Stabilization of formamidinium lead triiodide Î±-phase perovskite solar cells

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Citation Report

#	Article	IF	Citations
1	Recent Progress on Formamidiumâ€Dominated Perovskite Photovoltaics. Advanced Energy Materials, 2022, 12, 2100690.	10.2	45
2	Simultaneous passivation of bulk and interface defects through synergistic effect of anion and cation toward efficient and stable planar perovskite solar cells. Journal of Energy Chemistry, 2021, 63, 452-460.	7.1	105
3	Material, Phase, and Interface Stability of Photovoltaic Perovskite: A Perspective. Journal of Physical Chemistry C, 2021, 125, 19088-19096.	1.5	7
4	Phase stabilization for high-performance perovskite light-emitting diodes. , 2021, , .		0
5	Revealing phase evolution mechanism for stabilizing formamidinium-based lead halide perovskites by a key intermediate phase. CheM, 2021, 7, 2513-2526.	5.8	49
6	Ionic Liquid Additiveâ€Assisted Highly Efficient Electron Transport Layerâ€Free Perovskite Solar Cells. Solar Rrl, 2021, 5, 2100648.	3.1	10
7	Air fabrication of SnO2 based planar perovskite solar cells with an efficiency approaching 20%: Synergistic passivation of multi-defects by choline chloride. Ceramics International, 2022, 48, 212-223.	2.3	6
8	Regulating the Surface Passivation and Residual Strain in Pure Tin Perovskite Films. ACS Energy Letters, 2021, 6, 3555-3562.	8.8	45
9	Methylammonium- and bromide-free perovskites enable efficient and stable photovoltaics. Journal of Energy Chemistry, 2021, 63, 12-24.	7.1	1
10	Improved efficiency and stability of flexible perovskite solar cells by a new spacer cation additive. RSC Advances, 2021, 11, 33637-33645.	1.7	6
11	Achieving Efficient and Stable Perovskite Solar Cells in Ambient Air Through Nonâ€Halide Engineering. Advanced Energy Materials, 2021, 11, 2102169.	10.2	35
12	Alkali Metal Fluoride-Modified Tin Oxide for nâ€“iâ€“p Planar Perovskite Solar Cells. ACS Applied Materials & Interfaces, 2021, 13, 50083-50092.	4.0	12
13	Highâ€Quality Î±â€FAPbI₃ Film Assisted by Lead Acetate for Efficient Solar Cells. Solar Rrl, 2021, 5, 2100747.	3.1	10
14	Design Principles of Large Cation Incorporation in Halide Perovskites. Molecules, 2021, 26, 6184.	1.7	6
15	Investigation of Cation Exchange Behaviors of FAxMA1â^'xPbI3 Films Using Dynamic Spin-Coating. Materials, 2021, 14, 6422.	1.3	0
17	Methodologies for >30% Efficient Perovskite Solar Cells via Enhancement of Voltage and Fill Factor. Solar Rrl, 2022, 6, 2100767.	3.1	21
18	Anti-Ribbing: Ink Optimization Enables Certified Slot-Die Coated Perovskite Solar Cells with > 22% Certified Power Conversion Efficiency and a Full Year Outdoor Stability. SSRN Electronic Journal, 0, , .	0.4	1
19	Effect of light intensity on solar-driven interfacial steam generation. Nanoscale, 2021, 13, 20387-20395.	2.8	26

#	Article	IF	Citations
20	Fabrication of stable perovskite solar cells with efficiency over 20% in open air using in situ polymerized bi-functional additives. Journal of Materials Chemistry A, 2022, 10, 3688-3697.	5.2	16
21	Understanding the â€œdouble-edged-swordâ€•effect of dimethyl sulfoxide to guide the design of highly efficient perovskite solar cells in humid air. Nano Today, 2022, 42, 101371.	6.2	8
22	Fabricating Stable and Efficient Perovskite Solar Cells in Air Ambient Via Lattice Anchoring Strategy. SSRN Electronic Journal, 0, , .	0.4	0
23	Scalable Flexible Perovskite Solar Cells Based on a Crystalline and Printable Template with Intelligent Temperature Sensitivity. Solar Rrl, 2022, 6, .	3.1	9
24	A finely regulated quantum well structure in quasi-2D Ruddlesdenâ€“Popper perovskite solar cells with efficiency exceeding 20%. Energy and Environmental Science, 2022, 15, 296-310.	15.6	54
25	In Situ Synthesized 2D Covalent Organic Framework Nanosheets Induce Growth of Highâ€Quality Perovskite Film for Efficient and Stable Solar Cells. Advanced Functional Materials, 2022, 32, .	7.8	29
26	Amidinium additives for high-performance perovskite solar cells. Journal of Materials Chemistry A, 2022, 10, 3506-3512.	5.2	11
27	Charge Compensation by Iodine Covalent Bonding in Lead Iodide Perovskite Materials. Crystals, 2022, 12, 88.	1.0	2
28	Fabricating stable and efficient perovskite solar cells in air ambient via lattice anchoring strategy. Chemical Engineering Journal, 2022, 435, 134899.	6.6	4
29	Role of Ï€-conjugated-length-regulated perovskite intergrain interconnecting in the photovoltaic performance of perovskite solar cells. Applied Surface Science, 2022, 585, 152670.	3.1	5
30	Rethinking the A cation in halide perovskites. Science, 2022, 375, eabj1186.	6.0	207
31	Phase-Pure Î±-FAPbI₃ for Perovskite Solar Cells. Journal of Physical Chemistry Letters, 2022, 13, 1845-1854.	2.1	27
32	Understanding Instability in Formamidinium Lead Halide Perovskites: Kinetics of Transformative Reactions at Grain and Subgrain Boundaries. ACS Energy Letters, 2022, 7, 1534-1543.	8.8	45
33	Bismuth Stabilizes the Î±-Phase of Formamidinium Lead Iodide Perovskite Single Crystals. , 2022, 4, 707-712.		10
34	Toward Broad Spectral Response Inverted Perovskite Solar Cells: Insulating Quantumâ€Cutting Perovskite Nanophosphors and Multifunctional Ternary Organic Bulkâ€Heterojunction. Advanced Energy Materials, 2022, 12, .	10.2	21
35	Aminoâ€Functionalized Niobiumâ€Carbide MXene Serving as Electron Transport Layer and Perovskite Additive for the Preparation of Highâ€Performance and Stable Methylammoniumâ€Free Perovskite Solar Cells. Advanced Functional Materials, 2022, 32, .	7.8	55
36	Ion diffusion-induced double layer doping toward stable and efficient perovskite solar cells. Nano Research, 2022, 15, 5114-5122.	5.8	47
37	Flexible Perovskite Solar Cells: From Materials and Device Architectures to Applications. ACS Energy Letters, 2022, 7, 1412-1445.	8.8	54

#	Article	IF	Citations
38	Pressure-Assisted Space-Confinement Strategy to Eliminate PbI₂ in Perovskite Layers toward Improved Operational Stability. ACS Applied Materials & Interfaces, 2022, 14, 12442-12449.	4.0	6
39	Phaseâ€Pure Engineering for Efficient and Stable Formamidiniumâ€Based Perovskite Solar Cells. Solar Rrl, 2022, 6, .	3.1	16
40	High-performance hysteresis-free perovskite transistors through anion engineering. Nature Communications, 2022, 13, 1741.	5.8	51
41	Solubility of Hybrid Halide Perovskites in DMF and DMSO. Molecules, 2021, 26, 7541.	1.7	15
42	Lead-Free Perovskite Solar Cells with Over 10% Efficiency and Size 1 cm² Enabled by Solventâ€“Crystallization Regulation in a Two-Step Deposition Method. ACS Energy Letters, 2022, 7, 425-431.	8.8	36
43	Building Bulk Heterojunction to Enhance Hole Extraction for Highâ€Performance Printable Carbonâ€Based Perovskite Solar Cells. Solar Rrl, 2022, 6, .	3.1	6
44	High Open Circuit Voltage Over 1ÂV Achieved in Tinâ€Based Perovskite Solar Cells with a 2D/3D Vertical Heterojunction. Advanced Science, 2022, 9, e2200242.	5.6	46
45	Single-crystalline TiO2 nanoparticles for stable and efficient perovskite modules. Nature Nanotechnology, 2022, 17, 598-605.	15.6	121
46	Efficient and Stable FAâ€Rich Perovskite Photovoltaics: From Material Properties to Device Optimization. Advanced Energy Materials, 2022, 12, .	10.2	16
47	Strategies for highâ€performance perovskite solar cells from materials, film engineering to carrier dynamics and photon management. InformaÄnÃ-MateriÃ¡ly, 2022, 4, .	8.5	27
48	Microâ€Nano Structure Functionalized Perovskite Optoelectronics: From Structure Functionalities to Device Applications. Advanced Functional Materials, 2022, 32, .	7.8	25
49	Bridging the Interfacial Contact for Improved Stability and Efficiency of Inverted Perovskite Solar Cells. Small, 2022, 18, e2201694.	5.2	16
50	Stabilization and Self-Passivation of Grain Boundaries in Halide Perovskite by Rigid Body Translation. Journal of Physical Chemistry Letters, 2022, 13, 4628-4633.	2.1	5
51	Solvate phases crystallizing from hybrid halide perovskite solutions: Chemical classification and structural relations. Mendeleev Communications, 2022, 32, 311-314.	0.6	7
52	Understanding the p-doping of spiroOMeTAD by tris(pentafluorophenyl)borane. Electrochimica Acta, 2022, 424, 140602.	2.6	9
53	The high open-circuit voltage of perovskite solar cells: a review. Energy and Environmental Science, 2022, 15, 3171-3222.	15.6	181
54	Fabrication of Highâ€Quality CsBi₃I₁₀ Films via a Gasâ€Assisted Approach for Efficient Leadâ€Free Perovskite Solar Cells. Energy Technology, 2022, 10, .	1.8	4
55	Thermal Shock Fabrication of Ionâ€Stabilized Perovskite and Solar Cells. Advanced Materials, 2022, 34, .	11.1	15

#	Article	IF	Citations
56	Thermally controlled growth of photoactive FAPbI₃ films for highly stable perovskite solar cells. Energy and Environmental Science, 2022, 15, 3862-3876.	15.6	27
57	Molecular design for perovskite solar cells. International Journal of Energy Research, 2022, 46, 14740-14765.	2.2	3
58	KBF₄ Additive for Alleviating Microstrain, Improving Crystallinity, and Passivating Defects in Inverted Perovskite Solar Cells. Advanced Functional Materials, 2022, 32, .	7.8	40
59	Grain Boundary Defect Controlling of Perovskite via Nâ€Hydroxysuccinimide Postâ€Treatment Process in Efficient and Stable nâ€“iâ€“p Perovskite Solar Cells. Solar Rrl, 2022, 6, .	3.1	7
60	Vacuum thermal evaporation saved MA-free perovskite. Joule, 2022, 6, 1394-1396.	11.7	6
61	Efficient Perovskite Solar Cells Based on Tin Oxide Nanocrystals with Difunctional Modification. Small, 2022, 18, .	5.2	15
62	Recent Progress on the Phase Stabilization of FAPbI₃ for Highâ€Performance Perovskite Solar Cells. Solar Rrl, 2022, 6, .	3.1	25
63	Kinetic pathway of Î³-to-Î´ phase transition in CsPbI3. CheM, 2022, 8, 3120-3129.	5.8	23
64	Ethanol-based green-solution processing of Î±-formamidinium lead triiodide perovskite layers. Nature Energy, 2022, 7, 828-834.	19.8	53
65	Crystallization and Defect Regulation in Snâ€“Pb Perovskite Solar Cells via Optimized Antiâ€Solvent Passivation Strategy. Solar Rrl, 2022, 6, .	3.1	3
66	Modulating the deep-level defects and charge extraction for efficient perovskite solar cells with high fill factor over 86%. Energy and Environmental Science, 2022, 15, 4813-4822.	15.6	54
67	Carrier Management via Integrating InP Quantum Dots into Electron Transport Layer for Efficient Perovskite Solar Cells. ACS Nano, 2022, 16, 15063-15071.	7.3	10
68	Improvement of Openâ€Circuit Voltage Deficit via Preâ€Treated NH₄⁺ Ion Modification of Interface between SnO₂ and Perovskite Solar Cells. Small, 2022, 18, .	5.2	8
69	Lowâ€Temperature Phaseâ€Transition for Compositionalâ€Pure Î±â€FAPbI₃ Solar Cells with Low Residualâ€Stress and High Crystalâ€Orientation. Small Methods, 2022, 6, .	4.6	19
70	ZrCl4 for energy level alignment at the perovskite/TiO2 interface. Electrochimica Acta, 2022, 433, 141214.	2.6	3
71	Stoichiometry dependent phase evolution of co-evaporated formamidinium and cesium lead halide thin films. Materials Advances, 2022, 3, 8695-8704.	2.6	1
72	Recent progress of crystal orientation engineering in halide perovskite photovoltaics. Materials Horizons, 2023, 10, 13-40.	6.4	18
73	Improved performance of perovskite solar cellsviacombining Pbâ€“Sn alloying with the passivation effect of SnI₂. Sustainable Energy and Fuels, 2022, 6, 5300-5307.	2.5	1

#	Article	IF	Citations
74	Direct In Situ Conversion of Lead Iodide to a Highly Oriented and Crystallized Perovskite Thin Film via Sequential Deposition for 23.48% Efficient and Stable Photovoltaic Devices. ACS Applied Materials & Interfaces, 2022, 14, 49886-49897.	4.0	6
75	Volatile 2D Ruddlesdenâ€Popper Perovskite: A Gift for Î±â€Formamidinium Lead Triiodide Solar Cells. Advanced Functional Materials, 2022, 32, .	7.8	13
76	Wholeâ€Device Massâ€Producible Perovskite Photodetector Based on Laserâ€Induced Graphene Electrodes. Advanced Optical Materials, 2022, 10, .	3.6	7
77	é¢å•é«˜ç¨³å®šæ€§å²é˜³èƒ½ç”µæ±å¼€å•çš„åå—ç‰©é’™é’›çŸ¿ç¨³å®š æ€§æå‡ç–ç•¥. Science China Materials, 2022, 65, 3190-3201.	3.5	14
78	Intrinsic Phase Stability and Inherent Bandgap of Formamidinium Lead Triiodide Perovskite Single Crystals. Angewandte Chemie - International Edition, 2022, 61, .	7.2	25
79	Intrinsic Phase Stability and Inherent Bandgap of Formamidinium Lead Triiodide Perovskite Single Crystals. Angewandte Chemie, 2022, 134, .	1.6	6
80	In Situ Bonding Regulation of Surface Ligands for Efficient and Stable FAPbI₃ Quantum Dot Solar Cells. Advanced Science, 2022, 9, .	5.6	15
81	Energy Transfer Induced by TADF Polymer Enables the Recycling of Excitons in Perovskite Solar Cells. Advanced Functional Materials, 2023, 33, .	7.8	9
82	The race between complicated multiple cation/anion compositions and stabilization of FAPbI₃ for halide perovskite solar cells. Journal of Materials Chemistry C, 2023, 11, 2449-2468.	2.7	3
83	Elucidating degradation mechanisms of mixed cation formamidinium-based perovskite solar cells under device operation conditions. Applied Surface Science, 2023, 612, 155805.	3.1	2
84	Recent Progress Toward Commercialization of Flexible Perovskite Solar Cells: From Materials and Structures to Mechanical Stabilities. Advanced Energy and Sustainability Research, 2023, 4, .	2.8	10
85	How to stabilize standard perovskite solar cells to withstand operating conditions under an ambient environment for more than 1000 hours using simple and universal encapsulation. Journal of Energy Chemistry, 2023, 78, 246-252.	7.1	10
86	Stabilization of the Alkylammonium Cations in Halide Perovskite Thin Films by Waterâ€Mediated Proton Transfer. Advanced Materials, 2023, 35, .	11.1	1
87	Amine-Thiol/Selenol Chemistry for Efficient and Stable Perovskite Solar Cells. Journal of Physical Chemistry C, 2023, 127, 930-938.	1.5	2
88	Interfacial Î±-FAPbI3 phase stabilization by reducing oxygen vacancies in SnO2â^'x. Joule, 2023, 7, 380-397.	11.7	21
89	Cetrimonium bromide and potassium thiocyanate assisted post-vapor treatment approach to enhance power conversion efficiency and stability of FAPbI₃ perovskite solar cells. RSC Advances, 2023, 13, 1402-1411.	1.7	8
90	Radical polymeric p-doping and grain modulation for stable, efficient perovskite solar modules. Science, 2023, 379, 288-294.	6.0	59
91	Instability of solution-processed perovskite films: origin and mitigation strategies. Materials Futures, 2023, 2, 012102.	3.1	11

#	Article	IF	Citations
92	Orientated crystallization of FA-based perovskite via hydrogen-bonded polymer network for efficient and stable solar cells. Nature Communications, 2023, 14, .	5.8	66
93	Controlled growth of perovskite layers with volatile alkylammonium chlorides. Nature, 2023, 616, 724-730.	13.7	610
94	Reducing nonradiative recombination in perovskite solar cells with a porous insulator contact. Science, 2023, 379, 683-690.	6.0	128
95	Cu-Doping Induced Phase Transformation in CsPbI₃ Nanocrystals with Enhanced Structural Stability and Photoluminescence Quantum Yield. Chemistry of Materials, 2023, 35, 1601-1609.	3.2	7
96	Combined Ultraviolet Ozone and Thermally Activated Formamidinium Iodide Solution to Fabricate Large Grain FAPbI_{2.6}Br_{0.3}Cl_{0.1} Films. ACS Omega, 2023, 8, 9298-9306.	1.6	3
97	Multifunctional Green Solvent for Efficient Perovskite Solar Cells. Electronic Materials Letters, 2023, 19, 462-470.	1.0	4
98	In-situ growth of low-dimensional perovskite-based insular nanocrystals for highly efficient light emitting diodes. Light: Science and Applications, 2023, 12, .	7.7	17
99	Regioselective Multisite Atomic-Chlorine Passivation Enables Efficient and Stable Perovskite Solar Cells. Journal of the American Chemical Society, 2023, 145, 5872-5879.	6.6	38
100	Deciphering the Roles of MA-Based Volatile Additives for Î±-FAPbI₃ to Enable Efficient Inverted Perovskite Solar Cells. Journal of the American Chemical Society, 2023, 145, 5920-5929.	6.6	43
101	Examining a Year-Long Chemical Degradation Process and Reaction Kinetics in Pristine and Defect-Passivated Lead Halide Perovskites. Chemistry of Materials, 2023, 35, 2904-2917.	3.2	3
102	Recent Advances in Wide-Bandgap Organicâ€“Inorganic Halide Perovskite Solar Cells and Tandem Application. Nano-Micro Letters, 2023, 15, .	14.4	41
103	Kineticâ€Controlled Crystallization of Î±â€FAPbI₃ Inducing Preferred Crystallographic Orientation Enhances Photovoltaic Performance. Advanced Science, 2023, 10, .	5.6	8
104	Selfâ€Healing Perovskite Grain Boundaries in Efficient and Stable Solar Cells via Incorporation of 502 Adhesive. Solar Rrl, 2023, 7, .	3.1	2
105	Halideâ€InitiatedÂStructural Regulation in Amidinoâ€Based Lowâ€Dimensional Perovskite/Perovskitoid and Their Application for Crystal Xâ€Ray Detectors. Advanced Optical Materials, 2023, 11, .	3.6	1
106	Volatile 2-Thiophenemethylammonium and Its Strongly Bonded Condensation Product for Stabilizing Î±-FAPbI₃ in Sequential-Deposited Solar Cells. , 0, , 1395-1400.		1
107	R4N+ and Clâ¯ stabilized Î±-formamidinium lead triiodide and efficient bar-coated mini-modules. Joule, 2023, 7, 797-809.	11.7	6
108	One-pot surface and buried interface manipulation of perovskite film for efficient solar cells. Cell Reports Physical Science, 2023, 4, 101376.	2.8	0
109	Dual Interface Passivation in Mixed-Halide Perovskite Solar Cells by Bilateral Amine. ACS Applied Energy Materials, 0, , .	2.5	0

#	Article	IF	Citations
110	Progress in photocapacitors: A review. Functional Materials Letters, 2023, 16, .	0.7	1
111	Alkylammonium chloride promotes the record efficiency of perovskite solar cells. Joule, 2023, 7, 628-630.	11.7	2
123	Photovoltaic Performance of FAPbI₃ Perovskite Is Hampered by Intrinsic Quantum Confinement. ACS Energy Letters, 2023, 8, 2543-2551.	8.8	2
126	Synergy of 3D and 2D Perovskites for Durable, Efficient Solar Cells and Beyond. Chemical Reviews, 2023, 123, 9565-9652.	23.0	21
127	Structure, composition, and stability of metal halide perovskites. , 2023, , 3-47.		0
131	The role of organic spacers in 2D/3D hybrid perovskite solar cells. Materials Chemistry Frontiers, 2023, 8, 82-103.	3.2	2
147	Enhancing FAPbI₃ perovskite solar cell performance with a methanesulfonate-based additive. Sustainable Energy and Fuels, 2024, 8, 491-495.	2.5	0