Shijing Sun

List of Publications by Year
in descending order

60 papers	5,588 citations	126708 33 h-index	149479 56 g-index
66 all docs	66 docs citations	66 times ranked	7340 citing authors

#	Article	IF	Citations
1	Tailoring capping-layer composition for improved stability of mixed-halide perovskites. Journal of Materials Chemistry A, 2022, 10, 2957-2965.	5.2	5
2	Machine Learning Guided Dopant Selection for Metal Oxideâ€Based Photoelectrochemical Water Splitting: The Case Study of Fe₂O₃and CuO. Advanced Materials, 2022, 34, e2106776.	11.1	26
3	Toward autonomous materials research: Recent progress and future challenges. Applied Physics Reviews, 2022, 9, .	5.5	17
4	Discovering equations that govern experimental materials stability under environmental stress using scientific machine learning. Npj Computational Materials, 2022, 8, .	3.5	6
5	Opportunities for machine learning to accelerate halide-perovskite commercialization and scale-up. Matter, 2022, 5, 1353-1366.	5.0	8
6	Understanding the interplay between the crystal structure and charge transport in alloyed lead-free perovskites. Sustainable Energy and Fuels, 2021, 5, 5454-5460.	2.5	1
7	A data fusion approach to optimize compositional stability of halide perovskites. Matter, 2021, 4, 1305-1322.	5.0	75
8	Discovery of temperature-induced stability reversal in perovskites using high-throughput robotic learning. Nature Communications, 2021, 12, 2191.	5.8	77
9	An Open Combinatorial Diffraction Dataset Including Consensus Human and Machine Learning Labels with Quantified Uncertainty for Training New Machine Learning Models. Integrating Materials and Manufacturing Innovation, 2021, 10, 311-318.	1.2	5
10	Using automated serendipity to discover how trace water promotes and inhibits lead halide perovskite crystal formation. Applied Physics Letters, 2021, 119, .	1.5	12
11	Predicting Antimicrobial Activity of Conjugated Oligoelectrolyte Molecules via Machine Learning. Journal of the American Chemical Society, 2021, 143, 18917-18931.	6.6	17
12	Benchmarking the performance of Bayesian optimization across multiple experimental materials science domains. Npj Computational Materials, 2021, 7, .	3.5	62
13	Perovskite PV-Powered RFID: Enabling Low-Cost Self-Powered IoT Sensors. IEEE Sensors Journal, 2020, 20, 471-478.	2.4	46
14	Moisture-Induced Crystallographic Reorientations and Effects on Charge Carrier Extraction in Metal Halide Perovskite Solar Cells. ACS Energy Letters, 2020, 5, 3526-3534.	8.8	30
15	How machine learning can help select capping layers to suppress perovskite degradation. Nature Communications, 2020, 11, 4172.	5.8	75
16	Embedding physics domain knowledge into a Bayesian network enables layer-by-layer process innovation for photovoltaics. Npj Computational Materials, 2020, 6, .	3.5	18
17	Selfâ€Powered Sensors Enabled by Wideâ€Bandgap Perovskite Indoor Photovoltaic Cells. Advanced Functional Materials, 2019, 29, 1904072.	7.8	83
18	The effect of structural dimensionality on carrier mobility in lead-halide perovskites. Journal of Materials Chemistry A, 2019, 7, 23949-23957.	5.2	38

#	Article	IF	Citations
19	Accelerated Development of Perovskite-Inspired Materials via High-Throughput Synthesis and Machine-Learning Diagnosis. Joule, 2019, 3, 1437-1451.	11.7	187
20	Fast and interpretable classification of small X-ray diffraction datasets using data augmentation and deep neural networks. Npj Computational Materials, 2019, 5, .	3.5	177
21	Mechanical properties of hybrid organic-inorganic perovskites. Coordination Chemistry Reviews, 2019, 391, 15-29.	9.5	80
22	Halide Heterogeneity Affects Local Charge Carrier Dynamics in Mixed-Ion Lead Perovskite Thin Films. Chemistry of Materials, 2019, 31, 3712-3721.	3.2	27
23	How far does the defect tolerance of lead-halide perovskites range? The example of Bi impurities introducing efficient recombination centers. Journal of Materials Chemistry A, 2019, 7, 23838-23853.	5.2	57
24	Enhanced visible light absorption for lead-free double perovskite Cs₂AgSbBr₆. Chemical Communications, 2019, 55, 3721-3724.	2.2	117
25	Phosphonic Acid Modification of the Electron Selective Contact: Interfacial Effects in Perovskite Solar Cells. ACS Applied Energy Materials, 2019, 2, 2402-2408.	2.5	23
26	Homogenized halides and alkali cation segregation in alloyed organic-inorganic perovskites. Science, 2019, 363, 627-631.	6.0	258
27	The Effect of Tert-butylammonium Addition in Methylammonium Lead Iodide Perovskite Solar Cells. , 2019, , .		0
28	Investigating the influence of halide distribution on charge carrier dynamics in mixed-ion perovskite films. , 2019, , .		0
29	Physics-guided characterization and optimization of solar cells using surrogate machine learning model. , 2019, , .		8
30	Unraveling the Interfacial Structureâ€"Performance Correlation of Flexible Metalâ€"Organic Framework Membranes on Polymeric Substrates. ACS Applied Materials & Interfaces, 2019, 11, 5570-5577.	4.0	29
31	Elastic properties and thermal expansion of lead-free halide double perovskite Cs2AgBiBr6. Computational Materials Science, 2018, 141, 49-58.	1.4	87
32	Synthesis, crystal structure, magnetic and electronic properties of the caesium-based transition metal halide Cs₃Fe₂Br₉. Journal of Materials Chemistry C, 2018, 6, 3573-3577.	2.7	25
33	Precursor Concentration Affects Grain Size, Crystal Orientation, and Local Performance in Mixed-Ion Lead Perovskite Solar Cells. ACS Applied Energy Materials, 2018, 1, 6801-6808.	2.5	65
34	Interplay of Grain Size, Crystal Orientation, and Performance in Mixedion Lead Halide Perovskite Films. , 2018, , .		4
35	Influence of organic cations on the structural anisotropy in cubic lead halide perovskites. , 2018, , .		0
36	Octahedral connectivity and its role in determining the phase stabilities and electronic structures of low-dimensional, perovskite-related iodoplumbates. APL Materials, 2018, 6, .	2.2	23

#	Article	IF	Citations
37	<i>A</i>-Site Cation in Inorganic <i>A</i>₃Sb₂I₉ Perovskite Influences Structural Dimensionality, Exciton Binding Energy, and Solar Cell Performance. Chemistry of Materials, 2018, 30, 3734-3742.	3.2	134
38	Fundamental Carrier Lifetime Exceeding 1 Âµs in Cs₂AgBiBr₆ Double Perovskite. Advanced Materials Interfaces, 2018, 5, 1800464.	1.9	173
39	Stateâ€ofâ€theâ€Art Electronâ€Selective Contacts in Perovskite Solar Cells. Advanced Materials Interfaces, 2018, 5, 1800408.	1.9	38
40	Cobalt oxide and N-doped carbon nanosheets derived from a single two-dimensional metalâ€“organic framework precursor and their application in flexible asymmetric supercapacitors. Nanoscale Horizons, 2017, 2, 99-105.	4.1	227
41	Synthesis and Properties of a Lead-Free Hybrid Double Perovskite: (CH₃NH₃)₂AgBiBr₆. Chemistry of Materials, 2017, 29, 1089-1094.	3.2	290
42	Variable temperature and high-pressure crystal chemistry of perovskite formamidinium lead iodide: a single crystal X-ray diffraction and computational study. Chemical Communications, 2017, 53, 7537-7540.	2.2	43
43	Factors Influencing the Mechanical Properties of Formamidinium Lead Halides and Related Hybrid Perovskites. ChemSusChem, 2017, 10, 3683-3683.	3.6	0
44	Synthesis and Characterization of the Rare-Earth Hybrid Double Perovskites: (CH₃NH₃)₂KGdCl₆ and (CH₃NH₃)₂KYCl₆. Journal of Physical Chemistry Letters, 2017, 8, 5015-5020.	2.1	68
45	Factors Influencing the Mechanical Properties of Formamidinium Lead Halides and Related Hybrid Perovskites. ChemSusChem, 2017, 10, 3740-3745.	3.6	80
46	Functional conductive nanomaterials via polymerisation in nano-channels: PEDOT in a MOF. Materials Horizons, 2017, 4, 64-71.	6.4	60
47	Oriented Twoâ€Dimensional Porous Organic Cage Crystals. Angewandte Chemie, 2017, 129, 9519-9523.	1.6	13
48	Oriented Twoâ€Dimensional Porous Organic Cage Crystals. Angewandte Chemie - International Edition, 2017, 56, 9391-9395.	7.2	33
49	Porous Organic Cage Thin Films and Molecularâ€Sieving Membranes. Advanced Materials, 2016, 28, 2629-2637.	11.1	275
50	Molecular Sieves: Porous Organic Cage Thin Films and Molecularâ€Sieving Membranes (Adv. Mater.) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 5	11.1	1
51	Synthesis, crystal structure, and properties of a perovskite-related bismuth phase, (NH4)3Bi2I9. APL Materials, 2016, 4, .	2.2	106
52	Tuneable mechanical and dynamical properties in the ferroelectric perovskite solid solution [NH₃NH₂]_{1â"x}[NH₃OH]_xZn(HCOO)₃. Chemical Science, 2016, 7, 5108-5112.	3.7	33
53	The synthesis, structure and electronic properties of a lead-free hybrid inorganicâ€“organic double perovskite (MA)₂KBiCl₆ (MA = methylammonium). Materials Horizons, 2016, 3, 328-332.	6.4	284
54	Exploring the properties of lead-free hybrid double perovskites using a combined computational-experimental approach. Journal of Materials Chemistry A, 2016, 4, 12025-12029.	5.2	250

#	Article	IF	Citations
55	Role of Amineâ€“Cavity Interactions in Determining the Structure and Mechanical Properties of the Ferroelectric Hybrid Perovskite [NH₃NH₂]Zn(HCOO)₃. Chemistry of Materials, 2016, 28, 312-317.	3.2	55
56	Mechanical properties of organicâ€“inorganic halide perovskites, CH₃NH₃PbX₃(X = I, Br and Cl), by nanoindentation. Journal of Materials Chemistry A, 2015, 3, 18450-18455.	5.2	197
57	An extended Tolerance Factor approach for organicâ€“inorganic perovskites. Chemical Science, 2015, 6, 3430-3433.	3.7	587
58	Role of entropic effects in controlling the polymorphism in formate ABX₃ metalâ€“organic frameworks. Chemical Communications, 2015, 51, 15538-15541.	2.2	66
59	Mechanical Properties of a Calcium Dietary Supplement, Calcium Fumarate Trihydrate. Inorganic Chemistry, 2015, 54, 11186-11192.	1.9	14
60	Solid-state principles applied to organicâ€“inorganic perovskites: new tricks for an old dog. Chemical Science, 2014, 5, 4712-4715.	3.7	788