

# Mathew Beard

## List of Publications by Citations

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185  
papers

21,730  
citations

70  
h-index

147  
g-index

214  
ext. papers

24,693  
ext. citations

13.2  
avg, IF

7.07  
L-index

#	Paper	IF	Citations
185	Highly efficient multiple exciton generation in colloidal PbSe and PbS quantum dots. <i>Nano Letters</i> , <b>2005</b> , 5, 865-71	11.5	1425
184	Peak external photocurrent quantum efficiency exceeding 100% via MEG in a quantum dot solar cell. <i>Science</i> , <b>2011</b> , 334, 1530-3	33.3	1344
183	Semiconductor quantum dots and quantum dot arrays and applications of multiple exciton generation to third-generation photovoltaic solar cells. <i>Chemical Reviews</i> , <b>2010</b> , 110, 6873-90	68.1	996
182	Schottky solar cells based on colloidal nanocrystal films. <i>Nano Letters</i> , <b>2008</b> , 8, 3488-92	11.5	824
181	Multiple exciton generation in colloidal silicon nanocrystals. <i>Nano Letters</i> , <b>2007</b> , 7, 2506-12	11.5	710
180	Structural, optical, and electrical properties of self-assembled films of PbSe nanocrystals treated with 1,2-ethanedithiol. <i>ACS Nano</i> , <b>2008</b> , 2, 271-80	16.7	638
179	Enhanced mobility CsPbI quantum dot arrays for record-efficiency, high-voltage photovoltaic cells. <i>Science Advances</i> , <b>2017</b> , 3, eaao4204	14.3	636
178	PbTe colloidal nanocrystals: synthesis, characterization, and multiple exciton generation. <i>Journal of the American Chemical Society</i> , <b>2006</b> , 128, 3241-7	16.4	605
177	Observation of a hot-phonon bottleneck in lead-iodide perovskites. <i>Nature Photonics</i> , <b>2016</b> , 10, 53-59	33.9	577
176	Carrier lifetimes of >1 ns in Sn-Pb perovskites enable efficient all-perovskite tandem solar cells. <i>Science</i> , <b>2019</b> , 364, 475-479	33.3	496
175	Terahertz Spectroscopy. <i>Journal of Physical Chemistry B</i> , <b>2002</b> , 106, 7146-7159	3.4	442
174	Transient photoconductivity in GaAs as measured by time-resolved terahertz spectroscopy. <i>Physical Review B</i> , <b>2000</b> , 62, 15764-15777	3.3	379
173	Extrinsic ion migration in perovskite solar cells. <i>Energy and Environmental Science</i> , <b>2017</b> , 10, 1234-1242	35.4	336
172	Low surface recombination velocity in solution-grown CH <sub>3</sub> NH <sub>3</sub> PbBr <sub>3</sub> perovskite single crystal. <i>Nature Communications</i> , <b>2015</b> , 6, 7961	17.4	329
171	Multiple Exciton Generation in Semiconductor Quantum Dots. <i>Journal of Physical Chemistry Letters</i> , <b>2011</b> , 2, 1282-8	6.4	322
170	Stability assessment on a 3% bilayer PbS/ZnO quantum dot heterojunction solar cell. <i>Advanced Materials</i> , <b>2010</b> , 22, 3704-7	24	315
169	Comparing multiple exciton generation in quantum dots to impact ionization in bulk semiconductors: implications for enhancement of solar energy conversion. <i>Nano Letters</i> , <b>2010</b> , 10, 3019-27	11.5	292

168	Solar cells from colloidal nanocrystals: Fundamentals, materials, devices, and economics. <i>Current Opinion in Colloid and Interface Science</i> , <b>2009</b> , 14, 245-259	7.6	292
167	Third generation photovoltaics based on multiple exciton generation in quantum confined semiconductors. <i>Accounts of Chemical Research</i> , <b>2013</b> , 46, 1252-60	24.3	285
166	Comparison of Recombination Dynamics in CH <sub>3</sub> NH <sub>3</sub> PbBr <sub>3</sub> and CH <sub>3</sub> NH <sub>3</sub> PbI <sub>3</sub> Perovskite Films: Influence of Exciton Binding Energy. <i>Journal of Physical Chemistry Letters</i> , <b>2015</b> , 6, 4688-92	6.4	284
165	Transparent conductive single-walled carbon nanotube networks with precisely tunable ratios of semiconducting and metallic nanotubes. <i>ACS Nano</i> , <b>2008</b> , 2, 1266-74	16.7	278
164	Top and bottom surfaces limit carrier lifetime in lead iodide perovskite films. <i>Nature Energy</i> , <b>2017</b> , 2,	62.3	275
163	Quantum dot size dependent J-V characteristics in heterojunction ZnO/PbS quantum dot solar cells. <i>Nano Letters</i> , <b>2011</b> , 11, 1002-8	11.5	249
162	Advances in two-dimensional organic-inorganic hybrid perovskites. <i>Energy and Environmental Science</i> , <b>2020</b> , 13, 1154-1186	35.4	239
161	n-Type transition metal oxide as a hole extraction layer in PbS quantum dot solar cells. <i>Nano Letters</i> , <b>2011</b> , 11, 3263-6	11.5	230
160	Diffusion-controlled synthesis of PbS and PbSe quantum dots with in situ halide passivation for quantum dot solar cells. <i>ACS Nano</i> , <b>2014</b> , 8, 614-22	16.7	219
159	Absolute Photoluminescence Quantum Yields of IR-26 Dye, PbS, and PbSe Quantum Dots. <i>Journal of Physical Chemistry Letters</i> , <b>2010</b> , 1, 2445-2450	6.4	216
158	Multiple exciton generation in films of electronically coupled PbSe quantum dots. <i>Nano Letters</i> , <b>2007</b> , 7, 1779-84	11.5	213
157	Quantum dots for next-generation photovoltaics. <i>Materials Today</i> , <b>2012</b> , 15, 508-515	21.8	212
156	High efficiency perovskite quantum dot solar cells with charge separating heterostructure. <i>Nature Communications</i> , <b>2019</b> , 10, 2842	17.4	205
155	Variations in the quantum efficiency of multiple exciton generation for a series of chemically treated PbSe nanocrystal films. <i>Nano Letters</i> , <b>2009</b> , 9, 836-45	11.5	201
154	Characterization of basic physical properties of Sb <sub>2</sub> Se <sub>3</sub> and its relevance for photovoltaics. <i>Frontiers of Optoelectronics</i> , <b>2017</b> , 10, 18-30	2.8	191
153	PbSe quantum dot solar cells with more than 6% efficiency fabricated in ambient atmosphere. <i>Nano Letters</i> , <b>2014</b> , 14, 6010-5	11.5	191
152	Carrier Localization and Cooling in Dye-Sensitized Nanocrystalline Titanium Dioxide. <i>Journal of Physical Chemistry B</i> , <b>2002</b> , 106, 11716-11719	3.4	188
151	Metal halide solid-state surface treatment for high efficiency PbS and PbSe QD solar cells. <i>Scientific Reports</i> , <b>2015</b> , 5, 9945	4.9	186

150	Lead-Halide Perovskites for Photocatalytic $\alpha$ -Alkylation of Aldehydes. <i>Journal of the American Chemical Society</i> , <b>2019</b> , 141, 733-738	16.4	182
149	Coherent terahertz emission from ferromagnetic films excited by femtosecond laser pulses. <i>Applied Physics Letters</i> , <b>2004</b> , 84, 3465-3467	3.4	178
148	Tuning colloidal quantum dot band edge positions through solution-phase surface chemistry modification. <i>Nature Communications</i> , <b>2017</b> , 8, 15257	17.4	173
147	Subpicosecond carrier dynamics in low-temperature grown GaAs as measured by time-resolved terahertz spectroscopy. <i>Journal of Applied Physics</i> , <b>2001</b> , 90, 5915-5923	2.5	171
146	Enhanced Charge Transport in 2D Perovskites via Fluorination of Organic Cation. <i>Journal of the American Chemical Society</i> , <b>2019</b> , 141, 5972-5979	16.4	170
145	The promise and challenge of nanostructured solar cells. <i>Nature Nanotechnology</i> , <b>2014</b> , 9, 951-4	28.7	153
144	Determining the internal quantum efficiency of PbSe nanocrystal solar cells with the aid of an optical model. <i>Nano Letters</i> , <b>2008</b> , 8, 3904-10	11.5	150
143	Terahertz spectroscopy of solid serine and cysteine. <i>Chemical Physics Letters</i> , <b>2006</b> , 418, 65-70	2.5	146
142	Enhancing electron diffusion length in narrow-bandgap perovskites for efficient monolithic perovskite tandem solar cells. <i>Nature Communications</i> , <b>2019</b> , 10, 4498	17.4	138
141	Size and composition dependent multiple exciton generation efficiency in PbS, PbSe, and PbS(x)Se(1-x) alloyed quantum dots. <i>Nano Letters</i> , <b>2013</b> , 13, 3078-85	11.5	133
140	Multiple exciton generation for photoelectrochemical hydrogen evolution reactions with quantum yields exceeding 100%. <i>Nature Energy</i> , <b>2017</b> , 2,	62.3	130
139	Photoinduced charge carrier generation in a poly(3-hexylthiophene) and methanofullerene bulk heterojunction investigated by time-resolved terahertz spectroscopy. <i>Journal of Physical Chemistry B</i> , <b>2006</b> , 110, 25462-71	3.4	130
138	Absorption cross-section and related optical properties of colloidal InAs quantum dots. <i>Journal of Physical Chemistry B</i> , <b>2005</b> , 109, 7084-7	3.4	127
137	Comparing the Fundamental Physics and Device Performance of Transparent, Conductive Nanostructured Networks with Conventional Transparent Conducting Oxides. <i>Advanced Energy Materials</i> , <b>2012</b> , 2, 353-360	21.8	121
136	Tuning the synthesis of ternary lead chalcogenide quantum dots by balancing precursor reactivity. <i>ACS Nano</i> , <b>2011</b> , 5, 183-90	16.7	119
135	Spin-dependent charge transport through 2D chiral hybrid lead-iodide perovskites. <i>Science Advances</i> , <b>2019</b> , 5, eaay0571	14.3	118
134	Multiple exciton generation in semiconductor nanocrystals: Toward efficient solar energy conversion. <i>Laser and Photonics Reviews</i> , <b>2008</b> , 2, 377-399	8.3	114
133	Time-resolved photoconductivity of PbSe nanocrystal arrays. <i>Journal of Physical Chemistry B</i> , <b>2006</b> , 110, 25455-61	3.4	113

132	Size-Dependent Photoconductivity in CdSe Nanoparticles as Measured by Time-Resolved Terahertz Spectroscopy. <i>Nano Letters</i> , <b>2002</b> , 2, 983-987	11.5	113
131	Comparison of carrier multiplication yields in PbS and PbSe nanocrystals: the role of competing energy-loss processes. <i>Nano Letters</i> , <b>2012</b> , 12, 622-8	11.5	103
130	Infrared Quantum Dots: Progress, Challenges, and Opportunities. <i>ACS Nano</i> , <b>2019</b> , 13, 939-953	16.7	103
129	Air-Stable and Efficient PbSe Quantum-Dot Solar Cells Based upon ZnSe to PbSe Cation-Exchanged Quantum Dots. <i>ACS Nano</i> , <b>2015</b> , 9, 8157-64	16.7	95
128	Enhanced Sb <sub>2</sub> Se <sub>3</sub> solar cell performance through theory-guided defect control. <i>Progress in Photovoltaics: Research and Applications</i> , <b>2017</b> , 25, 861-870	6.8	94
127	Synthetic Conditions for High-Accuracy Size Control of PbS Quantum Dots. <i>Journal of Physical Chemistry Letters</i> , <b>2015</b> , 6, 1830-3	6.4	90
126	Control of PbSe quantum dot surface chemistry and photophysics using an alkylselenide ligand. <i>ACS Nano</i> , <b>2012</b> , 6, 5498-506	16.7	90
125	Revisiting the Valence and Conduction Band Size Dependence of PbS Quantum Dot Thin Films. <i>ACS Nano</i> , <b>2016</b> , 10, 3302-11	16.7	89
124	Flowing versus Static Conditions for Measuring Multiple Exciton Generation in PbSe Quantum Dots. <i>Journal of Physical Chemistry C</i> , <b>2010</b> , 114, 17486-17500	3.8	89
123	Chiral-induced spin selectivity enables a room-temperature spin light-emitting diode. <i>Science</i> , <b>2021</b> , 371, 1129-1133	33.3	86
122	Semiconductor interfacial carrier dynamics via photoinduced electric fields. <i>Science</i> , <b>2015</b> , 350, 1061-5	33.3	85
121	Impact of Layer Thickness on the Charge Carrier and Spin Coherence Lifetime in Two-Dimensional Layered Perovskite Single Crystals. <i>ACS Energy Letters</i> , <b>2018</b> , 3, 2273-2279	20.1	84
120	Preparation of Cd/Pb Chalcogenide Heterostructured Janus Particles via Controllable Cation Exchange. <i>ACS Nano</i> , <b>2015</b> , 9, 7151-63	16.7	82
119	Highly Distorted Chiral Two-Dimensional Tin Iodide Perovskites for Spin Polarized Charge Transport. <i>Journal of the American Chemical Society</i> , <b>2020</b> , 142, 13030-13040	16.4	79
118	Electronic Coupling in InP Nanoparticle Arrays. <i>Nano Letters</i> , <b>2003</b> , 3, 1695-1699	11.5	77
117	Excitonic Effects in Methylammonium Lead Halide Perovskites. <i>Journal of Physical Chemistry Letters</i> , <b>2018</b> , 9, 2595-2603	6.4	72
116	Large polarization-dependent exciton optical Stark effect in lead iodide perovskites. <i>Nature Communications</i> , <b>2016</b> , 7, 12613	17.4	72
115	Origin of the temperature dependence of the band gap of PbS and PbSe quantum dots. <i>Solid State Communications</i> , <b>2013</b> , 165, 49-54	1.6	70

114	Photogenerated free carrier dynamics in metal and semiconductor single-walled carbon nanotube films. <i>Nano Letters</i> , <b>2008</b> , 8, 4238-42	11.5	70
113	Electron-Rotor Interaction in Organic-Inorganic Lead Iodide Perovskites Discovered by Isotope Effects. <i>Journal of Physical Chemistry Letters</i> , <b>2016</b> , 7, 2879-87	6.4	69
112	Roadmap on optical energy conversion. <i>Journal of Optics (United Kingdom)</i> , <b>2016</b> , 18, 073004	1.7	69
111	Reconfiguring the band-edge states of photovoltaic perovskites by conjugated organic cations. <i>Science</i> , <b>2021</b> , 371, 636-640	33.3	69
110	Quantum Dot Solar Cell Fabrication Protocols. <i>Chemistry of Materials</i> , <b>2017</b> , 29, 189-198	9.6	66
109	Measuring Intramolecular Charge Transfer via Coherent Generation of THz Radiation. <i>Journal of Physical Chemistry A</i> , <b>2002</b> , 106, 878-883	2.8	63
108	Sensitizing Singlet Fission with Perovskite Nanocrystals. <i>Journal of the American Chemical Society</i> , <b>2019</b> , 141, 4919-4927	16.4	61
107	Strained Interface Defects in Silicon Nanocrystals. <i>Advanced Functional Materials</i> , <b>2012</b> , 22, 3223-3232	15.6	59
106	Stable Formamidinium-Based Perovskite Solar Cells via In Situ Grain Encapsulation. <i>Advanced Energy Materials</i> , <b>2018</b> , 8, 1800232	21.8	59
105	Tandem Solar Cells from Solution-Processed CdTe and PbS Quantum Dots Using a ZnTe-ZnO Tunnel Junction. <i>Nano Letters</i> , <b>2017</b> , 17, 1020-1027	11.5	55
104	Effect of Solar Concentration on the Thermodynamic Power Conversion Efficiency of Quantum-Dot Solar Cells Exhibiting Multiple Exciton Generation. <i>Journal of Physical Chemistry Letters</i> , <b>2012</b> , 3, 2857-2862	6.4	54
103	Quasi-Direct Optical Transitions in Silicon Nanocrystals with Intensity Exceeding the Bulk. <i>Nano Letters</i> , <b>2016</b> , 16, 1583-9	11.5	52
102	Charge generation in PbS quantum dot solar cells characterized by temperature-dependent steady-state photoluminescence. <i>ACS Nano</i> , <b>2014</b> , 8, 12814-25	16.7	52
101	Anomalous independence of multiple exciton generation on different group IV-VI quantum dot architectures. <i>Nano Letters</i> , <b>2011</b> , 11, 1623-9	11.5	52
100	Using the finite-difference time-domain pulse propagation method to simulate time-resolved THz experiments. <i>Journal of Chemical Physics</i> , <b>2001</b> , 114, 2903-2909	3.9	52
99	Metastable Dion-Jacobson 2D structure enables efficient and stable perovskite solar cells. <i>Science</i> , <b>2022</b> , 375, 71-76	33.3	51
98	Ultrafast exciton many-body interactions and hot-phonon bottleneck in colloidal cesium lead halide perovskite nanocrystals. <i>Physical Review B</i> , <b>2018</b> , 98,	3.3	51
97	One-Step Deposition of Photovoltaic Layers Using Iodide Terminated PbS Quantum Dots. <i>Journal of Physical Chemistry Letters</i> , <b>2014</b> , 5, 4002-7	6.4	49

96	Sharp exponential band tails in highly disordered lead sulfide quantum dot arrays. <i>Physical Review B</i> , <b>2012</b> , 86,	3.3	49
95	Control of Energy Flow Dynamics between Tetracene Ligands and PbS Quantum Dots by Size Tuning and Ligand Coverage. <i>Nano Letters</i> , <b>2018</b> , 18, 865-873	11.5	47
94	Emission Quenching in PbSe Quantum Dot Arrays by Short-Term Air Exposure. <i>Journal of Physical Chemistry Letters</i> , <b>2011</b> , 2, 889-93	6.4	47
93	Coherent exciton delocalization in strongly coupled quantum dot arrays. <i>Nano Letters</i> , <b>2013</b> , 13, 4862-9	11.5	46
92	Transforming energy using quantum dots. <i>Energy and Environmental Science</i> , <b>2020</b> , 13, 1347-1376	35.4	45
91	Quantum confined electron-phonon interaction in silicon nanocrystals. <i>Nano Letters</i> , <b>2015</b> , 15, 1511-6	11.5	45
90	Size-Dependent Exciton Formation Dynamics in Colloidal Silicon Quantum Dots. <i>ACS Nano</i> , <b>2016</b> , 10, 2316-23	16.7	44
89	Carrier Transport in PbS and PbSe QD Films Measured by Photoluminescence Quenching. <i>Journal of Physical Chemistry C</i> , <b>2014</b> , 118, 16228-16235	3.8	44
88	Synthesis and Spectroscopy of Silver-Doped PbSe Quantum Dots. <i>Journal of the American Chemical Society</i> , <b>2017</b> , 139, 10382-10394	16.4	44
87	The subtle chemistry of colloidal, quantum-confined semiconductor nanostructures. <i>ACS Nano</i> , <b>2012</b> , 6, 4573-9	16.7	42
86	Cation-Exchange Synthesis of Highly Monodisperse PbS Quantum Dots from ZnS Nanorods for Efficient Infrared Solar Cells. <i>Advanced Functional Materials</i> , <b>2020</b> , 30, 1907379	15.6	41
85	Enhanced Multiple Exciton Generation in PbS/CdS Janus-like Heterostructured Nanocrystals. <i>ACS Nano</i> , <b>2018</b> , 12, 10084-10094	16.7	41
84	Supersonically Spray-Coated Colloidal Quantum Dot Ink Solar Cells. <i>Scientific Reports</i> , <b>2017</b> , 7, 622	4.9	40
83	Exploration of Metal Chloride Uptake for Improved Performance Characteristics of PbSe Quantum Dot Solar Cells. <i>Journal of Physical Chemistry Letters</i> , <b>2015</b> , 6, 2892-9	6.4	40
82	Ultrafast Reaction Mechanisms in Perovskite Based Photocatalytic C <sub>2</sub> Coupling. <i>ACS Energy Letters</i> , <b>2020</b> , 5, 566-571	20.1	38
81	Improvement in carrier transport properties by mild thermal annealing of PbS quantum dot solar cells. <i>Applied Physics Letters</i> , <b>2013</b> , 102, 043506	3.4	37
80	Origin of Broad-Band Emission and Impact of Structural Dimensionality in Tin-Alloyed Ruddlesden-Popper Hybrid Lead Iodide Perovskites. <i>ACS Energy Letters</i> , <b>2020</b> , 5, 347-352	20.1	36
79	Enhanced photoredox activity of CsPbBr nanocrystals by quantitative colloidal ligand exchange. <i>Journal of Chemical Physics</i> , <b>2019</b> , 151, 204305	3.9	35

78	Strategies to Achieve High Circularly Polarized Luminescence from Colloidal Organic-Inorganic Hybrid Perovskite Nanocrystals. <i>ACS Nano</i> , <b>2020</b> , 14, 8816-8825	16.7	33
77	Combination of Cation Exchange and Quantized Ostwald Ripening for Controlling Size Distribution of Lead Chalcogenide Quantum Dots. <i>Chemistry of Materials</i> , <b>2017</b> , 29, 3615-3622	9.6	32
76	Multiple exciton generation in quantum dots versus singlet fission in molecular chromophores for solar photon conversion. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , <b>2015</b> , 373,	3	30
75	Measurement of Electromagnetic Radiation Emitted during Rapid Intramolecular Electron Transfer. <i>Journal of the American Chemical Society</i> , <b>2000</b> , 122, 11541-11542	16.4	30
74	In situ spectroscopic characterization of a solution-phase X-type ligand exchange at colloidal lead sulphide quantum dot surfaces. <i>Chemical Communications</i> , <b>2016</b> , 52, 13893-13896	5.8	29
73	All-Inorganic Germanium Nanocrystal Films by Cationic Ligand Exchange. <i>Nano Letters</i> , <b>2016</b> , 16, 1949-54	1.5	28
72	Both Free and Trapped Carriers Contribute to Photocurrent of SbSe Solar Cells. <i>Journal of Physical Chemistry Letters</i> , <b>2019</b> , 10, 4881-4887	6.4	28
71	Monitoring Electron-Phonon Interactions in Lead Halide Perovskites Using Time-Resolved THz Spectroscopy. <i>ACS Nano</i> , <b>2019</b> , 13, 8826-8835	16.7	26
70	Synthesis and spectroscopy of PbSe fused quantum-dot dimers. <i>Journal of the American Chemical Society</i> , <b>2014</b> , 136, 4670-9	16.4	26
69	Nanotechnology for catalysis and solar energy conversion. <i>Nanotechnology</i> , <b>2021</b> , 32, 042003	3.4	24
68	Spin-Dependent Photovoltaic and Photogalvanic Responses of Optoelectronic Devices Based on Chiral Two-Dimensional Hybrid Organic-Inorganic Perovskites. <i>ACS Nano</i> , <b>2021</b> , 15, 588-595	16.7	24
67	Optical Absorbance Enhancement in PbS QD/Cinnamate Ligand Complexes. <i>Journal of Physical Chemistry Letters</i> , <b>2018</b> , 9, 3425-3433	6.4	24
66	Comparative OHD-RIKES and THz-TDS Probes of Ultrafast Structural Dynamics in Molecular Liquids. <i>Journal of Physical Chemistry A</i> , <b>2004</b> , 108, 9348-9360	2.8	23
65	Ultrafast probes at the interfaces of solar energy conversion materials. <i>Physical Chemistry Chemical Physics</i> , <b>2019</b> , 21, 16399-16407	3.6	21
64	Quantum beats due to excitonic ground-state splitting in colloidal quantum dots. <i>Physical Review B</i> , <b>2012</b> , 86,	3.3	20
63	Individual Electron and Hole Mobilities in Lead-Halide Perovskites Revealed by Noncontact Methods. <i>ACS Energy Letters</i> , <b>2020</b> , 5, 47-55	20.1	20
62	Direct Detection of Circularly Polarized Light Using Chiral Copper Chloride-Carbon Nanotube Heterostructures. <i>ACS Nano</i> , <b>2021</b> , 15, 7608-7617	16.7	20
61	n-Type PbSe Quantum Dots via Post-Synthetic Indium Doping. <i>Journal of the American Chemical Society</i> , <b>2018</b> , 140, 13753-13763	16.4	20



60	Lead sulfide nanocrystal quantum dot solar cells with trenched ZnO fabricated via nanoimprinting. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2013</b> , 5, 3803-8	9.5	19
59	Single-walled carbon nanotubes as base material for THz photoconductive switching: a theoretical study from input power to output THz emission. <i>Optics Express</i> , <b>2011</b> , 19, 15077-89	3.3	19
58	A p-Type Quantum Dot/Organic Donor:Acceptor Solar-Cell Structure for Extended Spectral Response. <i>Advanced Energy Materials</i> , <b>2011</b> , 1, 528-533	21.8	19
57	Ballistic trajectories of optical wave packets within microcavities. <i>Physical Review A</i> , <b>2001</b> , 64,	2.6	19
56	Progress towards two-dimensional biomedical imaging with THz spectroscopy. <i>Physics in Medicine and Biology</i> , <b>2002</b> , 47, 3841-6	3.8	19
55	Gradient Doping in Sn-Pb Perovskites by Barium Ions for Efficient Single-junction and Tandem Solar Cells.. <i>Advanced Materials</i> , <b>2022</b> , e2110351	24	19
54	Ultrafast Electrical Measurements of Isolated Silicon Nanowires and Nanocrystals. <i>Journal of Physical Chemistry Letters</i> , <b>2014</b> , 5, 2050-7	6.4	18
53	Surface lattice engineering through three-dimensional lead iodide perovskitoid for high-performance perovskite solar cells. <i>CheM</i> , <b>2021</b> , 7, 774-785	16.2	18
52	Designing Janus Ligand Shells on PbS Quantum Dots using Ligand-Ligand Cooperativity. <i>ACS Nano</i> , <b>2019</b> , 13, 3839-3846	16.7	17
51	Curtailing Perovskite Processing Limitations via Lamination at the Perovskite/Perovskite Interface. <i>ACS Energy Letters</i> , <b>2018</b> , 3, 1192-1197	20.1	17
50	A Nanocrystal Catalyst Incorporating a Surface Bound Transition Metal to Induce Photocatalytic Sequential Electron Transfer Events. <i>Journal of the American Chemical Society</i> , <b>2021</b> , 143, 11361-11369	16.4	17
49	Direct Observation of Photoexcited Hole Localization in CdSe Nanorods. <i>ACS Energy Letters</i> , <b>2016</b> , 1, 76-81	20.1	16
48	Interfacial engineering of gallium indium phosphide photoelectrodes for hydrogen evolution with precious metal and non-precious metal based catalysts. <i>Journal of Materials Chemistry A</i> , <b>2019</b> , 7, 16821-16832	13.15	15
47	Electron transfer in hydrogenated nanocrystalline silicon observed by time-resolved terahertz spectroscopy. <i>Physical Review B</i> , <b>2013</b> , 87,	3.3	15
46	Electron-Phonon Coupling and Resonant Relaxation from 1D and 1P States in PbS Quantum Dots. <i>ACS Nano</i> , <b>2018</b> , 12, 6263-6272	16.7	14
45	Efficient Steplike Carrier Multiplication in Percolative Networks of Epitaxially Connected PbSe Nanocrystals. <i>ACS Nano</i> , <b>2018</b> , 12, 378-384	16.7	13
44	Facet-Specific Ligand Interactions on Ternary AgSbS Colloidal Quantum Dots. <i>Chemistry - A European Journal</i> , <b>2017</b> , 23, 17707-17713	4.8	13
43	A Multi-Dimensional Perspective on Electronic Doping in Metal Halide Perovskites. <i>ACS Energy Letters</i> , <b>2021</b> , 6, 1104-1123	20.1	13

42	Role of Exciton Binding Energy on LO Phonon Broadening and Polaron Formation in (BA) <sub>2</sub> PbI <sub>4</sub> Ruddlesden-Popper Films. <i>Journal of Physical Chemistry C</i> , <b>2020</b> , 124, 9496-9505	3.8	12
41	Dynamic Ligand Surface Chemistry of Excited PbS Quantum Dots. <i>Journal of Physical Chemistry Letters</i> , <b>2020</b> , 11, 2291-2297	6.4	10
40	Theoretical limits of multiple exciton generation and singlet fission tandem devices for solar water splitting. <i>Journal of Chemical Physics</i> , <b>2019</b> , 151, 114111	3.9	9
39	Tuning Spin-Polarized Lifetime in Two-Dimensional Metal-Halide Perovskite through Exciton Binding Energy. <i>Journal of the American Chemical Society</i> , <b>2021</b> , 143, 19438-19445	16.4	9
38	Embedding PbS Quantum Dots (QDs) in Pb-Halide Perovskite Matrices: QD Surface Chemistry and Antisolvent Effects on QD Dispersion and Confinement Properties <b>2020</b> , 2, 1464-1472		9
37	Unraveling the surface state of photovoltaic perovskite thin film. <i>Matter</i> , <b>2021</b> , 4, 2417-2428	12.7	9
36	Status and Prognosis of Future-Generation Photoconversion to Photovoltaics and Solar Fuels. <i>ACS Energy Letters</i> , <b>2016</b> , 1, 344-347	20.1	8
35	The Structural Origin of Chiroptical Properties in Perovskite Nanocrystals with Chiral Organic Ligands. <i>Advanced Functional Materials</i> , 2200454	15.6	8
34	Nongeminate radiative recombination of free charges in cation-exchanged PbS quantum dot films. <i>Chemical Physics</i> , <b>2016</b> , 471, 75-80	2.3	7
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32	Polaron and Spin Dynamics in Organic-Inorganic Lead Halide Perovskite Nanocrystals. <i>Advanced Optical Materials</i> , <b>2020</b> , 8, 2001016	8.1	7
31	Low Frequency, Collective Solvent Dynamics Probed with Time-Resolved THz Spectroscopy. <i>ACS Symposium Series</i> , <b>2002</b> , 44-57	0.4	6
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27	Influence of Ligand Structure on Excited State Surface Chemistry of Lead Sulfide Quantum Dots. <i>Journal of the American Chemical Society</i> , <b>2021</b> , 143, 13824-13834	16.4	5
26	Influence of One Specific Carbon-Carbon Bond on the Quality, Stability, and Photovoltaic Performance of Hybrid Organic-Inorganic Bismuth Iodide Materials. <i>ACS Applied Energy Materials</i> , <b>2019</b> , 2, 1579-1587	6.1	4
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24	Feature issue introduction: light, energy and the environment, 2017. <i>Optics Express</i> , <b>2018</b> , 26, A636-A639,	3.3	3
23	Interlayer Triplet-Sensitized Luminescence in Layered Two-Dimensional Hybrid Metal-Halide Perovskites. <i>ACS Energy Letters</i> , 4079-4096	20.1	3
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20	Synthesis and spectroscopic evaluation of PbS quantum dots emitting at 1300 nm for optimized imaging in optical window II <b>2016</b> ,		2
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18	Transient photoconductivity in CdSe nanoparticles and nanocrystalline TiO <sub>2</sub> as measured by time-resolved terahertz spectroscopy <b>2003</b> ,		2
17	Atomlike interaction and optically tunable giant band-gap renormalization in large-area atomically thin MoS <sub>2</sub> . <i>Physical Review B</i> , <b>2021</b> , 104,	3.3	2
16	Photoconductivity of dye-sensitized titanium dioxide films measured by time-resolved THz spectroscopy (TRTS). <i>Springer Series in Chemical Physics</i> , <b>2003</b> , 331-333	0.3	2
15	Some results for the BallonePastoreCalli modification of the MartynovBarkisov closure for hard spheres. <i>Molecular Physics</i> , <b>1997</b> , 92, 1083-1084	1.7	2
14	Suppressing Auger Recombination in Multiply Excited Colloidal Silicon Nanocrystals with Ligand-Induced Hole Traps. <i>Journal of Physical Chemistry C</i> , <b>2021</b> , 125, 2565-2574	3.8	2
13	Metastable Dion-Jacobson 2D structure enables efficient and stable perovskite solar cells. <i>Science</i> , <b>2021</b> , eabj2637	33.3	2
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