

Mohammad Mahdi Tavakoli

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

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	Is machine learning redefining the perovskite solar cells?. <i>Journal of Energy Chemistry</i> , 2022 , 66, 74-90	12	5
103	Band alignment and carrier recombination roles on the open circuit voltage of ETL-passivated perovskite photovoltaics. <i>International Journal of Energy Research</i> , 2022 , 46, 6022-6030	4.5	0
102	Recent Progress of Light Intensity-Modulated Small Perturbation Techniques in Perovskite Solar Cells. <i>Physica Status Solidi - Rapid Research Letters</i> , 2022 , 16, 2100510	2.5	1
101	Effect of bromine doping on the charge transfer, ion migration and stability of the single crystalline MAPb(BrxI1-x)3 photodetector. <i>Journal of Materials Chemistry C</i> , 2021 , 9, 15189-15200	7.1	4
100	Interface Engineering of Mesoscopic Perovskite Solar Cells by Atomic Layer Deposition of Ta2O5. <i>ACS Applied Energy Materials</i> , 2021 , 4, 10433-10441	6.1	2
99	Mesoscopic TiO2/Nb2O5 Electron Transfer Layer for Efficient and Stable Perovskite Solar Cells. <i>Advanced Materials Interfaces</i> , 2021 , 8, 2100177	4.6	6
98	Efficient and Stable Mesoscopic Perovskite Solar Cells Using a Dopant-Free D _A Copolymer Hole-Transporting Layer. <i>Solar Rrl</i> , 2021 , 5, 2000801	7.1	3
97	Ambient Stable and Efficient Monolithic Tandem Perovskite/PbS Quantum Dots Solar Cells via Surface Passivation and Light Management Strategies. <i>Advanced Functional Materials</i> , 2021 , 31, 21010623	15.6	19
96	Monolayer Hexagonal Boron Nitride: An Efficient Electron Blocking Layer in Organic Photovoltaics. <i>Advanced Functional Materials</i> , 2021 , 31, 2101238	15.6	0
95	Azahomofullerenes as New n-Type Acceptor Materials for Efficient and Stable Inverted Planar Perovskite Solar Cells. <i>ACS Applied Materials & Interfaces</i> , 2021 , 13, 20296-20304	9.5	4
94	Ultralow contact resistance between semimetal and monolayer semiconductors. <i>Nature</i> , 2021 , 593, 211-217	30.4	154
93	In the Quest of Low-Frequency Impedance Spectra of Efficient Perovskite Solar Cells. <i>Energy Technology</i> , 2021 , 9, 2100229	3.5	5
92	All-Vacuum-Processing for Fabrication of Efficient, Large-Scale, and Flexible Inverted Perovskite Solar Cells. <i>Physica Status Solidi - Rapid Research Letters</i> , 2021 , 15, 2000449	2.5	13
91	Efficient, Hysteresis-Free, and Flexible Inverted Perovskite Solar Cells Using All-Vacuum Processing. <i>Solar Rrl</i> , 2021 , 5, 2000552	7.1	16
90	Suppression of Photovoltaic Losses in Efficient Tandem Organic Solar Cells (15.2%) with Efficient Transporting Layers and Light Management Approach. <i>Energy Technology</i> , 2021 , 9, 2000751	3.5	2
89	Role of the spacer cation in the growth and crystal orientation of two-dimensional perovskites. <i>Sustainable Energy and Fuels</i> , 2021 , 5, 1255-1279	5.8	4
88	Recent Progress in Growth of Single-Crystal Perovskites for Photovoltaic Applications. <i>ACS Omega</i> , 2021 , 6, 1030-1042	3.9	11

87	Two-dimensional halide perovskite single crystals: principles and promises. <i>Emergent Materials</i> , 2021 , 4, 865-880	3.5	5
86	Metal Halide Perovskites for Energy Storage Applications. <i>European Journal of Inorganic Chemistry</i> , 2021 , 2021, 1201-1212	2.3	6
85	Impedance Spectroscopy for Metal Halide Perovskite Single Crystals: Recent Advances, Challenges, and Solutions. <i>ACS Energy Letters</i> , 2021 , 6, 3275-3286	20.1	13
84	A Dopant-Free Hole Transporting Layer for Efficient and Stable Planar Perovskite Solar Cells. <i>Physica Status Solidi - Rapid Research Letters</i> , 2020 , 14, 2000147	2.5	2
83	Changes in the Electrical Characteristics of Perovskite Solar Cells with Aging Time. <i>Molecules</i> , 2020 , 25,	4.8	14
82	Reducing ion migration in methylammonium lead tri-bromide single crystal via lead sulfate passivation. <i>Journal of Applied Physics</i> , 2020 , 127, 185501	2.5	19
81	Surface Treatment of Perovskite Layer with Guanidinium Iodide Leads to Enhanced Moisture Stability and Improved Efficiency of Perovskite Solar Cells. <i>Advanced Materials Interfaces</i> , 2020 , 7, 2000105	4.6	24
80	Synergistic Roll-to-Roll Transfer and Doping of CVD-Graphene Using Parylene for Ambient-Stable and Ultra-Lightweight Photovoltaics. <i>Advanced Functional Materials</i> , 2020 , 30, 2001924	15.6	32
79	Efficient Perovskite Solar Cells Based on CdSe/ZnS Quantum Dots Electron Transporting Layer with Superior UV Stability. <i>Physica Status Solidi - Rapid Research Letters</i> , 2020 , 14, 2000062	2.5	8
78	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. <i>Advanced Materials Interfaces</i> , 2020 , 7, 2000498	4.6	11
77	Transient absorption of transition metal dichalcogenide monolayers studied by a photodope-pump-probe technique. <i>Physical Review B</i> , 2020 , 102,	3.3	6
76	Graphdiyne Coupled with g-C ₃ N ₄ /NiFe-Layered Double Hydroxide, a Layered Nanohybrid for Highly Efficient Photoelectrochemical Water Oxidation. <i>Advanced Materials Interfaces</i> , 2020 , 7, 1902083	4.6	14
75	Interpretation of Resistance, Capacitance, Defect Density, and Activation Energy Levels in Single-Crystalline MAPbI ₃ . <i>Journal of Physical Chemistry C</i> , 2020 , 124, 3496-3502	3.8	16
74	Heavy Water Additive in Formamidinium: A Novel Approach to Enhance Perovskite Solar Cell Efficiency. <i>Advanced Materials</i> , 2020 , 32, e1907864	24	34
73	Suppressing recombination in perovskite solar cells via surface engineering of TiO ₂ ETL. <i>Solar Energy</i> , 2020 , 197, 50-57	6.8	26
72	Tuning Areal Density and Surface Passivation of ZnO Nanowire Array Enable Efficient PbS QDs Solar Cells with Enhanced Current Density. <i>Advanced Materials Interfaces</i> , 2020 , 7, 1901551	4.6	14
71	Double layer mesoscopic electron contact for efficient perovskite solar cells. <i>Sustainable Energy and Fuels</i> , 2020 , 4, 843-851	5.8	17
70	A review of aspects of additive engineering in perovskite solar cells. <i>Journal of Materials Chemistry A</i> , 2020 , 8, 27-54	13	145

69	Cost-Effective and Semi-Transparent PbS Quantum Dot Solar Cells Using Copper Electrodes. <i>ACS Applied Materials & Interfaces</i> , 2020 , 12, 818-825	9.5	13
68	Atomic Layer Deposition of an Effective Interface Layer of TiN for Efficient and Hysteresis-Free Mesoscopic Perovskite Solar Cells. <i>ACS Applied Materials & Interfaces</i> , 2020 , 12, 8098-8106	9.5	18
67	Gold Nanoparticles Functionalized with Fullerene Derivative as an Effective Interface Layer for Improving the Efficiency and Stability of Planar Perovskite Solar Cells. <i>Advanced Materials Interfaces</i> , 2020 , 7, 2001144	4.6	5
66	Elucidation of the role of guanidinium incorporation in single-crystalline MAPbI perovskite on ion migration and activation energy. <i>Physical Chemistry Chemical Physics</i> , 2020 , 22, 11467-11473	3.6	12
65	Luminescence down-shifting enables UV-stable and efficient ZnO nanowire-based PbS quantum dot solar cells with JSC exceeding 33 mA cm ⁻² . <i>Sustainable Energy and Fuels</i> , 2019 , 3, 3128-3134	5.8	14
64	Charge Accumulation, Recombination, and Their Associated Time Scale in Efficient (GUA) (MA) Pbl-Based Perovskite Solar Cells. <i>ACS Omega</i> , 2019 , 4, 16840-16846	3.9	18
63	A graphene/ZnO electron transfer layer together with perovskite passivation enables highly efficient and stable perovskite solar cells. <i>Journal of Materials Chemistry A</i> , 2019 , 7, 679-686	13	103
62	Correlation of recombination and open circuit voltage in planar heterojunction perovskite solar cells. <i>Journal of Materials Chemistry C</i> , 2019 , 7, 1273-1279	7.1	18
61	Highly efficient and stable inverted perovskite solar cells using down-shifting quantum dots as a light management layer and moisture-assisted film growth. <i>Journal of Materials Chemistry A</i> , 2019 , 7, 14753-14760	13	58
60	Light Management in Organic Photovoltaics Processed in Ambient Conditions Using ZnO Nanowire and Antireflection Layer with Nanocone Array. <i>Small</i> , 2019 , 15, e1900508	11	24
59	Controllable Perovskite Crystallization via Antisolvent Technique Using Chloride Additives for Highly Efficient Planar Perovskite Solar Cells. <i>Advanced Energy Materials</i> , 2019 , 9, 1803587	21.8	174
58	Engineering of Perovskite Materials Based on Formamidinium and Cesium Hybridization for High-Efficiency Solar Cells. <i>Chemistry of Materials</i> , 2019 , 31, 1620-1627	9.6	77
57	Efficient Semitransparent CsPbI ₃ Quantum Dots Photovoltaics Using a Graphene Electrode. <i>Small Methods</i> , 2019 , 3, 1900449	12.8	35
56	Synergistic interface and compositional engineering of inverted perovskite solar cells enables highly efficient and stable photovoltaic devices. <i>Chemical Communications</i> , 2019 , 55, 9196-9199	5.8	30
55	Oxygen Plasma-Induced p-Type Doping Improves Performance and Stability of PbS Quantum Dot Solar Cells. <i>ACS Applied Materials & Interfaces</i> , 2019 , 11, 26047-26052	9.5	25
54	A relatively wide-bandgap and air-stable donor polymer for fabrication of efficient semitransparent and tandem organic photovoltaics. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019 , 116, 22037-22043	11.5	16
53	Efficient and Stable Mesoscopic Perovskite Solar Cells Using PDTITT as a New Hole Transporting Layer. <i>Advanced Functional Materials</i> , 2019 , 29, 1905887	15.6	19
52	Effect of CsCl Additive on the Morphological and Optoelectronic Properties of Formamidinium Lead Iodide Perovskite. <i>Solar Rrl</i> , 2019 , 3, 1900294	7.1	18

51	Influence of A-site cations on the open-circuit voltage of efficient perovskite solar cells: a case of rubidium and guanidinium additives. <i>Journal of Materials Chemistry A</i> , 2019 , 7, 8218-8225	13	31
50	Efficient metal halide perovskite light-emitting diodes with significantly improved light extraction on nanophotonic substrates. <i>Nature Communications</i> , 2019 , 10, 727	17.4	124
49	Synergistic ligand exchange and UV curing of PbS quantum dots for effective surface passivation. <i>Nanoscale</i> , 2019 , 11, 22832-22840	7.7	6
48	Tuning, optimization, and perovskite solar cell device integration of ultrathin poly(3,4-ethylene dioxythiophene) films via a single-step all-dry process. <i>Science Advances</i> , 2019 , 5, eaay0414	14.3	42
47	Observation of charge transfer in mixed-dimensional heterostructures formed by transition metal dichalcogenide monolayers and PbS quantum dots. <i>Physical Review B</i> , 2019 , 100,	3.3	4
46	Synergistic Crystal and Interface Engineering for Efficient and Stable Perovskite Photovoltaics. <i>Advanced Energy Materials</i> , 2019 , 9, 1802646	21.8	150
45	Multilayer evaporation of MAFA _{1-x} PbI _{3-x} Cl _x for the fabrication of efficient and large-scale device perovskite solar cells. <i>Journal Physics D: Applied Physics</i> , 2019 , 52, 034005	3	11
44	Printable Fabrication of a Fully Integrated and Self-Powered Sensor System on Plastic Substrates. <i>Advanced Materials</i> , 2019 , 31, e1804285	24	102
43	Adamantanes Enhance the Photovoltaic Performance and Operational Stability of Perovskite Solar Cells by Effective Mitigation of Interfacial Defect States. <i>Advanced Energy Materials</i> , 2018 , 8, 1800275	21.8	86
42	Large-Grain Tin-Rich Perovskite Films for Efficient Solar Cells via Metal Alloying Technique. <i>Advanced Materials</i> , 2018 , 30, 1705998	24	94
41	One-step mechanochemical incorporation of an insoluble cesium additive for high performance planar heterojunction solar cells. <i>Nano Energy</i> , 2018 , 49, 523-528	17.1	70
40	Greener, Nonhalogenated Solvent Systems for Highly Efficient Perovskite Solar Cells. <i>Advanced Energy Materials</i> , 2018 , 8, 1800177	21.8	80
39	Nanotextured Spikes of FeO/NiFeO Composite for Efficient Photoelectrochemical Oxidation of Water. <i>Langmuir</i> , 2018 , 34, 3555-3564	4	23
38	Mesoscopic Oxide Double Layer as Electron Specific Contact for Highly Efficient and UV Stable Perovskite Photovoltaics. <i>Nano Letters</i> , 2018 , 18, 2428-2434	11.5	96
37	Blue and red wavelength resolved impedance response of efficient perovskite solar cells. <i>Sustainable Energy and Fuels</i> , 2018 , 2, 2407-2411	5.8	13
36	Surface modification of a hole transporting layer for an efficient perovskite solar cell with an enhanced fill factor and stability. <i>Molecular Systems Design and Engineering</i> , 2018 , 3, 717-722	4.6	23
35	Reducing Surface Recombination by a Poly(4-vinylpyridine) Interlayer in Perovskite Solar Cells with High Open-Circuit Voltage and Efficiency. <i>ACS Omega</i> , 2018 , 3, 5038-5043	3.9	29
34	Zinc Stannate Nanorod as an Electron Transporting Layer for Highly Efficient and Hysteresis-less Perovskite Solar Cells. <i>Engineered Science</i> , 2018 ,	3.8	21

33	Addition of adamantylammonium iodide to hole transport layers enables highly efficient and electroluminescent perovskite solar cells. <i>Energy and Environmental Science</i> , 2018 , 11, 3310-3320	35.4	118
32	Surface Engineering of TiO ₂ ETL for Highly Efficient and Hysteresis-Less Planar Perovskite Solar Cell (21.4%) with Enhanced Open-Circuit Voltage and Stability. <i>Advanced Energy Materials</i> , 2018 , 8, 1800794	21.8	193
31	Elucidation of Charge Recombination and Accumulation Mechanism in Mixed Perovskite Solar Cells. <i>Journal of Physical Chemistry C</i> , 2018 , 122, 15149-15154	3.8	49
30	Understanding the effect of chlorobenzene and isopropanol anti-solvent treatments on the recombination and interfacial charge accumulation in efficient planar perovskite solar cells. <i>Journal of Materials Chemistry A</i> , 2018 , 6, 14307-14314	13	81
29	High-quality organohalide lead perovskite films fabricated by layer-by-layer alternating vacuum deposition for high efficiency photovoltaics. <i>Materials Chemistry Frontiers</i> , 2017 , 1, 1520-1525	7.8	25
28	Organic Halides and Nanocone Plastic Structures Enhance the Energy Conversion Efficiency and Self-Cleaning Ability of Colloidal Quantum Dot Photovoltaic Devices. <i>Journal of Physical Chemistry C</i> , 2017 , 121, 9757-9765	3.8	19
27	A non-catalytic vapor growth regime for organohalide perovskite nanowires using anodic aluminum oxide templates. <i>Nanoscale</i> , 2017 , 9, 5828-5834	7.7	46
26	Lead-Free Perovskite Nanowire Array Photodetectors with Drastically Improved Stability in Nanoengineering Templates. <i>Nano Letters</i> , 2017 , 17, 523-530	11.5	177
25	Biochemical mechanisms of dose-dependent cytotoxicity and ROS-mediated apoptosis induced by lead sulfide/graphene oxide quantum dots for potential bioimaging applications. <i>Scientific Reports</i> , 2017 , 7, 12896	4.9	27
24	Spray Pyrolysis Deposition of ZnFe ₂ O ₄ /Fe ₂ O ₃ Composite Thin Films on Hierarchical 3-D Nanospikes for Efficient Photoelectrochemical Oxidation of Water. <i>Journal of Physical Chemistry C</i> , 2017 , 121, 18360-18368	3.8	34
23	All Inorganic Cesium Lead Iodide Perovskite Nanowires with Stabilized Cubic Phase at Room Temperature and Nanowire Array-Based Photodetectors. <i>Nano Letters</i> , 2017 , 17, 4951-4957	11.5	169
22	Chemical processing of three-dimensional graphene networks on transparent conducting electrodes for depleted-heterojunction quantum dot solar cells. <i>Chemical Communications</i> , 2016 , 52, 323-6	5.8	36
21	Interface Engineering of Perovskite Solar Cell Using a Reduced-Graphene Scaffold. <i>Journal of Physical Chemistry C</i> , 2016 , 120, 19531-19536	3.8	73
20	3D Arrays of 1024-Pixel Image Sensors based on Lead Halide Perovskite Nanowires. <i>Advanced Materials</i> , 2016 , 28, 9713-9721	24	172
19	Solar Energy: Progress and Design Concerns of Nanostructured Solar Energy Harvesting Devices (Small 19/2016). <i>Small</i> , 2016 , 12, 2530-2530	11	2
18	High Efficiency and Stable Perovskite Solar Cell Using ZnO/rGO QDs as an Electron Transfer Layer. <i>Advanced Materials Interfaces</i> , 2016 , 3, 1500790	4.6	121
17	Performance improvement of solution-processed CdS/CdTe solar cells with a thin compact TiO ₂ buffer layer. <i>Science Bulletin</i> , 2016 , 61, 86-91	10.6	15
16	Efficient, flexible and mechanically robust perovskite solar cells on inverted nanocone plastic substrates. <i>Nanoscale</i> , 2016 , 8, 4276-83	7.7	89

15	High performance thin film solar cells on plastic substrates with nanostructure-enhanced flexibility. <i>Nano Energy</i> , 2016 , 22, 539-547	17.1	53
14	Progress and Design Concerns of Nanostructured Solar Energy Harvesting Devices. <i>Small</i> , 2016 , 12, 2536-48	1.48	38
13	Fabrication of CuFeO ₂ /FeO Composite Thin Films on FTO Coated Glass and 3-D Nanospire Structures for Efficient Photoelectrochemical Water Splitting. <i>ACS Applied Materials & Interfaces</i> , 2016 , 8, 35315-35322	9.5	50
12	Surface Engineering of Pbs Colloidal Quantum Dots Using Atomic Passivation for Photovoltaic Applications. <i>Procedia Engineering</i> , 2016 , 139, 117-122		7
11	Surface passivation of lead sulfide nanocrystals with low electron affinity metals: photoluminescence and photovoltaic performance. <i>Physical Chemistry Chemical Physics</i> , 2016 , 18, 12086-92	3.6	15
10	Dual-Layer Nanostructured Flexible Thin-Film Amorphous Silicon Solar Cells with Enhanced Light Harvesting and Photoelectric Conversion Efficiency. <i>ACS Applied Materials & Interfaces</i> , 2016 , 8, 10929-36	9.5	43
9	Quasi Core/Shell Lead Sulfide/Graphene Quantum Dots for Bulk Heterojunction Solar Cells. <i>Journal of Physical Chemistry C</i> , 2015 , 119, 18886-18895	3.8	45
8	Supercritical Synthesis and Characterization of Graphene/Pbs Quantum Dots Composite with Enhanced Photovoltaic Properties. <i>Industrial & Engineering Chemistry Research</i> , 2015 , 54, 7382-7392	3.9	37
7	Highly flexible and transferable supercapacitors with ordered three-dimensional MnO ₂ /Au/MnO ₂ nanospire arrays. <i>Journal of Materials Chemistry A</i> , 2015 , 3, 10199-10204	13	47
6	Hybrid zinc oxide/graphene electrodes for depleted heterojunction colloidal quantum-dot solar cells. <i>Physical Chemistry Chemical Physics</i> , 2015 , 17, 24412-9	3.6	44
5	Highly Efficient Flexible Perovskite Solar Cells with Antireflection and Self-Cleaning Nanostructures. <i>ACS Nano</i> , 2015 , 9, 10287-95	16.7	274
4	Fabrication of efficient planar perovskite solar cells using a one-step chemical vapor deposition method. <i>Scientific Reports</i> , 2015 , 5, 14083	4.9	165
3	Physicochemical properties of hybrid graphene/lead sulfide quantum dots prepared by supercritical ethanol. <i>Journal of Nanoparticle Research</i> , 2015 , 17, 1	2.3	34
2	A quantitative approach to study solid state phase coarsening in solder alloys using combined phase-field modeling and experimental observation. <i>Journal of Computational Electronics</i> , 2014 , 13, 425-431	1.8	20
1	Atomic Layer Engineering of Aluminum-Doped Zinc Oxide Films for Efficient and Stable Perovskite Solar Cells. <i>Advanced Materials Interfaces</i> , 2015 , 2200575	4.6	1