Gerasimos Konstantatos

List of Publications by Year in Descending Order

132 papers	17,379 citations	51 h-index	131 g-index
138 ext. papers	19,543 ext. citations	13.4 avg, IF	7 L-index

#	Paper	IF	Citations
132	Visible-blind ZnMgO Colloidal Quantum Dot Downconverters expand Silicon CMOS Sensors Spectral Coverage into Ultraviolet and enable UV Band Discrimination.. *Advanced Materials*, **2022**, e2109498	24	2
131	Highly efficient, ultrathin, Cd-free kesterite solar cells in superstrate configuration enabled by band level tuning via Ag incorporation. *Nano Energy*, **2022**, 94, 106898	17.1	1
130	Cation disorder engineering yields AgBiS2 nanocrystals with enhanced optical absorption for efficient ultrathin solar cells. *Nature Photonics*, **2022**, 16, 235-241	33.9	19
129	Colloidal Quantum Dot Light Emitting Diodes at Telecom Wavelength with 18% Quantum Efficiency and Over 1MHz Bandwidth.. *Advanced Science*, **2022**, e2200637	13.6	2
128	Low-Threshold, Highly Stable Colloidal Quantum Dot Short-Wave Infrared Laser enabled by Suppression of Trap-Assisted Auger Recombination. *Advanced Materials*, **2021**, e2107532	24	5
127	Colloidal Quantum Dot Image Sensors: Technology and Marketplace Opportunities. *Information Display*, **2021**, 37, 18-23	0.8	0
126	AgBiSe2 Colloidal Nanocrystals for Use in Solar Cells. *ACS Applied Nano Materials*, **2021**, 4, 2887-2894	5.6	5
125	66-5: Invited Paper: Colloidal Quantum Dots: A Material Platform for Highly Sensitive Photodetectors and High Quantum Efficiency Light Emitters in the SWIR. *Digest of Technical Papers SID International Symposium*, **2021**, 52, 991-994	0.5	
124	Colloidal synthesis of lead-free Cs2TiBr6Ix perovskite nanocrystals. *Journal of Materials Chemistry C*, **2021**, 9, 11098-11103	7.1	5
123	AgZnSnS-ZnS core-shell colloidal quantum dots: a near-infrared luminescent material based on environmentally friendly elements. *Journal of Materials Chemistry C*, **2021**, 9, 5682-5688	7.1	3
122	Highly transparent and conductive ITO substrates for near infrared applications. *APL Materials*, **2021**, 9, 021121	5.7	7
121	Solution-processed PbS quantum dot infrared laser with room-temperature tuneable emission in the optical telecommunications window. *Nature Photonics*, **2021**, 15, 738-742	33.9	10
120	Size- and Temperature-Dependent Intraband Optical Properties of Heavily n-Doped PbS Colloidal Quantum Dot Solid-State Films. *ACS Nano*, **2020**, 14, 7161-7169	16.7	13
119	Colloidal AgBiS2 nanocrystals with reduced recombination yield 6.4% power conversion efficiency in solution-processed solar cells. *Nano Energy*, **2020**, 75, 104961	17.1	24
118	Low-Cost RoHS Compliant Solution Processed Photovoltaics Enabled by Ambient Condition Synthesis of AgBiS Nanocrystals. *ACS Photonics*, **2020**, 7, 588-595	6.3	14
117	Ag2ZnSnS4 Nanocrystals Expand the Availability of RoHS Compliant Colloidal Quantum Dots. *Chemistry of Materials*, **2020**, 32, 2148-2155	9.6	8
116	Cation Disorder and Local Structural Distortions in AgBiS Nanoparticles. *Nanomaterials*, **2020**, 10,	5.4	1

115	Mid- and Long-Wave Infrared Optoelectronics via Intraband Transitions in PbS Colloidal Quantum Dots. *Nano Letters*, **2020**, 20, 1003-1008	11.5	33
114	On-Demand Activation of Photochromic Nanoheaters for High Color Purity 3D Printing. *Nano Letters*, **2020**, 20, 3485-3491	11.5	12
113	Single-Exciton Gain and Stimulated Emission Across the Infrared Telecom Band from Robust Heavily Doped PbS Colloidal Quantum Dots. *Nano Letters*, **2020**, 20, 5909-5915	11.5	22
112	Highly Efficient, Bright, and Stable Colloidal Quantum Dot Short-Wave Infrared Light-Emitting Diodes. *Advanced Functional Materials*, **2020**, 30, 2004445	15.6	11
111	Solid-State Thin-Film Broadband Short-Wave Infrared Light Emitters. *Advanced Materials*, **2020**, 32, e2003830	24	12
110	Flexible graphene photodetectors for wearable fitness monitoring. *Science Advances*, **2019**, 5, eaaw7846	14.3	107
109	High Sensitivity Hybrid PbS CQD-TMDC Photodetectors up to 2 µm. *ACS Photonics*, **2019**, 6, 2381-2386	6.3	24
108	Solution processed infrared- and thermo-photovoltaics based on 0.7 eV bandgap PbS colloidal quantum dots. *Nanoscale*, **2019**, 11, 838-843	7.7	27
107	Origin of the Below-Bandgap Turn-On Voltage in Light-Emitting Diodes and the High V in Solar Cells Comprising Colloidal Quantum Dots with an Engineered Density of States. *Journal of Physical Chemistry Letters*, **2019**, 10, 3029-3034	6.4	12
106	Engineering Vacancies in Bi2S3 yielding Sub-Bandgap Photoresponse and Highly Sensitive Short-Wave Infrared Photodetectors. *Advanced Optical Materials*, **2019**, 7, 1900258	8.1	21
105	High-efficiency colloidal quantum dot infrared light-emitting diodes via engineering at the supra-nanocrystalline level. *Nature Nanotechnology*, **2019**, 14, 72-79	28.7	112
104	Reduction of moisture sensitivity of PbS quantum dot solar cells by incorporation of reduced graphene oxide. *Solar Energy Materials and Solar Cells*, **2018**, 183, 1-7	6.4	55
103	Infrared Solution-Processed Quantum Dot Solar Cells Reaching External Quantum Efficiency of 80% at 1.35 µm and J in Excess of 34 mA cm. *Advanced Materials*, **2018**, 30, 1704928	24	73
102	High-Open-Circuit-Voltage Solar Cells Based on Bright Mixed-Halide CsPbBrI2 Perovskite Nanocrystals Synthesized under Ambient Air Conditions. *Journal of Physical Chemistry C*, **2018**, 122, 7621-7626	3.8	47
101	Matildite Contact with Media: First-Principles Study of AgBiS Surfaces and Nanoparticle Morphology. *Journal of Physical Chemistry B*, **2018**, 122, 521-526	3.4	7
100	High carrier mobility in monolayer CVD-grown MoS through phonon suppression. *Nanoscale*, **2018**, 10, 15071-15077	7.7	40
99	Recent Progress and Future Prospects of 2D-Based Photodetectors. *Advanced Materials*, **2018**, 30, e1801164	24	221
98	White and Brightly Colored 3D Printing Based on Resonant Photothermal Sensitizers. *Nano Letters*, **2018**, 18, 6660-6664	11.5	15

97	Current status and technological prospect of photodetectors based on two-dimensional materials. *Nature Communications*, **2018**, 9, 5266	17.4	104
96	High-Efficiency Light-Emitting Diodes Based on Formamidinium Lead Bromide Nanocrystals and Solution Processed Transport Layers. *Chemistry of Materials*, **2018**, 30, 6231-6235	9.6	15
95	Colloidal Quantum Dot Tandem Solar Cells Using Chemical Vapor Deposited Graphene as an Atomically Thin Intermediate Recombination Layer. *ACS Energy Letters*, **2018**, 3, 1753-1759	20.1	22
94	Ultrahigh Carrier Mobility Achieved in Photoresponsive Hybrid Perovskite Films via Coupling with Single-Walled Carbon Nanotubes. *Advanced Materials*, **2017**, 29, 1602432	24	87
93	MoS -HgTe Quantum Dot Hybrid Photodetectors beyond 2 μm. *Advanced Materials*, **2017**, 29, 1606576	24	188
92	Suppressing Deep Traps in PbS Colloidal Quantum Dots via Facile Iodide Substitutional Doping for Solar Cells with Efficiency >10%. *ACS Energy Letters*, **2017**, 2, 739-744	20.1	78
91	Trap-State Suppression and Improved Charge Transport in PbS Quantum Dot Solar Cells with Synergistic Mixed-Ligand Treatments. *Small*, **2017**, 13, 1700598	11	55
90	Breaking the Open-Circuit Voltage Deficit Floor in PbS Quantum Dot Solar Cells through Synergistic Ligand and Architecture Engineering. *ACS Energy Letters*, **2017**, 2, 1444-1449	20.1	60
89	Broadband image sensor array based on graphene–CMOS integration. *Nature Photonics*, **2017**, 11, 366-371	33.9	350
88	Bandgap engineering by cationic disorder: case study on AgBiS. *Physical Chemistry Chemical Physics*, **2017**, 19, 27940-27944	3.6	16
87	Ultrasensitive all-2D MoS phototransistors enabled by an out-of-plane MoS PN homojunction. *Nature Communications*, **2017**, 8, 572	17.4	122
86	Near-Unity Photoluminescence Quantum Yield in CsPbBr3 Nanocrystal Solid-State Films via Postsynthesis Treatment with Lead Bromide. *Chemistry of Materials*, **2017**, 29, 7663-7667	9.6	218
85	Reducing Interface Recombination through Mixed Nanocrystal Interlayers in PbS Quantum Dot Solar Cells. *ACS Applied Materials & Interfaces*, **2017**, 9, 27390-27395	9.5	25
84	Low-temperature colloidal synthesis of CuBiS2 nanocrystals for optoelectronic devices. *Journal of Materials Chemistry A*, **2017**, 5, 24621-24625	13	17
83	Low-Temperature, Solution-Based Sulfurization and Necking of PbS CQD Films. *Journal of Physical Chemistry C*, **2016**, 120, 20315-20322	3.8	15
82	Solid-state colloidal CuInS quantum dot solar cells enabled by bulk heterojunctions. *Nanoscale*, **2016**, 8, 16776-16785	7.7	30
81	Aliovalent Doping in Colloidal Quantum Dots and Its Manifestation on Their Optical Properties: Surface Attachment versus Structural Incorporation. *Chemistry of Materials*, **2016**, 28, 5384-5393	9.6	10
80	The role of surface passivation for efficient and photostable PbS quantum dot solar cells. *Nature Energy*, **2016**, 1,	62.3	233

79	Integrating an electrically active colloidal quantum dot photodiode with a graphene phototransistor. *Nature Communications*, **2016**, 7, 11954	17.4	161
78	Photo-FETs: Phototransistors Enabled by 2D and 0D Nanomaterials. *ACS Photonics*, **2016**, 3, 2197-2210	6.3	160
77	Solution-processed solar cells based on environmentally friendly AgBiS2 nanocrystals. *Nature Photonics*, **2016**, 10, 521-525	33.9	218
76	Interface Engineering in Hybrid Quantum Dot2D Phototransistors. *ACS Photonics*, **2016**, 3, 1324-1330	6.3	97
75	Strategies for the Controlled Electronic Doping of Colloidal Quantum Dot Solids. *ChemPhysChem*, **2016**, 17, 632-44	3.2	41
74	Matildite versus schapbachite: First-principles investigation of the origin of photoactivity in AgBiS2. *Physical Review B*, **2016**, 94,	3.3	29
73	Colloidal synthesis of Cu2SnSe3 nanocrystals with structure induced shape evolution. *CrystEngComm*, **2016**, 18, 3161-3169	3.3	13
72	Prospects of nanoscience with nanocrystals. *ACS Nano*, **2015**, 9, 1012-57	16.7	849
71	Large-Area Plasmonic-CrystalHot-Electron-Based Photodetectors. *ACS Photonics*, **2015**, 2, 950-957	6.3	55
70	A facile phosphine-free colloidal synthesis of Cu2SnS3 and Cu2ZnSnS4 nanorods with a controllable aspect ratio. *Chemical Communications*, **2015**, 51, 13810-3	5.8	35
69	Solution Processed Bismuth Sulfide Nanowire Array Core/Silver Sulfide Shell Solar Cells. *Chemistry of Materials*, **2015**, 27, 3700-3706	9.6	27
68	Metal-insulator-semiconductor heterostructures for plasmonic hot-carrier optoelectronics. *Optics Express*, **2015**, 23, 14715-23	3.3	13
67	Highly Sensitive, Encapsulated MoS2 Photodetector with Gate Controllable Gain and Speed. *Nano Letters*, **2015**, 15, 7307-13	11.5	381
66	Size and bandgap tunability in Bi2S3 colloidal nanocrystals and its effect in solution processed solar cells. *Journal of Materials Chemistry A*, **2015**, 3, 20642-20648	13	61
65	Hybrid 2D-0D MoS2 -PbS quantum dot photodetectors. *Advanced Materials*, **2015**, 27, 176-80	24	507
64	Science and technology roadmap for graphene, related two-dimensional crystals, and hybrid systems. *Nanoscale*, **2015**, 7, 4598-810	7.7	2015
63	Thiol-Free Synthesized Copper Indium Sulfide Nanocrystals as Optoelectronic Quantum Dot Solids. *Chemistry of Materials*, **2015**, 27, 8424-8432	9.6	32
62	Integrated colloidal quantum dot photodetectors with color-tunable plasmonic nanofocusing lenses. *Light: Science and Applications*, **2015**, 4, e234-e234	16.7	39

61	Molecular interfaces for plasmonic hot electron photovoltaics. *Nanoscale*, **2015**, 7, 2281-8	7.7	31
60	Tailoring the Electronic Properties of Colloidal Quantum Dots in Metal-Semiconductor Nanocomposites for High Performance Photodetectors. *Small*, **2015**, 11, 2636-41	11	28
59	Imprinted electrodes for enhanced light trapping in solution processed solar cells. *Advanced Materials*, **2014**, 26, 443-8	24	37
58	Remote trap passivation in colloidal quantum dot bulk nano-heterojunctions and its effect in solution-processed solar cells. *Advanced Materials*, **2014**, 26, 4741-7	24	55
57	Improved electronic coupling in hybrid organic-inorganic nanocomposites employing thiol-functionalized P3HT and bismuth sulfide nanocrystals. *Nanoscale*, **2014**, 6, 10018-26	7.7	20
56	Surface Plasmon Polariton Couplers for Light Trapping in Thin-Film Absorbers and Their Application to Colloidal Quantum Dot Optoelectronics. *ACS Photonics*, **2014**, 1, 1197-1205	6.3	23
55	Plasmonic Schottky Nanojunctions for Tailoring the Photogeneration Profile in Thin Film Solar Cells. *Advanced Optical Materials*, **2014**, 2, 493-500	8.1	10
54	Complete colloidal synthesis of Cu[illegible]SnSe[illegible] nanocrystals with crystal phase and shape control. *Journal of the American Chemical Society*, **2014**, 136, 7954-60	16.4	69
53	Determination of carrier lifetime and mobility in colloidal quantum dot films via impedance spectroscopy. *Applied Physics Letters*, **2014**, 104, 063504	3.4	24
52	Heterovalent cation substitutional doping for quantum dot homojunction solar cells. *Nature Communications*, **2013**, 4, 2981	17.4	92
51	Hybrid solution-processed bulk heterojunction solar cells based on bismuth sulfide nanocrystals. *Physical Chemistry Chemical Physics*, **2013**, 15, 5482-7	3.6	36
50	Size- and Temperature-Dependent Carrier Dynamics in Oleic Acid Capped PbS Quantum Dots. *Journal of Physical Chemistry C*, **2013**, 117, 1887-1892	3.8	31
49	Integrated prototype nanodevices via SnO[illegible] nanoparticles decorated SnSe nanosheets. *Scientific Reports*, **2013**, 3, 2613	4.9	41
48	Coupling Resonant Modes of Embedded Dielectric Microspheres in Solution-Processed Solar Cells. *Advanced Optical Materials*, **2013**, 1, 139-143	8.1	14
47	Photoelectric energy conversion of plasmon-generated hot carriers in metal-insulator-semiconductor structures. *ACS Nano*, **2013**, 7, 3581-8	16.7	97
46	Microresonators: Coupling Resonant Modes of Embedded Dielectric Microspheres in Solution-Processed Solar Cells (Advanced Optical Materials 2/2013). *Advanced Optical Materials*, **2013**, 1, 194-194	8.1	1
45	Spectroscopic evidence of resonance energy transfer mechanism from PbS QDs to bulk silicon. *EPJ Web of Conferences*, **2013**, 54, 01017	0.3	4
44	Resonance energy transfer from PbS colloidal quantum dots to bulk silicon: the road to hybrid photovoltaics **2012**,		6

43	Electrical effects of metal nanoparticles embedded in ultra-thin colloidal quantum dot films. *Applied Physics Letters*, **2012**, 101, 041103	3.4	17
42	Au–Cu alloy bridged synthesis and optoelectronic properties of Au@CuInSe2 core–shell hybrid nanostructures. *Journal of Materials Chemistry*, **2012**, 22, 1765-1769		20
41	Plasmonic light trapping leads to responsivity increase in colloidal quantum dot photodetectors. *Applied Physics Letters*, **2012**, 100, 043101	3.4	44
40	Wurtzite Cu2ZnSnSe4 nanocrystals for high-performance organic–inorganic hybrid photodetectors. *NPG Asia Materials*, **2012**, 4, e2-e2	10.3	109
39	Hybrid graphene-quantum dot phototransistors with ultrahigh gain. *Nature Nanotechnology*, **2012**, 7, 363-8	28.7	1588
38	Solution-processed inorganic bulk nano-heterojunctions and their application to solar cells. *Nature Photonics*, **2012**, 6, 529-534	33.9	194
37	Bandgap engineering of monodispersed Cu(2-x)S(y)Se(1-y) nanocrystals through chalcogen ratio and crystal structure. *Journal of the American Chemical Society*, **2011**, 133, 18558-61	16.4	86
36	Absorption enhancement in solution processed metal-semiconductor nanocomposites. *Optics Express*, **2011**, 19, 21038-49	3.3	23
35	Solution-processed heterojunction solar cells based on p-type PbS quantum dots and n-type Bi2 S3 nanocrystals. *Advanced Materials*, **2011**, 23, 3712-7	24	160
34	Near IR-Sensitive, Non-toxic, Polymer/Nanocrystal Solar Cells Employing Bi2S3 as the Electron Acceptor. *Advanced Energy Materials*, **2011**, 1, 1029-1035	21.8	63
33	Colloidal quantum dot photodetectors. *Infrared Physics and Technology*, **2011**, 54, 278-282	2.7	91
32	Eco-friendly visible-wavelength photodetectors based on bandgap engineerable nanomaterials. *Journal of Materials Chemistry*, **2011**, 21, 17582		38
31	Nanostructured materials for photon detection. *Nature Nanotechnology*, **2010**, 5, 391-400	28.7	1036
30	Synthesis of monodispersed wurtzite structure CuInSe2 nanocrystals and their application in high-performance organic-inorganic hybrid photodetectors. *Journal of the American Chemical Society*, **2010**, 132, 12218-21	16.4	221
29	Depleted-heterojunction colloidal quantum dot solar cells. *ACS Nano*, **2010**, 4, 3374-80	16.7	707
28	Solution-processed PbS quantum dot infrared photodetectors and photovoltaics **2010**, 70-74		3
27	Depleted-Heterojunction Colloidal Quantum Dot Solar Cells Employing Low-Cost Metal Contacts **2010**,		1
26	Solution-Processed Quantum Dot Photodetectors. *Proceedings of the IEEE*, **2009**, 97, 1666-1683	14.3	105

25	Fast, sensitive and spectrally tuneable colloidal-quantum-dot photodetectors. *Nature Nanotechnology*, **2009**, 4, 40-4	28.7	395
24	High performance photodetectors of individual InSe single crystalline nanowire. *Journal of the American Chemical Society*, **2009**, 131, 15602-3	16.4	98
23	Heavy-metal-free solution-processed nanoparticle-based photodetectors: doping of intrinsic vacancies enables engineering of sensitivity and speed. *ACS Nano*, **2009**, 3, 331-8	16.7	68
22	Engineering the temporal response of photoconductive photodetectors via selective introduction of surface trap states. *Nano Letters*, **2008**, 8, 1446-50	11.5	192
21	Sensitive solution-processed Bi2S3 nanocrystalline photodetectors. *Nano Letters*, **2008**, 8, 4002-6	11.5	239
20	Smooth-Morphology Ultrasensitive Solution-Processed Photodetectors. *Advanced Materials*, **2008**, 20, 4398-4402	24	46
19	Sensitive solution-processed visible-wavelength photodetectors. *Nature Photonics*, **2007**, 1, 531-534	33.9	342
18	PbS colloidal quantum dot photoconductive photodetectors: Transport, traps, and gain. *Applied Physics Letters*, **2007**, 91, 173505	3.4	143
17	Ultrasensitive solution-cast quantum dot photodetectors. *Nature*, **2006**, 442, 180-3	50.4	1442
16	Enhanced infrared photovoltaic efficiency in PbS nanocrystal/semiconducting polymer composites: 600-fold increase in maximum power output via control of the ligand barrier. *Applied Physics Letters* , **2005**, 87, 233101	3.4	111
15	Solution-processed PbS quantum dot infrared photodetectors and photovoltaics. *Nature Materials*, **2005**, 4, 138-42	27	1620
14	Efficient Infrared Electroluminescent Devices Using Solution-Processed Colloidal Quantum Dots. *Advanced Functional Materials*, **2005**, 15, 1865-1869	15.6	93
13	Negative capacitance in polymer-nanocrystal composites. *Applied Physics Letters*, **2004**, 85, 3567-3569	3.4	27
12	Luminescence from processible quantum dot-polymer light emitters 1100�1600 nm: Tailoring spectral width and shape. *Applied Physics Letters*, **2004**, 84, 3459-3461	3.4	42
11	Exciton capture by nanocrystals in a polymer matrix. *Journal of Applied Physics*, **2003**, 94, 4066-4069	2.5	12
10	Engineering colloidal quantum dots1-29		2
9	Charge and energy transfer in polymer/nanocrystal blends87-111		1
8	Multiple exciton generation in semiconductor quantum dots and electronically coupled quantum dot arrays for application to thirdgeneration photovoltaic solar cells112-147		1

7	Colloidal quantum dot photodetectors173-198		3
6	Optical gain and lasing in colloidal quantum dots199-232		3
5	Solution-processed infrared quantum dot solar cells256-291		
4	Semiconductor quantum dot sensitized TiO2 mesoporous solar cells292-309		
3	Hybrid 2D-QD MoS2□PbSe Quantum Dot Broadband Photodetectors with High-Sensitivity and Room-Temperature Operation at 2.5□µm. *Advanced Optical Materials*,2101378	8.1	3
2	Ultra-Thin Infrared Optical Gain Medium and Optically-Pumped Stimulated Emission in PbS Colloidal Quantum Dot LEDs. *Advanced Functional Materials*,2200832	15.6	1
1	Environmentally Friendly AgBiS 2 Nanocrystal Inks for Efficient Solar Cells Employing Green Solvent Processing. *Advanced Energy Materials*,2200700	21.8	2