Tom Gregorkiewicz

List of Publications by Year
in descending order

91	4,558	147801 31	98798 67
papers	citations	h-index	g-index

92	92	92	5337
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Silicon nanostructures for photonics and photovoltaics. Nature Nanotechnology, 2014, 9, 19-32.	31.5	802
2	Space-separated quantum cutting with silicon nanocrystals for photovoltaic applications. Nature Photonics, 2008, 2, 105-109.	31.4	302
3	Red spectral shift and enhanced quantum efficiency in phonon-free photoluminescence from silicon nanocrystals. Nature Nanotechnology, 2010, 5, 878-884.	31.5	294
4	Surface brightens up Si quantum dots: direct bandgap-like size-tunable emission. Light: Science and Applications, 2013, 2, e47-e47.	16.6	254
5	Step-like enhancement of luminescence quantum yield of silicon nanocrystals. Nature Nanotechnology, 2011, 6, 710-713.	31.5	186
6	Direct generation of multiple excitons in adjacent silicon nanocrystals revealed by induced absorption. Nature Photonics, 2012, 6, 316-321.	31.4	173
7	Silicon quantum dots: surface matters. Journal of Physics Condensed Matter, 2014, 26, 173201.	1.8	163
8	Sensitization of Er luminescence by Si nanoclusters. Physical Review B, 2004, 69, .	3.2	131
9	Color-stable water-dispersed cesium lead halide perovskite nanocrystals. Nanoscale, 2017, 9, 631-636.	5.6	113
10	Energy Transfer between Inorganic Perovskite Nanocrystals. Journal of Physical Chemistry C, 2016, 120, 13310-13315.	3.1	106
11	Efficient carrier multiplication in CsPbI3 perovskite nanocrystals. Nature Communications, 2018, 9, 4199.	12.8	101
12	Perspective: Toward efficient GaN-based red light emitting diodes using europium doping. Journal of Applied Physics, 2018, 123, .	2.5	100
13	Nanosecond Dynamics of the Near-Infrared Photoluminescence of Er-DopedSiO2Sensitized with Si Nanocrystals. Physical Review Letters, 2006, 97, 207401.	7.8	87
14	Direct Observation of Band Structure Modifications in Nanocrystals of CsPbBr₃ Perovskite. Nano Letters, 2016, 16, 7198-7202.	9.1	82
15	Optically Induced Deexcitation of Rare-Earth Ions in a Semiconductor Matrix. Physical Review Letters, 2002, 89, 227401.	7.8	71
16	Energy transfer in Er-doped<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>SiO</mml:mtext></mml:mrow><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math> with Si nanocrystals. Physical Review B, 2008, 78, .	3.2	70
17	Hybridization of Single Nanocrystals of Cs₄PbBr₆ and CsPbBr₃. Journal of Physical Chemistry C, 2017, 121, 19490-19496.	3.1	68
18	Carrier multiplication in germanium nanocrystals. Light: Science and Applications, 2015, 4, e251-e251.	16.6	63

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19	Direct bandgap optical transitions in Si nanocrystals. JETP Letters, 2010, 90, 758-762.	1.4	59
20	Excitation cross section of erbium in semiconductor matrices under optical pumping. Physical Review B, 2001, 64, .	3.2	51
21	Photonic Properties of Er-Doped Crystalline Silicon. Proceedings of the IEEE, 2009, 97, 1269-1283.	21.3	51
22	Optical orientation and alignment of excitons in ensembles of inorganic perovskite nanocrystals. Physical Review B, 2018, 97, .	3.2	51
23	Microscopic Structure of Er-Related Optically Active Centers in Crystalline Silicon. Physical Review Letters, 2003, 90, 066401.	7.8	50
24	Multiexciton Lifetime in All-Inorganic CsPbBr₃ Perovskite Nanocrystals. Journal of Physical Chemistry C, 2017, 121, 1941-1947.	3.1	46
25	Microscopic Origin of the Fast Blueâ€Green Luminescence of Chemically Synthesized Nonâ€oxidized Silicon Quantum Dots. Small, 2012, 8, 3185-3191.	10.0	44
26	Experimental Investigations and Modeling of Auger Recombination in Silicon Nanocrystals. Journal of Physical Chemistry C, 2013, 117, 5963-5968.	3.1	42
27	Efficient optical extraction of hot-carrier energy. Nature Communications, 2014, 5, 4665.	12.8	42
28	Carrier multiplication in van der Waals layered transition metal dichalcogenides. Nature Communications, 2019, 10, 5488.	12.8	41
29	Integrating Quantum Dots and Dielectric Mie Resonators: A Hierarchical Metamaterial Inheriting the Best of Both. ACS Photonics, 2017, 4, 2187-2196.	6.6	37
30	Energy transfer between shallow centers and rare-earth ion cores:Er3+ion in silicon. Physical Review B, 2000, 61, 5369-5375.	3.2	36
31	Optical properties of a single type of optically active center inSiâ•Si:Ernanostructures. Physical Review B, 2004, 70, .	3.2	33
32	Donor-State-Enabling Er-Related Luminescence in Silicon: Direct Identification and Resonant Excitation. Physical Review Letters, 2007, 99, 077401.	7.8	29
33	Spectroscopic investigations of dark Si nanocrystals in SiO2 and their role in external quantum efficiency quenching. Journal of Applied Physics, 2013, 114, 074304.	2.5	29
34	Direct spectral probing of energy storage in Si:Er by a free-electron laser. Applied Physics Letters, 1999, 75, 4121-4123.	3.3	28
35	Afterglow effect in photoluminescence of Si:Er. Physical Review B, 2002, 65, .	3.2	28
36	Nanophotonics of higher-plant photosynthetic membranes. Light: Science and Applications, 2019, 8, 5.	16.6	28

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37	Electron-paramagnetic-resonance identification of silver centers in silicon. Physical Review B, 1992, 46, 4544-4550.	3.2	27
38	Saturation of luminescence from Si nanocrystals embedded in SiO₂. Physica Status Solidi (A) Applications and Materials Science, 2010, 207, 183-187.	1.8	27
39	Resonant Energy Transfer in Si Nanocrystal Solids. Journal of Physical Chemistry C, 2015, 119, 19565-19570.	3.1	27
40	Extraordinary Interfacial Stitching between Single All-Inorganic Perovskite Nanocrystals. ACS Applied Materials & Interfaces, 2018, 10, 5984-5991.	8.0	27
41	Emission efficiency limit of Si nanocrystals. Scientific Reports, 2016, 6, 19566.	3.3	26
42	Photoluminescence of erbium-doped silicon: Excitation power and temperature dependence. Journal of Applied Physics, 2000, 88, 1443-1455.	2.5	24
43	Size confinement of Si nanocrystals in multinanolayer structures. Scientific Reports, 2015, 5, 17289.	3.3	24
44	Allâ€Inorganic Perovskite Nanocrystals: Microscopy Insights in Structure and Optical Properties. Advanced Optical Materials, 2018, 6, 1800289.	7.3	24
45	Self-trapped exciton state in Si nanocrystals revealed by induced absorption. Physical Review B, 2012, 85, .	3.2	22
46	Simultaneous Photonic and Excitonic Coupling in Spherical Quantum Dot Supercrystals. ACS Nano, 2020, 14, 13806-13815.	14.6	22
47	Lasing in Rare-Earth-Doped Semiconductors: Hopes and Facts. MRS Bulletin, 1999, 24, 27-32.	3.5	21
48	Concentration ofEr3+ions contributing to1.5â^¼memission inSiâ•Si:Ernanolayers. Physical Review B, 2007, 76, .	3.2	21
49	Paramagnetic state of the isolated gold impurity in silicon. Physical Review Letters, 1992, 69, 3185-3188.	7.8	19
50	Increased carrier generation rate in Si nanocrystals in SiO2 investigated by induced absorption. Applied Physics Letters, 2011, 99, .	3.3	19
51	Highly Stable Perovskite Supercrystals via Oil-in-Oil Templating. Nano Letters, 2020, 20, 5997-6004.	9.1	19
52	Observation of Zeeman effect in photoluminescence of Er3+ ion imbedded in crystalline silicon. Physica B: Condensed Matter, 2001, 308-310, 340-343.	2.7	18
53	High-Power Eu-Doped GaN Red LED Based on a Multilayer Structure Grown at Lower Temperatures by Organometallic Vapor Phase Epitaxy. MRS Advances, 2017, 2, 159-164.	0.9	18
54	Optical gain of the<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mn>1.54</mml:mn><mml:mtext>â€,</mml:mtext><mml:mi>Î¼</mml:mi><mml:mtext>m</mml:mtext></mml:m in MBE-grown Si:Er nanolayers. Physical Review B, 2010, 81, .	3.2	17

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55	Carrier dynamics in Si nanocrystals in an SiO2matrix investigated by transient light absorption. Physical Review B, 2013, 88, .	3.2	17
56	Auger deexcitation ofEr3+ions in crystalline Si optically induced by midinfrared illumination. Physical Review B, 2003, 68, .	3.2	15
57	Theoretical modeling of thermally activated luminescence quenching processes in Si:Er. Physical Review B, 2005, 72, .	3.2	15
58	Photon cutting for excitation of Er3+ions in SiO2sensitized by Si quantum dots. Physical Review B, 2011, 84, .	3.2	15
59	Substantial enhancement of red emission intensity by embedding Eu-doped GaN into a microcavity. AIP Advances, 2016, 6, .	1.3	15
60	Color-Tunablility in GaN LEDs Based on Atomic Emission Manipulation under Current Injection. ACS Photonics, 2019, 6, 1153-1161.	6.6	15
61	Negligible Electronic Interaction between Photoexcited Electronâ€“Hole Pairs and Free Electrons in Phosphorusâ€“Boron Co-Doped Silicon Nanocrystals. Journal of Physical Chemistry C, 2018, 122, 6397-6404.	3.1	14
62	Spectroscopy of carrier multiplication in nanocrystals. Scientific Reports, 2016, 6, 20538.	3.3	12
63	Hot-carrier-mediated impact excitation of Er3+ ions in SiO2 sensitized by Si Nanocrystals. Applied Physics Letters, 2018, 113, 031109.	3.3	11
64	Microscopic evidence for role of oxygen in luminescence ofEr3+ions in Si: Two-color and pump-probe spectroscopy. Physical Review B, 2008, 78, .	3.2	10
65	Re-Excitation of Trivalent Europium Ions Doped into Gallium Nitride Revealed through Photoluminescence under Pulsed Laser Excitation. ACS Photonics, 2018, 5, 875-880.	6.6	10
66	Toward Practical Carrier Multiplication: Donor/Acceptor Codoped Si Nanocrystals in SiO₂. ACS Photonics, 2018, 5, 2843-2849.	6.6	10
67	Photon Recycling in CsPbBr₃ All-Inorganic Perovskite Nanocrystals. ACS Photonics, 2021, 8, 3201-3208.	6.6	10
68	Dynamics and microscopic origin of fast 1.5<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>Î¼</mml:mi></mml:mrow></mml:math>m emission in Er-doped SiO<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow /><mml:mrow><mml:mn>2</mml:mn></mml:mrow></mml:msub></mml:mrow></mml:math>sensitized wi	3.2	9
69	Structural and optical characterization of self-assembled Ge nanocrystal layers grown by plasma-enhanced chemical vapor deposition. Nanotechnology, 2014, 25, 405705.	2.6	9
70	Substitutional Doping of Yb³⁺ in CsPbBr_xCl_{3â€“x} Nanocrystals. Journal of Physical Chemistry C, 2020, 124, 6413-6417.	3.1	9
71	780-meV photoluminescence band in silver-doped silicon: Isotope effect and time-resolved spectroscopy. Physical Review B, 2001, 65, .	3.2	8
72	Room temperature synthesis and characterization of novel lead-free double perovskite nanocrystals with a stable and broadband emission. Journal of Materials Chemistry C, 2021, 9, 158-163.	5.5	8

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73	Investigation of optical gain in Eu-doped GaN thin film grown by OMVPE method. Journal of Science: Advanced Materials and Devices, 2016, 1, 220-223.	3.1	7
74	Photoluminescence Quantum Yield in Ensembles of Si Nanocrystals. Advanced Optical Materials, 2017, 5, 1600709.	7.3	7
75	Optical generation of electronâ€“hole pairs in phosphor and boron coâ€doped Si nanocrystals in SiO₂. Physica Status Solidi (A) Applications and Materials Science, 2016, 213, 2863-2866.	1.8	6
76	Trapping time of excitons in Si nanocrystals embedded in a <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi mathvariant="bold">SiO</mml:mi><mml:mn mathvariant="bold">2</mml:mn></mml:msub></mml:math> matrix. Physical Review B, 2017, 95, .	3.2	5
77	Direct Visualization and Determination of the Multiple Exciton Generation Rate. ACS Omega, 2020, 5, 21506-21512.	3.5	4
78	Investigation of saturation and excitation behavior of 1.5 Î¼m emission from Er³⁺ ions in SiO₂ sensitized with Si nanocrystals. Physica Status Solidi C: Current Topics in Solid State Physics, 2012, 9, 2312-2317.	0.8	3
79	Investigating photoluminescence quantum yield of silicon nanocrystals formed in SiO_xwith different initial Si excess. Proceedings of SPIE, 2015, , .	0.8	3
80	Growth and optical characteristics of Tm-doped AlGaN layer grown by organometallic vapor phase epitaxy. Journal of Applied Physics, 2018, 123, .	2.5	3
81	Picosecond time-resolved dynamics of energy transfer between GaN and the various excited states of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi mathvariant="normal">E</mml:mi><mml:msup><mml:mrow><mml:mi mathvariant="normal">u</mml:mi></mml:mrow><mml:mrow><mml:mn>3</mml:mn><mml:mo>+</mml:mo></mml:mrow></mml:msup> ions. Physical Review B, 2019, 100, .	3.2	3
82	Enhanced light extraction efficiency of Eu-related emission from a nano-patterned GaN layer grown by MOCVD. Scientific Reports, 2019, 9, 4231.	3.3	3
83	Oxygen related mechanism of reverse annealing for boron implants in silicon. Radiation Effects, 1984, 85, 249-254.	0.4	2
84	Detection of In segregation in InGaN by using Eu as a probe. Journal of Crystal Growth, 2017, 468, 831-834.	1.5	2
85	Microwave contactless method of conductivity measurement in the studies of ion implantation effects. Radiation Effects, 1980, 52, 169-173.	0.4	1
86	Electron paramagnetic resonance of silicon implanted with boron and arsenic ions. Radiation Effects, 1983, 77, 195-203.	0.4	1
87	Step-like increase of quantum yield of 1.5â€‰Î¼m Er-related emission in SiO2 doped with Si nanocrystals. Journal of Applied Physics, 2015, 117, 064303.	2.5	1
88	Comparison of the Optical Properties of Graphene and Alkyl-terminated Si and Ge Quantum Dots. Scientific Reports, 2017, 7, 14463.	3.3	1
89	(Invited) Optical Properties of All-Inorganic Perovskite Nanocrystals. ECS Meeting Abstracts, 2018, , .	0.0	1
90	On the frequency dependence of the classical cyclotron resonance linewidth. Physica Status Solidi A, 1977, 40, K127-K129.	1.7	0

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91	Optical properties of Si/Si:Er multi-nanolayer structures grown by SMBE method. Physica B: Condensed Matter, 2009, 404, 5132-5135.	2.7	0