Hsinhan Tsai

List of Publications by Year
in descending order

71 papers	13,165 citations	101543 36 h-index	110387 64 g-index
72 all docs	72 docs citations	72 times ranked	14115 citing authors

#	Article	IF	Citations
1	High-efficiency solution-processed perovskite solar cells with millimeter-scale grains. Science, 2015, 347, 522-525.	12.6	2,978
2	High-efficiency two-dimensional Ruddlesdenâ€“Popper perovskite solar cells. Nature, 2016, 536, 312-316.	27.8	2,767
3	Light-activated photocurrent degradation and self-healing in perovskite solar cells. Nature Communications, 2016, 7, 11574.	12.8	584
4	PEDOT:PSS for Flexible and Stretchable Electronics: Modifications, Strategies, and Applications. Advanced Science, 2019, 6, 1900813.	11.2	563
5	Light-induced lattice expansion leads to high-efficiency perovskite solar cells. Science, 2018, 360, 67-70.	12.6	554
6	New Type of 2D Perovskites with Alternating Cations in the Interlayer Space, (C(NH₂)₃)(CH₃NH₃)_nPb_nI<sub>3n+ Structure, Properties, and Photovoltaic Performance. Journal of the American Chemical Society, 2017, 139, 16297-16309.	13.7	374
7	High Members of the 2D Ruddlesden-Popper Halide Perovskites: Synthesis, Optical Properties, and Solar Cells of (CH3(CH2)3NH3)2(CH3NH3)4Pb5I16. CheM, 2017, 2, 427-440.	11.7	354
8	Advances and Promises of Layered Halide Hybrid Perovskite Semiconductors. ACS Nano, 2016, 10, 9776-9786.	14.6	351
9	Understanding Film Formation Morphology and Orientation in High Member 2D Ruddlesdenâ€“Popper Perovskites for Highâ€Efficiency Solar Cells. Advanced Energy Materials, 2018, 8, 1700979.	19.5	286
10	A fabrication process for flexible single-crystal perovskite devices. Nature, 2020, 583, 790-795.	27.8	278
11	Stable Lightâ€Emitting Diodes Using Phaseâ€Pure Ruddlesdenâ€“Popper Layered Perovskites. Advanced Materials, 2018, 30, 1704217.	21.0	258
12	Polaron Stabilization by Cooperative Lattice Distortion and Cation Rotations in Hybrid Perovskite Materials. Nano Letters, 2016, 16, 3809-3816.	9.1	245
13	Phase Transition Control for High Performance Ruddlesdenâ€“Popper Perovskite Solar Cells. Advanced Materials, 2018, 30, e1707166.	21.0	244
14	Structural and thermodynamic limits of layer thickness in 2D halide perovskites. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 58-66.	7.1	236
15	Role of Organic Counterion in Lead- and Tin-Based Two-Dimensional Semiconducting Iodide Perovskites and Application in Planar Solar Cells. Chemistry of Materials, 2016, 28, 7781-7792.	6.7	228
16	Critical Role of Interface and Crystallinity on the Performance and Photostability of Perovskite Solar Cell on Nickel Oxide. Advanced Materials, 2018, 30, 1703879.	21.0	198
17	Uniaxial Expansion of the 2D Ruddlesdenâ€“Popper Perovskite Family for Improved Environmental Stability. Journal of the American Chemical Society, 2019, 141, 5518-5534.	13.7	193
18	Two-Dimensional Halide Perovskites Incorporating Straight Chain Symmetric Diammonium Ions, (NH₃C_mH_{2m}NH₃)(CH₃NH₃)_n (m = 4â€“9; n = 1â€“4). Journal of the American Chemical Society, 2018, 140, 12226-12238.	13.7	184

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19	Laser wavelength- and power-dependent plasmon-driven chemical reactions monitored using single particle surface enhanced Raman spectroscopy. Chemical Communications, 2013, 49, 3389.	4.1	165
20	Design principles for electronic charge transport in solution-processed vertically stacked 2D perovskite quantum wells. Nature Communications, 2018, 9, 2130.	12.8	153
21	A sensitive and robust thin-film x-ray detector using 2D layered perovskite diodes. Science Advances, 2020, 6, eaay0815.	10.3	153
22	Composite Nature of Layered Hybrid Perovskites: Assessment on Quantum and Dielectric Confinements and Band Alignment. ACS Nano, 2018, 12, 3321-3332.	14.6	146
23	Effect of Precursor Solution Aging on the Crystallinity and Photovoltaic Performance of Perovskite Solar Cells. Advanced Energy Materials, 2017, 7, 1602159.	19.5	130
24	Effect of Cation Composition on the Mechanical Stability of Perovskite Solar Cells. Advanced Energy Materials, 2018, 8, 1702116.	19.5	130
25	Bright and stable light-emitting diodes made with perovskite nanocrystals stabilized in metalâ€“organic frameworks. Nature Photonics, 2021, 15, 843-849.	31.4	117
26	One-step synthesis of Mn3O4/reduced graphene oxide nanocomposites for oxygen reduction in nonaqueous Liâ€“O2 batteries. Chemical Communications, 2013, 49, 10838.	4.1	106
27	Concept of Lattice Mismatch and Emergence of Surface States in Two-dimensional Hybrid Perovskite Quantum Wells. Nano Letters, 2018, 18, 5603-5609.	9.1	103
28	Structure-Dependent Electrocatalytic Properties of Cu₂O Nanocrystals for Oxygen Reduction Reaction. Journal of Physical Chemistry C, 2013, 117, 13872-13878.	3.1	92
29	Optimizing Composition and Morphology for Large-Grain Perovskite Solar Cells via Chemical Control. Chemistry of Materials, 2015, 27, 5570-5576.	6.7	82
30	Structurally Defined 3D Nanographene Assemblies via Bottomâ€Up Chemical Synthesis for Highly Efficient Lithium Storage. Advanced Materials, 2016, 28, 10250-10256.	21.0	72
31	Structural Design of Benzo[1,2-b:4,5-bâ€²]dithiophene-Based 2D Conjugated Polymers with Bithienyl and Terthienyl Substituents toward Photovoltaic Applications. Macromolecules, 2014, 47, 1008-1020.	4.8	56
32	A simple one-step method with wide processing window for high-quality perovskite mini-module fabrication. Joule, 2021, 5, 958-974.	24.0	55
33	Geometry Distortion and Small Polaron Binding Energy Changes with Ionic Substitution in Halide Perovskites. Journal of Physical Chemistry Letters, 2018, 9, 7130-7136.	4.6	52
34	Facile Fabrication of Selfâ€Assembly Functionalized Polythiophene Hole Transporting Layer for High Performance Perovskite Solar Cells. Advanced Science, 2021, 8, 2002718.	11.2	46
35	Polymer-assisted preparation of metal nanoparticles with controlled size and morphology. Journal of Materials Chemistry, 2011, 21, 2550-2554.	6.7	41
36	Critical Role of Organic Spacers for Bright 2D Layered Perovskites Lightâ€Emitting Diodes. Advanced Science, 2020, 7, 1903202.	11.2	39

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37	Solvent Polarity Effect on Chain Conformation, Film Morphology, and Optical Properties of a Water-Soluble Conjugated Polymer. Journal of Physical Chemistry B, 2010, 114, 11746-11752.	2.6	38
38	Quasiâ€2D Perovskite Crystalline Layers for Printable Direct Conversion Xâ€Ray Imaging. Advanced Materials, 2022, 34, e2106498.	21.0	37
39	Flexible memory devices with tunable electrical bistability via controlled energetics in donorâ€“donor and donorâ€“acceptor conjugated polymers. Journal of Materials Chemistry C, 2014, 2, 4374-4378.	5.5	34
40	Cation Alloying Delocalizes Polarons in Lead Halide Perovskites. Journal of Physical Chemistry Letters, 2019, 10, 3516-3524.	4.6	33
41	Structural dynamics and charge transfer via complexation with fullerene in large area conjugated polymer honeycomb thin filmsâ€. Chemistry of Materials, 2011, 23, 759-761.	6.7	32
42	Halide Perovskite High-k Field Effect Transistors with Dynamically Reconfigurable Ambipolarity. , 2019, 1, 633-640.		29
43	Robust Unencapsulated Perovskite Solar Cells Protected by a Fluorinated Fullerene Electron Transporting Layer. ACS Energy Letters, 2021, 6, 3376-3385.	17.4	27
44	Hydrazine-Free Surface Modification of CZTSe Nanocrystals with All-Inorganic Ligand. Journal of Physical Chemistry C, 2014, 118, 30302-30308.	3.1	24
45	Cesium Lead Halide Perovskite Nanocrystals Assembled in Metalâ€Organic Frameworks for Stable Blue Light Emitting Diodes. Advanced Science, 2022, 9, e2105850.	11.2	23
46	The working principle of hybrid perovskite gamma-ray photon counter. Materials Today, 2020, 37, 27-34.	14.2	22
47	Role of the Metalâ€“Semiconductor Interface in Halide Perovskite Devices for Radiation Photon Counting. ACS Applied Materials & Interfaces, 2020, 12, 45533-45540.	8.0	21
48	Edge States Drive Exciton Dissociation in Ruddlesdenâ€“Popper Lead Halide Perovskite Thin Films. , 2020, 2, 1360-1367.		20
49	Vacuumâ€Free, Allâ€Solution, and Allâ€Air Processed Organic Photovoltaics with over 11% Efficiency and Promoted Stability Using Layerâ€byâ€Layer Codoped Polymeric Electrodes. Solar Rrl, 2020, 4, 1900543.	5.8	19
50	Millimeterâ€Size Allâ€Inorganic Perovskite Crystalline Thin Film Grown by Chemical Vapor Deposition. Advanced Functional Materials, 2021, 31, 2101058.	14.9	19
51	Benzimidazole Based Holeâ€Transporting Materials for Highâ€performance Inverted Perovskite Solar Cells. Advanced Functional Materials, 2022, 32, .	14.9	19
52	Interface Design Principles for Highâ€Performance Organic Semiconductor Devices. Advanced Science, 2015, 2, 1500024.	11.2	18
53	Methylammonium Lead Tribromide Single Crystal Detectors towards Robust Gammaâ€Ray Photon Sensing. Advanced Optical Materials, 2020, 8, 2000233.	7.3	18
54	Perovskite nanocrystals stabilized in metalâ€“organic frameworks for light emission devices. Journal of Materials Chemistry A, 2022, 10, 19518-19533.	10.3	15

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55	Response to Comment on â€œLight-induced lattice expansion leads to high-efficiency solar cellsâ€. Science, 2020, 368, .	12.6	13
56	Highly efficient photoelectric effect in halide perovskites for regenerative electron sources. Nature Communications, 2021, 12, 673.	12.8	13
57	An Efficient and Reversible Battery Anode Electrode Derived from a Lead-Based Metalâ€“Organic Framework. Energy & Fuels, 2021, 35, 9669-9682.	5.1	13
58	In-situ observation of trapped carriers in organic metal halide perovskite films with ultra-fast temporal and ultra-high energetic resolutions. Nature Communications, 2021, 12, 1636.	12.8	11
59	Billion-pixel x-ray camera (BiPC-X). Review of Scientific Instruments, 2021, 92, 043708.	1.3	10
60	The degradation and recovery behavior of mixed-cation perovskite solar cells in moisture and a gas mixture environment. Journal of Materials Chemistry A, 2022, 10, 13519-13526.	10.3	10
61	Synthesis and Characterization of Ethylene Glycol Substituted Poly(phenylene Vinylene) Derivatives. ACS Applied Materials & Interfaces, 2010, 2, 738-747.	8.0	9
62	Supramolecular block copolymer photovoltaics through ureido-pyrimidinone hydrogen bonding interactions. RSC Advances, 2016, 6, 51562-51568.	3.6	8
63	The crucial role of a spacer material on the efficiency of charge transfer processes in organic donorâ€“acceptor junction solar cells. Nanoscale, 2018, 10, 451-459.	5.6	5
64	Correlation of Spatiotemporal Dynamics of Polarization and Charge Transport in Blended Hybrid Organicâ€“Inorganic Perovskites on Macro- and Nanoscales. ACS Applied Materials & Interfaces, 2020, 12, 15380-15388.	8.0	5
65	DNA-assisted photoinduced charge transfer between a cationic poly(phenylene vinylene) and a cationic fullerene. Physical Chemistry Chemical Physics, 2015, 17, 15675-15678.	2.8	4
66	The challenges and promises of layered 2D perovskites. CheM, 2022, 8, 890-891.	11.7	2
67	Emerging Lead-Halide Perovskite Semiconductor for Solid-State Detectors. , 2022, , 35-58.		1
68	Semiconductors: Interface Design Principles for High-Performance Organic Semiconductor Devices (Adv. Sci. 6/2015). Advanced Science, 2015, 2, .	11.2	0
69	Nanoscaled self-assemblies for facilitated energy conversion. , 2015, , .		0
70	Optoelectronic properties and photo-physics of large grain hybrid perovskites. , 2016, , .		0
71	Halide Perovskites: Recent Advances in Optoelectronic Properties from Atomic Scale Modelling. , 0, , .		0