Francesco Priolo

List of Publications by Year in descending order

149 papers	11,194 citations	43973 48 h-index	29081 104 g-index
150 all docs	150 docs citations	150 times ranked	6987 citing authors

#	Article	IF	Citations
1	Visualization of Directional Beaming of Weakly Localized Raman from a Random Network of Silicon Nanowires. Advanced Science, 2021, 8, 2100139.	5.6	9
2	Cost-Effective Fabrication of Fractal Silicon Nanowire Arrays. Nanomaterials, 2021, 11, 1972.	1.9	4
3	Silicon nanowires: a building block for future technologies. , 2021, , .		0
4	A Novel Silicon Platform for Selective Isolation, Quantification, and Molecular Analysis of Small Extracellular Vesicles. International Journal of Nanomedicine, 2021, Volume 16, 5153-5165.	3.3	5
5	Localized Energy Band Bending in ZnO Nanorods Decorated with Au Nanoparticles. Nanomaterials, 2021, 11, 2718.	1.9	11
6	Low cost synthesis of silicon nanowires for photonic applications. Journal of Materials Science: Materials in Electronics, 2020, 31, 34-40.	1.1	14
7	New Hybrid Light Harvesting Antenna Based on Silicon Nanowires and Metal Dendrimers. Advanced Optical Materials, 2020, 8, 2001070.	3.6	17
8	Erbium emission in Er:Y2O3 decorated fractal arrays of silicon nanowires. Scientific Reports, 2020, 10, 12854.	1.6	15
9	Bismuth doping of silicon compatible thin films for telecommunications and visible light emitting devices. Materials Science in Semiconductor Processing, 2019, 92, 47-57.	1.9	8
10	New Generation of Ultrasensitive Label-Free Optical Si Nanowire-Based Biosensors. ACS Photonics, 2018, 5, 471-479.	3.2	43
11	Low Cost Fabrication of Si NWs/CuI Heterostructures. Nanomaterials, 2018, 8, 569.	1.9	17
12	Ultrasensitive Label- and PCR-Free Genome Detection Based on Cooperative Hybridization of Silicon Nanowires Optical Biosensors. ACS Sensors, 2018, 3, 1690-1697.	4.0	67
13	Coherent backscattering of Raman light. Nature Photonics, 2017, 11, 170-176.	15.6	44
14	Light-emitting silicon nanowires obtained by metal-assisted chemical etching. Semiconductor Science and Technology, 2017, 32, 043004.	1.0	39
15	Efficient energy transfer from Bi to Er ions in Y 2 O 3 thin films. Journal of Luminescence, 2017, 191, 92-96.	1.5	4
16	Visible emission from bismuth-doped yttrium oxide thin films for lighting and display applications. Scientific Reports, 2017, 7, 17325.	1.6	18
17	Nanoscale silicon in photonics and photovoltaics. Series in Materials Science and Engineering, 2017, , 593-616.	0.1	0
18	Strongly enhanced light trapping in a two-dimensional silicon nanowire random fractal array. Light: Science and Applications, 2016, 5, e16062-e16062.	7.7	97

#	Article	IF	Citations
19	Decoration of silicon nanowires with silver nanoparticles for ultrasensitive surface enhanced Raman scattering. Nanotechnology, 2016, 27, 375603.	1.3	33
20	Experimental quantification of useful and parasitic absorption of light in plasmon-enhanced thin silicon films for solar cells application. Scientific Reports, 2016, 6, 22481.	1.6	50
21	Photonic Torque Microscopy of the Nonconservative Force Field for Optically Trapped Silicon Nanowires. Nano Letters, 2016, 16, 4181-4188.	4.5	39
22	Nanostructured CdO thin films for water treatments. Materials Science in Semiconductor Processing, 2016, 42, 85-88.	1.9	18
23	Silicon nanowire and carbon nanotube hybrid for room temperature multiwavelength light source. Scientific Reports, 2015, 5, 16753.	1.6	26
24	Enhancement of Er optical efficiency through bismuth sensitization in yttrium oxide. Applied Physics Letters, 2015, 107, 041908.	1.5	13
25	Broadband light trapping in thin film solar cells with self-organized plasmonic nano-colloids. Nanotechnology, 2015, 26, 135202.	1.3	51
26	Broadband photocurrent enhancement in a-Si:H solar cells with plasmonic back reflectors. Optics Express, 2014, 22, A1059.	1.7	60
27	Influence of Bi on the Er luminescence in yttrium-erbium disilicate thin films. Journal of Applied Physics, 2014, 116, 123511.	1.1	4
28	Colloidal plasmonic back reflectors for light trapping in solar cells. Nanoscale, 2014, 6, 4796-4805.	2.8	74
29	Visible and infrared emission from Si/Ge nanowires synthesized by metal-assisted wet etching. Nanoscale Research Letters, 2014, 9, 74.	3.1	7
30	Silicon nanostructures for photonics and photovoltaics. Nature Nanotechnology, 2014, 9, 19-32.	15.6	802
31	Silicon nanowires: synthesis, optical properties and applications. Physica Status Solidi C: Current Topics in Solid State Physics, 2014, 11, 1622-1625.	0.8	5
32	Structural, Electronic, and Electrical Properties of an Undoped n-Type CdO Thin Film with High Electron Concentration. Journal of Physical Chemistry C, 2014, 118, 15019-15026.	1.5	38
33	Colloidal Self-assembled Nanosphere Arrays for Plasmon-enhanced Light Trapping in Thin Film Silicon Solar Cells. Energy Procedia, 2014, 44, 184-191.	1.8	9
34	A Study of Current Stability in the Dissipative Flux Flow State of Superconducting Films. IEEE Transactions on Applied Superconductivity, 2013, 23, 8200704-8200704.	1.1	7
35	Self-assembled silver nanoparticles for plasmon-enhanced solar cell back reflectors: correlation between structural and optical properties. Nanotechnology, 2013, 24, 265601.	1.3	77
36	Room temperature allâ€silicon photonic crystal nanocavity light emitting diode at subâ€bandgap wavelengths. Laser and Photonics Reviews, 2013, 7, 114-121.	4.4	67

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37	Structural and optical properties of highly Er-doped Yb-Y disilicate thin films. Optical Materials Express, 2013, 3, 11.	1.6	8
38	Room temperature electrically pumped silicon nano-light source at telecommunication wavelengths. Proceedings of SPIE, 2013, , .	0.8	0
39	Heteroepitaxial Growth of Ge Nanowires on Si Substrates. International Journal of Photoenergy, 2012, 2012, 1-5.	1.4	3
40	Temperature dependence and aging effects on silicon nanowires photoluminescence. Optics Express, 2012, 20, 1483.	1.7	16
41	Eu^3+ reduction and efficient light emission in Eu_2O_3 films deposited on Si substrates. Optics Express, 2012, 20, 5501.	1.7	30
42	Plasmonic-photonic arrays with aperiodic spiral order for ultra-thin film solar cells. Optics Express, 2012, 20, A418.	1.7	34
43	Aluminium Implantation in Germanium: Uphill Diffusion, Electrical Activation, and Trapping. Applied Physics Express, 2012, 5, 021301.	1.1	16
44	Structural, Electronic, and Electrical Properties of Y-Doped Cd₂SnO₄. Journal of Physical Chemistry C, 2012, 116, 3363-3368.	1.5	10
45	Nanopatterning of silicon nanowires for enhancing visible photoluminescence. Nanoscale, 2012, 4, 2863.	2.8	30
46	Ion beam-induced bending of silicon nanowires. Physica E: Low-Dimensional Systems and Nanostructures, 2012, 44, 1074-1077.	1.3	9
47	Electrical and optical properties of ion implanted SOI-based photonic crystals. , 2011, , .		0
48	Size-Scaling in Optical Trapping of Silicon Nanowires. Nano Letters, 2011, 11, 4879-4884.	4.5	73
49	Si nanowire light emitting devices. , 2011, , .		0
50	Energy transfer and enhanced 154 Î¼m emission in Erbium-Ytterbium disilicate thin films. Optics Express, 2011, 19, 20761.	1.7	39
51	Nanoscale amorphization, bending and recrystallization in silicon nanowires. Applied Physics A: Materials Science and Processing, 2011, 102, 13-19.	1.1	33
52	Kinetics of Si and Ge nanowires growth through electron beam evaporation. Nanoscale Research Letters, 2011, 6, 162.	3.1	28
53	Light generation in silicon photonic crystal cavities. , 2011, , .		0
54	Fluorine effect on As diffusion in Ge. Journal of Applied Physics, 2011, 109, .	1.1	73

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55	Subbandgap photoluminescence of Si photonic crystal nanocavity at room temperature. , 2011, , .		0
56	Photoluminescence spectroscopy of silicon photonic crystal nanocavities. , 2011, , .		0
57	Electrical conduction and optical properties of doped silicon-on-insulator photonic crystals. Applied Physics Letters, 2011, 98, 203506.	1.5	12
58	Influence of O contamination and Au cluster properties on the structural features of Si nanowires. Thin Solid Films, 2010, 518, 2562-2564.	0.8	7
59	(Invited) Recent Insights in the Diffusion of Boron in Silicon and Germanium. ECS Transactions, 2010, 33, 167-178.	0.3	2
60	Heteroepitaxial Growth and Faceting of Ge Nanowires on Si(111) by Electron-Beam Evaporation. Electrochemical and Solid-State Letters, 2010, 13, K53.	2.2	18
61	Influence of the matrix properties on the performances of Er-doped Si nanoclusters light emitting devices. Journal of Applied Physics, 2010, 107, 054302.	1.1	33
62	Enhanced down conversion of photons emitted by photoexcited<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>Er</mml:mtext></mml:mrow><mml:mi>x</mml:mi></mml:msub> Physical Review B, 2010, 81, .	1.1	36
63	High-level incorporation of antimony in germanium by laser annealing. Journal of Applied Physics, 2010, 108, .	1.1	38
64	Modification of erbium radiative lifetime in planar silicon slot waveguides. Applied Physics Letters, 2009, 94, .	1.5	28
65	Control of growth mechanisms and orientation in epitaxial Si nanowires grown by electron beam evaporation. Nanotechnology, 2009, 20, 135601.	1.3	42
66	Er-based materials for Si microphotonics. Optical Materials, 2009, 31, 1269-1274.	1.7	8
67	Synthesis and luminescence properties of erbium silicate thin films. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2008, 146, 29-34.	1.7	7
68	Indirect Diffusion Mechanism of Boron Atoms in Crystalline and Amorphous Silicon. Materials Research Society Symposia Proceedings, 2008, 1070, 1.	0.1	1
69	Mechanism of Boron Diffusion in Amorphous Silicon. Physical Review Letters, 2008, 100, 155901.	2.9	44
70	Formation, evolution and photoluminescence properties of Si nanoclusters. Journal of Physics Condensed Matter, 2007, 19, 225003.	0.7	29
71	Role of the Si excess on the excitation of Er doped SiOx. Applied Physics Letters, 2007, 90, 183102.	1.5	31
72	Silicon nanocrystal formation in annealed silicon-rich silicon oxide films prepared by plasma enhanced chemical vapor deposition. Journal of Applied Physics, 2007, 101, 113510.	1.1	77

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73	Efficient Luminescence and Energy Transfer in Erbium Silicate Thin Films. Advanced Materials, 2007, 19, 1582-1588.	11.1	124
74	Surface morphology of Mn+ implanted Ge(100): A systematic investigation as a function of the implantation substrate temperature. Surface Science, 2007, 601, 2623-2627.	0.8	38
75	Iso-concentration study of atomistic mechanism of B diffusion in Si. Nuclear Instruments & Methods in Physics Research B, 2007, 257, 165-168.	0.6	0
76	Light emitting devices based on silicon nanostructures. Physica E: Low-Dimensional Systems and Nanostructures, 2007, 38, 181-187.	1.3	31
77	Light emitting devices based on Si nanoclusters: the integration with a photonic crystal and electroluminescence properties. Optoelectronics Letters, 2007, 3, 321-325.	0.4	0
78	Strong enhancement of Er3+ emission at room temperature in silicon-on-insulator photonic crystal waveguides. Applied Physics Letters, 2006, 88, 251114.	1.5	46
79	Evidence for a â€œdarkâ€•state of PbS nanocrystals in a silicate glass. Applied Physics Letters, 2006, 88, 181115.	1.5	36
80	Silicon-Based Light-Emitting Devices: Properties and Applications of Crystalline, Amorphous and Er-Doped Nanoclusters. IEEE Journal of Selected Topics in Quantum Electronics, 2006, 12, 1596-1606.	1.9	37
81	Electroluminescence and transport properties in amorphous silicon nanostructures. Nanotechnology, 2006, 17, 1428-1436.	1.3	68
82	Atomistic Mechanism of Boron Diffusion in Silicon. Physical Review Letters, 2006, 97, 255902.	2.9	28
83	Photonic-crystal silicon-nanocluster light-emitting device. Applied Physics Letters, 2006, 88, 033501.	1.5	37
84	Direct evidence of light confinement and emission enhancement in active silicon-on-insulator slot waveguides. Applied Physics Letters, 2006, 89, 241114.	1.5	62
85	Thermal evolution and photoluminescence properties of nanometric Si layers. Nanotechnology, 2005, 16, 3012-3016.	1.3	10
86	Revealing the sequential nature of the Si-nanoclusterâ€“Er interaction by variable pulse duration excitation. Physical Review B, 2005, 72, .	1.1	11
87	Light amplification in silicon nanocrystals by pump and probe transmission measurements. Journal of Applied Physics, 2004, 96, 5747-5755.	1.1	54
88	Optical and structural investigation on the energy transfer in a multicomponent glass co-doped with Si nanoaggregates and Er3+ ions. Materials Research Society Symposia Proceedings, 2004, 817, 49.	0.1	2
89	Structural properties of Si nanoclusters produced by thermal annealing of SiOx films. Materials Research Society Symposia Proceedings, 2004, 817, 118.	0.1	2
90	Role of fluorine in suppressing boron transient enhanced diffusion in preamorphized Si. Applied Physics Letters, 2004, 84, 1862-1864.	1.5	52

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91	Formation and evolution of luminescent Si nanoclusters produced by thermal annealing of SiOx films. Journal of Applied Physics, 2004, 95, 3723-3732.	1.1	303
92	Stimulated emission in plasma-enhanced chemical vapour deposited silicon nanocrystals. Physica E: Low-Dimensional Systems and Nanostructures, 2003, 16, 297-308.	1.3	121
93	Electroluminescence properties of light emitting devices based on silicon nanocrystals. Physica E: Low-Dimensional Systems and Nanostructures, 2003, 16, 395-399.	1.3	50
94	Erbium-doped Si nanocrystals: optical properties and electroluminescent devices. Physica E: Low-Dimensional Systems and Nanostructures, 2003, 16, 331-340.	1.3	60
95	Modeling and perspectives of the Si nanocrystalsâ€“Er interaction for optical amplification. Physical Review B, 2003, 67, .	1.1	179
96	Sensitizing properties of amorphous Si clusters on the 1.54-Î¼m luminescence of Er in Si-rich SiO2. Applied Physics Letters, 2003, 82, 3871-3873.	1.5	156
97	Dynamics of stimulated emission in silicon nanocrystals. Applied Physics Letters, 2003, 82, 4636-4638.	1.5	151
98	Dissolution kinetics of boron-interstitial clusters in silicon. Applied Physics Letters, 2003, 83, 680-682.	1.5	61
99	Coupling and Cooperative Up-conversion Coefficients in Er-doped Si Nanocrystals. Materials Research Society Symposia Proceedings, 2003, 770, 681.	0.1	0
100	Light Emitting Silicon for Microphotonics. Springer Tracts in Modern Physics, 2003, , .	0.1	237
101	Nonlinear optical properties of silicon nanocrystals grown by plasma-enhanced chemical vapor deposition. Journal of Applied Physics, 2002, 91, 4607-4610.	1.1	116
102	Excitation and de-excitation properties of silicon quantum dots under electrical pumping. Applied Physics Letters, 2002, 81, 1866-1868.	1.5	96
103	Electroluminescence at 1.54 Î¼m in Er-doped Si nanocluster-based devices. Applied Physics Letters, 2002, 81, 3242-3244.	1.5	164
104	Linear and nonlinear optical properties of plasma-enhanced chemical-vapour deposition grown silicon nanocrystals. Journal of Modern Optics, 2002, 49, 719-730.	0.6	59
105	Electroluminescence of silicon nanocrystals in MOS structures. Applied Physics A: Materials Science and Processing, 2002, 74, 1-5.	1.1	234
106	Luminescence properties of Si nanocrystals embedded in optical microcavities. Materials Science and Engineering C, 2002, 19, 377-381.	3.8	23
107	Role of the energy transfer in the optical properties of undoped and Er-doped interacting Si nanocrystals. Journal of Applied Physics, 2001, 89, 264-272.	1.1	300
108	High-resolution scanning capacitance microscopy by angle bevelling. Materials Science in Semiconductor Processing, 2001, 4, 77-80.	1.9	6

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109	Excitation and non-radiative de-excitation processes in Er-doped Si nanocrystals. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2001, 81, 9-15.	1.7	35
110	Influence of the spatial arrangement on the quantum confinement properties of Si nanocrystals. Optical Materials, 2001, 17, 51-55.	1.7	12
111	Deep-level electroluminescence at 3.5 Âµm from semi-insulating InP layers ion implanted with Fe. Semiconductor Science and Technology, 2001, 16, L1-L3.	1.0	6
112	Two-dimensional profiling and size effects on the transient enhanced diffusion of ultralow-energy B implants in Si. Applied Physics Letters, 2001, 78, 598-600.	1.5	17
113	Silicon nanocrystals and Er3+ ions in an optical microcavity. Journal of Applied Physics, 2001, 89, 8354-8356.	1.1	44
114	Complete suppression of the transient enhanced diffusion of B implanted in preamorphized Si by interstitial trapping in a spatially separated C-rich layer. Applied Physics Letters, 2001, 79, 4145-4147.	1.5	46
115	Enhanced rare earth luminescence in silicon nanocrystals. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2000, 69-70, 335-339.	1.7	28
116	Optical gain in silicon nanocrystals. Nature, 2000, 408, 440-444.	13.7	2,269
117	Room-temperature luminescence from rare-earth ions implanted into Si nanocrystals. The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties, 2000, 80, 719-728.	0.6	11
118	High-resolution scanning capacitance microscopy of silicon devices by surface beveling. Applied Physics Letters, 2000, 76, 2565-2567.	1.5	32
119	Er3+â€‚ionsâ€“Si nanocrystals interactions and their effects on the luminescence properties. Applied Physics Letters, 2000, 76, 2167-2169.	1.5	123
120	Quantum confinement and recombination dynamics in silicon nanocrystals embedded in Si/SiO2 superlattices. Journal of Applied Physics, 2000, 87, 8165-8173.	1.1	184
121	Interaction between Fe, dopants, and secondary defects in MeV Fe ion implanted InP. Journal of Applied Physics, 1999, 85, 753-760.	1.1	33
122	The excitation mechanism of rare-earth ions in silicon nanocrystals. Applied Physics A: Materials Science and Processing, 1999, 69, 3-12.	1.1	229
123	Understanding and control of the erbium non-radiative de-excitation processes in silicon. Journal of Luminescence, 1998, 80, 19-28.	1.5	16
124	Crystal grain nucleation in amorphous silicon. Journal of Applied Physics, 1998, 84, 5383-5414.	1.1	331
125	Direct evidence of impact excitation and spatial profiling of excited Er in light emitting Si diodes. Applied Physics Letters, 1998, 73, 93-95.	1.5	54
126	Role of surface and of dopant-impurity interactions on the electrical activation of B implants in crystalline Si. Applied Physics Letters, 1998, 72, 3011-3013.	1.5	19

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127	Excitation and nonradiative deexcitation processes ofEr3+in crystalline Si. Physical Review B, 1998, 57, 4443-4455.	1.1	267
128	Plasma processing of the silicon surface: A novel method to reduce transient enhanced diffusion of boron. Journal of Applied Physics, 1998, 84, 6628-6635.	1.1	2
129	The effect of reactive plasma etching on the transient enhanced diffusion of boron in silicon. Applied Physics Letters, 1997, 71, 1834-1836.	1.5	13
130	Mechanism and performance of forward and reverse bias electroluminescence at 1.54 Î¼m from Er-doped Si diodes. Journal of Applied Physics, 1997, 81, 2784-2793.	1.1	164
131	Roomâ€temperature migration and interaction of ion beam generated defects in crystalline silicon. Applied Physics Letters, 1996, 68, 3422-3424.	1.5	40
132	Room temperature migration of ion beam injected point defects in crystalline silicon. Nuclear Instruments & Methods in Physics Research B, 1996, 120, 9-13.	0.6	6
133	The erbiumâ€impurity interaction and its effects on the 1.54 Î¼m luminescence of Er3+in crystalline silicon. Journal of Applied Physics, 1995, 78, 3874-3882.	1.1	187
134	Roomâ€temperature electroluminescence from Erâ€doped crystalline Si. Applied Physics Letters, 1994, 64, 2235-2237.	1.5	350
135	Temperature dependence and quenching processes of the intra-4fluminescence of Er in crystalline Si. Physical Review B, 1994, 49, 16313-16320.	1.1	263
136	Electrical and optical characterization of Erâ€implanted Si: The role of impurities and defects. Journal of Applied Physics, 1993, 74, 4936-4942.	1.1	111
137	Defect production and annealing in ion-implanted amorphous silicon. Physical Review Letters, 1993, 70, 3756-3759.	2.9	60
138	Diffusion and outdiffusion of aluminium implanted into silicon. Semiconductor Science and Technology, 1993, 8, 488-494.	1.0	30
139	Optical activation and excitation mechanisms of Er implanted in Si. Physical Review B, 1993, 48, 11782-11788.	1.1	138
140	Reduction of secondary defect density by C and B implants in GexSi1â^'xlayers formed by high dose Ge implantation in (100) Si. Applied Physics Letters, 1993, 62, 2335-2337.	1.5	46
141	Amorphous-crystal silicon interfaces: structure and movement under ion beam irradiation. Applied Surface Science, 1992, 56-58, 577-588.	3.1	33
142	Lowâ€temperature reordering in partially amorphized Si crystals. Applied Physics Letters, 1990, 57, 768-770.	1.5	25
143	Concentration dependence and interfacial instabilities during ion beam annealing of arsenicâ€doped silicon. Applied Physics Letters, 1990, 56, 24-26.	1.5	8
144	Phenomenological description of ion-beam-induced epitaxial crystallization of amorphous silicon. Physical Review B, 1990, 41, 5235-5242.	1.1	66

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145	Ionâ€induced annealing and amorphization of isolated damage clusters in Si. Applied Physics Letters, 1990, 56, 2622-2624.	1.5	33
146	Ion-beam-induced epitaxial crystallization and amorphization in silicon. Materials Science and Engineering Reports, 1990, 5, 319-379.	5.8	191
147	Ion-beam-induced epitaxial crystallization and amorphization in silicon. Materials Science and Engineering Reports, 1990, 5, 321-379.	5.8	23
148	Nonequilibrium segregation and trapping phenomena during ion-induced crystallization of amorphous Si. Physical Review Letters, 1988, 60, 1322-1325.	2.9	49
149	Radiationâ€enhanced diffusion of Au in amorphous Si. Applied Physics Letters, 1988, 52, 1213-1215.	1.5	38