Ahmad R Kirmani

List of Publications by Citations

52 papers	4,317 citations	29 h-index	65 g-index
65 ext. papers	5,145 ext. citations	13.2 avg, IF	5.31 L-index

#	Paper	IF	Citations
52	Ligand-Stabilized Reduced-Dimensionality Perovskites. *Journal of the American Chemical Society*, **2016**, 138, 2649-55	16.4	889
51	Air-stable n-type colloidal quantum dot solids. *Nature Materials*, **2014**, 13, 822-8	27	466
50	Hybrid organic-inorganic inks flatten the energy landscape in colloidal quantum dotsolids. *Nature Materials*, **2017**, 16, 258-263	27	432
49	CO electrolysis to multicarbon products at activities greater than 1 A cm. *Science*, **2020**, 367, 661-666	33.3	403
48	2D matrix engineering for homogeneous quantum dot coupling in photovoltaic solids. *Nature Nanotechnology*, **2018**, 13, 456-462	28.7	196
47	Solution-printed organic semiconductor blends exhibiting transport properties on par with single crystals. *Nature Communications*, **2015**, 6, 8598	17.4	188
46	Highly efficient perovskite solar cells based on a nanostructured WO3TiO2 corehell electron transporting material. *Journal of Materials Chemistry A*, **2015**, 3, 9051-9057	13	170
45	Efficient electrically powered CO2-to-ethanol via suppression of deoxygenation. *Nature Energy*, **2020**, 5, 478-486	62.3	163
44	Surface Restructuring of Hybrid Perovskite Crystals. *ACS Energy Letters*, **2016**, 1, 1119-1126	20.1	115
43	In Situ Back-Contact Passivation Improves Photovoltage and Fill Factor in Perovskite Solar Cells. *Advanced Materials*, **2019**, 31, e1807435	24	112
42	The donor-supply electrode enhances performance in colloidal quantum dot solar cells. *ACS Nano*, **2013**, 7, 6111-6	16.7	105
41	A Au/Cu 2 OTiO 2 system for photo-catalytic hydrogen production. A pn-junction effect or a simple case of in situ reduction?. *Journal of Catalysis*, **2015**, 322, 109-117	7.3	100
40	Effect of solvent environment on colloidal-quantum-dot solar-cell manufacturability and performance. *Advanced Materials*, **2014**, 26, 4717-23	24	75
39	A scalable synthesis of highly stable and water dispersible Ag44(SR)30 nanoclusters. *Journal of Materials Chemistry A*, **2013**, 1, 10148	13	66
38	Dynamical evolution of the 2D/3D interface: a hidden driver behind perovskite solar cell instability. *Journal of Materials Chemistry A*, **2020**, 8, 2343-2348	13	60
37	Overcoming the Ambient Manufacturability-Scalability-Performance Bottleneck in Colloidal Quantum Dot Photovoltaics. *Advanced Materials*, **2018**, 30, e1801661	24	58
36	Efficient upgrading of CO to C fuel using asymmetric C-C coupling active sites. *Nature Communications*, **2019**, 10, 5186	17.4	55

35	The Impact of Molecular p-Doping on Charge Transport in High-Mobility Small-Molecule/Polymer Blend Organic Transistors. *Advanced Electronic Materials*, **2018**, 4, 1700464	6.4	52
34	The complete in-gap electronic structure of colloidal quantum dot solids and its correlation with electronic transport and photovoltaic performance. *Advanced Materials*, **2014**, 26, 937-42	24	51
33	On the relation between chemical composition and optical properties of detonation nanodiamonds. *Carbon*, **2015**, 94, 79-84	10.4	39
32	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
31	A Chemically Orthogonal Hole Transport Layer for Efficient Colloidal Quantum Dot Solar Cells. *Advanced Materials*, **2020**, 32, e1906199	24	38
30	Colloidal Quantum Dot Photovoltaics: Current Progress and Path to Gigawatt Scale Enabled by Smart Manufacturing. *ACS Energy Letters*, **2020**, 5, 3069-3100	20.1	37
29	Hybrid tandem solar cells with depleted-heterojunction quantum dot and polymer bulk heterojunction subcells. *Nano Energy*, **2015**, 17, 196-205	17.1	34
28	Remote Molecular Doping of Colloidal Quantum Dot Photovoltaics. *ACS Energy Letters*, **2016**, 1, 922-930	20.1	34
27	Solution-Processed In2O3/ZnO Heterojunction Electron Transport Layers for Efficient Organic Bulk Heterojunction and Inorganic Colloidal Quantum-Dot Solar Cells. *Solar Rrl*, **2018**, 2, 1800076	7.1	32
26	Synthesis of Copper Hydroxide Branched Nanocages and Their Transformation to Copper Oxide. *Journal of Physical Chemistry C*, **2014**, 118, 19374-19379	3.8	30
25	Materials processing strategies for colloidal quantum dot solar cells: advances, present-day limitations, and pathways to improvement. *MRS Communications*, **2013**, 3, 83-90	2.7	30
24	Crystal Orientation Drives the Interface Physics at Two/Three-Dimensional Hybrid Perovskites. *Journal of Physical Chemistry Letters*, **2019**, 10, 5713-5720	6.4	29
23	Programmable and coherent crystallization of semiconductors. *Science Advances*, **2017**, 3, e1602462	14.3	27
22	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
21	10-fold enhancement in light-driven water splitting using niobium oxynitride microcone array films. *Solar Energy Materials and Solar Cells*, **2016**, 151, 149-153	6.4	25
20	Optimizing Solid-State Ligand Exchange for Colloidal Quantum Dot Optoelectronics: How Much Is Enough?. *ACS Applied Energy Materials*, **2020**, 3, 5385-5392	6.1	21
19	Hybrid tandem quantum dot/organic photovoltaic cells with complementary near infrared absorption. *Applied Physics Letters*, **2017**, 110, 223903	3.4	17
18	Overcoming the Cut-Off Charge Transfer Bandgaps at the PbS Quantum Dot Interface. *Advanced Functional Materials*, **2015**, 25, 7435-7441	15.6	16

17	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
16	Role of the electronically-active amorphous state in low-temperature processed In2O3 thin-film transistors. *Materials Advances*, **2020**, 1, 167-176	3.3	11
15	Combined Precursor Engineering and Grain Anchoring Leading to MA-Free, Phase-Pure, and Stable Formamidinium Lead Iodide Perovskites for Efficient Solar Cells. *Angewandte Chemie - International Edition*, **2021**, 60, 27299	16.4	10
14	Hybrid Doping of Few-Layer Graphene via a Combination of Intercalation and Surface Doping. *ACS Applied Materials & Interfaces*, **2017**, 9, 20020-20028	9.5	9
13	Contributions of the lead-bromine weighted bands to the occupied density of states of the hybrid tri-bromide perovskites. *Applied Physics Letters*, **2018**, 113, 022101	3.4	6
12	Colloidal Quantum Dot Photovoltaics Using Ultrathin, Solution-Processed Bilayer In2O3/ZnO Electron Transport Layers with Improved Stability. *ACS Applied Energy Materials*, **2020**, 3, 5135-5141	6.1	5
11	Photoactivated p-Doping of Organic Interlayer Enables Efficient Perovskite/Silicon Tandem Solar Cells. *ACS Energy Letters*,1987-1993	20.1	4
10	Facile and noninvasive passivation, doping and chemical tuning of macroscopic hybrid perovskite crystals. *PLoS ONE*, **2020**, 15, e0230540	3.7	3
9	Combined Precursor Engineering and Grain Anchoring Leading to MA-Free, Phase-Pure, and Stable Formamidinium Lead Iodide Perovskites for Efficient Solar Cells. *Angewandte Chemie*,	3.6	3
8	Coating Thickness Controls Crystallinity and Enables Homoepitaxial Growth of Ultra-Thin-Channel Blade-Coated In2O3 Transistors. *Advanced Electronic Materials*, **2020**, 6, 2000354	6.4	3
7	Solar Cells: Overcoming the Ambient Manufacturability-Scalability-Performance Bottleneck in Colloidal Quantum Dot Photovoltaics (Adv. Mater. 35/2018). *Advanced Materials*, **2018**, 30, 1870260	24	3
6	Technoeconomic Model Suggests Scaling-Up Perovskite Quantum Dots for Optoelectronics Warrants Improved Synthesis Yield, Solvent Recycling, and Automation. *ACS Energy Letters*, **2022**, 7, 1255-1259	20.1	3
5	Conjugated polymers with controllable interfacial order and energetics enable tunable heterojunctions in organic and colloidal quantum dot photovoltaics. *Journal of Materials Chemistry A*, **2022**, 10, 1788-1801	13	2
4	Photovoltaics: The Complete In-Gap Electronic Structure of Colloidal Quantum Dot Solids and Its Correlation with Electronic Transport and Photovoltaic Performance (Adv. Mater. 6/2014). *Advanced Materials*, **2014**, 26, 822-822	24	1
3	Fresh insights into detonation nanodiamond aggregation: An X-ray photoelectron spectroscopy, thermogravimetric analysis, and nuclear magnetic resonance study. *Engineering Reports*, **2021**, 3, e12375	1.2	1
2	Climate change and materials virology. *MRS Bulletin*, **2018**, 43, 77-77	3.2	
1	Quantum Dots: Overcoming the Cut-Off Charge Transfer Bandgaps at the PbS Quantum Dot Interface (Adv. Funct. Mater. 48/2015). *Advanced Functional Materials*, **2015**, 25, 7548-7548	15.6	