Laura Schelhas

List of Publications by Year
in descending order

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82 papers	3,090 citations	147801 31 h-index	161849 54 g-index
83 all docs	83 docs citations	83 times ranked	4991 citing authors

#	Article	IF	Citations
1	A map of the inorganic ternary metal nitrides. Nature Materials, 2019, 18, 732-739.	27.5	274
2	A practical field guide to thermoelectrics: Fundamentals, synthesis, and characterization. Applied Physics Reviews, 2018, 5, 021303.	11.3	223
3	Metastable Dion-Jacobson 2D structure enables efficient and stable perovskite solar cells. Science, 2022, 375, 71-76.	12.6	216
4	Size-Dependent Lattice Structure and Confinement Properties in CsPbI₃ Perovskite Nanocrystals: Negative Surface Energy for Stabilization. ACS Energy Letters, 2020, 5, 238-247.	17.4	201
5	Structural Origins of Light-Induced Phase Segregation in Organic-Inorganic Halide Perovskite Photovoltaic Materials. Matter, 2020, 2, 207-219.	10.0	128
6	Insights into operational stability and processing of halide perovskite active layers. Energy and Environmental Science, 2019, 12, 1341-1348.	30.8	125
7	Perovskite-Inspired Photovoltaic Materials: Toward Best Practices in Materials Characterization and Calculations. Chemistry of Materials, 2017, 29, 1964-1988.	6.7	116
8	Understanding crystallization pathways leading to manganese oxide polymorph formation. Nature Communications, 2018, 9, 2553.	12.8	98
9	Chemical Bath Deposition of p-Type Transparent, Highly Conducting (CuS)_x:(ZnS)_{1â€“x} Nanocomposite Thin Films and Fabrication of Si Heterojunction Solar Cells. Nano Letters, 2016, 16, 1925-1932.	9.1	89
10	General Method for the Synthesis of Hierarchical Nanocrystal-Based Mesoporous Materials. ACS Nano, 2012, 6, 6386-6399.	14.6	85
11	Monte Carlo simulations of disorder in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>ZnSn</mml:mi><mml:msub><mml:mi mathvariant="normal">N</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math> and the effects on the electronic structure. Physical Review Materials, 2017, 1, .	2.4	79
12	Nanostructured Pseudocapacitors Based on Atomic Layer Deposition of V₂O₅ onto Conductive Nanocrystalâ€based Mesoporous ITO Scaffolds. Advanced Functional Materials, 2014, 24, 6717-6728.	14.9	76
13	Magnetoelectric Control of Superparamagnetism. Nano Letters, 2013, 13, 884-888.	9.1	66
14	The Role of Dimethylammonium in Bandgap Modulation for Stable Halide Perovskites. ACS Energy Letters, 2020, 5, 1856-1864.	17.4	65
15	High-fraction brookite films from amorphous precursors. Scientific Reports, 2017, 7, 15232.	3.3	56
16	Surface-Activated Corrosion in Tinâ€“Lead Halide Perovskite Solar Cells. ACS Energy Letters, 2020, 5, 3344-3351.	17.4	55
17	Dopant activation in Sn-doped Ga2O3 investigated by X-ray absorption spectroscopy. Applied Physics Letters, 2015, 107, .	3.3	53
18	Undoped and Ni-Doped CoO_x Surface Modification of Porous BiVO₄ Photoelectrodes for Water Oxidation. Journal of Physical Chemistry C, 2016, 120, 23449-23457.	3.1	52

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19	Monitoring a Silent Phase Transition in CH₃NH₃PbI₃ Solar Cells via Operando X-ray Diffraction. ACS Energy Letters, 2016, 1, 1007-1012.	17.4	52
20	Comparing Matched Polymer:Fullerene Solar Cells Made by Solution-Sequential Processing and Traditional Blend Casting: Nanoscale Structure and Device Performance. Journal of Physical Chemistry C, 2014, 118, 17413-17425.	3.1	50
21	Reversible multicolor chromism in layered formamidinium metal halide perovskites. Nature Communications, 2020, 11, 5234.	12.8	48
22	Novel phase diagram behavior and materials design in heterostructural semiconductor alloys. Science Advances, 2017, 3, e1700270.	10.3	46
23	Temperature Coefficients of Perovskite Photovoltaics for Energy Yield Calculations. ACS Energy Letters, 2021, 6, 2038-2047.	17.4	43
24	Exciton photoluminescence and benign defect complex formation in zinc tin nitride. Materials Horizons, 2018, 5, 823-830.	12.2	41
25	Extensive Penetration of Evaporated Electrode Metals into Fullerene Films: Intercalated Metal Nanostructures and Influence on Device Architecture. ACS Applied Materials & Interfaces, 2015, 7, 25247-25258.	8.0	40
26	Pâ€Type Transparent Cuâ€Alloyed ZnS Deposited at Room Temperature. Advanced Electronic Materials, 2016, 2, 1500396.	5.1	40
27	Comment on â€œLight-induced lattice expansion leads to high-efficiency perovskite solar cellsâ€. Science, 2020, 368, .	12.6	38
28	Negative-pressure polymorphs made by heterostructural alloying. Science Advances, 2018, 4, eaaq1442.	10.3	34
29	Glass/glass photovoltaic module reliability and degradation: a review. Journal Physics D: Applied Physics, 2021, 54, 413002.	2.8	34
30	Structural Evolution During Perovskite Crystal Formation and Degradation: In Situ and Operando Xâ€Ray Diffraction Studies. Advanced Energy Materials, 2020, 10, 1903074.	19.5	33
31	Zn₂SbN₃: growth and characterization of a metastable photoactive semiconductor. Materials Horizons, 2019, 6, 1669-1674.	12.2	32
32	Nanoporous Semiconductors Synthesized Through Polymer Templating of Ligandâ€Stripped CdSe Nanocrystals. Advanced Materials, 2013, 25, 1315-1322.	21.0	28
33	Reversible Methanolation of Metal Halide Perovskites. Journal of the American Chemical Society, 2022, 144, 667-672.	13.7	23
34	Mixing Matters: Nanoscale Heterogeneity and Stability in Metal Halide Perovskite Solar Cells. ACS Energy Letters, 2022, 7, 471-480.	17.4	23
35	Tearing and reliability of photovoltaic module backsheets. Progress in Photovoltaics: Research and Applications, 2019, 27, 693-705.	8.1	21
36	Compositional heterogeneity in Cs_yFA_{1â^’y}Pb(Br_xI_{1â^’x})₃ perovskite films and its impact on phase behavior. Energy and Environmental Science, 2021, 14, 6394-6405.	30.8	20

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37	UVâ€induced degradation of highâ€efficiency silicon PV modules with different cell architectures. Progress in Photovoltaics: Research and Applications, 2023, 31, 36-51.	8.1	20
38	Using heterostructural alloying to tune the structure and properties of the thermoelectric Sn_{1â^'x}Ca_xSe. Journal of Materials Chemistry A, 2017, 5, 16873-16882.	10.3	19
39	Advantages of ultrashort phase-shaped pulses for selective two-photon activation and biomedical imaging. Nanomedicine: Nanotechnology, Biology, and Medicine, 2006, 2, 177-181.	3.3	18
40	Tuning magnetoelectric coupling using porosity in multiferroic nanocomposites of ALD-grown Pb(Zr,Ti)O3 and templated mesoporous CoFe2O4. Applied Physics Letters, 2016, 109, .	3.3	17
41	Low-Vapor-Pressure Solvent Additives Function as Polymer Swelling Agents in Bulk Heterojunction Organic Photovoltaics. Journal of Physical Chemistry C, 2018, 122, 16574-16588.	3.1	17
42	Mechanisms of adhesion degradation at the photovoltiac module's cell metallizationâ€encapsulant interface. Progress in Photovoltaics: Research and Applications, 2019, 27, 340-345.	8.1	16
43	Towards validation of combined-accelerated stress testing through failure analysis of polyamide-based photovoltaic backsheets. Scientific Reports, 2021, 11, 2019.	3.3	15
44	Point defects in Cu 2 ZnSnSe 4 (CZTSe): Resonant Xâ€ray diffraction study of the lowâ€temperature order/disorder transition. Physica Status Solidi (B): Basic Research, 2017, 254, 1700156.	1.5	14
45	Study of the crystal structure of SnS thin films by atomic layer deposition. AIP Advances, 2021, 11, .	1.3	14
46	Dependence of adhesion on degradation mechanisms of ethylene co-vinyl acetate encapsulants over the lifetime of photovoltaic modules. Solar Energy Materials and Solar Cells, 2022, 244, 111818.	6.2	14
47	Selective brookite polymorph formation related to the amorphous precursor state in TiO2 thin films. Journal of Non-Crystalline Solids, 2019, 505, 109-114.	3.1	13
48	Using resonant energy X-ray diffraction to extract chemical order parameters in ternary semiconductors. Journal of Materials Chemistry C, 2020, 8, 4350-4356.	5.5	13
49	Understanding interfacial chemistry of positive bias high-voltage degradation in photovoltaic modules. Solar Energy Materials and Solar Cells, 2021, 223, 110959.	6.2	13
50	Directed Selfâ€Assembly as a Route to Ferromagnetic and Superparamagnetic Nanoparticle Arrays. Advanced Functional Materials, 2014, 24, 6956-6962.	14.9	11
51	UV-Induced Degradation of High-Efficiency Solar Cells with Different Architectures. , 2020, , .		11
52	Electrochemical degradation modes in bifacial silicon photovoltaic modules. Progress in Photovoltaics: Research and Applications, 2022, 30, 948-958.	8.1	11
53	Strain-mediated multiferroic control of spontaneous exchange bias in Ni-NiO heterostructures. Journal of Applied Physics, 2016, 120, .	2.5	10
54	Crystallization of TiO2 polymorphs from RF-sputtered, amorphous thin-film precursors. AIP Advances, 2020, 10, 025109.	1.3	10

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55	Magnetic confinement and coupling in narrow-diameter Auâ€“Ni nanowires. Journal of Magnetism and Magnetic Materials, 2015, 379, 239-243.	2.3	9
56	Formation of Nanoscale Composites of Compound Semiconductors Driven by Charge Transfer. Nano Letters, 2016, 16, 5247-5254.	9.1	9
57	The effect of sub-oxide phases on the transparency of tin-doped gallium oxide. Applied Physics Letters, 2016, 109, .	3.3	9
58	Corrosion of novel reactive silver ink and commercial silver-based metallizations in diluted acetic acid. Solar Energy Materials and Solar Cells, 2021, 223, 110900.	6.2	9
59	Perovskite solar cells can take the heat. Science, 2022, 376, 28-29.	12.6	9
60	Chemical and mechanical interfacial degradation in bifacial glass/glass and glass/transparent backsheet photovoltaic modules. Progress in Photovoltaics: Research and Applications, 2022, 30, 1423-1432.	8.1	8
61	Failure Analysis of a New Polyamide-Based Fluoropolymer-Free Backsheet After Combined-Accelerated Stress Testing. IEEE Journal of Photovoltaics, 2021, 11, 1197-1205.	2.5	7
62	Kinetic origins of the metastable zone width in the manganese oxide Pourbaix diagram. Journal of Materials Chemistry A, 2021, 9, 7857-7867.	10.3	7
63	A Comparison of Emerging Nonfluoropolymer-Based Coextruded PV Backsheets to Industry-Benchmark Technologies. IEEE Journal of Photovoltaics, 2022, 12, 88-96.	2.5	7
64	Theoryâ€Guided Synthesis of a Metastable Leadâ€Free Piezoelectric Polymorph. Advanced Materials, 2018, 30, 1800559.	21.0	6
65	Atomic layer deposition of cubic tinâ€“calcium sulfide alloy films. Journal of Materials Research, 2020, 35, 795-803.	2.6	6
66	Advanced X-ray Scattering and Spectroscopy Characterization of an Antisoiling Coating for Solar Module Glass. ACS Applied Energy Materials, 2019, 2, 7870-7878.	5.1	5
67	Correlation of advanced accelerated stress testing with polyamide-based photovoltaic backsheet field-failures. , 2019, , .		5
68	Solar Data Tools: Automatic Solar Data Processing Pipeline. , 2020, , .		5
69	UV-Fluorescence Imaging of Silicon PV Modules After Outdoor Aging and Accelerated Stress Testing. , 2020, , .		5
70	Effects of Oxygen and Water on the Formation and Degradation Processes of (CH₃NH₃)PbI₃ Thin Films. ACS Applied Energy Materials, 2020, 3, 11269-11274.	5.1	4
71	Combined Spatially Resolved Characterization of Antireflection and Antisoiling Coatings for PV Module Glass. ACS Combinatorial Science, 2020, 22, 197-203.	3.8	4
72	Multifunctional Optical Coatings and Light Management for Photovoltaics. , 2019, , 153-173.		3

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73	BACKFLIP: Identification of Materials and Changes Upon Aging of Emerging Fluoropolymer-Free and Industry-Benchmark PV Backsheets. , 2021, , .		3
74	Accurately Quantifying Stress during Metal Halide Perovskite Thin Film Formation. ACS Applied Materials & Interfaces, 2022, 14, 27791-27798.	8.0	3
75	Role of Cation Ordering on Device Performance in (Ag,Cu)InSe₂ Solar Cells with KF Post-Deposition Treatment. ACS Applied Energy Materials, 2021, 4, 233-241.	5.1	2
76	Getting their days in the sun. Nature Energy, 2021, 6, 15-16.	39.5	2
77	Metastable Dion-Jacobson 2D structure enables efficient and stable perovskite solar cells. Science, 2021, , eabj2637.	12.6	2
78	Understanding Crystallization Pathways of MnOx Polymorph Formation via in-situ X-ray Scattering. Microscopy and Microanalysis, 2018, 24, 1486-1487.	0.4	1
79	Operando X-Ray Diffraction for Characterization of Photovoltaic Materials. , 2017, , .		0
80	A Dimethylammonium-Induced Intermediate Phase Approach Towards Stable Formamidinium-Caesium-based Perovskite Solar Cells. , 0, , .		0
81	Special Section Guest Editorial: Perovskite-Based Solar Cells. Journal of Photonics for Energy, 2018, 8, 1.	1.3	0
82	Venturing outdoors. Nature Energy, 0, , .	39.5	0