Mohammad Mahdi Tavakoli

List of Publications by Citations

104 papers	4,663 citations	36 h-index	66 g-index
111 ext. papers	5,702 ext. citations	9.4 avg, IF	6.23 L-index

#	Paper	IF	Citations
104	Highly Efficient Flexible Perovskite Solar Cells with Antireflection and Self-Cleaning Nanostructures. *ACS Nano*, **2015**, 9, 10287-95	16.7	274
103	Surface Engineering of TiO2 ETL for Highly Efficient and Hysteresis-Less Planar Perovskite Solar Cell (21.4%) with Enhanced Open-Circuit Voltage and Stability. *Advanced Energy Materials*, **2018**, 8, 1800794	21.8	193
102	Lead-Free Perovskite Nanowire Array Photodetectors with Drastically Improved Stability in Nanoengineering Templates. *Nano Letters*, **2017**, 17, 523-530	11.5	177
101	Controllable Perovskite Crystallization via Antisolvent Technique Using Chloride Additives for Highly Efficient Planar Perovskite Solar Cells. *Advanced Energy Materials*, **2019**, 9, 1803587	21.8	174
100	3D Arrays of 1024-Pixel Image Sensors based on Lead Halide Perovskite Nanowires. *Advanced Materials*, **2016**, 28, 9713-9721	24	172
99	All Inorganic Cesium Lead Iodide Perovskite Nanowires with Stabilized Cubic Phase at Room Temperature and Nanowire Array-Based Photodetectors. *Nano Letters*, **2017**, 17, 4951-4957	11.5	169
98	Fabrication of efficient planar perovskite solar cells using a one-step chemical vapor deposition method. *Scientific Reports*, **2015**, 5, 14083	4.9	165
97	Ultralow contact resistance between semimetal and monolayer semiconductors. *Nature*, **2021**, 593, 211-217	50.4	154
96	Synergistic Crystal and Interface Engineering for Efficient and Stable Perovskite Photovoltaics. *Advanced Energy Materials*, **2019**, 9, 1802646	21.8	150
95	A review of aspects of additive engineering in perovskite solar cells. *Journal of Materials Chemistry A*, **2020**, 8, 27-54	13	145
94	Efficient metal halide perovskite light-emitting diodes with significantly improved light extraction on nanophotonic substrates. *Nature Communications*, **2019**, 10, 727	17.4	124
93	High Efficiency and Stable Perovskite Solar Cell Using ZnO/rGO QDs as an Electron Transfer Layer. *Advanced Materials Interfaces*, **2016**, 3, 1500790	4.6	121
92	Addition of adamantylammonium iodide to hole transport layers enables highly efficient and electroluminescent perovskite solar cells. *Energy and Environmental Science*, **2018**, 11, 3310-3320	35.4	118
91	A graphene/ZnO electron transfer layer together with perovskite passivation enables highly efficient and stable perovskite solar cells. *Journal of Materials Chemistry A*, **2019**, 7, 679-686	13	103
90	Printable Fabrication of a Fully Integrated and Self-Powered Sensor System on Plastic Substrates. *Advanced Materials*, **2019**, 31, e1804285	24	102
89	Mesoscopic Oxide Double Layer as Electron Specific Contact for Highly Efficient and UV Stable Perovskite Photovoltaics. *Nano Letters*, **2018**, 18, 2428-2434	11.5	96
88	Large-Grain Tin-Rich Perovskite Films for Efficient Solar Cells via Metal Alloying Technique. *Advanced Materials*, **2018**, 30, 1705998	24	94

87	Efficient, flexible and mechanically robust perovskite solar cells on inverted nanocone plastic substrates. *Nanoscale*, **2016**, 8, 4276-83	7.7	89
86	Adamantanes Enhance the Photovoltaic Performance and Operational Stability of Perovskite Solar Cells by Effective Mitigation of Interfacial Defect States. *Advanced Energy Materials*, **2018**, 8, 1800275	21.8	86
85	Understanding the effect of chlorobenzene and isopropanol anti-solvent treatments on the recombination and interfacial charge accumulation in efficient planar perovskite solar cells. *Journal of Materials Chemistry A*, **2018**, 6, 14307-14314	13	81
84	Greener, Nonhalogenated Solvent Systems for Highly Efficient Perovskite Solar Cells. *Advanced Energy Materials*, **2018**, 8, 1800177	21.8	80
83	Engineering of Perovskite Materials Based on Formamidinium and Cesium Hybridization for High-Efficiency Solar Cells. *Chemistry of Materials*, **2019**, 31, 1620-1627	9.6	77
82	Interface Engineering of Perovskite Solar Cell Using a Reduced-Graphene Scaffold. *Journal of Physical Chemistry C*, **2016**, 120, 19531-19536	3.8	73
81	One-step mechanochemical incorporation of an insoluble cesium additive for high performance planar heterojunction solar cells. *Nano Energy*, **2018**, 49, 523-528	17.1	70
80	Highly efficient and stable inverted perovskite solar cells using down-shifting quantum dots as a light management layer and moisture-assisted film growth. *Journal of Materials Chemistry A*, **2019**, 7, 14753-14760	13	58
79	High performance thin film solar cells on plastic substrates with nanostructure-enhanced flexibility. *Nano Energy*, **2016**, 22, 539-547	17.1	53
78	Fabrication of CuFeO/□FeO Composite Thin Films on FTO Coated Glass and 3-D Nanospike Structures for Efficient Photoelectrochemical Water Splitting. *ACS Applied Materials & Interfaces*, **2016**, 8, 35315-35322	9.5	50
77	Elucidation of Charge Recombination and Accumulation Mechanism in Mixed Perovskite Solar Cells. *Journal of Physical Chemistry C*, **2018**, 122, 15149-15154	3.8	49
76	Highly flexible and transferable supercapacitors with ordered three-dimensional MnO2/Au/MnO2 nanospike arrays. *Journal of Materials Chemistry A*, **2015**, 3, 10199-10204	13	47
75	A non-catalytic vapor growth regime for organohalide perovskite nanowires using anodic aluminum oxide templates. *Nanoscale*, **2017**, 9, 5828-5834	7.7	46
74	Quasi Core/Shell Lead Sulfide/Graphene Quantum Dots for Bulk Heterojunction Solar Cells. *Journal of Physical Chemistry C*, **2015**, 119, 18886-18895	3.8	45
73	Hybrid zinc oxide/graphene electrodes for depleted heterojunction colloidal quantum-dot solar cells. *Physical Chemistry Chemical Physics*, **2015**, 17, 24412-9	3.6	44
72	Dual-Layer Nanostructured Flexible Thin-Film Amorphous Silicon Solar Cells with Enhanced Light Harvesting and Photoelectric Conversion Efficiency. *ACS Applied Materials & Interfaces*, **2016**, 8, 10929-36	9.5	43
71	Tuning, optimization, and perovskite solar cell device integration of ultrathin poly(3,4-ethylene dioxythiophene) films via a single-step all-dry process. *Science Advances*, **2019**, 5, eaay0414	14.3	42
70	Progress and Design Concerns of Nanostructured Solar Energy Harvesting Devices. *Small*, **2016**, 12, 2536-48	11	38

69	Supercritical Synthesis and Characterization of Graphene–PbS Quantum Dots Composite with Enhanced Photovoltaic Properties. *Industrial & Engineering Chemistry Research*, **2015**, 54, 7382-7392	3.9	37
68	Chemical processing of three-dimensional graphene networks on transparent conducting electrodes for depleted-heterojunction quantum dot solar cells. *Chemical Communications*, **2016**, 52, 323-6	5.8	36
67	Efficient Semitransparent CsPbI3 Quantum Dots Photovoltaics Using a Graphene Electrode. *Small Methods*, **2019**, 3, 1900449	12.8	35
66	Heavy Water Additive in Formamidinium: A Novel Approach to Enhance Perovskite Solar Cell Efficiency. *Advanced Materials*, **2020**, 32, e1907864	24	34
65	Spray Pyrolysis Deposition of ZnFe2O4/Fe2O3 Composite Thin Films on Hierarchical 3-D Nanospikes for Efficient Photoelectrochemical Oxidation of Water. *Journal of Physical Chemistry C*, **2017**, 121, 18360-18368	3.8	34
64	Physicochemical properties of hybrid graphene–lead sulfide quantum dots prepared by supercritical ethanol. *Journal of Nanoparticle Research*, **2015**, 17, 1	2.3	34
63	Synergistic Roll-to-Roll Transfer and Doping of CVD-Graphene Using Parylene for Ambient-Stable and Ultra-Lightweight Photovoltaics. *Advanced Functional Materials*, **2020**, 30, 2001924	15.6	32
62	Influence of A-site cations on the open-circuit voltage of efficient perovskite solar cells: a case of rubidium and guanidinium additives. *Journal of Materials Chemistry A*, **2019**, 7, 8218-8225	13	31
61	Synergistic interface and compositional engineering of inverted perovskite solar cells enables highly efficient and stable photovoltaic devices. *Chemical Communications*, **2019**, 55, 9196-9199	5.8	30
60	Reducing Surface Recombination by a Poly(4-vinylpyridine) Interlayer in Perovskite Solar Cells with High Open-Circuit Voltage and Efficiency. *ACS Omega*, **2018**, 3, 5038-5043	3.9	29
59	Biochemical mechanisms of dose-dependent cytotoxicity and ROS-mediated apoptosis induced by lead sulfide/graphene oxide quantum dots for potential bioimaging applications. *Scientific Reports*, **2017**, 7, 12896	4.9	27
58	Suppressing recombination in perovskite solar cells via surface engineering of TiO2 ETL. *Solar Energy*, **2020**, 197, 50-57	6.8	26
57	High-quality organohalide lead perovskite films fabricated by layer-by-layer alternating vacuum deposition for high efficiency photovoltaics. *Materials Chemistry Frontiers*, **2017**, 1, 1520-1525	7.8	25
56	Oxygen Plasma-Induced p-Type Doping Improves Performance and Stability of PbS Quantum Dot Solar Cells. *ACS Applied Materials & Interfaces*, **2019**, 11, 26047-26052	9.5	25
55	Light Management in Organic Photovoltaics Processed in Ambient Conditions Using ZnO Nanowire and Antireflection Layer with Nanocone Array. *Small*, **2019**, 15, e1900508	11	24
54	Surface Treatment of Perovskite Layer with Guanidinium Iodide Leads to Enhanced Moisture Stability and Improved Efficiency of Perovskite Solar Cells. *Advanced Materials Interfaces*, **2020**, 7, 2000105	4.6	24
53	Nanotextured Spikes of α-FeO/NiFeO Composite for Efficient Photoelectrochemical Oxidation of Water. *Langmuir*, **2018**, 34, 3555-3564	4	23
52	Surface modification of a hole transporting layer for an efficient perovskite solar cell with an enhanced fill factor and stability. *Molecular Systems Design and Engineering*, **2018**, 3, 717-722	4.6	23

51	Zinc Stannate Nanorod as an Electron Transporting Layer for Highly Efficient and Hysteresis-less Perovskite Solar Cells. *Engineered Science*, **2018**,	3.8	21
50	A quantitative approach to study solid state phase coarsening in solder alloys using combined phase-field modeling and experimental observation. *Journal of Computational Electronics*, **2014**, 13, 425-431	1.8	20
49	Organic Halides and Nanocone Plastic Structures Enhance the Energy Conversion Efficiency and Self-Cleaning Ability of Colloidal Quantum Dot Photovoltaic Devices. *Journal of Physical Chemistry C* , **2017**, 121, 9757-9765	3.8	19
48	Reducing ion migration in methylammonium lead tri-bromide single crystal via lead sulfate passivation. *Journal of Applied Physics*, **2020**, 127, 185501	2.5	19
47	Efficient and Stable Mesoscopic Perovskite Solar Cells Using PDTITT as a New Hole Transporting Layer. *Advanced Functional Materials*, **2019**, 29, 1905887	15.6	19
46	Ambient Stable and Efficient Monolithic Tandem Perovskite/PbS Quantum Dots Solar Cells via Surface Passivation and Light Management Strategies. *Advanced Functional Materials*, **2021**, 31, 2010623	15.6	19
45	Charge Accumulation, Recombination, and Their Associated Time Scale in Efficient (GUA) (MA) PbI-Based Perovskite Solar Cells. *ACS Omega*, **2019**, 4, 16840-16846	3.9	18
44	Correlation of recombination and open circuit voltage in planar heterojunction perovskite solar cells. *Journal of Materials Chemistry C*, **2019**, 7, 1273-1279	7.1	18
43	Effect of CsCl Additive on the Morphological and Optoelectronic Properties of Formamidinium Lead Iodide Perovskite. *Solar Rrl*, **2019**, 3, 1900294	7.1	18
42	Atomic Layer Deposition of an Effective Interface Layer of TiN for Efficient and Hysteresis-Free Mesoscopic Perovskite Solar Cells. *ACS Applied Materials & Interfaces*, **2020**, 12, 8098-8106	9.5	18
41	Double layer mesoscopic electron contact for efficient perovskite solar cells. *Sustainable Energy and Fuels*, **2020**, 4, 843-851	5.8	17
40	Interpretation of Resistance, Capacitance, Defect Density, and Activation Energy Levels in Single-Crystalline MAPbI3. *Journal of Physical Chemistry C*, **2020**, 124, 3496-3502	3.8	16
39	A relatively wide-bandgap and air-stable donor polymer for fabrication of efficient semitransparent and tandem organic photovoltaics. *Proceedings of the National Academy of Sciences of the United States of America*, **2019**, 116, 22037-22043	11.5	16
38	Efficient, Hysteresis-Free, and Flexible Inverted Perovskite Solar Cells Using All-Vacuum Processing. *Solar Rrl*, **2021**, 5, 2000552	7.1	16
37	Performance improvement of solution-processed CdS/CdTe solar cells with a thin compact TiO 2 buffer layer. *Science Bulletin*, **2016**, 61, 86-91	10.6	15
36	Surface passivation of lead sulfide nanocrystals with low electron affinity metals: photoluminescence and photovoltaic performance. *Physical Chemistry Chemical Physics*, **2016**, 18, 12086-92	3.6	15
35	Luminescence down-shifting enables UV-stable and efficient ZnO nanowire-based PbS quantum dot solar cells with JSC exceeding 33 mA cm⁻². *Sustainable Energy and Fuels*, **2019**, 3, 3128-3134	5.8	14
34	Changes in the Electrical Characteristics of Perovskite Solar Cells with Aging Time. *Molecules*, **2020**, 25,	4.8	14

33	Graphdiyne Coupled with g-C3N4/NiFe-Layered Double Hydroxide, a Layered Nanohybrid for Highly Efficient Photoelectrochemical Water Oxidation. *Advanced Materials Interfaces*, **2020**, 7, 1902083	4.6	14
32	Tuning Areal Density and Surface Passivation of ZnO Nanowire Array Enable Efficient PbS QDs Solar Cells with Enhanced Current Density. *Advanced Materials Interfaces*, **2020**, 7, 1901551	4.6	14
31	Blue and red wavelength resolved impedance response of efficient perovskite solar cells. *Sustainable Energy and Fuels*, **2018**, 2, 2407-2411	5.8	13
30	Cost-Effective and Semi-Transparent PbS Quantum Dot Solar Cells Using Copper Electrodes. *ACS Applied Materials & Interfaces*, **2020**, 12, 818-825	9.5	13
29	All-Vacuum-Processing for Fabrication of Efficient, Large-Scale, and Flexible Inverted Perovskite Solar Cells. *Physica Status Solidi - Rapid Research Letters*, **2021**, 15, 2000449	2.5	13
28	Impedance Spectroscopy for Metal Halide Perovskite Single Crystals: Recent Advances, Challenges, and Solutions. *ACS Energy Letters*, **2021**, 6, 3275-3286	20.1	13
27	Elucidation of the role of guanidinium incorporation in single-crystalline MAPbI perovskite on ion migration and activation energy. *Physical Chemistry Chemical Physics*, **2020**, 22, 11467-11473	3.6	12
26	Efficient, Flexible, and Ultra-Lightweight Inverted PbS Quantum Dots Solar Cells on All-CVD-Growth of Parylene/Graphene/oCVD PEDOT Substrate with High Power-per-Weight. *Advanced Materials Interfaces*, **2020**, 7, 2000498	4.6	11
25	Multilayer evaporation of MAFAPbI3 Cl x for the fabrication of efficient and large-scale device perovskite solar cells. *Journal Physics D: Applied Physics*, **2019**, 52, 034005	3	11
24	Recent Progress in Growth of Single-Crystal Perovskites for Photovoltaic Applications. *ACS Omega*, **2021**, 6, 1030-1042	3.9	11
23	Efficient Perovskite Solar Cells Based on CdSe/ZnS Quantum Dots Electron Transporting Layer with Superior UV Stability. *Physica Status Solidi - Rapid Research Letters*, **2020**, 14, 2000062	2.5	8
22	Surface Engineering of Pbs Colloidal Quantum Dots Using Atomic Passivation for Photovoltaic Applications. *Procedia Engineering*, **2016**, 139, 117-122		7
21	Transient absorption of transition metal dichalcogenide monolayers studied by a photodope-pump-probe technique. *Physical Review B*, **2020**, 102,	3.3	6
20	Mesoscopic TiO2/Nb2O5 Electron Transfer Layer for Efficient and Stable Perovskite Solar Cells. *Advanced Materials Interfaces*, **2021**, 8, 2100177	4.6	6
19	Synergistic ligand exchange and UV curing of PbS quantum dots for effective surface passivation. *Nanoscale*, **2019**, 11, 22832-22840	7.7	6
18	Metal Halide Perovskites for Energy Storage Applications. *European Journal of Inorganic Chemistry*, **2021**, 2021, 1201-1212	2.3	6
17	Gold Nanoparticles Functionalized with Fullerene Derivative as an Effective Interface Layer for Improving the Efficiency and Stability of Planar Perovskite Solar Cells. *Advanced Materials Interfaces* , **2020**, 7, 2001144	4.6	5
16	In the Quest of Low-Frequency Impedance Spectra of Efficient Perovskite Solar Cells. *Energy Technology*, **2021**, 9, 2100229	3.5	5

15	Two-dimensional halide perovskite single crystals: principles and promises. *Emergent Materials*, **2021**, 4, 865-880	3.5	5
14	Is machine learning redefining the perovskite solar cells?. *Journal of Energy Chemistry*, **2022**, 66, 74-90	12	5
13	Effect of bromine doping on the charge transfer, ion migration and stability of the single crystalline MAPb(BrxI1-x)3 photodetector. *Journal of Materials Chemistry C*, **2021**, 9, 15189-15200	7.1	4
12	Azahomofullerenes as New n-Type Acceptor Materials for Efficient and Stable Inverted Planar Perovskite Solar Cells. *ACS Applied Materials & Interfaces*, **2021**, 13, 20296-20304	9.5	4
11	Observation of charge transfer in mixed-dimensional heterostructures formed by transition metal dichalcogenide monolayers and PbS quantum dots. *Physical Review B*, **2019**, 100,	3.3	4
10	Role of the spacer cation in the growth and crystal orientation of two-dimensional perovskites. *Sustainable Energy and Fuels*, **2021**, 5, 1255-1279	5.8	4
9	Efficient and Stable Mesoscopic Perovskite Solar Cells Using a Dopant-Free DA Copolymer Hole-Transporting Layer. *Solar Rrl*, **2021**, 5, 2000801	7.1	3
8	A Dopant-Free Hole Transporting Layer for Efficient and Stable Planar Perovskite Solar Cells. *Physica Status Solidi - Rapid Research Letters*, **2020**, 14, 2000147	2.5	2
7	Solar Energy: Progress and Design Concerns of Nanostructured Solar Energy Harvesting Devices (Small 19/2016). *Small*, **2016**, 12, 2530-2530	11	2
6	Interface Engineering of Mesoscopic Perovskite Solar Cells by Atomic Layer Deposition of Ta2O5. *ACS Applied Energy Materials*, **2021**, 4, 10433-10441	6.1	2
5	Suppression of Photovoltaic Losses in Efficient Tandem Organic Solar Cells (15.2%) with Efficient Transporting Layers and Light Management Approach. *Energy Technology*, **2021**, 9, 2000751	3.5	2
4	Recent Progress of Light Intensity-Modulated Small Perturbation Techniques in Perovskite Solar Cells. *Physica Status Solidi - Rapid Research Letters*, **2022**, 16, 2100510	2.5	1
3	Atomic Layer Engineering of Aluminum-Doped Zinc Oxide Films for Efficient and Stable Perovskite Solar Cells. *Advanced Materials Interfaces*,2200575	4.6	1
2	Monolayer Hexagonal Boron Nitride: An Efficient Electron Blocking Layer in Organic Photovoltaics. *Advanced Functional Materials*, **2021**, 31, 2101238	15.6	0
1	Band alignment and carrier recombination roles on the open circuit voltage of ETL-passivated perovskite photovoltaics. *International Journal of Energy Research*, **2022**, 46, 6022-6030	4.5	0