targeted Imaging of Lung Cancer. <i>Nanoscale Research Letters</i> , 2021 , 16, 124	5	3
22	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
21	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> , 2015 , 29, 251-260	4.5	2
20	Cera alba-assisted ultraclean graphene transfer for high-performance Pbl UV photodetectors. <i>Nanotechnology</i> , 2020 , 31, 365204	3.4	2
19	Reduction in Modulus of Suspended Sub-2 nm Single Crystalline Silicon Nanomembranes. <i>Advanced Materials Interfaces</i> , 2017 , 4, 1700529	4.6	2
18	Silicon nanocrystals synthesized using very high frequency non-thermal plasma and their application in photovoltaics. <i>Journal Physics D: Applied Physics</i> , 2015 , 48, 314011	3	2
17	Electrical Activity of Nitrogen-Oxygen Complexes in Silicon. <i>Physica Status Solidi (B): Basic Research</i> , 2000 , 221, 641-645	1.3	2
16	Deformation of 4H-SiC: The role of dopants. <i>Applied Physics Letters</i> , 2022 , 120, 052105	3.4	2

15	Silicon Nanocrystals: Size-Dependent Structures and Optical Absorption of Boron-Hyperdoped Silicon Nanocrystals (Advanced Optical Materials 5/2016). <i>Advanced Optical Materials</i> , 2016 , 4, 646-646	8.1	2
14	Compensation of p-type doping in Al-doped 4H-SiC. <i>Journal of Applied Physics</i> , 2022 , 131, 185703	2.5	2
13	Defects in TiO ₂ films on p+-Si studied by positron annihilation spectroscopy. <i>Materials Science and Engineering B: Solid-State Materials for Advanced Technology</i> , 2012 , 177, 625-628	3.1	1
12	Silicon and Germanium Nanocrystal Inks for Low-Cost Solar Cells 2010 ,		1
11	Doping Effects in Co-deposited Mixed Phase Films of Hydrogenated Amorphous Silicon Containing Nanocrystalline Inclusions. <i>Materials Research Society Symposia Proceedings</i> , 2008 , 1066, 1		1
10	Optical-switched proton logic gate: Indocyanine green decorated HSB-W5 MOFs nanosheets. <i>Science China Materials</i> , 1	7.1	1
9	Toward Wafer-Scale Production of 2D Transition Metal Chalcogenides. <i>Advanced Electronic Materials</i> , 2021 , 7, 2100278	6.4	1
8	Recent Progress on the Scanning Tunneling Microscopy and Spectroscopy Study of Semiconductor Heterojunctions. <i>Small</i> , 2021 , e2100655	11	1
7	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> , 2021 , 3, 4810-4815	5.1	1
6	Doping-dependent nucleation of basal plane dislocations in 4H-SiC. <i>Journal Physics D: Applied Physics</i> , 2022 , 55, 334002	3	1
5	Density functional theory study on the boron and phosphorus doping of germanium quantum dots. <i>RSC Advances</i> , 2017 , 7, 50935-50941	3.7	0
4	Colloidal Silicon Quantum Dots and Solar Cells 2017 , 1-27		0
3	Numerical Simulation of a Novel Method for PVT Growth of SiC by Adding a Graphite Block. <i>Crystals</i> , 2021 , 11, 1581	2.3	0
2	Colloidal Silicon Quantum Dots and Solar Cells 2019 , 933-958		
1	Silicon nanocrystals doped with boron and phosphorous. <i>Series in Materials Science and Engineering</i> , 2017 , 341-366		