Sjoerd H Hoogland

List of Publications by Citations

146 papers	22,701 citations	61 h-index	150 g-index
152 ext. papers	25,795 ext. citations	17.1 avg, IF	6.59 L-index

#	Paper	IF	Citations
146	Solar cells. Low trap-state density and long carrier diffusion in organolead trihalide perovskite single crystals. *Science*, **2015**, 347, 519-22	33.3	3307
145	Efficient and stable solution-processed planar perovskite solar cells via contact passivation. *Science*, **2017**, 355, 722-726	33.3	1667
144	Perovskite energy funnels for efficient light-emitting diodes. *Nature Nanotechnology*, **2016**, 11, 872-877	28.7	1484
143	Ultrasensitive solution-cast quantum dot photodetectors. *Nature*, **2006**, 442, 180-3	50.4	1442
142	Colloidal-quantum-dot photovoltaics using atomic-ligand passivation. *Nature Materials*, **2011**, 10, 765-71	27	1206
141	Hybrid passivated colloidal quantum dot solids. *Nature Nanotechnology*, **2012**, 7, 577-82	28.7	993
140	Ligand-Stabilized Reduced-Dimensionality Perovskites. *Journal of the American Chemical Society*, **2016**, 138, 2649-55	16.4	889
139	Planar-integrated single-crystalline perovskite photodetectors. *Nature Communications*, **2015**, 6, 8724	17.4	497
138	Air-stable n-type colloidal quantum dot solids. *Nature Materials*, **2014**, 13, 822-8	27	466
137	Hybrid organic-inorganic inks flatten the energy landscape in colloidal quantum dot solids. *Nature Materials*, **2017**, 16, 258-263	27	432
136	Fast, sensitive and spectrally tuneable colloidal-quantum-dot photodetectors. *Nature Nanotechnology*, **2009**, 4, 40-4	28.7	395
135	Quantum-dot-in-perovskite solids. *Nature*, **2015**, 523, 324-8	50.4	382
134	Tandem colloidal quantum dot solar cells employing a graded recombination layer. *Nature Photonics*, **2011**, 5, 480-484	33.9	336
133	Conformal organohalide perovskites enable lasing on spherical resonators. *ACS Nano*, **2014**, 8, 10947-52	16.7	290
132	Bipolar-shell resurfacing for blue LEDs based on strongly confined perovskite quantum dots. *Nature Nanotechnology*, **2020**, 15, 668-674	28.7	281
131	Passivation Using Molecular Halides Increases Quantum Dot Solar Cell Performance. *Advanced Materials*, **2016**, 28, 299-304	24	279
130	10.6% Certified Colloidal Quantum Dot Solar Cells via Solvent-Polarity-Engineered Halide Passivation. *Nano Letters*, **2016**, 16, 4630-4	11.5	275

129	Amine-Free Synthesis of Cesium Lead Halide Perovskite Quantum Dots for Efficient Light-Emitting Diodes. *Advanced Functional Materials*, **2016**, 26, 8757-8763	15.6	265
128	Continuous-wave lasing in colloidal quantum dot solids enabled by facet-selective epitaxy. *Nature*, **2017**, 544, 75-79	50.4	225
127	Enhanced mobility-lifetime products in PbS colloidal quantum dot photovoltaics. *ACS Nano*, **2012**, 6, 89-99	16.7	214
126	Two-Photon Absorption in Organometallic Bromide Perovskites. *ACS Nano*, **2015**, 9, 9340-6	16.7	208
125	Bright colloidal quantum dot light-emitting diodes enabled by efficient chlorination. *Nature Photonics*, **2018**, 12, 159-164	33.9	206
124	Spin control in reduced-dimensional chiral perovskites. *Nature Photonics*, **2018**, 12, 528-533	33.9	205
123	DNA-based programming of quantum dot valency, self-assembly and luminescence. *Nature Nanotechnology*, **2011**, 6, 485-90	28.7	204
122	2D matrix engineering for homogeneous quantum dot coupling in photovoltaic solids. *Nature Nanotechnology*, **2018**, 13, 456-462	28.7	196
121	Engineering colloidal quantum dot solids within and beyond the mobility-invariant regime. *Nature Communications*, **2014**, 5, 3803	17.4	188
120	A charge-orbital balance picture of doping in colloidal quantum dot solids. *ACS Nano*, **2012**, 6, 8448-55	16.7	183
119	All-inorganic colloidal quantum dot photovoltaics employing solution-phase halide passivation. *Advanced Materials*, **2012**, 24, 6295-9	24	179
118	High-Efficiency Colloidal Quantum Dot Photovoltaics via Robust Self-Assembled Monolayers. *Nano Letters*, **2015**, 15, 7691-6	11.5	175
117	Perovskite thin films via atomic layer deposition. *Advanced Materials*, **2015**, 27, 53-8	24	171
116	Quantum junction solar cells. *Nano Letters*, **2012**, 12, 4889-94	11.5	169
115	N-type colloidal-quantum-dot solids for photovoltaics. *Advanced Materials*, **2012**, 24, 6181-5	24	165
114	Measuring charge carrier diffusion in coupled colloidal quantum dot solids. *ACS Nano*, **2013**, 7, 5282-90	16.7	163
113	The In-Gap Electronic State Spectrum of Methylammonium Lead Iodide Single-Crystal Perovskites. *Advanced Materials*, **2016**, 28, 3406-10	24	151
112	Graded doping for enhanced colloidal quantum dot photovoltaics. *Advanced Materials*, **2013**, 25, 1719-23	24	150

111	Lattice anchoring stabilizes solution-processed semiconductors. *Nature*, **2019**, 570, 96-101	50.4	149
110	Sub-500-fs soliton-like pulse in a passively mode-locked broadband surface-emitting laser with 100 mW average power. *Applied Physics Letters*, **2002**, 80, 3892-3894	3.4	148
109	Efficient Schottky-quantum-dot photovoltaics: The roles of depletion, drift, and diffusion. *Applied Physics Letters*, **2008**, 92, 122111	3.4	143
108	Efficient Biexciton Interaction in Perovskite Quantum Dots Under Weak and Strong Confinement. *ACS Nano*, **2016**, 10, 8603-9	16.7	142
107	Passively mode-locked diode-pumped surface-emitting semiconductor laser. *IEEE Photonics Technology Letters*, **2000**, 12, 1135-1137	2.2	129
106	Vertical-external-cavity semiconductor lasers. *Journal Physics D: Applied Physics*, **2004**, 37, R75-R85	3	121
105	Enhanced optical path and electron diffusion length enable high-efficiency perovskite tandems. *Nature Communications*, **2020**, 11, 1257	17.4	114
104	Mixed-quantum-dot solar cells. *Nature Communications*, **2017**, 8, 1325	17.4	113
103	Extended cavity surface-emitting semiconductor lasers. *Progress in Quantum Electronics*, **2006**, 30, 1-43	9.1	113
102	Cascade surface modification of colloidal quantum dot inks enables efficient bulk homojunction photovoltaics. *Nature Communications*, **2020**, 11, 103	17.4	110
101	The donor-supply electrode enhances performance in colloidal quantum dot solar cells. *ACS Nano*, **2013**, 7, 6111-6	16.7	105
100	A solution-processed 1.53 mum quantum dot laser with temperature-invariant emission wavelength. *Optics Express*, **2006**, 14, 3273-81	3.3	103
99	Self-assembled, nanowire network electrodes for depleted bulk heterojunction solar cells. *Advanced Materials*, **2013**, 25, 1769-73	24	101
98	Double-Sided Junctions Enable High-Performance Colloidal-Quantum-Dot Photovoltaics. *Advanced Materials*, **2016**, 28, 4142-8	24	100
97	Chloride Passivation of ZnO Electrodes Improves Charge Extraction in Colloidal Quantum Dot Photovoltaics. *Advanced Materials*, **2017**, 29, 1702350	24	97
96	Interface Recombination in Depleted Heterojunction Photovoltaics based on Colloidal Quantum Dots. *Advanced Energy Materials*, **2013**, 3, 917-922	21.8	97
95	Microsecond-sustained lasing from colloidal quantum dot solids. *Nature Communications*, **2015**, 6, 8694	17.4	91
94	Jointly tuned plasmonic-excitonic photovoltaics using nanoshells. *Nano Letters*, **2013**, 13, 1502-8	11.5	89

93	Directly deposited quantum dot solids using a colloidally stable nanoparticle ink. *Advanced Materials*, **2013**, 25, 5742-9	24	87
92	High Color Purity Lead-Free Perovskite Light-Emitting Diodes via Sn Stabilization. *Advanced Science*, **2020**, 7, 1903213	13.6	85
91	Soliton-like pulse-shaping mechanism in passively mode-locked surface-emitting semiconductor lasers. *Applied Physics B: Lasers and Optics*, **2002**, 75, 445-451	1.9	85
90	Efficient hybrid colloidal quantum dot/organic solar cells mediated by near-infrared sensitizing small molecules. *Nature Energy*, **2019**, 4, 969-976	62.3	78
89	Infrared Colloidal Quantum Dot Photovoltaics via Coupling Enhancement and Agglomeration Suppression. *ACS Nano*, **2015**, 9, 8833-42	16.7	73
88	Field-emission from quantum-dot-in-perovskite solids. *Nature Communications*, **2017**, 8, 14757	17.4	68
87	High-Performance Perovskite Single-Junction and Textured Perovskite/Silicon Tandem Solar Cells via Slot-Die-Coating. *ACS Energy Letters*, **2020**, 5, 3034-3040	20.1	65
86	Broadband solar absorption enhancement via periodic nanostructuring of electrodes. *Scientific Reports*, **2013**, 3, 2928	4.9	63
85	Pseudohalide-Exchanged Quantum Dot Solids Achieve Record Quantum Efficiency in Infrared Photovoltaics. *Advanced Materials*, **2017**, 29, 1700749	24	61
84	Photojunction field-effect transistor based on a colloidal quantum dot absorber channel layer. *ACS Nano*, **2015**, 9, 356-62	16.7	57
83	Single-step fabrication of quantum funnels via centrifugal colloidal casting of nanoparticle films. *Nature Communications*, **2015**, 6, 7772	17.4	57
82	Stable Colloidal Quantum Dot Inks Enable Inkjet-Printed High-Sensitivity Infrared Photodetectors. *ACS Nano*, **2019**, 13, 11988-11995	16.7	55
81	A Facet-Specific Quantum Dot Passivation Strategy for Colloid Management and Efficient Infrared Photovoltaics. *Advanced Materials*, **2019**, 31, e1805580	24	55
80	ZnFe2 O4 Leaves Grown on TiO2 Trees Enhance Photoelectrochemical Water Splitting. *Small*, **2016**, 12, 3181-8	11	50
79	All-Quantum-Dot Infrared Light-Emitting Diodes. *ACS Nano*, **2015**, 9, 12327-33	16.7	48
78	Systematic optimization of quantum junction colloidal quantum dot solar cells. *Applied Physics Letters*, **2012**, 101, 151112	3.4	48
77	Butylamine-Catalyzed Synthesis of Nanocrystal Inks Enables Efficient Infrared CQD Solar Cells. *Advanced Materials*, **2018**, 30, e1803830	24	48
76	Mixed Lead Halide Passivation of Quantum Dots. *Advanced Materials*, **2019**, 31, e1904304	24	42

75	10-GHz train of sub-500-fs optical soliton-like pulses from a surface-emitting semiconductor laser. *IEEE Photonics Technology Letters*, **2005**, 17, 267-269	2.2	42
74	Single-step colloidal quantum dot films for infrared solar harvesting. *Applied Physics Letters*, **2016**, 109, 183105	3.4	42
73	Picosecond Charge Transfer and Long Carrier Diffusion Lengths in Colloidal Quantum Dot Solids. *Nano Letters*, **2018**, 18, 7052-7059	11.5	42
72	Multiple Self-Trapped Emissions in the Lead-Free Halide CsCuI. *Journal of Physical Chemistry Letters*, **2020**, 11, 4326-4330	6.4	40
71	Nanoimprint-Transfer-Patterned Solids Enhance Light Absorption in Colloidal Quantum Dot Solar Cells. *Nano Letters*, **2017**, 17, 2349-2353	11.5	39
70	Molecular Doping of the Hole-Transporting Layer for Efficient, Single-Step-Deposited Colloidal Quantum Dot Photovoltaics. *ACS Energy Letters*, **2017**, 2, 1952-1959	20.1	39
69	Atomistic Design of CdSe/CdS Core-Shell Quantum Dots with Suppressed Auger Recombination. *Nano Letters*, **2016**, 16, 6491-6496	11.5	39
68	Multibandgap quantum dot ensembles for solar-matched infrared energy harvesting. *Nature Communications*, **2018**, 9, 4003	17.4	39
67	A Chemically Orthogonal Hole Transport Layer for Efficient Colloidal Quantum Dot Solar Cells. *Advanced Materials*, **2020**, 32, e1906199	24	38
66	Acid-Assisted Ligand Exchange Enhances Coupling in Colloidal Quantum Dot Solids. *Nano Letters*, **2018**, 18, 4417-4423	11.5	37
65	Carrier relaxation dynamics in lead sulfide colloidal quantum dots. *Journal of Physical Chemistry B*, **2008**, 112, 2757-60	3.4	37
64	Nanostructured Back Reflectors for Efficient Colloidal Quantum-Dot Infrared Optoelectronics. *Advanced Materials*, **2019**, 31, e1901745	24	36
63	Quantum-size-tuned heterostructures enable efficient and stable inverted perovskite solar cells. *Nature Photonics*,	33.9	35
62	Activated Electron-Transport Layers for Infrared Quantum Dot Optoelectronics. *Advanced Materials* , **2018**, 30, e1801720	24	34
61	Design of Phosphor White Light Systems for High-Power Applications. *ACS Photonics*, **2016**, 3, 2243-2248	6.3	33
60	Imbalanced charge carrier mobility and Schottky junction induced anomalous current-voltage characteristics of excitonic PbS colloidal quantum dot solar cells. *Solar Energy Materials and Solar Cells*, **2016**, 155, 155-165	6.4	31
59	Controlled Steric Hindrance Enables Efficient Ligand Exchange for Stable, Infrared-Bandgap Quantum Dot Inks. *ACS Energy Letters*, **2019**, 4, 1225-1230	20.1	30
58	Electronically active impurities in colloidal quantum dot solids. *ACS Nano*, **2014**, 8, 11763-9	16.7	30

57	Enhanced Solar-to-Hydrogen Generation with Broadband Epsilon-Near-Zero Nanostructured Photocatalysts. *Advanced Materials*, **2017**, 29, 1701165	24	29
56	Quantum Dots in Two-Dimensional Perovskite Matrices for Efficient Near-Infrared Light Emission. *ACS Photonics*, **2017**, 4, 830-836	6.3	28
55	Ligand-Assisted Reconstruction of Colloidal Quantum Dots Decreases Trap State Density. *Nano Letters*, **2020**, 20, 3694-3702	11.5	27
54	Exciton Lifetime Broadening and Distribution Profiles of PbS Colloidal Quantum Dot Thin Films Using Frequency- and Temperature-Scanned Photocarrier Radiometry. *Journal of Physical Chemistry C*, **2013**, 117, 23333-23348	3.8	27
53	Halide Re-Shelled Quantum Dot Inks for Infrared Photovoltaics. *ACS Applied Materials & Interfaces*, **2017**, 9, 37536-37541	9.5	26
52	Electro-Optic Modulation in Hybrid Metal Halide Perovskites. *Advanced Materials*, **2019**, 31, e1808336	24	26
51	Quantum Dot-Plasmon Lasing with Controlled Polarization Patterns. *ACS Nano*, **2020**, 14, 3426-3433	16.7	26
50	Hybrid Tandem Quantum Dot/Organic Solar Cells with Enhanced Photocurrent and Efficiency via Ink and Interlayer Engineering. *ACS Energy Letters*, **2018**, 3, 1307-1314	20.1	26
49	Joint mapping of mobility and trap density in colloidal quantum dot solids. *ACS Nano*, **2013**, 7, 5757-62	16.7	26
48	Picosecond pulse generation with 1.5 [micro sign]m passively modelocked surface-emitting semiconductor laser. *Electronics Letters*, **2003**, 39, 846	1.1	26
47	A Tuned Alternating D-A Copolymer Hole-Transport Layer Enables Colloidal Quantum Dot Solar Cells with Superior Fill Factor and Efficiency. *Advanced Materials*, **2020**, 32, e2004985	24	25
46	Micron Thick Colloidal Quantum Dot Solids. *Nano Letters*, **2020**, 20, 5284-5291	11.5	23
45	Stabilizing Surface Passivation Enables Stable Operation of Colloidal Quantum Dot Photovoltaic Devices at Maximum Power Point in an Air Ambient. *Advanced Materials*, **2020**, 32, e1906497	24	23
44	Quantitative Analysis of Trap-State-Mediated Exciton Transport in Perovskite-Shelled PbS Quantum Dot Thin Films Using Photocarrier Diffusion-Wave Nondestructive Evaluation and Imaging. *Journal of Physical Chemistry C*, **2016**, 120, 14416-14427	3.8	22
43	Bright and Stable Light-Emitting Diodes Based on Perovskite Quantum Dots in Perovskite Matrix. *Journal of the American Chemical Society*, **2021**, 143, 15606-15615	16.4	22
42	Engineering Directionality in Quantum Dot Shell Lasing Using Plasmonic Lattices. *Nano Letters*, **2020**, 20, 1468-1474	11.5	21
41	Folded-light-path colloidal quantum dot solar cells. *Scientific Reports*, **2013**, 3, 2166	4.9	20
40	Quantum beats due to excitonic ground-state splitting in colloidal quantum dots. *Physical Review B*, **2012**, 86,	3.3	20

39	Gain bandwidth characterization of surface-emitting quantum well laser gain structures for femtosecond operation. *Optics Express*, **2010**, 18, 21330-41	3.3	19
38	Orthogonal colloidal quantum dot inks enable efficient multilayer optoelectronic devices. *Nature Communications*, **2020**, 11, 4814	17.4	19
37	Optical Resonance Engineering for Infrared Colloidal Quantum Dot Photovoltaics. *ACS Energy Letters*, **2016**, 1, 852-857	20.1	19
36	Photocurrent extraction efficiency in colloidal quantum dot photovoltaics. *Applied Physics Letters*, **2013**, 103, 211101	3.4	18
35	Hybrid tandem quantum dot/organic photovoltaic cells with complementary near infrared absorption. *Applied Physics Letters*, **2017**, 110, 223903	3.4	17
34	Deep-Blue Perovskite Single-Mode Lasing through Efficient Vapor-Assisted Chlorination. *Advanced Materials*, **2021**, 33, e2006697	24	17
33	A tunable colloidal quantum dot photo field-effect transistor. *Applied Physics Letters*, **2011**, 99, 101102	3.4	16
32	Narrow Emission from Rb3Sb2I9 Nanoparticles. *Advanced Optical Materials*, **2020**, 8, 1901606	8.1	16
31	Quantum Dot Color-Converting Solids Operating Efficiently in the kW/cm2 Regime. *Chemistry of Materials*, **2017**, 29, 5104-5112	9.6	15
30	Megahertz-frequency large-area optical modulators at 1.55 microm based on solution-cast colloidal quantum dots. *Optics Express*, **2008**, 16, 6683-91	3.3	14
29	Spatial Collection in Colloidal Quantum Dot Solar Cells. *Advanced Functional Materials*, **2020**, 30, 1908200	15.6	14
28	Control Over Ligand Exchange Reactivity in Hole Transport Layer Enables High-Efficiency Colloidal Quantum Dot Solar Cells. *ACS Energy Letters*, **2021**, 6, 468-476	20.1	14
27	Facet-Oriented Coupling Enables Fast and Sensitive Colloidal Quantum Dot Photodetectors. *Advanced Materials*, **2021**, 33, e2101056	24	13
26	Infrared Cavity-Enhanced Colloidal Quantum Dot Photovoltaics Employing Asymmetric Multilayer Electrodes. *ACS Energy Letters*, **2018**, 3, 2908-2913	20.1	12
25	Quantum Dot Self-Assembly Enables Low-Threshold Lasing. *Advanced Science*, **2021**, 8, e2101125	13.6	12
24	Colloidal Quantum Dot Bulk Heterojunction Solids with Near-Unity Charge Extraction Efficiency. *Advanced Science*, **2020**, 7, 2000894	13.6	10
23	Efficient and Stable Colloidal Quantum Dot Solar Cells with a Green-Solvent Hole-Transport Layer. *Advanced Energy Materials*, **2020**, 10, 2002084	21.8	9
22	Linear Electro-Optic Modulation in Highly Polarizable Organic Perovskites. *Advanced Materials*, **2021**, 33, e2006368	24	8

21	Temperature-Induced Self-Compensating Defect Traps and Gain Thresholds in Colloidal Quantum Dots. *ACS Nano*, **2019**, 13, 8970-8976	16.7	7
20	Structural Distortion and Bandgap Increase of Two-Dimensional Perovskites Induced by Trifluoromethyl Substitution on Spacer Cations. *Journal of Physical Chemistry Letters*, **2020**, 11, 10144-10149	6.4	7
19	Monolithic Organic/Colloidal Quantum Dot Hybrid Tandem Solar Cells via Buffer Engineering. *Advanced Materials*, **2020**, 32, e2004657	24	7
18	Gradient-Doped Colloidal Quantum Dot Solids Enable Thermophotovoltaic Harvesting of Waste Heat. *ACS Energy Letters*, **2016**, 1, 740-746	20.1	7
17	Single-Precursor Intermediate Shelling Enables Bright, Narrow Line Width InAs/InZnP-Based QD Emitters. *Chemistry of Materials*, **2020**, 32, 2919-2925	9.6	6
16	Study of Exciton Hopping Transport in PbS Colloidal Quantum Dot Thin Films Using Frequency- and Temperature-Scanned Photocarrier Radiometry. *International Journal of Thermophysics*, **2017**, 38, 1	2.1	6
15	Colloidal Quantum Dot Solar Cell Band Alignment using Two-Step Ionic Doping **2020**, 2, 1583-1589		6
14	Continuous-wave operation of monolithically grown 1.5-microm optically pumped vertical-external-cavity surface-emitting lasers. *Applied Optics*, **2003**, 42, 6678-81	1.7	5
13	Rigid Conjugated Diamine Templates for Stable Dion-Jacobson-Type Two-Dimensional Perovskites. *Journal of the American Chemical Society*, **2021**, 143, 19901-19908	16.4	5
12	Optical Generation and Transport of Charges in Iron Pyrite Nanocrystal Films and Subsequent Injection into SnO2. *Journal of Physical Chemistry C*, **2016**, 120, 22155-22162	3.8	5
11	Atomic layer deposition of absorbing thin films on nanostructured electrodes for short-wavelength infrared photosensing. *Applied Physics Letters*, **2015**, 107, 153105	3.4	4
10	Self-Assembled, Nanowire Network Electrodes for Depleted Bulk Heterojunction Solar Cells (Adv. Mater. 12/2013). *Advanced Materials*, **2013**, 25, 1768-1768	24	4
9	The Impact of Ion Migration on the Electro-Optic Effect in Hybrid Organic‐Inorganic Perovskites. *Advanced Functional Materials*,2107939	15.6	4
8	Suppression of Auger Recombination by Gradient Alloying in InAs/CdSe/CdS QDs. *Chemistry of Materials*, **2020**, 32, 7703-7709	9.6	4
7	Controlled Crystal Plane Orientations in ZnO Transport Layer enables High Responsivity, Low Dark Current Infrared Photodetectors.. *Advanced Materials*, **2022**, e2200321	24	4
6	Optical gain and lasing in colloidal quantum dots199-232		3
5	Physical, electrical, and optical properties of SF-PECVD-grown hydrogenated microcrystalline silicon with growth surface electrical bias. *Journal of Materials Science: Materials in Electronics*, **2006** , 17, 789-799	2.1	3
4	Electro-Optic Modulation Using Metal-Free Perovskites. *ACS Applied Materials & Interfaces*, **2021**, 13, 19042-19047	9.5	3

3	Self-Aligned Non-Centrosymmetric Conjugated Molecules Enable Electro-Optic Perovskites. *Advanced Optical Materials*,2100730	8.1	3
2	InP-Quantum-Dot-in-ZnS-Matrix Solids for Thermal and Air Stability. *Chemistry of Materials*, **2020**, 32, 9584-9590	9.6	2
1	Reply to: Perovskite decomposition and missing crystal planes in HRTEM. *Nature*, **2021**, 594, E8-E9	50.4	