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	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
2	Carrier extraction from metallic perovskite oxide nanoparticles. Nanoscale, 2021, 13, 12271-12278.	5.6	1
3	(Invited) Electronic and Optical Properties of Quantum-Confined Nanoparticles. ECS Transactions, 2021, 102, 67-73.	0.5	1
4	Silicon-Tin Alloyed Nanocrystals by Femtosecond Laser Plasma. ECS Transactions, 2021, 102, 19-23.	0.5	0
5	The importance of surface states in N-doped carbon quantum dots. Carbon, 2021, 183, 1-11.	10.3	71
6	Tuning the Bandgap Character of Quantumâ€Confined Siâ€“Sn Alloyed Nanocrystals. Advanced Functional Materials, 2020, 30, 1907210.	14.9	5
7	Bridging energy bands to the crystalline and amorphous states of Si QDs. Faraday Discussions, 2020, 222, 390-404.	3.2	3
8	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
9	Nanostructured Perovskite Solar Cells. Nanomaterials, 2019, 9, 1481.	4.1	19
10	Size-dependent stability of ultra-small Î±-/Î²-phase tin nanocrystals synthesized by microplasma. Nature Communications, 2019, 10, 817.	12.8	23
11	Microplasma-synthesized ultra-small NiO nanocrystals, a ubiquitous hole transport material. Nanoscale Advances, 2019, 1, 4915-4925.	4.6	15
12	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
13	Semiconducting silicon-tin alloy nanocrystals with direct bandgap behavior for photovoltaic devices. Materials Today Energy, 2018, 7, 87-97.	4.7	15
14	Significant Carrier Extraction Enhancement at the Interface of an InN/p-GaN Heterojunction under Reverse Bias Voltage. Nanomaterials, 2018, 8, 1039.	4.1	6
15	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
16	Type-I alignment in MAPbI3 based solar devices with doped-silicon nanocrystals. Nano Energy, 2018, 50, 245-255.	16.0	22
17	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
18	(Invited) Microplasmas Technologies for Engineering of Silicon Based Quantum Dot Solar Cells. ECS Transactions, 2017, 77, 1-8.	0.5	3

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19	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
20	Charge carrier localised in zero-dimensional (CH3NH3)3Bi2I9 clusters. Nature Communications, 2017, 8, 170.	12.8	62
21	Bandgap Engineering in OHâ€Functionalized Silicon Nanocrystals: Interplay between Surface Functionalization and Quantum Confinement. Advanced Functional Materials, 2017, 27, 1701898.	14.9	15
22	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
23	Environmentally friendly nitrogen-doped carbon quantum dots for next generation solar cells. Sustainable Energy and Fuels, 2017, 1, 1611-1619.	4.9	81
24	Zero-dimensional methylammonium iodo bismuthate solar cells and synergistic interactions with silicon nanocrystals. Nanoscale, 2017, 9, 18759-18771.	5.6	25
25	Impact of Silicon Nanocrystal Oxidation on the Nonmetallic Growth of Carbon Nanotubes. ACS Applied Materials & Interfaces, 2016, 8, 19012-19023.	8.0	3
26	Temperature-dependent photoluminescence of surface-engineered silicon nanocrystals. Scientific Reports, 2016, 6, 27727.	3.3	20
27	Microscopic Electrical Conductivity of Nanodiamonds after Thermal and Plasma Treatments. MRS Advances, 2016, 1, 1105-1111.	0.9	8
28	Ultra-small photoluminescent silicon-carbide nanocrystals by atmospheric-pressure plasmas. Nanoscale, 2016, 8, 17141-17149.	5.6	41
29	Silicon Nanocrystal/Nanocarbon Hybrids. , 2016, , 543-561.		1
30	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
31	Lowâ€Temperature Atmospheric Pressure Plasma Processes for â€œGreenâ€•Third Generation Photovoltaics. Plasma Processes and Polymers, 2016, 13, 70-90.	3.0	62
32	Energy band diagram of device-grade silicon nanocrystals. Nanoscale, 2016, 8, 6623-6628.	5.6	21
33	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
34	The Interplay of Quantum Confinement and Hydrogenation in Amorphous Silicon Quantum Dots. Advanced Materials, 2015, 27, 8011-8016.	21.0	20
35	Synthesis of nanocrystals by discharges in liquid nitrogen from Siâ€“Sn sintered electrode. Scientific Reports, 2015, 5, 17477.	3.3	16
36	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

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37	A silicon nanocrystal/polymer nanocomposite as a down-conversion layer in organic and hybrid solar cells. Nanoscale, 2015, 7, 11566-11574.	5.6	37
38	Silicon-based quantum dots: synthesis, surface and composition tuning with atmospheric pressure plasmas. Journal Physics D: Applied Physics, 2015, 48, 314002.	2.8	54
39	Surface-engineered silicon nanocrystals as high energy photons downshifters for organic and hybrid solar cells. , 2014, , .		0
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	Semiconducting quantum confined siliconâ€“tin alloyed nanocrystals prepared by ns pulsed laser ablation in water. Nanoscale, 2013, 5, 6725.	5.6	19
42	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
43	Surface-engineered silicon nanocrystals. Nanoscale, 2013, 5, 1385.	5.6	67
44	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
45	Carbon nanotube growth activated by quantum-confined silicon nanocrystals. Journal Physics D: Applied Physics, 2013, 46, 122001.	2.8	18
46	Enhancement of polymer solar cell performance under low-concentrated sunlight by 3D surface-engineered silicon nanocrystals. , 2013, , .		1
47	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
48	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
49	Carriers multiplication in neighboring surfactant-free silicon nanocrystals produced by 3D-surface engineering in liquid medium.. , 2012, , .		1
50	Fabrication of multi-level carbon nanotube arrays with adjustable patterns. Nanoscale, 2012, 4, 278-283.	5.6	36
51	Electronic interactions of silicon nanocrystals and nanocarbon materials: Hybrid solar cells. Pure and Applied Chemistry, 2012, 84, 2629-2639.	1.9	3
52	Integration of Surfactant-Free Silicon Nanocrystal in Hybrid Solar Cells. Japanese Journal of Applied Physics, 2012, 51, 10NE25.	1.5	3
53	Plasmaâ€“Liquid Interactions at Atmospheric Pressure for Nanomaterials Synthesis and Surface Engineering. Plasma Processes and Polymers, 2012, 9, 1074-1085.	3.0	227
54	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

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55	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
56	Silicon Nanocrystals Surface Engineering by Nanosecond Laser Processing in Water. The Review of Laser Engineering, 2012, 40, 128.	0.0	2
57	Integration of Surfactant-Free Silicon Nanocrystal in Hybrid Solar Cells. Japanese Journal of Applied Physics, 2012, 51, 10NE25.	1.5	2
58	Silicon nanocrystal surface engineering and their electronic interaction with carbon based materials. , 2011, , .		0
59	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
60	Silicon Nanocrystals and Semiconducting Single-Walled Carbon Nanotubes Applied to Photovoltaic Cells. Journal of Physical Chemistry Letters, 2011, 2, 1646-1650.	4.6	32
61	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
62	Hybrid Optoelectronic and Photovoltaic Materials based on Silicon Nanocrystals and Conjugated Polymers. , 2011, , .		2
63	Synthesis and surface engineering of nanomaterials by atmospheric-pressure microplasmas. EPJ Applied Physics, 2011, 56, 24020.	0.7	42
64	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
65	Filtering and Assembly of Si Nanocrystals/Conjugated Polymer Blend with Reduced Oxygen Penetration. Journal of the Electrochemical Society, 2010, 157, K194.	2.9	0
66	Enhanced photovoltaic effect of nanosecond-laser produced silicon nanocrystals embedded into TiO<inf>2</inf> nanotubes. , 2010, , .		0
67	Ordered titanium dioxide nanotubes filled with photoluminescent surfactant-free silicon nanocrystals. Nanotechnology, 2010, 21, 215203.	2.6	15
68	Microplasma-induced surface engineering of silicon nanocrystals in colloidal dispersion. Applied Physics Letters, 2010, 97, .	3.3	63
69	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
70	Excitation energy transfer in conjugated polymer/silicon nanocrystal-based bulk heterojunctions. Pure and Applied Chemistry, 2010, 82, 2121-2135.	1.9	5
71	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
72	Colloidal Silicon Nanocrystallites for Low-cost Solar Cell Development. Nano-Micro Letters, 2010, 1, .	27.0	0

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73	Bulk-heterojunction performance influenced by polymer structure and silicon nanocrystals micrograins doping. , 2009, , .		0
74	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
75	Three-Dimensional Femtosecond Laser Fabrication. ECS Transactions, 2009, 16, 57-63.	0.5	1
76	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
77	Photoelectric Properties of Silicon Nanocrystals/P3HT Bulk-Heterojunction Ordered in Titanium Dioxide Nanotube Arrays. Nanoscale Research Letters, 2009, 4, 1389-94.	5.7	17
78	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
79	Luminescent properties of doped freestanding silicon nanocrystals embedded in MEH-PPV. Solar Energy Materials and Solar Cells, 2009, 93, 774-778.	6.2	13
80	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
81	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
82	Blue luminescent silicon nanocrystals prepared by short pulsed laser ablation in liquid media. Applied Surface Science, 2009, 255, 9643-9646.	6.1	18
83	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
84	Colloidal silicon nanocrystallites for low-cost solar cell development. Nano-Micro Letters, 2009, 1, 40-44.	27.0	4
85	Ambient-stable blue luminescent silicon nanocrystals prepared by nanosecond-pulsed laser ablation in water. Optics Express, 2009, 17, 520.	3.4	71
86	Encapsulation of fresh silicon nanocrystals in carbon nanotube cavity. Materials Letters, 2008, 62, 2578-2580.	2.6	5
87	Transport and stability of doped freestanding silicon nanocrystals and MEH-PPV blends. Conference Record of the IEEE Photovoltaic Specialists Conference, 2008, , .	0.0	0
88	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
89	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
90	Phosphorous and Boron Doped Colloidal Silicon Nanocrystals in Conjugated Co-polymers. Materials Research Society Symposia Proceedings, 2008, 1102, 1.	0.1	1

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91	Nanocrystalline silicon and carbon nanotube nanocomposites prepared by pulsed laser fragmentation. Pure and Applied Chemistry, 2008, 80, 2513-2520.	1.9	8
92	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
93	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
94	Room temperature photoluminescence of the freestanding silicon nanocrystals. Transactions of the Materials Research Society of Japan, 2008, 33, 659-663.	0.2	0
95	Self-organized nanostructures on atmospheric microplasma exposed surfaces. Applied Physics Letters, 2007, 91, 183111.	3.3	91
96	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
97	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
98	Aggregation of Silicon Nanocrystals Prepared by Laser Ablation in Deionized Water. Journal of Laser Micro Nanoengineering, 2007, 2, 15-20.	0.1	20
99	Filling of single silicon nanocrystals within multiwalled carbon nanotubes. Applied Physics Letters, 2006, 88, 033112.	3.3	17
100	Silicon nanocrystals formed by pulsed laser-induced fragmentation of electrochemically etched Si micrograins. Chemical Physics Letters, 2006, 429, 483-487.	2.6	21
101	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
102	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
103	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
104	Blue luminescent silicon nanocrystals prepared by ns pulsed laser ablation in water. Applied Physics Letters, 2006, 89, 213113.	3.3	125
105	Unaggregated silicon nanocrystals obtained by ball milling. Journal of Crystal Growth, 2005, 275, 589-597.	1.5	30
106	Fuctionalization of single silicon nanocrystals by connecting with multiwalled carbon nanotubes. AIP Conference Proceedings, 2005, , .	0.4	0
107	Clustering/declustering of silicon nanocrystals in spin-on glass solutions. Semiconductor Science and Technology, 2005, 20, 314-319.	2.0	11
108	Wiring and introduction of single silicon nanocrystals into multi-walled carbon nanotubes. Materials Research Society Symposia Proceedings, 2005, 862, 451.	0.1	0

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109	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
110	Ex situprepared Si nanocrystals embedded in silica glass: Formation and characterization. Journal of Applied Physics, 2004, 95, 3158-3163.	2.5	76
111	Thin silicon films deposited at low substrate temperatures studied by surface photovoltage technique. Thin Solid Films, 2004, 451-452, 408-412.	1.8	0
112	Silicon nanocrystals as light converter for solar cells. Thin Solid Films, 2004, 451-452, 384-388.	1.8	169
113	Photoluminescence studies from silicon nanocrystals embedded in spin on glass thin films. Journal of Luminescence, 2003, 101, 269-274.	3.1	12
114	Studies of silicon nanocrystals in phosphorus rich SiO2 matrices. Physica E: Low-Dimensional Systems and Nanostructures, 2003, 16, 420-423.	2.7	17
115	Basic features of transport in microcrystalline silicon. Solar Energy Materials and Solar Cells, 2003, 78, 493-512.	6.2	63
116	Photoluminescence of a superficial Si nanolayer and an example of its use. Applied Physics Letters, 2003, 82, 4056-4058.	3.3	8
117	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
118	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
119	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
120	Model of transport in microcrystalline silicon. Journal of Non-Crystalline Solids, 2002, 299-302, 355-359.	3.1	41
121	Photoluminescence properties of solâ€“gel derived SiO2 layers doped with porous silicon. Materials Science and Engineering C, 2002, 19, 233-236.	7.3	33
122	A new approach to surface photovoltage measurements on hydrogenated microcrystalline silicon layers. Philosophical Magazine Letters, 2001, 81, 405-410.	1.2	5
123	Transport anisotropy in microcrystalline silicon studied by measurement of ambipolar diffusion length. Journal of Applied Physics, 2001, 89, 1800.	2.5	31
124	Silicon thin film solar cells deposited under 80Â°C. Thin Solid Films, 2001, 383, 129-131.	1.8	35
125	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
126	Charge transport in microcrystalline Si â€“ the specific features. Solar Energy Materials and Solar Cells, 2001, 66, 61-71.	6.2	20

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127	Microcrystalline Silicon - Relation between Transport and Microstructure. Solid State Phenomena, 2001, 80-81, 213-224.	0.3	18
128	Amorphous/microcrystalline silicon superlatticesâ€"the chance to control isotropy and other transport properties. Applied Physics Letters, 2001, 79, 2540-2542.	3.3	18
129	Oscillating Antiferromagnetism of Ultrathin EuTe Layers. Acta Physica Polonica A, 1997, 92, 1051-1054.	0.5	3
130	Functionalization of Carbon Nanotubes with Luminescent Silicon Nanocrystals upon Nanosecond Laser Processing in Liquid Media. , 0, , .		0