Vladimir Svrcek

List of Publications by Year
in descending order

130	3,588	147801	149698
papers	citations	31 h-index	56 g-index

132	132	132	3756
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Modifying the solar spectrum to enhance silicon solar cell efficiencyâ€"An overview of available materials. Solar Energy Materials and Solar Cells, 2007, 91, 238-249.	6.2	527
2	Plasmaâ€"Liquid Interactions at Atmospheric Pressure for Nanomaterials Synthesis and Surface Engineering. Plasma Processes and Polymers, 2012, 9, 1074-1085.	3.0	227
3	Silicon nanocrystals as light converter for solar cells. Thin Solid Films, 2004, 451-452, 384-388.	1.8	169
4	Blue luminescent silicon nanocrystals prepared by ns pulsed laser ablation in water. Applied Physics Letters, 2006, 89, 213113.	3.3	125
5	Self-organized nanostructures on atmospheric microplasma exposed surfaces. Applied Physics Letters, 2007, 91, 183111.	3.3	91
6	Understanding surface chemistry during MAPbI₃ spray deposition and its effect on photovoltaic performance. Journal of Materials Chemistry C, 2017, 5, 902-916.	5.5	89
7	Environmentally friendly nitrogen-doped carbon quantum dots for next generation solar cells. Sustainable Energy and Fuels, 2017, 1, 1611-1619.	4.9	81
8	Optical gain in porous silicon grains embedded in sol-gel derived SiO2 matrix under femtosecond excitation. Applied Physics Letters, 2004, 84, 3280-3282.	3.3	76
9	Ex situprepared Si nanocrystals embedded in silica glass: Formation and characterization. Journal of Applied Physics, 2004, 95, 3158-3163.	2.5	76
10	Silicon Nanocrystals in Liquid Media: Optical Properties and Surface Stabilization by Microplasmaâ€Induced Nonâ€Equilibrium Liquid Chemistry. Advanced Functional Materials, 2012, 22, 954-964.	14.9	72
11	Ambient-stable blue luminescent silicon nanocrystals prepared by nanosecond-pulsed laser ablation in water. Optics Express, 2009, 17, 520.	3.4	71
12	The importance of surface states in N-doped carbon quantum dots. Carbon, 2021, 183, 1-11.	10.3	71
13	Photovoltaic Applications of Silicon Nanocrystal Based Nanostructures Induced by Nanosecond Laser Fragmentation in Liquid Media. Journal of Physical Chemistry C, 2011, 115, 5084-5093.	3.1	67
14	Surface-engineered silicon nanocrystals. Nanoscale, 2013, 5, 1385.	5.6	67
15	Basic features of transport in microcrystalline silicon. Solar Energy Materials and Solar Cells, 2003, 78, 493-512.	6.2	63
16	Microplasma-induced surface engineering of silicon nanocrystals in colloidal dispersion. Applied Physics Letters, 2010, 97, .	3.3	63
17	Lowâ€Temperature Atmospheric Pressure Plasma Processes for â€œGreenâ€•Third Generation Photovoltaics. Plasma Processes and Polymers, 2016, 13, 70-90.	3.0	62
18	Charge carrier localised in zero-dimensional (CH3NH3)3Bi2I9 clusters. Nature Communications, 2017, 8, 170.	12.8	62

#	Article	IF	Citations
19	Ultraâ€small CuO nanoparticles with tailored energyâ€band diagram synthesized by a hybrid plasmaâ€liquid process. Plasma Processes and Polymers, 2017, 14, 1600224.	3.0	55
20	Silicon-based quantum dots: synthesis, surface and composition tuning with atmospheric pressure plasmas. Journal Physics D: Applied Physics, 2015, 48, 314002.	2.8	54
21	Self-organized carbon connections between catalyst particles on a silicon surface exposed to atmospheric-pressure Ar+CH4 microplasmas. Carbon, 2009, 47, 2379-2390.	10.3	46
22	Synthesis and surface engineering of nanomaterials by atmospheric-pressure microplasmas. EPJ Applied Physics, 2011, 56, 24020.	0.7	42
23	Model of transport in microcrystalline silicon. Journal of Non-Crystalline Solids, 2002, 299-302, 355-359.	3.1	41
24	Ultra-small photoluminescent silicon-carbide nanocrystals by atmospheric-pressure plasmas. Nanoscale, 2016, 8, 17141-17149.	5.6	41
25	A hybrid heterojunction based on fullerenes and surfactant-free, self-assembled, closely packed silicon nanocrystals. Journal Physics D: Applied Physics, 2010, 43, 415402.	2.8	40
26	A silicon nanocrystal/polymer nanocomposite as a down-conversion layer in organic and hybrid solar cells. Nanoscale, 2015, 7, 11566-11574.	5.6	37
27	Fabrication of multi-level carbon nanotube arrays with adjustable patterns. Nanoscale, 2012, 4, 278-283.	5.6	36
28	Silicon thin film solar cells deposited under 80Â°C. Thin Solid Films, 2001, 383, 129-131.	1.8	35
29	Improved Optoelectronic Properties of Silicon Nanocrystals/Polymer Nanocomposites by Microplasma-Induced Liquid Chemistry. Journal of Physical Chemistry C, 2013, 117, 23198-23207.	3.1	35
30	Photoluminescence properties of solâ€“gel derived SiO2 layers doped with porous silicon. Materials Science and Engineering C, 2002, 19, 233-236.	7.3	33
31	Silicon Nanocrystals and Semiconducting Single-Walled Carbon Nanotubes Applied to Photovoltaic Cells. Journal of Physical Chemistry Letters, 2011, 2, 1646-1650.	4.6	32
32	Transport anisotropy in microcrystalline silicon studied by measurement of ambipolar diffusion length. Journal of Applied Physics, 2001, 89, 1800.	2.5	31
33	Unaggregated silicon nanocrystals obtained by ball milling. Journal of Crystal Growth, 2005, 275, 589-597.	1.5	30
34	Photosensitive self-assembled nanoarchitectures containing surfactant-free Si nanocrystals produced by laser fragmentation in water. Chemical Physics Letters, 2009, 478, 224-229.	2.6	29
35	Constructing honeycomb micropatterns on nonplanar substrates with high glass transition temperature polymers. Journal of Colloid and Interface Science, 2012, 380, 99-104.	9.4	27
36	Top-down prepared silicon nanocrystals and a conjugated polymer-based bulk heterojunction: Optoelectronic and photovoltaic applications. Acta Materialia, 2009, 57, 5986-5995.	7.9	26

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37	Dramatic Enhancement of Photoluminescence Quantum Yields for Surfaceâ€Engineered Si Nanocrystals within the Solar Spectrum. Advanced Functional Materials, 2013, 23, 6051-6058.	14.9	26
38	Aging effect on blue luminescent silicon nanocrystals prepared byÂpulsed laser ablation of silicon wafer in de-ionized water. Applied Physics B: Lasers and Optics, 2009, 94, 133-139.	2.2	25
39	Zero-dimensional methylammonium iodo bismuthate solar cells and synergistic interactions with silicon nanocrystals. Nanoscale, 2017, 9, 18759-18771.	5.6	25
40	Microplasmaâ€<scp>I</scp>nduce Liquid Chemistry for Stabilizing of Silicon Nanocrystals Optical Properties in Water. Plasma Processes and Polymers, 2014, 11, 158-163.	3.0	24
41	Environmentally Friendly Processing Technology for Engineering Silicon Nanocrystals in Water with Laser Pulses. Journal of Physical Chemistry C, 2016, 120, 18822-18830.	3.1	23
42	Size-dependent stability of ultra-small Î±-/Î²-phase tin nanocrystals synthesized by microplasma. Nature Communications, 2019, 10, 817.	12.8	23
43	Improved transport and photostability of poly(methoxy-ethylexyloxy-phenylenevinilene) polymer thin films by boron doped freestanding silicon nanocrystals. Applied Physics Letters, 2008, 92, .	3.3	22
44	Type-I alignment in MAPbI3 based solar devices with doped-silicon nanocrystals. Nano Energy, 2018, 50, 245-255.	16.0	22
45	Silicon nanocrystals formed by pulsed laser-induced fragmentation of electrochemically etched Si micrograins. Chemical Physics Letters, 2006, 429, 483-487.	2.6	21
46	Energy band diagram of device-grade silicon nanocrystals. Nanoscale, 2016, 8, 6623-6628.	5.6	21
47	Charge transport in microcrystalline Si â€“ the specific features. Solar Energy Materials and Solar Cells, 2001, 66, 61-71.	6.2	20
48	The Interplay of Quantum Confinement and Hydrogenation in Amorphous Silicon Quantum Dots. Advanced Materials, 2015, 27, 8011-8016.	21.0	20
49	Temperature-dependent photoluminescence of surface-engineered silicon nanocrystals. Scientific Reports, 2016, 6, 27727.	3.3	20
50	Aggregation of Silicon Nanocrystals Prepared by Laser Ablation in Deionized Water. Journal of Laser Micro Nanoengineering, 2007, 2, 15-20.	0.1	20
51	Semiconducting quantum confined siliconâ€“tin alloyed nanocrystals prepared by ns pulsed laser ablation in water. Nanoscale, 2013, 5, 6725.	5.6	19
52	Nanostructured Perovskite Solar Cells. Nanomaterials, 2019, 9, 1481.	4.1	19
53	Microcrystalline Silicon - Relation between Transport and Microstructure. Solid State Phenomena, 2001, 80-81, 213-224.	0.3	18
54	Amorphous/microcrystalline silicon superlatticesâ€”the chance to control isotropy and other transport properties. Applied Physics Letters, 2001, 79, 2540-2542.	3.3	18

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55	Blue luminescent silicon nanocrystals prepared by short pulsed laser ablation in liquid media. Applied Surface Science, 2009, 255, 9643-9646.	6.1	18
56	Carbon nanotube growth activated by quantum-confined silicon nanocrystals. Journal Physics D: Applied Physics, 2013, 46, 122001.	2.8	18
57	Studies of silicon nanocrystals in phosphorus rich SiO2 matrices. Physica E: Low-Dimensional Systems and Nanostructures, 2003, 16, 420-423.	2.7	17
58	Filling of single silicon nanocrystals within multiwalled carbon nanotubes. Applied Physics Letters, 2006, 88, 033112.	3.3	17
59	Blue luminescent silicon nanocrystals prepared by nanosecond laser ablation and stabilized in electronically compatible spin on glasses. Journal of Applied Physics, 2008, 103, 023101.	2.5	17
60	Photoelectric Properties of Silicon Nanocrystals/P3HT Bulk-Heterojunction Ordered in Titanium Dioxide Nanotube Arrays. Nanoscale Research Letters, 2009, 4, 1389-94.	5.7	17
61	Synthesis of nanocrystals by discharges in liquid nitrogen from Siâ€“Sn sintered electrode. Scientific Reports, 2015, 5, 17477.	3.3	16
62	Varying Surface Chemistries for p-Doped and n-Doped Silicon Nanocrystals and Impact on Photovoltaic Devices. ACS Applied Materials & Interfaces, 2015, 7, 28207-28214.	8.0	16
63	Ordered titanium dioxide nanotubes filled with photoluminescent surfactant-free silicon nanocrystals. Nanotechnology, 2010, 21, 215203.	2.6	15
64	Bandgap Engineering in OHâ€Functionalized Silicon Nanocrystals: Interplay between Surface Functionalization and Quantum Confinement. Advanced Functional Materials, 2017, 27, 1701898.	14.9	15
65	Semiconducting silicon-tin alloy nanocrystals with direct bandgap behavior for photovoltaic devices. Materials Today Energy, 2018, 7, 87-97.	4.7	15
66	Microplasma-synthesized ultra-small NiO nanocrystals, a ubiquitous hole transport material. Nanoscale Advances, 2019, 1, 4915-4925.	4.6	15
67	Filling and capping multiwall carbon nanotubes with silicon nanocrystals dispersed in SiO2-based spin on glass. Journal of Applied Physics, 2006, 99, 064306.	2.5	14
68	Enhancement of hybrid solar cell performance by polythieno [3,4-b]thiophenebenzodithiophene and microplasma-induced surface engineering of silicon nanocrystals. Applied Physics Letters, 2012, 100, .	3.3	14
69	Luminescent properties of doped freestanding silicon nanocrystals embedded in MEH-PPV. Solar Energy Materials and Solar Cells, 2009, 93, 774-778.	6.2	13
70	Tailoring of hybrid silicon nanocrystal-based bulk heterojunction photovoltaic properties upon nanocrystal laser processing in liquid medium. Acta Materialia, 2011, 59, 764-773.	7.9	13
71	Photoluminescence studies from silicon nanocrystals embedded in spin on glass thin films. Journal of Luminescence, 2003, 101, 269-274.	3.1	12
72	Oxidation and reduction of nanodiamond particles in colloidal solutions by laser irradiation or radio-frequency plasma treatment. Vibrational Spectroscopy, 2016, 83, 108-114.	2.2	12

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73	Clustering/declustering of silicon nanocrystals in spin-on glass solutions. Semiconductor Science and Technology, 2005, 20, 314-319.	2.0	11
74	Stable ultrathin surfactantâ€free surfaceâ€engineered silicon nanocrystal solar cells deposited at room temperature. Energy Science and Engineering, 2017, 5, 184-193.	4.0	11
75	Controlling the Energy-Level Alignment of Silicon Carbide Nanocrystals by Combining Surface Chemistry with Quantum Confinement. Journal of Physical Chemistry Letters, 2020, 11, 1721-1728.	4.6	11
76	Importance of the transport isotropy in Î¼c-Si:H thin films for solar cells deposited at low substrate temperatures. Journal of Non-Crystalline Solids, 2002, 299-302, 395-399.	3.1	9
77	Monitoring the chemical vapor deposition growth of multiwalled carbon nanotubes by tapered element oscillating microbalance. Journal of Chemical Physics, 2006, 124, 184705.	3.0	9
78	Fabrication of Filled Carbon Nanotubes with Fresh Silicon Nanocrystals Produced In Situ by Nanosecond Pulsed Laser Processing in Environmentally Friendly Solutions. Journal of Physical Chemistry C, 2008, 112, 13181-13186.	3.1	9
79	Formation of Single-Crystal Spherical Particle Architectures by Plasma-Induced Low-Temperature Coalescence of Silicon Nanocrystals Synthesized by Laser Ablation in Water. Journal of Physical Chemistry C, 2011, 115, 6235-6242.	3.1	9
80	Built-In Charges and Photoluminescence Stability of 3D Surface-Engineered Silicon Nanocrystals by a Nanosecond Laser and a Direct Current Microplasma. Journal of Physical Chemistry C, 2013, 117, 10939-10948.	3.1	9
81	Photoluminescence of a superficial Si nanolayer and an example of its use. Applied Physics Letters, 2003, 82, 4056-4058.	3.3	8
82	Nanocrystalline silicon and carbon nanotube nanocomposites prepared by pulsed laser fragmentation. Pure and Applied Chemistry, 2008, 80, 2513-2520.	1.9	8
83	Microscopic Electrical Conductivity of Nanodiamonds after Thermal and Plasma Treatments. MRS Advances, 2016, 1, 1105-1111.	0.9	8
84	Significant Carrier Extraction Enhancement at the Interface of an InN/p-GaN Heterojunction under Reverse Bias Voltage. Nanomaterials, 2018, 8, 1039.	4.1	6
85	In Situ Grown Nanocrystalline Si Recombination Junction Layers for Efficient Perovskiteâ€“Si Monolithic Tandem Solar Cells: Toward a Simpler Multijunction Architecture. ACS Applied Materials & Interfaces, 2022, 14, 33505-33514.	8.0	6
86	A new approach to surface photovoltage measurements on hydrogenated microcrystalline silicon layers. Philosophical Magazine Letters, 2001, 81, 405-410.	1.2	5
87	Surface photovoltage measurements in Î¼c-Si:H: Manifestation of the bottom space charge region. Journal of Applied Physics, 2002, 92, 2323-2329.	2.5	5
88	Encapsulation of fresh silicon nanocrystals in carbon nanotube cavity. Materials Letters, 2008, 62, 2578-2580.	2.6	5
89	In Situ Monitoring the Thermal Dependence of the Growth of Carbon Nanotubes by Chemical Vapor Deposition Investigated by Tapered Element Oscillating Microbalance. Journal of Physical Chemistry C, 2009, 113, 14879-14892.	3.1	5
90	Excitation energy transfer in conjugated polymer/silicon nanocrystal-based bulk heterojunctions. Pure and Applied Chemistry, 2010, 82, 2121-2135.	1.9	5

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91	Tuning the Bandgap Character of Quantumâ€Confined Siâ€“Sn Alloyed Nanocrystals. Advanced Functional Materials, 2020, 30, 1907210.	14.9	5
92	Detection of bottom depletion layer and its influence on surface photovoltage measurement in Î¼c-Si:H. Thin Solid Films, 2001, 383, 271-273.	1.8	4
93	Connection of silicon nanocrystals (Si-nc) with multi-walled carbon nanotubes. Applied Physics A: Materials Science and Processing, 2006, 83, 153-157.	2.3	4
94	Colloidal silicon nanocrystallites for low-cost solar cell development. Nano-Micro Letters, 2009, 1, 40-44.	27.0	4
95	Blue Light Emitting Silicon Nanocrystals Prepared by Laser Ablation of Doped Si Wafers in Water. Journal of Laser Micro Nanoengineering, 2010, 5, 103-108.	0.1	4
96	Electronic interactions of silicon nanocrystals and nanocarbon materials: Hybrid solar cells. Pure and Applied Chemistry, 2012, 84, 2629-2639.	1.9	3
97	Integration of Surfactant-Free Silicon Nanocrystal in Hybrid Solar Cells. Japanese Journal of Applied Physics, 2012, 51, 10NE25.	1.5	3
98	Impact of Silicon Nanocrystal Oxidation on the Nonmetallic Growth of Carbon Nanotubes. ACS Applied Materials & Interfaces, 2016, 8, 19012-19023.	8.0	3
99	(Invited) Microplasmas Technologies for Engineering of Silicon Based Quantum Dot Solar Cells. ECS Transactions, 2017, 77, 1-8.	0.5	3
100	Bridging energy bands to the crystalline and amorphous states of Si QDs. Faraday Discussions, 2020, 222, 390-404.	3.2	3
101	Oscillating Antiferromagnetism of Ultrathin EuTe Layers. Acta Physica Polonica A, 1997, 92, 1051-1054.	0.5	3
102	Luminescent Colloidal Silicon Nanocrystals Prepared by Nanoseconds Laser Fragmentation and Laser Ablation in Water. Materials Research Society Symposia Proceedings, 2008, 1066, 1.	0.1	2
103	Hybrid Optoelectronic and Photovoltaic Materials based on Silicon Nanocrystals and Conjugated Polymers. , 2011, , .		2
104	Performance and stability gain in zero-dimensional perovskite solar cells after >2 years when hybridized with silicon nanocrystals. Nanoscale Advances, 2019, 1, 4683-4687.	4.6	2
105	Computer-based methods for measurement, recording and modeling vessel responses in vitro: A pilot study with noradrenaline. Methods and Findings in Experimental and Clinical Pharmacology, 2003, 25, 441.	0.8	2
106	Silicon Nanocrystals Surface Engineering by Nanosecond Laser Processing in Water. The Review of Laser Engineering, 2012, 40, 128.	0.0	2
107	Integration of Surfactant-Free Silicon Nanocrystal in Hybrid Solar Cells. Japanese Journal of Applied Physics, 2012, 51, 10NE25.	1.5	2
108	Colloidal blue and red luminescent silicon nanocrystals and their elaboration in pure and doped spin on glasses. Physica E: Low-Dimensional Systems and Nanostructures, 2007, 40, 293-296.	2.7	1

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109	Phosphorous and Boron Doped Colloidal Silicon Nanocrystals in Conjugated Co-polymers. Materials Research Society Symposia Proceedings, 2008, 1102, 1.	0.1	1
110	Bulk-heterojunction Based on Blending of Red and Blue Luminescent Silicon Nanocrystals and P3HT Polymer. Materials Research Society Symposia Proceedings, 2009, 1153, 1.	0.1	1
111	Three-Dimensional Femtosecond Laser Fabrication. ECS Transactions, 2009, 16, 57-63.	0.5	1
112	Carriers multiplication in neighboring surfactant-free silicon nanocrystals produced by 3D-surface engineering in liquid medium.. , 2012, , .		1
113	Enhancement of polymer solar cell performance under low-concentrated sunlight by 3D surface-engineered silicon nanocrystals. , 2013, , .		1
114	Silicon Nanocrystal/Nanocarbon Hybrids. , 2016, , 543-561.		1
115	Carrier extraction from metallic perovskite oxide nanoparticles. Nanoscale, 2021, 13, 12271-12278.	5.6	1
116	(Invited) Electronic and Optical Properties of Quantum-Confined Nanoparticles. ECS Transactions, 2021, 102, 67-73.	0.5	1
117	Thin silicon films deposited at low substrate temperatures studied by surface photovoltage technique. Thin Solid Films, 2004, 451-452, 408-412.	1.8	0
118	Fuctionalization of single silicon nanocrystals by connecting with multiwalled carbon nanotubes. AIP Conference Proceedings, 2005, , .	0.4	0
119	Wiring and introduction of single silicon nanocrystals into multi-walled carbon nanotubes. Materials Research Society Symposia Proceedings, 2005, 862, 451.	0.1	0
120	Transport and stability of doped freestanding silicon nanocrystals and MEH-PPV blends. Conference Record of the IEEE Photovoltaic Specialists Conference, 2008, , .	0.0	0
121	Bulk-heterojunction performance influenced by polymer structure and silicon nanocrystals micrograins doping. , 2009, , .		0
122	Filtering and Assembly of Si Nanocrystals/Conjugated Polymer Blend with Reduced Oxygen Penetration. Journal of the Electrochemical Society, 2010, 157, K194.	2.9	0
123	Enhanced photovoltaic effect of nanosecond-laser produced silicon nanocrystals embedded into TiO<inf>2</inf> nanotubes. , 2010, , .		0
124	Silicon nanocrystal surface engineering and their electronic interaction with carbon based materials. , 2011, , .		0
125	Surface-engineered silicon nanocrystals as high energy photons downshifters for organic and hybrid solar cells. , 2014, , .		0
126	Zero-dimensional perovskite-like (CH<inf>3</inf> NH<inf>3</inf>)<inf>3</inf> Bi<inf>2</inf> I<inf>9</inf> thin films for photovoltaics. , 2018, , .		0

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127	Silicon-Tin Alloyed Nanocrystals by Femtosecond Laser Plasma. ECS Transactions, 2021, 102, 19-23.	0.5	0
128	Room temperature photoluminescence of the freestanding silicon nanocrystals. Transactions of the Materials Research Society of Japan, 2008, 33, 659-663.	0.2	0
129	Functionalization of Carbon Nanotubes with Luminescent Silicon Nanocrystals upon Nanosecond Laser Processing in Liquid Media. , 0, , .		0
130	Colloidal Silicon Nanocrystallites for Low-cost Solar Cell Development. Nano-Micro Letters, 2010, 1, .	27.0	0