Randy J Ellingson

List of Publications by Citations

119 papers	9,823 citations	39 h-index	98 g-index
138 ext. papers	11,007 ext. citations	9.6 avg, IF	5.91 L-index

#	Paper	IF	Citations
119	Highly efficient multiple exciton generation in colloidal PbSe and PbS quantum dots. *Nano Letters*, **2005**, 5, 865-71	11.5	1425
118	Schottky solar cells based on colloidal nanocrystal films. *Nano Letters*, **2008**, 8, 3488-92	11.5	824
117	Multiple exciton generation in colloidal silicon nanocrystals. *Nano Letters*, **2007**, 7, 2506-12	11.5	710
116	PbTe colloidal nanocrystals: synthesis, characterization, and multiple exciton generation. *Journal of the American Chemical Society*, **2006**, 128, 3241-7	16.4	605
115	Low-bandgap mixed tin–lead iodide perovskite absorbers with long carrier lifetimes for all-perovskite tandem solar cells. *Nature Energy*, **2017**, 2,	62.3	515
114	Femtosecond IR Study of Excited-State Relaxation and Electron-Injection Dynamics of Ru(dcbpy)2(NCS)2 in Solution and on Nanocrystalline TiO2 and Al2O3 Thin Films. *Journal of Physical Chemistry B*, **1999**, 103, 3110-3119	3.4	353
113	Photoenhancement of Luminescence in Colloidal CdSe Quantum Dot Solutions. *Journal of Physical Chemistry B*, **2003**, 107, 11346-11352	3.4	300
112	Fabrication of Efficient Low-Bandgap Perovskite Solar Cells by Combining Formamidinium Tin Iodide with Methylammonium Lead Iodide. *Journal of the American Chemical Society*, **2016**, 138, 12360-3	16.4	298
111	Energy payback time (EPBT) and energy return on energy invested (EROI) of solar photovoltaic systems: A systematic review and meta-analysis. *Renewable and Sustainable Energy Reviews*, **2015**, 47, 133-141	16.2	270
110	Dynamics of Electron Injection in Nanocrystalline Titanium Dioxide Films Sensitized with [Ru(4,4′-dicarboxy-2,2′-bipyridine)2(NCS)2] by Infrared Transient Absorption. *Journal of Physical Chemistry B*, **1998**, 102, 6455-6458	3.4	260
109	Quantum dot size dependent J-V characteristics in heterojunction ZnO/PbS quantum dot solar cells. *Nano Letters*, **2011**, 11, 1002-8	11.5	249
108	n-Type transition metal oxide as a hole extraction layer in PbS quantum dot solar cells. *Nano Letters* , **2011**, 11, 3263-6	11.5	230
107	Multiple exciton generation in films of electronically coupled PbSe quantum dots. *Nano Letters*, **2007**, 7, 1779-84	11.5	213
106	Variations in the quantum efficiency of multiple exciton generation for a series of chemically treated PbSe nanocrystal films. *Nano Letters*, **2009**, 9, 836-45	11.5	201
105	Impact of Processing Temperature and Composition on the Formation of Methylammonium Lead Iodide Perovskites. *Chemistry of Materials*, **2015**, 27, 4612-4619	9.6	184
104	Low-temperature plasma-enhanced atomic layer deposition of tin oxide electron selective layers for highly efficient planar perovskite solar cells. *Journal of Materials Chemistry A*, **2016**, 4, 12080-12087	13	175
103	Reducing Saturation-Current Density to Realize High-Efficiency Low-Bandgap Mixed Tin–Lead Halide Perovskite Solar Cells. *Advanced Energy Materials*, **2019**, 9, 1803135	21.8	162

102	Improving the Performance of Formamidinium and Cesium Lead Triiodide Perovskite Solar Cells using Lead Thiocyanate Additives. *ChemSusChem*, **2016**, 9, 3288-3297	8.3	143
101	Synergistic Effects of Lead Thiocyanate Additive and Solvent Annealing on the Performance of Wide-Bandgap Perovskite Solar Cells. *ACS Energy Letters*, **2017**, 2, 1177-1182	20.1	142
100	Compositional and morphological engineering of mixed cation perovskite films for highly efficient planar and flexible solar cells with reduced hysteresis. *Nano Energy*, **2017**, 35, 223-232	17.1	138
99	Photoinduced charge carrier generation in a poly(3-hexylthiophene) and methanofullerene bulk heterojunction investigated by time-resolved terahertz spectroscopy. *Journal of Physical Chemistry B*, **2006**, 110, 25462-71	3.4	130
98	Absorption cross-section and related optical properties of colloidal InAs quantum dots. *Journal of Physical Chemistry B*, **2005**, 109, 7084-7	3.4	127
97	Achieving a high open-circuit voltage in inverted wide-bandgap perovskite solar cells with a graded perovskite homojunction. *Nano Energy*, **2019**, 61, 141-147	17.1	97
96	Oxygenated CdS Buffer Layers Enabling High Open-Circuit Voltages in Earth-Abundant Cu2BaSnS4 Thin-Film Solar Cells. *Advanced Energy Materials*, **2017**, 7, 1601803	21.8	83
95	Dithieno[3,2-b:2?,3?-d]pyrrol-Cored Hole Transport Material Enabling Over 21% Efficiency Dopant-Free Perovskite Solar Cells. *Advanced Functional Materials*, **2019**, 29, 1904300	15.6	80
94	Electron Relaxation in Colloidal InP Quantum Dots with Photogenerated Excitons or Chemically Injected Electrons. *Journal of Physical Chemistry B*, **2003**, 107, 102-109	3.4	80
93	Low-bandgap mixed tin□lead iodide perovskites with reduced methylammonium for simultaneous enhancement of solar cell efficiency and stability. *Nature Energy*, **2020**, 5, 768-776	62.3	80
92	One-step facile synthesis of a simple carbazole-cored hole transport material for high-performance perovskite solar cells. *Nano Energy*, **2017**, 40, 163-169	17.1	75
91	Dithieno[3,2-b:2P,3Pd]pyrrole Cored p-Type Semiconductors Enabling 20 % Efficiency Dopant-Free Perovskite Solar Cells. *Angewandte Chemie - International Edition*, **2019**, 58, 13717-13721	16.4	73
90	Environmental analysis of perovskites and other relevant solar cell technologies in a tandem configuration. *Energy and Environmental Science*, **2017**, 10, 1874-1884	35.4	71
89	Excitation Energy Dependent Efficiency of Charge Carrier Relaxation and Photoluminescence in Colloidal InP Quantum Dots. *Journal of Physical Chemistry B*, **2002**, 106, 7758-7765	3.4	68
88	Thin film solar cells based on the heterojunction of colloidal PbS quantum dots with CdS. *Solar Energy Materials and Solar Cells*, **2013**, 117, 476-482	6.4	57
87	Probing the origins of photodegradation in organic□inorganic metal halide perovskites with time-resolved mass spectrometry. *Sustainable Energy and Fuels*, **2018**, 2, 2460-2467	5.8	56
86	Arylammonium-Assisted Reduction of the Open-Circuit Voltage Deficit in Wide-Bandgap Perovskite Solar Cells: The Role of Suppressed Ion Migration. *ACS Energy Letters*, **2020**, 5, 2560-2568	20.1	56
85	Employing Overlayers To Improve the Performance of Cu2BaSnS4 Thin Film based Photoelectrochemical Water Reduction Devices. *Chemistry of Materials*, **2017**, 29, 916-920	9.6	52

84	Size Dependent Femtosecond Electron Cooling Dynamics in CdSe Quantum Rods. *Nano Letters*, **2004**, 4, 1089-1092	11.5	47
83	Iron pyrite nanocrystal film serves as a copper-free back contact for polycrystalline CdTe thin film solar cells. *Solar Energy Materials and Solar Cells*, **2015**, 140, 108-114	6.4	46
82	Binary hole transport materials blending to linearly tune HOMO level for high efficiency and stable perovskite solar cells. *Nano Energy*, **2018**, 51, 680-687	17.1	41
81	Energy Payback Time (EPBT) and Energy Return on Energy Invested (EROI) of Perovskite Tandem Photovoltaic Solar Cells. *IEEE Journal of Photovoltaics*, **2018**, 8, 305-309	3.7	40
80	Impact of Moisture on Photoexcited Charge Carrier Dynamics in Methylammonium Lead Halide Perovskites. *Journal of Physical Chemistry Letters*, **2018**, 9, 6312-6320	6.4	37
79	Majority Carrier Type Control of Cobalt Iron Sulfide (CoxFe1⊠S2) Pyrite Nanocrystals. *Journal of Physical Chemistry C*, **2016**, 120, 5706-5713	3.8	35
78	Enhanced Grain Size, Photoluminescence, and Photoconversion Efficiency with Cadmium Addition during the Two-Step Growth of CHNHPbI. *ACS Applied Materials & Interfaces*, **2017**, 9, 2334-2341	9.5	33
77	Cost-effective hole transporting material for stable and efficient perovskite solar cells with fill factors up to 82%. *Journal of Materials Chemistry A*, **2017**, 5, 23319-23327	13	32
76	Post-deposition processing options for high-efficiency sputtered CdS/CdTe solar cells. *Journal of Applied Physics*, **2014**, 115, 064502	2.5	32
75	Extrinsic and intrinsic effects on the excited-state kinetics of single-walled carbon nanotubes. *Nano Letters*, **2007**, 7, 300-6	11.5	32
74	The Role of Back Buffer Layers and Absorber Properties for >25% Efficient CdTe Solar Cells. *ACS Applied Energy Materials*, **2019**, 2, 5419-5426	6.1	30
73	Analysis and characterization of iron pyrite nanocrystals and nanocrystalline thin films derived from bromide anion synthesis. *Journal of Materials Chemistry A*, **2015**, 3, 6853-6861	13	30
72	Interface modification of sputtered NiOx as the hole-transporting layer for efficient inverted planar perovskite solar cells. *Journal of Materials Chemistry C*, **2020**, 8, 1972-1980	7.1	30
71	Influence of Charge Transport Layers on Capacitance Measured in Halide Perovskite Solar Cells. *Joule*, **2020**, 4, 644-657	27.8	29
70	Eliminating S-Kink To Maximize the Performance of MgZnO/CdTe Solar Cells. *ACS Applied Energy Materials*, **2019**, 2, 2896-2903	6.1	28
69	Improving Performance and Stability of Planar Perovskite Solar Cells through Grain Boundary Passivation with Block Copolymers. *Solar Rrl*, **2019**, 3, 1900078	7.1	28
68	A New Hole Transport Material for Efficient Perovskite Solar Cells With Reduced Device Cost. *Solar Rrl*, **2018**, 2, 1700175	7.1	28
67	CdTe Thin Films from Nanoparticle Precursors by Spray Deposition. *Chemistry of Materials*, **1997**, 9, 889-900	9.6	26

66	Theoretical and experimental investigation of electronic structure and relaxation of colloidal nanocrystalline indium phosphide quantum dots. *Physical Review B*, **2003**, 67,	3.3	24
65	Structural, optical, and hole transport properties of earth-abundant chalcopyrite (CuFeS2) nanocrystals. *MRS Communications*, **2018**, 8, 970-978	2.7	23
64	Synergistic effects of thiocyanate additive and cesium cations on improving the performance and initial illumination stability of efficient perovskite solar cells. *Sustainable Energy and Fuels*, **2018**, 2, 2435-2441	5.8	22
63	Anomalies in the linear absorption, transient absorption, photoluminescence and photoluminescence excitation spectroscopies of colloidal InP quantum dots. *Journal of Photochemistry and Photobiology A: Chemistry*, **2001**, 142, 187-195	4.7	22
62	Application of composition controlled nickel-alloyed iron sulfide pyrite nanocrystal thin films as the hole transport layer in cadmium telluride solar cells. *Journal of Materials Chemistry C*, **2017**, 5, 4996-5004	7.1	21
61	Probing Photocurrent Nonuniformities in the Subcells of Monolithic Perovskite/Silicon Tandem Solar Cells. *Journal of Physical Chemistry Letters*, **2016**, 7, 5114-5120	6.4	21
60	The Effects of Hydrogen Iodide Back Surface Treatment on CdTe Solar Cells. *Solar Rrl*, **2019**, 3, 1800304	7.1	21
59	Enhanced Grain Size and Crystallinity in CH3NH3PbI3 Perovskite Films by Metal Additives to the Single-Step Solution Fabrication Process. *MRS Advances*, **2018**, 3, 3237-3242	0.7	20
58	Maximize CdTe solar cell performance through copper activation engineering. *Nano Energy*, **2020**, 73, 104835	17.1	19
57	Elemental anion thermal injection synthesis of nanocrystalline marcasite iron dichalcogenide FeSe2 and FeTe2. *RSC Advances*, **2016**, 6, 69708-69714	3.7	19
56	Selective Cd Removal From CdTe for High-Efficiency Te Back-Contact Formation. *IEEE Journal of Photovoltaics*, **2018**, 8, 1125-1131	3.7	19
55	Near-infrared Fourier transform photoluminescence spectrometer with tunable excitation for the study of single-walled carbon nanotubes. *Review of Scientific Instruments*, **2006**, 77, 053104	1.7	19
54	A Cu3PS4 nanoparticle hole selective layer for efficient inverted perovskite solar cells. *Journal of Materials Chemistry A*, **2019**, 7, 4604-4610	13	18
53	Photophysics of (CdSe)ZnS colloidal quantum dots in an aqueous environment stabilized with amino acids and genetically-modified proteins. *Photochemical and Photobiological Sciences*, **2007**, 6, 1027-33	4.2	18
52	Exceedingly Cheap Perovskite Solar Cells Using Iron Pyrite Hole Transport Materials. *ChemistrySelect*, **2016**, 1, 5316-5319	1.8	18
51	Thin film iron pyrite deposited by hybrid sputtering/co-evaporation as a hole transport layer for sputtered CdS/CdTe solar cells. *Solar Energy Materials and Solar Cells*, **2017**, 163, 277-284	6.4	17
50	Nanocomposite (CuS)x(ZnS)1-x thin film back contact for CdTe solar cells: Toward a bifacial device. *Solar Energy Materials and Solar Cells*, **2018**, 186, 227-235	6.4	17
49	Sub-picosecond Injection of Electrons from Excited [Ru(2,2?-bipy-4,4?-dicarboxy)2(SCN)2] into TiO2 Using Transient Mid-Infrared Spectroscopy*. *Zeitschrift Fur Physikalische Chemie*, **1999**, 212, 77-84	3.1	17

48	Few-Atom-Thick Colloidal PbS/CdS Core/Shell Nanosheets. *Chemistry of Materials*, **2016**, 28, 5342-5346	9.6	16
47	High speed, intermediate resolution, large area laser beam induced current imaging and laser scribing system for photovoltaic devices and modules. *Review of Scientific Instruments*, **2016**, 87, 093708	1.7	16
46	Irradiance and temperature considerations in the design and deployment of high annual energy yield perovskite/CIGS tandems. *Sustainable Energy and Fuels*, **2019**, 3, 1841-1851	5.8	15
45	Determination of heterojunction band offsets between CdS bulk and PbS quantum dots using photoelectron spectroscopy. *Applied Physics Letters*, **2014**, 105, 131604	3.4	14
44	Charge Compensating Defects in Methylammonium Lead Iodide Perovskite Suppressed by Formamidinium Inclusion. *Journal of Physical Chemistry Letters*, **2020**, 11, 121-128	6.4	14
43	Influences of buffer material and fabrication atmosphere on the electrical properties of CdTe solar cells. *Progress in Photovoltaics: Research and Applications*, **2019**, 27, 1115-1123	6.8	13
42	Imaging the Spatial Evolution of Degradation in Perovskite/Si Tandem Solar Cells After Exposure to Humid Air. *IEEE Journal of Photovoltaics*, **2017**, 7, 1563-1568	3.7	13
41	Understanding and Advancing Bifacial Thin Film Solar Cells. *ACS Applied Energy Materials*, **2020**, 3, 6072-6078	6.0	11
40	Enabling bifacial thin film devices by developing a back surface field using CuxAlOy. *Nano Energy*, **2021**, 83, 105827	17.1	10
39	Understanding the Photoluminescence Mechanism of Carbon Dots. *MRS Advances*, **2017**, 2, 2927-2934	0.7	9
38	High Remaining Factors in the Photovoltaic Performance of Perovskite Solar Cells after High-Fluence Electron Beam Irradiations. *Journal of Physical Chemistry C*, **2020**, 124, 1330-1336	3.8	9
37	Influence of interparticle electronic coupling on the temperature and size dependent optical properties of lead sulfide quantum dot thin films. *Journal of Applied Physics*, **2016**, 119, 094307	2.5	9
36	Effect of electric field on carrier escape mechanisms in quantum dot intermediate band solar cells. *Journal of Applied Physics*, **2017**, 121, 013101	2.5	8
35	Effects of chronic ethanol consumption on male Syrian hamster hepatic, microsomal mixed-function oxidases. *Alcohol*, **1985**, 2, 17-22	2.7	8
34	Electronic circuit model for evaluating S-kink distorted current-voltage curves **2016**,		8
33	Wet chemical etching of cadmium telluride photovoltaics for enhanced open-circuit voltage, fill factor, and power conversion efficiency. *Journal of Materials Research*, **2019**, 34, 3988-3997	2.5	8
32	Solution-processed Nanocrystal Based Thin Films as Hole Transport Materials in Cadmium Telluride Photovoltaics. *MRS Advances*, **2018**, 3, 2441-2447	0.7	7
31	Doping of CdTe using CuCl2 Solution for Highly Efficient Photovoltaic Devices **2019**,		7

30	Impact of Divalent Metal Additives on the Structural and Optoelectronic Properties of CH3NH3PbI3 Perovskite Prepared by the Two-Step Solution Process. *MRS Advances*, **2017**, 2, 1183-1188	0.7	6
29	Aspect ratio controlled synthesis of tellurium nanowires for photovoltaic applications. *Materials Advances*, **2020**, 1, 2721-2728	3.3	6
28	Low-temperature and effective ex situ group V doping for efficient polycrystalline CdSeTe solar cells. *Nature Energy*, **2021**, 6, 715-722	62.3	6
27	Applications of hybrid organic-inorganic metal halide perovskite thin film as a hole transport layer in CdTe thin film solar cells **2017**,		5
26	Low Temperature Photoluminescence Spectroscopy of Defect and Interband Transitions in CdSexTe1-x Thin Films. *MRS Advances*, **2018**, 3, 3293-3299	0.7	5
25	Intraexciton Transitions Observed in High Stability Doped Single-Wall Carbon Nanotube Films and Solutions. *Journal of Physical Chemistry C*, **2014**, 118, 25253-25260	3.8	5
24	Back-Surface Passivation of CdTe Solar Cells Using Solution-Processed Oxidized Aluminum. *ACS Applied Materials & Interfaces*, **2020**, 12, 51337-51343	9.5	3
23	**2017**,		3
22	Spatially resolved characterization of solution processed perovskite solar cells using the LBIC technique **2015**,		3
21	Photoluminescence spectroscopy of Cadmium Telluride deep defects **2014**,		3
20	Copper iodide nanoparticles as a hole transport layer to CdTe photovoltaics: 5.5 % efficient back-illuminated bifacial CdTe solar cells. *Solar Energy Materials and Solar Cells*, **2022**, 235, 111451	6.4	3
19	Semi-transparent p-type barium copper sulfide as a back contact interface layer for cadmium telluride solar cells. *Solar Energy Materials and Solar Cells*, **2020**, 218, 110764	6.4	3
18	One-dimensional growth of colloidal PbSe nanorods in chloroalkanes. *Physica Status Solidi - Rapid Research Letters*, **2016**, 10, 833-837	2.5	3
17	Real Time Spectroscopic Ellipsometry Analysis of First Stage CuInGaSe□ Growth: Indium-Gallium Selenide Co-Evaporation. *Materials*, **2018**, 11,	3.5	3
16	CuSCN as the Back Contact for Efficient ZMO/CdTe Solar Cells. *Materials*, **2020**, 13,	3.5	2
15	Very high VOC and FF of CdTe thin-film solar cells with the applications of organo-metallic halide perovskite thin film as a hole transport layer. *Progress in Photovoltaics: Research and Applications*, **2020**, 28, 1024-1033	6.8	2
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13	Identification of Defect Levels in Copper Indium Diselenide (CuInSe2) Thin Films via Photoluminescence Studies. *MRS Advances*, **2018**, 3, 3135-3141	0.7	2

12	Bandgap, window layer thickness, and light soaking effects on PbS quantum dot solar cells **2013**,		2
11	Enhancing the efficiency of CdTe solar cells using a nanocrystalline iron pyrite film as an interface layer **2015**,		2
10	Experimental and theoretical investigation of electronic structure in colloidal indium phosphide quantum dots. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2003**, 1229-1232		2
9	Open-circuit Voltage Exceeding 840 mV for All-Sputtered CdS/CdTe Devices **2020**,		2
8	Successive Ionic Layer Adsorption and Reaction-Deposited Transparent Cu2nS Nanocomposites as Hole Transport Materials in CdTe Photovoltaics. *Energy Technology*, **2020**, 8, 2000429	3.5	2
7	Understanding the Interplay between CdSe Thickness and Cu Doping Temperature in CdSe/CdTe Devices **2021**,		2
6	Understanding the Interplay Between CdSe Thickness and Cu Doping Temperature in CdSe/CdTe Devices. *IEEE Journal of Photovoltaics*, **2021**, 1-5	3.7	2
5	Ultrathin Colloidal PbS/CdS Core/Shell Nanosheets. *MRS Advances*, **2017**, 2, 3685-3690	0.7	1
4	Improving CdSeTe Devices With a Back Buffer Layer of CuxAlOy. *IEEE Journal of Photovoltaics*, **2021** , 1-6	3.7	1
3	Room Temperature Processed Transparent Cu-Zn-S Nanocomposites as Hole Transport Materials in CdTe Photovoltaics **2019**,		1
2	Optical Properties of Organic Inorganic Metal Halide Perovskite for Photovoltaics **2019**,		1
1	Effects of Cu Precursor on the Performance of Efficient CdTe Solar Cells. *ACS Applied Materials & Interfaces*, **2021**, 13, 38432-38440	9.5	0