

CITATION REPORT

List of articles citing

Halide perovskite materials for solar cells: a theoretical review

DOI: 10.1039/c4ta05033a

Journal of Materials Chemistry A, 2015, 3, 8926-8942.

Source: <https://exaly.com/paper-pdf/62887517/citation-report.pdf>

Version: 2024-04-26

This report has been generated based on the citations recorded by exaly.com for the above article. For the latest version of this publication list, visit the link given above.

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

#	Paper	IF	Citations
1000	Prediction of the Role of Bismuth Dopants in Organic-Inorganic Lead Halide Perovskites on Photoelectric Properties and Photovoltaic Performance.		
999	Reshuffling of Electronic Environment by Introducing CH ₃ NH ₂ F ⁺ as an Organic Cation for Enhanced Power Conversion Efficiency and Stability of the Designed Hybrid Organic-Inorganic Perovskite.		
998	Two Regimes of Bandgap Red Shift and Partial Ambient Retention in Pressure-Treated Two-Dimensional Perovskites.		
997	Ultrasensitive Perovskite Photodetectors by Co Partially Substituted Hybrid Perovskite.		
996	Theory of Hydrogen Migration in Organic-Inorganic Halide Perovskites. 2015 , 127, 12614-12618		7
995	Methylammonium fragmentation in amines as source of localized trap levels and the healing role of Cl in hybrid lead-iodide perovskites. 2015 , 92,		53
994	Hexagonal rare-earth manganites as promising photovoltaics and light polarizers. 2015 , 92,		62
993	Excitonic effects in two-dimensional semiconductors: Path integral Monte Carlo approach. 2015 , 92,		41
992	Self-regulation of charged defect compensation and formation energy pinning in semiconductors. 2015 , 5, 16977		33
991	Photovoltaic Switching Mechanism in Lateral Structure Hybrid Perovskite Solar Cells. 2015 , 5, 1500615		443
990	Copper(I) Iodide as Hole-Conductor in Planar Perovskite Solar Cells: Probing the Origin of J _V Hysteresis. 2015 , 25, 5650-5661		224
989	Theory of hydrogen migration in organic-inorganic halide perovskites. 2015 , 54, 12437-41		112
988	Controllable Sequential Deposition of Planar CH ₃ NH ₃ PbI ₃ Perovskite Films via Adjustable Volume Expansion. 2015 , 15, 3959-63		217
987	Band Gap Tuning of CH ₃ NH ₃ Pb(Br(1-x)Cl _x) Hybrid Perovskite for Blue Electroluminescence. 2015 , 7, 13119-24		278
986	Tunable Optical Properties and Charge Separation in CH ₃ NH ₃ Sn(x)Pb(1-x)I ₃ /TiO ₂ -Based Planar Perovskites Cells. 2015 , 137, 8227-36		109
985	Ferroelectric Polarization of CH ₃ NH ₃ PbI ₃ : A Detailed Study Based on Density Functional Theory and Symmetry Mode Analysis. 2015 , 6, 2223-31		151
984	Optical Properties of Photovoltaic Organic-Inorganic Lead Halide Perovskites. 2015 , 6, 4774-85		199

983	Beyond silicon: Alternative photovoltaic technologies. 2015,		
982	Electronic and optical properties of mixed SnPb organohalide perovskites: a first principles investigation. <i>Journal of Materials Chemistry A</i> , 2015 , 3, 9208-9215	13	156
981	Principles of Chemical Bonding and Band Gap Engineering in Hybrid Organic-Inorganic Halide Perovskites. 2015 , 119, 5755-5760		226
980	Importance of Orbital Interactions in Determining Electronic Band Structures of Organo-Lead Iodide. 2015 , 119, 4627-4634		55
979	Fully printable mesoscopic perovskite solar cells with organic silane self-assembled monolayer. 2015 , 137, 1790-3		345
978	Morphology control of the perovskite films for efficient solar cells. 2015 , 44, 10582-93		136
977	Ionic transport in hybrid lead iodide perovskite solar cells. 2015 , 6, 7497		1649
976	Perovskites for photovoltaics: a combined review of organic/inorganic halide perovskites and ferroelectric oxide perovskites. <i>Journal of Materials Chemistry A</i> , 2015 , 3, 18809-18828	13	186
975	Large-Size CH ₃ NH ₃ PbBr ₃ Single Crystal: Growth and In Situ Characterization of the Photophysics Properties. 2015 , 6, 2622-8		39
974	Origin of High Electronic Quality in Structurally Disordered CH ₃ NH ₃ PbI ₃ and the Passivation Effect of Cl and O at Grain Boundaries. 2015 , 1, 1500044		150
973	Fundamental physics behind high-efficiency organo-metal halide perovskite solar cells. <i>Journal of Materials Chemistry A</i> , 2015 , 3, 15372-15385	13	99
972	Copper(I) thiocyanate (CuSCN) as a hole-transport material for large-area opto/electronics. 2015 , 30, 104002		69
971	Graphene-Based Dye-Sensitized Solar Cells: A Review. 2015 , 7, 1863-1912		85
970	Effects of annealing temperature of tin oxide electron selective layers on the performance of perovskite solar cells. <i>Journal of Materials Chemistry A</i> , 2015 , 3, 24163-24168	13	154
969	Efficient fully-vacuum-processed perovskite solar cells using copper phthalocyanine as hole selective layers. <i>Journal of Materials Chemistry A</i> , 2015 , 3, 23888-23894	13	136
968	High-performance perovskite solar cells fabricated by vapor deposition with optimized PbI ₂ precursor films. 2015 , 5, 95847-95853		15
967	(CH ₃ NH ₃) ₂ Pb(SCN) ₂ I ₂ : a more stable structural motif for hybrid halide photovoltaics?. 2015 , 6, 4594-8		100
966	First-Principles Study of Ion Diffusion in Perovskite Solar Cell Sensitizers. 2015 , 137, 10048-51		456

965	Electronic Structure and Optical Properties of $\text{CH}_3\text{NH}_3\text{PbBr}_3$ Perovskite Single Crystal. 2015 , 6, 4304-8		113
964	Low-cost solution-processed copper iodide as an alternative to PEDOT:PSS hole transport layer for efficient and stable inverted planar heterojunction perovskite solar cells. <i>Journal of Materials Chemistry A</i> , 2015 , 3, 19353-19359	13	191
963	Influence of halide precursor type and its composition on the electronic properties of vacuum deposited perovskite films. 2015 , 17, 24342-8		35
962	Organic-Inorganic hybrid perovskites AB_3 (A = CH_3NH_3 , NH_2CHNH_2 ; B = Sn, Pb) as potential thermoelectric materials: a density functional evaluation. 2015 , 5, 78701-78707		51
961	Real-Time Observation of Organic Cation Reorientation in Methylammonium Lead Iodide Perovskites. 2015 , 6, 3663-9		281
960	Structural investigation of co-evaporated methyl ammonium lead halide perovskite films during growth and thermal decomposition using different PbX_2 (X = I, Cl) precursors. <i>Journal of Materials Chemistry A</i> , 2015 , 3, 19842-19849	13	33
959	Monitoring the stability of organometallic perovskite thin films. <i>Journal of Materials Chemistry A</i> , 2015 , 3, 21940-21945	13	13
958	Material Innovation in Advancing Organometal Halide Perovskite Functionality. 2015 , 6, 4862-72		35
957	Charge Carriers in Hybrid Organic-Inorganic Lead Halide Perovskites Might Be Protected as Large Polarons. 2015 , 6, 4758-61		369
956	Perovskite Solar Cells: Progress and Advancements. 2016 , 9, 861		71
955	Influence of hydration water on $\text{CH}_3\text{NH}_3\text{PbI}_3$ perovskite films prepared through one-step procedure. 2016 , 24, A1431-A1443		19
954	Nonhazardous Solvent Systems for Processing Perovskite Photovoltaics. 2016 , 6, 1600386		113
953	Photovoltaic Performance of Perovskite Solar Cells with Different Grain Sizes. 2016 , 28, 917-22		239
952	Impact of Film Stoichiometry on the Ionization Energy and Electronic Structure of $\text{CH}_3\text{NH}_3\text{PbI}_3$ Perovskites. 2016 , 28, 553-9		127
951	Efficiency and Stability Enhancement in Perovskite Solar Cells by Inserting Lithium-Neutralized Graphene Oxide as Electron Transporting Layer. 2016 , 26, 2686-2694		154
950	The In-Gap Electronic State Spectrum of Methylammonium Lead Iodide Single-Crystal Perovskites. 2016 , 28, 3406-10		151
949	Band Gap Insensitivity to Large Chemical Pressures in Ternary Bismuth Iodides for Photovoltaic Applications. 2016 , 120, 28924-28932		37
948	Numerical design of thin perovskite solar cell with fiber array-based anti-reflection front electrode for light-trapping enhancement. 2016 , 18, 125901		16

947	Synergistic Effects of Water and Oxygen Molecule Co-adsorption on (001) Surfaces of Tetragonal CH ₃ NH ₃ PbI ₃ : A First-Principles Study. 2016 , 120, 28448-28455	40
946	Rotation mechanism of methylammonium molecules in organometal halide perovskite in cubic phase: An ab initio molecular dynamics study. 2016 , 145, 224503	11
945	Origin of the high performance of perovskite solar cells with large grains. 2016 , 108, 053302	41
944	Ab initio modeling of 2D layered organohalide lead perovskites. 2016 , 144, 164701	32
943	Quantitative determination of optical and recombination losses in thin-film photovoltaic devices based on external quantum efficiency analysis. 2016 , 120, 064505	81
942	Escalating the performance of perovskite solar cell via electrospun TiO ₂ nanofibers. 2016 ,	0
941	Degradation mechanism of CH ₃ NH ₃ PbI ₃ perovskite materials upon exposure to humid air. 2016 , 119, 115501	140
940	Synthesis, spectroscopic studies, and single crystal X-ray diffraction analysis of a lead(II) based hybrid perovskite: morpholinium trichloroplumbate(II). 2016 , 39,	3
939	Exploring a Lead-free Semiconducting Hybrid Ferroelectric with a Zero-Dimensional Perovskite-like Structure. 2016 , 128, 12033-12037	17
938	Effect of Electron Transporting Layer on Bismuth-Based Lead-Free Perovskite (CH ₃ NH ₃) ₃ Bi ₂ I ₉ for Photovoltaic Applications. 2016 , 8, 14542-7	225
937	Progress in emerging solution-processed thin film solar cells [Part II: Perovskite solar cells. 2016 , 62, 1012-1031	93
936	Synthesis of Perfectly Oriented and Micrometer-Sized MAPbBr ₃ Perovskite Crystals for Thin-Film Photovoltaic Applications. 2016 , 1, 150-154	80
935	Hole Conductor Free Perovskite-based Solar Cells. 2016 ,	5
934	Organo-Metal Lead Halide Perovskite Properties. 2016 , 1-4	
933	High performance perovskite solar cell via multi-cycle low temperature processing of lead acetate precursor solutions. 2016 , 52, 4784-7	33
932	Two-Dimensional Halide Perovskites: Tuning Electronic Activities of Defects. 2016 , 16, 3335-40	80
931	Life Cycle Assessment (LCA) of perovskite PV cells projected from lab to fab. 2016 , 156, 157-169	114
930	Graphene and transition metal dichalcogenide nanosheets as charge transport layers for solution processed solar cells. 2016 , 19, 580-594	68

929	State and prospects of solar cells based on perovskites. 2016 , 52, 5-15		6
928	Mapping the Photoresponse of CH ₃ NH ₃ PbI ₃ Hybrid Perovskite Thin Films at the Nanoscale. 2016 , 16, 3434-41		101
927	Carrier trapping and recombination: the role of defect physics in enhancing the open circuit voltage of metal halide perovskite solar cells. 2016 , 9, 3472-3481		317
926	Printable Solar Cells from Advanced Solution-Processible Materials. 2016 , 1, 197-219		50
925	Optical Probe Ion and Carrier Dynamics at the CH ₃ NH ₃ PbI ₃ Interface with Electron and Hole Transport Materials. 2016 , 3, 1600467		18
924	The Additive Coordination Effect on Hybrids Perovskite Crystallization and High-Performance Solar Cell. 2016 , 28, 9862-9868		235
923	Additive-assisted construction of all-inorganic CsSnI ₂ Br mesoscopic perovskite solar cells with superior thermal stability up to 473 K. <i>Journal of Materials Chemistry A</i> , 2016 , 4, 17104-17110	13	186
922	Controllable design of solid-state perovskite solar cells by SCAPS device simulation. 2016 , 126, 75-80		76
921	Tuning the thermal conductivity of methylammonium lead halide by the molecular substructure. 2016 , 18, 24318-24		41
920	Thermodynamic Stability and Defect Chemistry of Bismuth-Based Lead-Free Double Perovskites. 2016 , 9, 2628-2633		195
919	Three-Dimensionally Homoconjugated Carbon-Bridged Oligophenylenevinylene for Perovskite Solar Cells. 2016 , 138, 10897-904		26
918	Ab initio static and dynamic study of CH ₃ NH ₃ PbI ₃ degradation in the presence of water, hydroxyl radicals, and hydroxide ions. 2016 , 6, 76938-76947		18
917	Doped tin induced structural evaluation and performance of CH ₃ NH ₃ Pb _x Sn _{1-x} I ₃ thin films prepared by a simple route of unisource thermal evaporation. 2016 , 27, 13192-13198		5
916	Hybrid Perovskite Nanoparticles for High-Performance Resistive Random Access Memory Devices: Control of Operational Parameters through Chloride Doping. 2016 , 3, 1600092		52
915	Effect of crystal structures on the stability of CH ₃ NH ₃ PbI ₃ under humidity environment. 2016 , 136, 470-474		6
914	Quantum Confinement Effects in Organic Lead Tribromide Perovskite Nanoparticles. 2016 , 120, 18333-18339		25
913	Inverted Planar Structure of Perovskite Solar Cells. 2016 , 307-324		1
912	Defect Physics of CH ₃ NH ₃ PbX ₃ (X = I, Br, Cl) Perovskites. 2016 , 79-105		17

911	Ion Migration in Hybrid Perovskite Solar Cells. 2016 , 137-162	13
910	APbI ₃ (A = CH ₃ NH ₃ and HC(NH ₂) ₂) Perovskite Solar Cells: From Sensitization to Planar Heterojunction. 2016 , 223-253	3
909	Lead-Free Inverted Planar Formamidinium Tin Triiodide Perovskite Solar Cells Achieving Power Conversion Efficiencies up to 6.22. 2016 , 28, 9333-9340	480
908	Effects of water molecules on the chemical stability of MA ₂ GeI ₃ perovskite explored from a theoretical viewpoint. 2016 , 18, 24526-36	19
907	The Luminescence of CH ₃ NH ₃ PbBr Perovskite Nanoparticles Crests the Summit and Their Photostability under Wet Conditions is Enhanced. 2016 , 12, 5245-5250	98
906	Surface engineering of ZnO electron transporting layer via Al doping for high efficiency planar perovskite solar cells. 2016 , 28, 311-318	113
905	Impact of Conformality and Crystallinity for Ultrathin 4 nm Compact TiO ₂ Layers in Perovskite Solar Cells. 2016 , 3, 1600580	18
904	Optical properties of the organic-inorganic hybrid perovskite CH ₃ NH ₃ PbI ₃ : Theory and experiment. 2016 , 94,	37
903	Exploring a Lead-free Semiconducting Hybrid Ferroelectric with a Zero-Dimensional Perovskite-like Structure. 2016 , 55, 11854-8	108
902	Crystal structure, stability, and optoelectronic properties of the organic-inorganic wide-band-gap perovskite CH ₃ NH ₃ BaI ₃ : Candidate for transparent conductor applications. 2016 , 94,	40
901	Graphene-Perovskite Solar Cells Exceed 18 % Efficiency: A Stability Study. 2016 , 9, 2609-2619	133
900	Theoretical study on the PbIn (n=1B) series molecules. 2016 , 1094, 23-31	1
899	Strategic improvement of the long-term stability of perovskite materials and perovskite solar cells. 2016 , 18, 27026-27050	116
898	First-principles analysis of the spectroscopic limited maximum efficiency of photovoltaic absorber layers for CuAu-like chalcogenides and silicon. 2016 , 18, 20542-9	29
897	Persistent Dopants and Phase Segregation in Organolead Mixed-Halide Perovskites. 2016 , 28, 6848-6859	104
896	All-inorganic perovskite CsPb(Br/I) ₃ nanorods for optoelectronic application. 2016 , 8, 15158-61	104
895	Exceptional elastic anisotropy of hybrid organic/inorganic perovskite CH ₃ NH ₃ PbBr ₃ measured by laser ultrasonic technique. 2016 , 10, 606-612	24
894	Atomic structure of metal-halide perovskites from first principles: The chicken-and-egg paradox of the organic-inorganic interaction. 2016 , 94,	53

893	Organic-Inorganic Halide Perovskite Photovoltaics. 2016,	91
892	Simultaneous band-gap narrowing and carrier-lifetime prolongation of organic-inorganic trihalide perovskites. 2016, 113, 8910-5	199
891	Carrier Transport in CH ₃ NH ₃ PbI ₃ Films with Different Thickness for Perovskite Solar Cells. 2016, 3, 1600327	39
890	Photovoltaic Diode Effect Induced by Positive Bias Poling of Organic Layer-Mediated Interface in Perovskite Heterostructure HC(NH ₂) ₂ PbI ₃ /TiO ₂ . 2016, 3, 1600267	9
889	Optical Transitions in Hybrid Perovskite Solar Cells: Ellipsometry, Density Functional Theory, and Quantum Efficiency Analyses for CH ₃ NH ₃ PbI ₃ . 2016, 5,	229
888	The Bright Side of Perovskites. 2016, 7, 4322-4334	100
887	Computational predictions of energy materials using density functional theory. 2016, 1,	373
886	Photon Transport in One-Dimensional Incommensurately Epitaxial CsPbX Arrays. 2016, 16, 7974-7981	102
885	Near-Infrared-Absorbing and Dopant-Free Heterocyclic Quinoid-Based Hole-Transporting Materials for Efficient Perovskite Solar Cells. 2016, 9, 3139-3144	21
884	Surface and Interface Aspects of Organometal Halide Perovskite Materials and Solar Cells. 2016, 7, 4764-4794	147
883	Cesium lead halide (CsPbX ₃ , X = Cl , Br, I) perovskite quantum dots-synthesis, properties, and applications: a review of their present status. 2016, 6, 042001	48
882	Cationic Effect on Pressure Driven Spin-State Transition and Cooperativity in Hybrid Perovskites. 2016, 28, 8379-8384	13
881	Hybrid organic-inorganic perovskites: low-cost semiconductors with intriguing charge-transport properties. 2016, 1,	912
880	Improved efficiency and stability of PbSn binary perovskite solar cells by Cs substitution. <i>Journal of Materials Chemistry A</i> , 2016, 4, 17939-17945	13 115
879	Organometal Halide Perovskite Quantum Dot Light-Emitting Diodes. 2016, 26, 4797-4802	196
878	Hole-Transporting Materials in Inverted Planar Perovskite Solar Cells. 2016, 6, 1600474	197
877	Organic-inorganic interactions of single crystalline organolead halide perovskites studied by Raman spectroscopy. 2016, 18, 18112-8	68
876	Chemically, spatially, and temporally resolved 2D mapping study for the role of grain interiors and grain boundaries of organic-inorganic lead halide perovskites. 2016, 155, 134-140	19

875	Transformation of Sintered CsPbBr ₃ Nanocrystals to Cubic CsPbI ₃ and Gradient CsPbBr _x I _{3-x} through Halide Exchange. 2016 , 138, 8603-11	269
874	A comprehensive theoretical study of halide perovskites ABX ₃ . 2016 , 37, 61-73	114
873	Intriguing Optoelectronic Properties of Metal Halide Perovskites. 2016 , 116, 12956-13008	987
872	Thermally Activated Point Defect Diffusion in Methylammonium Lead Trihalide: Anisotropic and Ultrahigh Mobility of Iodine. 2016 , 7, 2356-61	93
871	Understanding the relationship between ion migration and the anomalous hysteresis in high-efficiency perovskite solar cells: A fresh perspective from halide substitution. 2016 , 26, 620-630	127
870	Solution processed perovskite solar cells using highly conductive PEDOT:PSS interfacial layer. 2016 , 157, 318-325	61
869	Ultrafast Carrier Dynamics in Methylammonium Lead Bromide Perovskite. 2016 , 120, 2542-2547	42
868	Ion Migration in Organometal Trihalide Perovskite and Its Impact on Photovoltaic Efficiency and Stability. 2016 , 49, 286-93	1002
867	Recent progress and challenges of organometal halide perovskite solar cells. 2016 , 79, 026501	97
866	Systematic analysis of the unique band gap modulation of mixed halide perovskites. 2016 , 18, 4423-8	21
865	Trigonal Cu ₂ II-Sn-VI ₄ (II = Ba, Sr and VI = S, Se) quaternary compounds for earth-abundant photovoltaics. 2016 , 18, 4828-34	71
864	Alloying and Defect Control within Chalcogenide Perovskites for Optimized Photovoltaic Application. 2016 , 28, 821-829	105
863	Atomic Structures of CH ₃ NH ₃ PbI ₃ (001) Surfaces. 2016 , 10, 1126-31	114
862	Organic-inorganic hybrid lead halide perovskites for optoelectronic and electronic applications. 2016 , 45, 655-89	1049
861	Stabilized Wide Bandgap MAPbBr ₃ Perovskite by Enhanced Grain Size and Improved Crystallinity. 2016 , 3, 1500301	182
860	Time-resolved fluorescence anisotropy study of organic lead halide perovskite. 2016 , 151, 102-112	12
859	Large Perovskite Grain Growth in Low-Temperature Solution-Processed Planar p-i-n Solar Cells by Sodium Addition. 2016 , 8, 5053-7	102
858	Thin-film semiconductor perspective of organometal trihalide perovskite materials for high-efficiency solar cells. 2016 , 101, 1-38	91

857	Surface Properties of CH ₃ NH ₃ PbI ₃ for Perovskite Solar Cells. 2016 , 49, 554-61		119
856	A Bismuth-Halide Double Perovskite with Long Carrier Recombination Lifetime for Photovoltaic Applications. 2016 , 138, 2138-41		1056
855	Cs ₂ AgBiX ₆ (X = Br, Cl): New Visible Light Absorbing, Lead-Free Halide Perovskite Semiconductors. 2016 , 28, 1348-1354		738
854	Octahedral Rotation Preferences in Perovskite Iodides and Bromides. 2016 , 7, 918-22		84
853	Solvent-molecule-mediated manipulation of crystalline grains for efficient planar binary lead and tin triiodide perovskite solar cells. 2016 , 8, 7621-30		53
852	Stability and electronic properties of new inorganic perovskites from high-throughput ab initio calculations. 2016 , 4, 3157-3167		156
851	Graphene in perovskite solar cells: device design, characterization and implementation. <i>Journal of Materials Chemistry A</i> , 2016 , 4, 6185-6235	13	149
850	Temperature Evolution of Methylammonium Trihalide Vibrations at the Atomic Scale. 2016 , 7, 529-35		66
849	Recent Advances in the Inverted Planar Structure of Perovskite Solar Cells. 2016 , 49, 155-65		472
848	Organometal halide perovskite thin films and solar cells by vapor deposition. <i>Journal of Materials Chemistry A</i> , 2016 , 4, 6693-6713	13	177
847	Can ferroelectric polarization explain the high performance of hybrid halide perovskite solar cells?. 2016 , 18, 331-8		62
846	Crystallization process of perovskite modified by adding lead acetate in precursor solution for better morphology and higher device efficiency. 2017 , 43, 189-195		12
845	Thermal Conductivity of CH ₃ NH ₃ PbI ₃ and CsPbI ₃ : Measuring the Effect of the Methylammonium Ion on Phonon Scattering. 2017 , 121, 3228-3233		52
844	Design of Lead-Free Inorganic Halide Perovskites for Solar Cells via Cation-Transmutation. 2017 , 139, 2630-2638		490
843	A theoretical study on the charge transport properties of DNA. 2017 , 42, 244-255		7
842	Development of a Classical Interatomic Potential for MAPbBr ₃ . 2017 , 121, 3724-3733		19
841	Enhanced photovoltaic performance of polymer-filled nanoporous Si hybrid structures. 2017 , 19, 5121-5126		2
840	Efficient and stable solution-processed planar perovskite solar cells via contact passivation. 2017 , 355, 722-726		1667

839	Piezoelectric scattering limited mobility of hybrid organic-inorganic perovskites CH ₃ NH ₃ PbI ₃ . 2017 , 7, 41860	25
838	Substrate-dependent electronic structure and film formation of MAPbI ₃ perovskites. 2017 , 7, 40267	189
837	Recent advances in perovskite solar cells: efficiency, stability and lead-free perovskite. <i>Journal of Materials Chemistry A</i> , 2017 , 5, 11462-11482	13 307
836	Towards high efficiency thin film solar cells. 2017 , 87, 246-291	67
835	Perovskite solar cells with a DMSO-treated PEDOT:PSS hole transport layer exhibit higher photovoltaic performance and enhanced durability. 2017 , 9, 4236-4243	111
834	New Films on Old Substrates: Toward Green and Sustainable Energy Production via Recycling of Functional Components from Degraded Perovskite Solar Cells. 2017 , 5, 3261-3269	28
833	Low-bandgap mixed tin/lead iodide perovskite absorbers with long carrier lifetimes for all-perovskite tandem solar cells. 2017 , 2,	515
832	Slow cooling and highly efficient extraction of hot carriers in colloidal perovskite nanocrystals. 2017 , 8, 14350	196
831	Brief review of emerging photovoltaic absorbers. 2017 , 4, 8-15	45
830	Highly efficient and stable inverted planar solar cells from (FAI) _x (MABr) _{1-x} PbI ₂ perovskites. 2017 , 35, 62-70	21
829	Solution-Processed Cu(In, Ga)(S, Se) Nanocrystal as Inorganic Hole-Transporting Material for Efficient and Stable Perovskite Solar Cells. 2017 , 12, 159	31
828	Polymorphic Phase Control Mechanism of Organic/Inorganic Hybrid Perovskite Engineered by Dual-Site Alloying. 2017 , 121, 9508-9515	14
827	Copper indium gallium selenide based solar cells: A review. 2017 , 10, 1306-1319	346
826	It Takes Two to Tango-Double-Layer Selective Contacts in Perovskite Solar Cells for Improved Device Performance and Reduced Hysteresis. 2017 , 9, 17245-17255	99
825	Chemical Reduction of Intrinsic Defects in Thicker Heterojunction Planar Perovskite Solar Cells. 2017 , 29, 1606774	267
824	Model development of monolithic tandem silicon-perovskite solar cell by SCAPS simulation. 2017 ,	10
823	Recombination in Perovskite Solar Cells: Significance of Grain Boundaries, Interface Traps, and Defect Ions. 2017 , 2, 1214-1222	577
822	Recent progress and remaining challenges in organometallic halides based perovskite solar cells. 2017 , 78, 1-14	39

821	Profiling the organic cation-dependent degradation of organolead halide perovskite solar cells. <i>Journal of Materials Chemistry A</i> , 2017 , 5, 1103-1111	13	108
820	Pressure-Induced Bandgap Optimization in Lead-Based Perovskites with Prolonged Carrier Lifetime and Ambient Retainability. 2017 , 27, 1604208		115
819	A Short Progress Report on High-Efficiency Perovskite Solar Cells. 2017 , 12, 410		54
818	Enhanced efficiency of planar perovskite solar cells via a two-step deposition using DMF as an additive to optimize the crystal growth behavior. <i>Journal of Materials Chemistry A</i> , 2017 , 5, 13032-13038 ¹³		69
817	Effect of water on the effective Goldschmidt tolerance factor and photoelectric conversion efficiency of organic-inorganic perovskite: insights from first-principles calculations. 2017 , 19, 14955-14960		6
816	PVDF-HFP additive for visible-light-semitransparent perovskite films yielding enhanced photovoltaic performance. 2017 , 170, 178-186		33
815	Theoretical Treatment of CH ₃ NH ₃ PbI ₃ Perovskite Solar Cells. 2017 , 56, 15806-15817		84
814	Experimental and simulation study for impact of different halides on the performance of planar perovskite solar cells. 2017 , 66, 176-185		33
813	Theoretische Abhandlung über CH ₃ NH ₃ PbI ₃ -Perowskit-Solarzellen. 2017 , 129, 16014-16026		4
812	Energy-Down-Shift CsPbCl ₃ :Mn Quantum Dots for Boosting the Efficiency and Stability of Perovskite Solar Cells. 2017 , 2, 1479-1486		178
811	Tailoring lanthanide doping in perovskite CaTiO ₃ for luminescence applications. 2017 , 19, 16189-16197		16
810	Origin of Open-Circuit Voltage Loss in Polymer Solar Cells and Perovskite Solar Cells. 2017 , 9, 19988-19997		23
809	Revealing a Discontinuity in the Degradation Behavior of CH ₃ NH ₃ PbI ₃ during Thermal Operation. 2017 , 121, 13577-13585		27
808	Highly efficient and stable low-temperature processed ZnO solar cells with triple cation perovskite absorber. <i>Journal of Materials Chemistry A</i> , 2017 , 5, 13439-13447	13	71
807	First determination of the valence band dispersion of CH ₃ NH ₃ PbI ₃ hybrid organic/inorganic perovskite. 2017 , 50, 26LT02		26
806	Current state and perspectives for organo-halide perovskite solar cells. Part 1. Crystal structures and thin film formation, morphology, processing, degradation, stability improvement by carbon nanotubes. A review. 2017 , 3, 1-25		20
805	Parity-Forbidden Transitions and Their Impact on the Optical Absorption Properties of Lead-Free Metal Halide Perovskites and Double Perovskites. 2017 , 8, 2999-3007		267
804	Luminescence spectroscopy of lead-halide perovskites: materials properties and application as photovoltaic devices. 2017 , 5, 3427-3437		88

803	Universal rules for visible-light absorption in hybrid perovskite materials. 2017 , 121, 115501	61
802	Solvent vapor annealing of oriented PbI ₂ films for improved crystallization of perovskite films in the air. 2017 , 166, 167-175	16
801	Exploring the Way To Approach the Efficiency Limit of Perovskite Solar Cells by Drift-Diffusion Model. 2017 , 4, 934-942	74
800	Enhancement in efficiency and optoelectronic quality of perovskite thin films annealed in MACl vapor. 2017 , 1, 755-766	53
799	Graphene Interface Engineering for Perovskite Solar Modules: 12.6% Power Conversion Efficiency over 50 cm ² Active Area. 2017 , 2, 279-287	162
798	A facile deposition method for CuSCN: Exploring the influence of CuSCN on J-V hysteresis in planar perovskite solar cells. 2017 , 32, 310-319	32
797	Functionality-Directed Screening of Pb-Free Hybrid Organic-Inorganic Perovskites with Desired Intrinsic Photovoltaic Functionalities. 2017 , 29, 524-538	110
796	Enhancement of photocurrent in an ultra-thin perovskite solar cell by Ag nanoparticles deposited at low temperature. 2017 , 7, 1206-1214	26
795	Long Minority-Carrier Diffusion Length and Low Surface-Recombination Velocity in Inorganic Lead-Free CsSnI ₃ Perovskite Crystal for Solar Cells. 2017 , 27, 1604818	124
794	Structural Stabilities and Electronic Properties of High-Angle Grain Boundaries in Perovskite Cesium Lead Halides. 2017 , 121, 1715-1722	80
793	Two-Dimensional Single-Layer Organic-Inorganic Hybrid Perovskite Semiconductors. 2017 , 7, 1601731	70
792	Searching for promising new perovskite-based photovoltaic absorbers: the importance of electronic dimensionality. 2017 , 4, 206-216	406
791	CsPbBr ₃ Solar Cells: Controlled Film Growth through Layer-by-Layer Quantum Dot Deposition. 2017 , 29, 9767-9774	136
790	Lead-Free Hybrid Material with an Exceptional Dielectric Phase Transition Induced by a Chair-to-Boat Conformation Change of the Organic Cation. 2017 , 56, 13078-13085	25
789	(2-Methylpiperidine)PbI ₃ : an ABX ₃ -type organic-inorganic hybrid chain compound and its semiconducting nanowires with photoconductive properties. 2017 , 5, 11466-11471	16
788	Numerical simulation and experimental validation of inverted planar perovskite solar cells based on NiOx hole transport layer. 2017 , 112, 383-393	17
787	Two Regimes of Bandgap Red Shift and Partial Ambient Retention in Pressure-Treated Two-Dimensional Perovskites. 2017 , 2, 2518-2524	63
786	Role of Dielectric Drag in Polaron Mobility in Lead Halide Perovskites. 2017 , 2, 2555-2562	70

785	[(CH ₃) ₂ NH] Bi I ₃ : A Polar Lead-Free Hybrid Perovskite-Like Material as a Potential Semiconducting Absorber. 2017 , 23, 17304-17310	34
784	Solution-Processed Ultrathin TiO ₂ Compact Layer Hybridized with Mesoporous TiO ₂ for High-Performance Perovskite Solar Cells. 2017 , 9, 36865-36874	34
783	Synthesis of Cs ₂ AgSbCl ₆ and improved optoelectronic properties of Cs ₂ AgSbCl ₆ /TiO ₂ heterostructure driven by the interface effect for lead-free double perovskites solar cells. 2017 , 111, 151602	41
782	Metal-Halide Perovskite Transistors for Printed Electronics: Challenges and Opportunities. 2017 , 29, 1702838	92
781	Organometal Trihalide Perovskites with Intriguing Ferroelectric and Piezoelectric Properties. 2017 , 27, 1702207	25
780	Touching is believing: interrogating halide perovskite solar cells at the nanoscale via scanning probe microscopy. 2017 , 2,	35
779	Synergetic effect of double-step blocking layer for the perovskite solar cell. 2017 , 122, 145106	11
778	Lead halide perovskites: Crystal-liquid duality, phonon glass electron crystals, and large polaron formation. 2017 , 3, e1701469	234
777	Stabilization of the Cubic Crystalline Phase in Organometal Halide Perovskite Quantum Dots via Surface Energy Manipulation. 2017 , 8, 5378-5384	20
776	Progress in Theoretical Study of Metal Halide Perovskite Solar Cell Materials. 2017 , 7, 1701136	197
775	First-principles study on the electric structure and ferroelectricity in epitaxial CsSnI ₃ films. 2017 , 7, 41077-41083	9
774	Computational Characterization of the Dependence of Halide Perovskite Effective Masses on Chemical Composition and Structure. 2017 , 121, 23886-23895	28
773	Oriented tuning the photovoltaic properties of RbGeX ₃ by strain-induced electron effective mass mutation. 2017 , 50, 465101	37
772	Large carrier-capture rate of Pbl antisite in CH ₃ NH ₃ PbI ₃ induced by heavy atoms and soft phonon modes. 2017 , 96,	11
771	Fluorine Functionalized Graphene Nano Platelets for Highly Stable Inverted Perovskite Solar Cells. 2017 , 17, 6385-6390	84
770	Enhanced optical absorption via cation doping hybrid lead iodine perovskites. 2017 , 7, 7843	39
769	Biotemplated Synthesis of TiO ₂ -Coated Gold Nanowire for Perovskite Solar Cells. 2017 , 2, 5478-5485	3
768	Current progress and scientific challenges in the advancement of organic-inorganic lead halide perovskite solar cells. 2017 , 41, 10508-10527	19

767	Properties of Lead-Free Hybrid Organic-Inorganic Halide Perovskite CH ₃ NH ₃ BX ₃ Using Density Functional Theory. 2017 , 4, 5154-5160		2
766	Bulk and interface recombination in planar lead halide perovskite solar cells: A Drift-Diffusion study. 2017 , 94, 118-122		12
765	Charging assisted structural phase transitions in monolayer InSe. 2017 , 19, 22502-22508		5
764	Collective Molecular Mechanisms in the CH ₃ NHPbI Dissolution by Liquid Water. 2017 , 11, 9183-9190		49
763	Exploring the effects of interfacial carrier transport layers on device performance and optoelectronic properties of planar perovskite solar cells. 2017 , 5, 8819-8827		67
762	Emerging solar technologies: Perovskite solar cell. 2017 , 22, 1061-1083		14
761	Unique Trapped Dimer State of the Photogenerated Hole in Hybrid Orthorhombic CH ₃ NHPbI Perovskite: Identification, Origin, and Implications. 2017 , 17, 7724-7730		14
760	Charge transport in hybrid halide perovskites. 2017 , 96,		16
759	First-Principles Study of Electron Injection and Defects at the TiO ₂ /CH ₃ NHPbI Interface of Perovskite Solar Cells. 2017 , 8, 5840-5847		22
758	Ideal Bandgap Organic-Inorganic Hybrid Perovskite Solar Cells. 2017 , 29, 1704418		103
757	Strain-induced improper ferroelectricity in Ruddlesden-Popper perovskite halides. 2017 , 96,		8
756	DFT Study of Mechanical Properties and Stability of Cubic Methylammonium Lead Halide Perovskites (CH ₃ NH ₃ PbX ₃ , X = I, Br, Cl). 2017 , 121, 27059-27070		50
755	A theoretical study of hybrid lead iodide perovskite homologous semiconductors with 0D, 1D, 2D and 3D structures. <i>Journal of Materials Chemistry A</i> , 2017 , 5, 16786-16795	13	30
754	Strategies to reduce the open-circuit voltage deficit in Cu ₂ ZnSn(S,Se) ₄ thin film solar cells. 2017 , 13, 373-392		25
753	Poor Photovoltaic Performance of Cs ₃ Bi ₂ I ₉ : An Insight through First-Principles Calculations. 2017 , 121, 17062-17067		81
752	Hybrid organic-inorganic lead and tin halide perovskites with saturated heterocyclic cations (CH ₂) _n NH ₂ ⁺ and (CH ₂) _n OH ⁺ , (n = 2-8): Ab initio study. 2017 , 138, 99-104		5
751	Pressure Effects on Structure and Optical Properties in Cesium Lead Bromide Perovskite Nanocrystals. 2017 , 139, 10087-10094		155
750	Progress on Perovskite Materials and Solar Cells with Mixed Cations and Halide Anions. 2017 , 9, 30197-30246		339

749	2D halide perovskite-based van der Waals heterostructures: contact evaluation and performance modulation. 2017 , 4, 035009	18
748	Synthetic Development of Low Dimensional Materials. 2017 , 29, 168-175	20
747	Synthesis, structure, optical, and thermal properties of diallylammonium hexabromostannate(IV) hybrid. 2017 , 192, 58-63	4
746	Chemical Approaches to Addressing the Instability and Toxicity of Lead-Halide Perovskite Absorbers. 2017 , 56, 46-55	186
745	Mixed Cation FAXPEA1xPbI3 with Enhanced Phase and Ambient Stability toward High-Performance Perovskite Solar Cells. 2017 , 7, 1601307	237
744	Non-precious transition metals as counter electrode of perovskite solar cells. 2017 , 7, 40-47	32
743	Pure Formamidinium-Based Perovskite Light-Emitting Diodes with High Efficiency and Low Driving Voltage. 2017 , 29, 1603826	145
742	Modeling hybrid perovskites by molecular dynamics. 2017 , 29, 043001	45
741	Mechanisms of radiation degradation of solar cells based on organic-inorganic perovskites. 2017 , 53, 326-333	5
740	Solution Processed Hybrid Organic-Inorganic CH ₃ NH ₃ PbI ₃ Perovskite Material and Optical Properties. 2017 , 4, 12661-12665	8
739	. 2017 ,	
738	First-Principles Density Functional Theory Calculation of Metal-Substituted Lead Halide Perovskite. 2017 ,	
737	Bandgap Engineering of Stable Lead-Free Oxide Double Perovskites for Photovoltaics. 2018 , 30, e1705901	38
736	Renaissance of graphene-related materials in photovoltaics due to the emergence of metal halide perovskite solar cells. 2018 , 11, 1030-1061	47
735	Organometal Halide Perovskites for Next Generation Fully Printed and Flexible LEDs and Displays. 2018 , 199-214	
734	Mixed halide hybrid perovskites: a paradigm shift in photovoltaics. <i>Journal of Materials Chemistry A</i> , 2018 , 6, 5507-5537	13 80
733	Intrinsic Instability of the Hybrid Halide Perovskite Semiconductor CH ₃ NH ₃ PbI ₃ *. 2018 , 35, 036104	107
732	Classical modelling of grain size and boundary effects in polycrystalline perovskite solar cells. 2018 , 180, 76-82	28

731	Evolution of organometal halide solar cells. 2018 , 35, 74-107	22
730	Crystallization of CH ₃ NH ₃ PbI _{3-x} Br _x perovskite from micro-droplets of lead acetate precursor solution. 2018 , 20, 3058-3065	4
729	Organic-inorganic hybrid perovskite quantum dots with high PLQY and enhanced carrier mobility through crystallinity control by solvent engineering and solid-state ligand exchange. 2018 , 10, 13356-13367	53
728	A review of perovskite solar cells with a focus on wire-shaped devices. 2018 , 25, 17-23	5
727	Surface Termination: A Key Factor to Influence Electronic and Optical Properties of CsSnI ₃ . 2018 , 122, 9275-9282	40
726	Molecular Engineering Using an Anthanthrone Dye for Low-Cost Hole Transport Materials: A Strategy for Dopant-Free, High-Efficiency, and Stable Perovskite Solar Cells. 2018 , 8, 1703007	115
725	Solution-processed nickel oxide hole transport layer for highly efficient perovskite-based photovoltaics. 2018 , 44, 9347-9352	13
724	Novel synthesis process of methyl ammonium bromide and effect of particle size on structural, optical and thermodynamic behavior of CH ₃ NH ₃ PbBr ₃ organometallic perovskite light harvester. 2018 , 743, 728-736	21
723	Effects of Spin-Orbit Coupling on Nonequilibrium Quantum Transport Properties of Hybrid Halide Perovskites. 2018 , 122, 4150-4155	7
722	Charge Transport Layer Doping Influence on Perovskite CH ₃ NH ₃ PbI _{3-x} Cl _x Solar Cell Performance. 2018 , 762, 249-254	
721	Efficient Perovskite Solar Cells Fabricated by Co Partially Substituted Hybrid Perovskite. 2018 , 8, 1703178	88
720	Assessing Temperature Dependence of Drift Mobility in Methylammonium Lead Iodide Perovskite Single Crystals. 2018 , 122, 5935-5939	34
719	Influence of chromium hyperdoping on the electronic structure of CH ₃ NH ₃ PbI ₃ perovskite: a first-principles insight. 2018 , 8, 2511	13
718	Design Principles for the Atomic and Electronic Structure of Halide Perovskite Photovoltaic Materials: Insights from Computation. 2018 , 24, 8708-8716	18
717	Optical Characteristics and Operational Principles of Hybrid Perovskite Solar Cells. 2018 , 215, 1700730	31
716	Intrinsic Point Defects in Inorganic Cesium Lead Iodide Perovskite CsPbI ₃ . 2018 , 122, 1345-1350	101
715	Phase Engineering of Perovskite Materials for High-Efficiency Solar Cells: Rapid Conversion of CH ₃ NH ₃ PbI ₃ to Phase-Pure CH ₃ NH ₃ PbCl via Hydrochloric Acid Vapor Annealing Post-Treatment. 2018 , 10, 1897-1908	49
714	Manipulation of cation combinations and configurations of halide double perovskites for solar cell absorbers. <i>Journal of Materials Chemistry A</i> , 2018 , 6, 1809-1815	13 50

713	Electric field effects on the electronic and optical properties in C2N/Sb van der Waals heterostructure. 2018 , 129, 738-744	33
712	Realizing Efficient Lead-Free Formamidinium Tin Triiodide Perovskite Solar Cells via a Sequential Deposition Route. 2018 , 30, 1703800	151
711	One step facile synthesis of a novel anthanthrone dye-based, dopant-free hole transporting material for efficient and stable perovskite solar cells. 2018 , 6, 3699-3708	48
710	Improving electron transport in the hybrid perovskite solar cells using CaMnO3-based buffer layer. 2018 , 45, 287-297	11
709	Introducing paired electric dipole layers for efficient and reproducible perovskite solar cells. 2018 , 11, 1742-1751	59
708	Origin of Pronounced Nonlinear Band Gap Behavior in Lead ^{III} in Hybrid Perovskite Alloys. 2018 , 30, 3920-3928	108
707	Sn-Stabilization in MASnI perovskites by superhalide incorporation. 2018 , 148, 124111	14
706	Atomic and Electronic Structure of Two-Dimensional Inorganic Halide Perovskites $A_{n+1}MnX_{3n+1}$ ($n = 1\bar{8}$, $A = Cs$, $M = Pb$ and Sn , and $X = Cl$, Br , and I) from ab Initio Calculations. 2018 , 122, 7464-7473	19
705	Role of Localized States in Photoluminescence Dynamics of High Optical Gain CsPbBr3 Nanocrystals. 2018 , 6, 1800109	63
704	CaI2: a more effective passivator of perovskite films than PbI2 for high efficiency and long-term stability of perovskite solar cells. <i>Journal of Materials Chemistry A</i> , 2018 , 6, 7903-7912	13 54
703	CHNHPb Eu I mixed halide perovskite for hybrid solar cells: the impact of divalent europium doping on efficiency and stability.. 2018 , 8, 11095-11101	33
702	Bismuth and antimony-based oxyhalides and chalcogenides as potential optoelectronic materials. 2018 , 4,	55
701	Excess iodine as the interface recombination center limiting the open-circuit voltage of CuI-based perovskite planar solar cell. 2018 , 29, 8838-8846	6
700	Exciton-Dominated Core-Level Absorption Spectra of Hybrid Organic-Inorganic Lead Halide Perovskites. 2018 , 9, 1852-1858	16
699	Halogen in materials design: Fluoroammonium lead triiodide (FNH3PbI3) perovskite as a newly discovered dynamical bandgap semiconductor in 3D. 2018 , 118, e25621	1
698	Perovskite Solar Absorbers: Materials by Design. 2018 , 2, 1700316	78
697	Hansen theory applied to the identification of nonhazardous solvents for hybrid perovskite thin-films processing. 2018 , 147, 9-14	8
696	Large-area perovskite solar cells - a review of recent progress and issues.. 2018 , 8, 10489-10508	114

695	Recent Advances in Spiro-MeOTAD Hole Transport Material and Its Applications in Organic-Inorganic Halide Perovskite Solar Cells. 2018 , 5, 1700623	229
694	Role of organic cations on hybrid halide perovskite CH ₃ NH ₃ PbI ₃ surfaces. 2018 , 258, 488-494	9
693	Recent theoretical progress in the development of perovskite photovoltaic materials. 2018 , 27, 637-649	32
692	Polymer Doping for High-Efficiency Perovskite Solar Cells with Improved Moisture Stability. 2018 , 8, 1701757	233
691	Recent Advances in Nanogenerator-Driven Self-Powered Implantable Biomedical Devices. 2018 , 8, 1701210	109
690	An overview of engineered porous material for energy applications: a mini-review. 2018 , 24, 1-17	56
689	Degradation of encapsulated perovskite solar cells driven by deep trap states and interfacial deterioration. 2018 , 6, 162-170	60
688	Band Structure Engineering of CsAgBiBr Perovskite through Order-Disordered Transition: A First-Principle Study. 2018 , 9, 31-35	82
687	Structural, electronic, optical and thermodynamic investigations of NaXF ₃ (X = Ca and Sr): First-principles calculations. 2018 , 56, 131-144	52
686	First principles investigation on pressure induced phase transition and photocatalytic properties in RbPbCl ₃ . 2018 , 143, 403-410	5
685	Photophysical Model for Non-Exponential Relaxation Dynamics in Hybrid Perovskite Semiconductors. 2018 , 122, 1119-1124	11
684	Organic cation steered interfacial electron transfer within organic-inorganic perovskite solar cells. <i>Journal of Materials Chemistry A</i> , 2018 , 6, 4305-4312	13 13
683	Interactions between molecules and perovskites in halide perovskite solar cells. 2018 , 175, 1-19	54
682	Rod-shaped thiocyanate-induced abnormal band gap broadening in SCN ⁻ doped CsPbBr ₃ perovskite nanocrystals. 2018 , 11, 2715-2723	30
681	Theoretical investigations on crystal crosslinking in perovskite solar cells. 2018 , 6, 234-241	12
680	The role of grain boundaries in perovskite solar cells. 2018 , 7, 149-160	149
679	Halogen in materials design: Chloroammonium lead triiodide perovskite (ClNH ₄ PbI ₃) a dynamical bandgap semiconductor in 3D for photovoltaics. 2018 , 39, 1902-1912	2
678	Exploring the Recombination Mechanism Induced by Carrier Transport Layers in Perovskite Solar Cells. 2018 ,	0

- 677 A novel and cost effective CZTS hole transport material applied in perovskite solar cells. **2018**, 20, 7677-7687 28
- 676 Promising photovoltaic and solid-state-lighting materials: two-dimensional Ruddlesden-Popper type lead-free halide double perovskites $Cs_{n+1}In_n/2Sb_n/2I_{3n+1}$ ($n = 3$) and $Cs_{n+1}In_n/2Sb_n/2Cl_{3n+1}/Cs_{m+1}Cu_m/2Bi_m/2Cl_{3m+1}$ ($n = 3, m = 1$). **2018**, 6, 11575-11586 11
- 675 Recent advances in one-dimensional halide perovskites for optoelectronic applications. **2018**, 10, 20963-20989 31
- 674 Functional materials, device architecture, and flexibility of perovskite solar cell. **2018**, 1, 133-154 67
- 673 Rationalizing Perovskite Data for Machine Learning and Materials Design. **2018**, 9, 6948-6954 46
- 672 First-Principle Insights of Electronic and Optical Properties of Cubic Organic-Inorganic $MAGePb(1-x)I_3$ Perovskites for Photovoltaic Applications. **2018**, 122, 28245-28255 16
- 671 Organic-Inorganic Hybrid Perovskite Solar Cells. **2018**, 463-507 1
- 670 Tailoring properties of hybrid perovskites by domain-width engineering with charged walls. **2018**, 4, 12
- 669 Beyond Methylammonium Lead Iodide Perovskite. **2018**, 155-181
- 668 Improving the stability of methylammonium lead iodide perovskite solar cells by cesium doping. **2018**, 667, 40-47 19
- 667 Visible-Light-Enhanced Photocatalytic Activity of Totally Inorganic Halide-Based Perovskite. **2018**, 3, 10226-10235 13
- 666 Photoelectric performance and stability comparison of MAPbI₃ and FAPbI₃ perovskite solar cells. **2018**, 174, 933-939 18
- 665 Effects of thermal disorder on the electronic structure of halide perovskites: insights from MD simulations. **2018**, 20, 25693-25700 12
- 664 Solvent Engineering Improves Efficiency of Lead-Free Tin-Based Hybrid Perovskite Solar Cells beyond 9%. **2018**, 3, 2701-2707 126
- 663 Structural Phase Transition and Switchable Dielectric Properties of a Unique Two-Dimensional Organic-Inorganic Hybrid Perovskite Compound $[C_6H_{11}NH_2CH_3]_4Pb_3I_{10}$. **2018**, 18, 7316-7322 19
- 662 A theoretical investigation of structural, mechanical, electronic and thermoelectric properties of orthorhombic $CH_3NH_3PbI_3$. **2018**, 91, 1 11
- 661 MoS₂ incorporated hybrid hole transport layer for high performance and stable perovskite solar cells. **2018**, 246, 195-203 31
- 660 Proton Migration in Hybrid Lead Iodide Perovskites: From Classical Hopping to Deep Quantum Tunneling. **2018**, 9, 6536-6543 10

659	Optical Hall Effect of PV Device Materials. 2018 , 8, 1793-1799	5
658	Long-Term Durability of Bromide-Incorporated Perovskite Solar Cells via a Modified Vapor-Assisted Solution Process. 2018 , 1, 6018-6026	12
657	Impact of Moisture on Photoexcited Charge Carrier Dynamics in Methylammonium Lead Halide Perovskites. 2018 , 9, 6312-6320	37
656	Strain and layer modulated electronic and optical properties of low dimensional perovskite methylammonium lead iodide: Implications to solar cells. 2018 , 173, 1315-1322	18
655	Halogen Migration in Hybrid Perovskites: The Organic Cation Matters. 2018 , 9, 5474-5480	77
654	High-throughput screening of chalcogenide single perovskites by first-principles calculations for photovoltaics. 2018 , 51, 474003	25
653	Surface Ligand Management for Stable FAPbI ₃ Perovskite Quantum Dot Solar Cells. 2018 , 2, 1866-1878	114
652	Influence of solvent additive on the chemical and electronic environment of wide bandgap perovskite thin films. 2018 , 6, 12052-12061	19
651	A Cryogenic Process for Antisolvent-Free High-Performance Perovskite Solar Cells. 2018 , 30, e1804402	39
650	Investigation of Interface Effect on the Performance of CH ₃ NH ₃ PbCl/ZnO UV Photodetectors. 2018 , 10, 34744-34750	32
649	First-Principles DFT Calculations for Perovskite Solar Cells. 2018 , 487-509	5
648	Controllable growth of two-dimensional perovskite microstructures. 2018 , 20, 6538-6545	12
647	Long-Term Stability of Perovskite Solar Cells under Different Growth Conditions: A Defect-Controlled Water Diffusion Mechanism. 2018 , 9, 5386-5391	15
646	Determination of the miscibility gap in the solid solutions series of methylammonium lead iodide/chloride. 2018 , 74, 445-449	8
645	Impacts of cation ordering on bandgap dispersion of double perovskites. 2018 , 6, 084903	10
644	Spectroscopic Limited Practical Efficiency (SLPE) model for organometal halide perovskites solar cells evaluation. 2018 , 59, 389-398	3
643	Photovoltaics and Nanotechnology as Alternative Energy. 2018 , 211-241	1
642	Recent progressive efforts in perovskite solar cells toward commercialization. <i>Journal of Materials Chemistry A</i> , 2018 , 6, 12215-12236	13 47

641	The effect of bromine doping on the perovskite solar cells modified by PVP/PEG polymer blends. 2018 , 120, 279-287	2
640	Exciton photoluminescence and benign defect complex formation in zinc tin nitride. 2018 , 5, 823-830	29
639	Evolution of Perovskite Solar Cells. 2018 , 43-88	9
638	The computational probing of carrier transport in MAPbI ₃ Cl _x . 2018 , 1138, 135-139	2
637	Photochemical upconversion is suppressed by high concentrations of molecular sensitizers. 2018 , 20, 19500-19506	20
636	Recent Advances toward High-Efficiency Halide Perovskite Light-Emitting Diodes: Review and Perspective. 2018 , 2, 1700419	145
635	Origin of the stability of two-dimensional perovskites: a first-principles study. <i>Journal of Materials Chemistry A</i> , 2018 , 6, 14949-14955	13 54
634	Ferroic domains regulate photocurrent in single-crystalline CH ₃ NH ₃ PbI ₃ films self-grown on FTO/TiO ₂ substrate. 2018 , 3,	66
633	A Facile Preparative Route of Nanoscale Perovskites over Mesoporous Metal Oxide Films and Their Applications to Photosensitizers and Light Emitters. 2018 , 28, 1803801	13
632	A class of Pb-free double perovskite halide semiconductors with intrinsic ferromagnetism, large spin splitting and high Curie temperature. 2018 , 5, 961-968	40
631	Isothermal pressure-derived metastable states in 2D hybrid perovskites showing enduring bandgap narrowing. 2018 , 115, 8076-8081	92
630	Ab initio study of the moisture stability of lead iodine perovskites. 2018 , 30, 355501	7
629	Organic Inorganic Hybrid Perovskite Materials and Devices. 2018 , 282-291	
628	Defect Engineering toward Highly Efficient and Stable Perovskite Solar Cells. 2018 , 5, 1800326	29
627	Analysis of Defects and Traps in NiD Layered-Structure of Perovskite Solar Cells by Charge-Based Deep Level Transient Spectroscopy (Q-DLTS). 2018 , 122, 17601-17611	17
626	Metal Halide Perovskites: Synthesis, Ion Migration, and Application in Field-Effect Transistors. 2018 , 14, e1801460	69
625	Modelling Hysteresis in Perovskite Solar Cells. 2018 , 267-278	
624	Microstructure Engineering of Metal-Halide Perovskite Films for Efficient Solar Cells. 2018 ,	

623	Twin Domains in Organometallic Halide Perovskite Thin-Films. 2018 , 8, 216	11
622	Recent progress in Pb-free stable inorganic double halide perovskites. 2018 , 39, 071003	9
621	Charge traps in lead-halide perovskites with different grain sizes. 2018 , 57, 08RE03	3
620	Mixed A-Cation Perovskites for Solar Cells: Atomic-Scale Insights Into Structural Distortion, Hydrogen Bonding, and Electronic Properties. 2018 , 30, 5194-5204	75
619	Long Carrier Lifetimes in Pbl ₂ -Rich Perovskites Rationalized by Ab Initio Nonadiabatic Molecular Dynamics. 2018 , 3, 1868-1874	41
618	Development of Perovskite-Type Materials for Thermoelectric Application. 2018 , 11,	45
617	Advancement on Lead-Free Organic-Inorganic Halide Perovskite Solar Cells: A Review. 2018 , 11,	59
616	First-principle study of structural, electronic and optical properties of Cu ₂ FeSnS ₄ semiconductor. 2018 , 16, e00321	6
615	Multiscale model for disordered hybrid perovskites: The concept of organic cation pair modes. 2018 , 98,	12
614	Enhanced reproducibility of planar perovskite solar cells by fullerene doping with silver nanoparticles. 2018 , 124, 065306	12
613	Efficient Perovskite Solar Cells Fabricated Through CsCl-Enhanced Pbl Precursor via Sequential Deposition. 2018 , 30, e1803095	78
612	Surface polarization and recombination in organic-inorganic hybrid perovskite solar cells based on photo- and electrically induced negative capacitance studies. 2018 , 62, 203-208	20
611	Surface Passivation of Bismuth-Based Perovskite Variant Quantum Dots To Achieve Efficient Blue Emission. 2018 , 18, 6076-6083	118
610	Easy and green preparation of a graphene-TiO nanohybrid using a supramolecular biomaterial consisting of artificially bifunctionalized proteins and its application for a perovskite solar cell. 2018 , 10, 19249-19253	5
609	High-Quality Perovskite Film Preparations for Efficient Perovskite Solar Cells. 2018 ,	
608	Perovskites photovoltaic solar cells: An overview of current status. 2018 , 91, 1025-1044	95
607	Energy Harvesting Research: The Road from Single Source to Multisource. 2018 , 30, e1707271	125
606	Surface properties of lead-free halide double perovskites: Possible visible-light photo-catalysts for water splitting. 2018 , 112, 243901	34

605	Low-bandgap mixed tin/lead iodide perovskite with large grains for high performance solar cells. <i>Journal of Materials Chemistry A</i> , 2018 , 6, 13090-13095	13	42
604	A newly developed lithium cobalt oxide super hydrophilic film for large area, thermally stable and highly efficient inverted perovskite solar cells. <i>Journal of Materials Chemistry A</i> , 2018 , 6, 13751-13760	13	21
603	Perovskite-Betavoltaic Cells: A Novel Application of Organic-Inorganic Hybrid Halide Perovskites. 2019 , 11, 32969-32977		12
602	Unidirectional Spin-Orbit Interaction Induced by the Line Defect in Monolayer Transition Metal Dichalcogenides for High-Performance Devices. 2019 , 19, 6005-6012		8
601	Additive effects of alkali metals on Cu-modified CH ₃ NH ₃ PbI ₃ Cl photovoltaic devices.. 2019 , 9, 24231-24240		16
600	S-Shaped Current-Voltage Characteristics in Solar Cells: A Review. 2019 , 9, 1477-1484		37
599	Lattice Expansion in Hybrid Perovskites: Effect on Optoelectronic Properties and Charge Carrier Dynamics. 2019 , 10, 5000-5007		38
598	Revealing the structural, electronic and optical properties of lead-free perovskite derivatives of Rb ₂ SnX ₆ (X = Cl, Br and I): A theory calculation. 2019 , 190, 272-277		17
597	Effect of metal (Ag and Cd) substitution on methylammonium lead iodide perovskite MAPbI ₃ optoelectronic properties for photovoltaic applications. 2019 , 75, 105393		1
596	CsTlBiI ₃ : a new lead-free halide double perovskite with direct band gap. 2019 , 31, 445902		12
595	Study of the effect of annealing parameters on the perovskite material (CH ₃ NH ₃ SnCl ₃) using PL spectra. 2019 ,		
594	Pseudohalide induced tunable electronic and excitonic properties in two-dimensional single-layer perovskite for photovoltaics and photoelectronic applications. 2019 , 36, 106-113		6
593	Effect of film thickness on the properties of bismuth iodide perovskite film for solar cell application. 2019 ,		
592	The effect of the magnitude and direction of the dipoles of organic cations on the electronic structure of hybrid halide perovskites. 2019 , 21, 16564-16572		10
591	Spiro-bifluorene core based hole transporting material with graphene oxide modified CH ₃ NH ₃ PbI ₃ for inverted planar heterojunction solar cells. 2019 , 319, 885-894		12
590	Recent progress in fundamental understanding of halide perovskite semiconductors. 2019 , 106, 100580		69
589	Free-electron effects on the optical absorption of the hybrid perovskite CH ₃ NH ₃ PbI ₃ from first principles. 2019 , 100,		5
588	Suppressing X-Migrations and Enhancing the Phase Stability of Cubic FAPbX ₃ (X = Br, I). 2019 , 9, 1901411		10

587	Correlation between carrier recombination and valence band offset effect of graded Cu(In,Ga)Se ₂ solar cells. 2019 , 201, 110070	20
586	Homogeneous Freestanding Luminescent Perovskite Organogel with Superior Water Stability. 2019 , 31, e1902928	23
585	When defects become dynamic—halide perovskites: a new window on materials?. 2019 , 6, 1297-1305	40
584	Size and temperature dependence of photoluminescence of hybrid perovskite nanocrystals. 2019 , 151, 154705	16
583	Structures and Properties of Higher-Degree Aggregates of Methylammonium Iodide toward Halide Perovskite Solar Cells. 2019 , 93, 2250-2255	1
582	Direct numerical simulation of a three-dimensional spatially evolving compressible mixing layer laden with particles. II. Turbulence anisotropy and growth rate. 2019 , 31, 083303	12
581	Highly Sensitive, Fast Response Perovskite Photodetectors Demonstrated in Weak Light Detection Circuit and Visible Light Communication System. 2019 , 15, e1903599	63
580	Density functional theory study on the electronic structures and related properties of Ag-doped CH ₃ NH ₃ PbI ₃ perovskite. 2019 , 15, 102709	5
579	Structural, elastic, electronic and optical properties of lead-free halide double perovskite Cs ₂ AgBiX ₆ (X = Cl, Br, and I). 2019 , 6, 115517	11
578	The characteristics of band structures and crystal binding in all-inorganic perovskite APbBr ₃ studied by the first principle calculations using the Density Functional Theory (DFT) method. 2019 , 15, 102592	21
577	Internal and external pressure in cubic perovskites: electronic structure effects and systematic accuracy from first principles. 2019 , 1, 035001	5
576	Cesium Bismuth Iodide Solar Cells from Systematic Molar Ratio Variation of CsI and BiI. 2019 , 58, 12040-12052	23
575	Electronic Structure and Optical Properties of Gallium-Doped Hybrid Organic-Inorganic Lead Perovskites from First-Principles Calculations and Spectroscopic Limited Maximum Efficiencies. 2019 , 123, 23323-23333	8
574	Stacking induced indirect-to-direct bandgap transition in layered group-IV monochalcogenides for ideal optoelectronics. 2019 , 7, 11858-11867	9
573	Potential of Raman spectroscopy towards understanding structures of carbon-based materials and perovskites. 2019 , 2, 417-439	11
572	Two-Dimensional Model for Perovskite Nanorod Solar Cells: A Dark Case Study. 2019 , 9, 1668-1677	1
571	Active meta-optics and nanophotonics with halide perovskites. 2019 , 6, 031307	46
570	Perovskite Solar Fibers: Current Status, Issues and Challenges. 2019 , 1, 101-125	16

569	Advances in modelling and simulation of halide perovskites for solar cell applications. 2019 , 1, 022001	36
568	Two-Dimensional Hybrid Perovskite-Type Ferroelectric for Highly Polarization-Sensitive Shortwave Photodetection. 2019 , 141, 2623-2629	164
567	Tuning the Luminescence of Layered Halide Perovskites. 2019 , 119, 3104-3139	318
566	Cation-Dependent Hot Carrier Cooling in Halide Perovskite Nanocrystals. 2019 , 141, 3532-3540	116
565	Microscopic calculation of the optical properties and intrinsic losses in the methylammonium lead iodide perovskite system. 2019 , 7, 011107	1
564	High-Performance Photodetectors Based on Lead-Free 2D Ruddlesden-Popper Perovskite/MoS Heterostructures. 2019 , 11, 8419-8427	68
563	Unraveling the Impacts Induced by Organic and Inorganic Hole Transport Layers in Inverted Halide Perovskite Solar Cells. 2019 , 11, 7055-7065	34
562	Hybrid Organic-Inorganic Perovskites as Promising Substrates for Pt Single-Atom Catalysts. 2019 , 122, 046101	16
561	Mixed Cs and FA Cations Slow Electron-Hole Recombination in FAPbI Perovskites by Time-Domain Ab Initio Study: Lattice Contraction versus Octahedral Tilting. 2019 , 10, 672-678	25
560	Narrow band gap and optical anisotropy in double perovskite oxide Sm ₂ NiMnO ₆ : A new promising solar cell absorber. 2019 , 193, 206-213	21
559	Review of lead-free halide perovskites as light-absorbers for photovoltaic applications: From materials to solar cells. 2019 , 193, 107-132	96
558	A Facile and Effective Method for Patching Sulfur Vacancies of WS via Nitrogen Plasma Treatment. 2019 , 15, e1901791	26
557	Influence of Defects on Excited-State Dynamics in Lead Halide Perovskites: Time-Domain ab Initio Studies. 2019 , 10, 3788-3804	57
556	First-Principles Study of Enhanced Out-of-Plane Transport Properties and Stability in Dion-Jacobson Two-Dimensional Perovskite Semiconductors for High-Performance Solar Cell Applications. 2019 , 10, 3670-3675	30
555	Structurally Stabilizing and Environment Friendly Triggers: Double-Metallic Lead-Free Perovskites. 2019 , 3, 1900148	23
554	Understanding substitution effects on dye structures and optoelectronic properties of molecular halide perovskite CsMX (M=Pb, Sn, Ge; X= Br, I, Cl). 2019 , 91, 172-179	3
553	Modulating optoelectronic properties of organo-metal halide perovskites with unsaturated heterocyclic cations via ring substitution. 2019 , 135, 109078	3
552	Ab-initio calculation of APbI ₃ (A=Li, Na, K, Rb and Cs) perovskite crystal and their lattice constants optimization using density functional theory. 2019 , 1170, 012023	2

551	KBaTeBiO6: A Lead-Free, Inorganic Double-Perovskite Semiconductor for Photovoltaic Applications. 2019 , 31, 4769-4778	19	
550	Surface stabilized cubic phase of CsPbI3 and CsPbBr3 at room temperature. 2019 , 28, 056402	10	
549	Investigating the optical, photosensitivity and photocatalytic properties of double perovskites A2LuTaO6 (A = Ba, Sr): A combined experimental and density functional theory study. 2019 , 45, 15496-15504	9	
548	Defect and Contact Passivation for Perovskite Solar Cells. 2019 , 31, e1900428	276	
547	Oligomeric Silica-Wrapped Perovskites Enable Synchronous Defect Passivation and Grain Stabilization for Efficient and Stable Perovskite Photovoltaics. 2019 , 4, 1231-1240	83	
546	Putting the Squeeze on Lead Iodide Perovskites: Pressure-Induced Effects To Tune Their Structural and Optoelectronic Behavior. 2019 , 31, 4063-4071	47	
545	A new long-range sub-structure found in the tetragonal phase of CH3NH3PbI3 single crystals. 2019 , 52, 314001	2	
544	A new organic-inorganic bismuth halide crystal structure and quantum dot bearing long-chain alkylammonium cations. 2019 , 70, 155-161	2	
543	Design of Mixed-Cation Tri-Layered Pb-Free Halide Perovskites for Optoelectronic Applications. 2019 , 5, 1900234	18	
542	Reshuffling of Electronic Environment by Introducing CH3NH2F+ as an Organic Cation for Enhanced Power Conversion Efficiency and Stability of the Designed Hybrid Organic/Inorganic Perovskite. 2019 , 123, 13385-13393	5	
541	Improved phase stability of the CsPbI perovskite via organic cation doping. 2019 , 21, 11175-11180	34	
540	Prediction of the Role of Bismuth Dopants in Organic/Inorganic Lead Halide Perovskites on Photoelectric Properties and Photovoltaic Performance. 2019 ,	19	
539	Bandgap alignment of CsPbI3 perovskites with synergistically enhanced stability and optical performance via B-site minor doping. 2019 , 61, 389-396	37	
538	Boosting inverted perovskite solar cell performance by using 9,9-bis(4-diphenylaminophenyl)fluorene functionalized with triphenylamine as a dopant-free hole transporting material. <i>Journal of Materials Chemistry A</i> , 2019 , 7, 12507-12517	13	52
537	Band engineering of two-dimensional Ruddlesden-Popper perovskites for solar utilization: the relationship between chemical components and electronic properties. <i>Journal of Materials Chemistry A</i> , 2019 , 7, 11530-11536	13	13
536	Influence of Chloride Substitution on the Rotational Dynamics of Methylammonium in MAPbI3-xClx Perovskites. 2019 , 123, 11436-11446	12	
535	Machine Learning Augmented Discovery of Chalcogenide Double Perovskites for Photovoltaics. 2019 , 2, 1800173	30	
534	Rationalizing the control of interfacial charge transfer directions in halide perovskite materials via additives: A first principles investigation. 2019 , 481, 1178-1184	10	

533	Novel hybrid semiconducting lead and tin halide perovskites with saturated heterocyclic cations (CH ₂) _n PH ₂ ⁺ and (CH ₂) _n SH ⁺ , (n=2-8): Ab initio study. 2019 , 229, 387-391	2
532	Comprehensive Computational Study of Partial Lead Substitution in Methylammonium Lead Bromide. 2019 , 31, 3599-3612	20
531	Pressure engineering of photovoltaic perovskites. 2019 , 27, 91-106	50
530	Optimum Luminescent Down-Shifting Properties for High Efficiency and Stable Perovskite Solar Cells. 2019 , 2, 2930-2938	24
529	Beyond quantum confinement: excitonic nonlocality in halide perovskite nanoparticles with Mie resonances. 2019 , 11, 6747-6754	29
528	Understanding structures and properties of phosphorene/perovskite heterojunction toward perovskite solar cell applications. 2019 , 89, 96-101	3
527	Formation of DY center as n-type limiting defects in octahedral semiconductors: the case of Bi-doped hybrid halide perovskites. 2019 , 7, 4230-4234	33
526	Theoretical Prediction of Chiral 3D Hybrid Organic-Inorganic Perovskites. 2019 , 31, e1807628	38
525	Materials Discovery of Stable and Nontoxic Halide Perovskite Materials for High-Efficiency Solar Cells. 2019 , 29, 1804354	34
524	Understanding adsorption of nucleobases on CH ₃ NH ₃ PbI ₃ surfaces toward biological applications of halide perovskite materials. 2019 , 483, 1052-1057	5
523	High-order harmonic generation from hybrid organic-inorganic perovskite thin films. 2019 , 7, 041107	32
522	Mechanochemical synthesis of the lead-free double perovskite Cs ₂ [AgIn]Br ₆ and its optical properties. 2019 , 1, 025003	15
521	Room-temperature synthesized SnO electron transport layers for efficient perovskite solar cells.. 2019 , 9, 9946-9950	11
520	Chlorine Passivation of Grain Boundary Suppresses Electron-Hole Recombination in CsPbBr ₃ Perovskite by Nonadiabatic Molecular Dynamics Simulation. 2019 , 2, 3419-3426	22
519	Electrochemical Detection and Characterization of Nanoparticles with Printed Devices. 2019 , 9,	16
518	From Lead Halide Perovskites to Lead-Free Metal Halide Perovskites and Perovskite Derivatives. 2019 , 31, e1803792	346
517	Origin of narrow band gap and optical anisotropy in solar cell absorbers L ₂ NiMnO ₆ (L = La, Eu): A comparative DFT study. 2019 , 161, 293-299	3
516	Two-Dimensional CH ₃ NH ₃ PbI ₃ with High Efficiency and Superior Carrier Mobility: A Theoretical Study. 2019 , 123, 5231-5239	23

515	Bi(Sb)NCa ₃ : Expansion of Perovskite Photovoltaics into All-Inorganic Anti-Perovskite Materials. 2019 , 123, 6363-6369	5
514	Slow Hot-Carrier Cooling in Halide Perovskites: Prospects for Hot-Carrier Solar Cells. 2019 , 31, e1802486	104
513	Halide Perovskites: Is It All about the Interfaces?. 2019 , 119, 3349-3417	287
512	Strain engineering in perovskite solar cells and its impacts on carrier dynamics. 2019 , 10, 815	286
511	Pulsed Terahertz Emission from Solution-Processed Lead Iodide Perovskite Films. 2019 , 6, 1175-1181	17
510	Theoretical study on halide and mixed halide Perovskite solar cells: Effects of halide atoms on the stability and electronic properties. 2019 , 66, 575-582	5
509	Electronic structure and optical properties of CsSnI ₃ 1-yBr _y (y = 0, 1, 2, 3) perovskites. 2019 , 33, 1950003	4
508	Aqueous Solution Processed Copper Iodide as Hole Transport Material For Planar Inverted Perovskite Solar Cells. 2019 ,	0
507	Time-Domain ab Initio Studies of Excited State Dynamics at Nanoscale Interfaces. 2019 , 101-136	2
506	A zwitterionic polymer as an interfacial layer for efficient and stable perovskite solar cells.. 2019 , 9, 30317-30324	4
505	Origin of Band-Tail and Deep-Donor States in CuZnSnS Solar Cells and Their Suppression through Sn-Poor Composition. 2019 , 10, 7929-7936	40
504	Halide-Perovskite Resonant Nanophotonics. 2019 , 7, 1800784	98
503	Rational chemical doping of metal halide perovskites. 2019 , 48, 517-539	130
502	The first-principle study of mechanical, optoelectronic and thermoelectric properties of CsGeBr ₃ and CsSnBr ₃ perovskites. 2019 , 6, 045901	18
501	Stable Bandgap-Tunable Hybrid Perovskites with Alloyed Pb-Ba Cations for High-Performance Photovoltaic Applications. 2019 , 10, 59-66	33
500	Two-Dimensional Lead-Free Perovskite (CH ₃ CH ₂ NH ₃)CsSnI ₃ with High Hole Mobility. 2019 , 10, 7-12	23
499	Tuning Bandgap of Mixed-Halide Perovskite for Improved Photovoltaic Performance Under Monochromatic-Light Illumination. 2019 , 216, 1800727	5
498	Effect of defect density and energy level mismatch on the performance of perovskite solar cells by numerical simulation. 2019 , 182, 1204-1210	32

497	Two-dimensional lead-free hybrid halide perovskite using superatom anions with tunable electronic properties. 2019 , 191, 33-38	75
496	Fabrication of perovskite solar cells based on vacuum-assisted linear meniscus printing of MAPbI ₃ . 2019 , 191, 148-156	16
495	Copper Chalcopyrites for Solar Energy Applications. 2019 , 72, 271-288	12
494	Theoretical insights on the binding of isoniazid to the active site residues of Mycobacterium tuberculosis catalase-peroxidase. 2019 , 114, 61-68	3
493	Semimetallicity and Negative Differential Resistance from Hybrid Halide Perovskite Nanowires. 2019 , 29, 1807620	8
492	Unusual pressure-induced electronic structure evolution in organometal halide perovskite predicted from first-principles. 2019 , 67, 89-94	11
491	Unraveling the Impact of Halide Mixing on Perovskite Stability. 2019 , 141, 3515-3523	71
490	Effect of perovskite film morphology on device performance of perovskite light-emitting diodes. 2019 , 11, 1505-1514	20
489	Electrodeposition of nanostructured TiO ₂ thin film as an efficient bifunctional layer for perovskite solar cells. 2019 , 295, 662-667	11
488	Theoretical study on photoelectric properties of lead-free mixed inorganic perovskite RbGe _{1-x} Sn _x I ₃ . 2019 , 19, 279-284	38
487	Impact of fluorine on organic cation for determining the electronic and optical properties of CH ₃ NH _{3-x} F _x NH ₃ PbI ₃ (x = 0, 1, 2, 3) hybrid perovskites-based photovoltaic devices. 2019 , 177, 517-530	7
486	Merits and Challenges of Ruddlesden-Popper Soft Halide Perovskites in Electro-Optics and Optoelectronics. 2019 , 31, e1803514	57
485	High-symmetry tin(II) iodides as promising light absorbers for solar cells: A theoretical prediction. 2019 , 156, 246-251	1
484	Unraveling the Stable Phase, High Absorption Coefficient, Optical and Mechanical Properties of Hybrid Perovskite CH ₃ NH ₃ Pb _x Mg _{1-x} I ₃ : Density Functional Approach. 2020 , 30, 299-309	7
483	Semiconductor behavior of halide perovskites AGeX ₃ (A = K, Rb and Cs; X = F, Cl and Br): first-principles calculations. 2020 , 94, 455-467	20
482	Inhibition of PDE4 protects neurons against oxygen-glucose deprivation-induced endoplasmic reticulum stress through activation of the Nrf-2/HO-1 pathway. 2020 , 28, 101342	26
481	Lead-Free Double Perovskites for Perovskite Solar Cells. 2020 , 4, 1900306	64
480	Present Status and Research Prospects of Tin-based Perovskite Solar Cells. 2020 , 4, 1900310	34

479	Verringerung schädlicher Defekte für leistungsstarke Metallhalogenid-Perowskit-Solarzellen. 2020 , 132, 6740-6764	7
478	Photoexcited charge carrier behaviors in solar energy conversion systems from theoretical simulations. 2020 , 10, e1441	3
477	Reducing Detrimental Defects for High-Performance Metal Halide Perovskite Solar Cells. 2020 , 59, 6676-6698	171
476	The Effect of SnO ₂ and ZnO on the Performance of Perovskite Solar Cells. 2020 , 49, 364-376	9
475	Circular formation flight control for unmanned aerial vehicles with directed network and external disturbance. 2020 , 7, 505-516	31
474	Additive Engineering for Efficient and Stable Perovskite Solar Cells. 2020 , 10, 1902579	259
473	Geological Exploration Using Integrated Geophysical Methods in Tunnel: A Case. 2020 , 38, 1111-1119	0
472	It's a trap! On the nature of localised states and charge trapping in lead halide perovskites. 2020 , 7, 397-410	204
471	A highly sensitive and selective hydroquinone sensor based on a newly designed N-rGO/SrZrO ₃ composite. 2020 , 2, 502-511	35
470	Strain engineering and epitaxial stabilization of halide perovskites. 2020 , 577, 209-215	213
469	Designing solar-cell absorber materials through computational high-throughput screening. 2020 , 29, 028803	3
468	Preparation of Ordered MAPbI ₃ Perovskite Needle-Like Crystal Films by Electric Field and Microdroplet Jetting 3D Printing. 2020 , 20, 1405-1414	4
467	Air-processed carbon-based perovskite solar cells with enhanced efficiency and stability: Effect of temperature control and using CuSCN. 2020 , 821, 153272	19
466	Photovoltaic Effect Related to Methylammonium Cation Orientation and Carrier Transport Properties in High-Performance Perovskite Solar Cells. 2020 , 12, 3563-3571	7
465	Light-Enhanced Spin Diffusion in Hybrid Perovskite Thin Films and Single Crystals. 2020 , 12, 3205-3213	8
464	From Pb to Bi: A Promising Family of Pb-Free Optoelectronic Materials and Devices. 2020 , 10, 1902496	56
463	MAPbBr ₃ Crystals Improved by Accurate Solution-Grown Procedure for Alpha Particle Detection. 2020 , 7,	2
462	An internally photoemitted hot carrier solar cell based on organic-inorganic perovskite. 2020 , 68, 104383	18

461	Examining the uniform strain effect on elastic, electronic and optical properties of CsPbCl ₃ through FP-LAPW calculations. 2020 , 531, 110654	5
460	Perovskite solar cells: The new epoch in photovoltaics. 2020 , 196, 295-309	27
459	Thermal Effects and Halide Mixing of Hybrid Perovskites: MD and XPS Studies. 2020 , 124, 135-140	4
458	Characterizing MAPbI ₃ with the aid of first principles calculations. 2020 , 217-236	0
457	Research Direction toward Scalable, Stable, and High Efficiency Perovskite Solar Cells. 2020 , 10, 1903106	118
456	Improved Pore-Filling and Passivation of Defects in Hole-Conductor-Free, Fully Printable Mesoscopic Perovskite Solar Cells Based on d-Sorbitol Hexaacetate-Modified MAPbI. 2020 , 12, 47677-47683	5
455	Enhanced Luminescence and Mechanistic Studies on Layered Double-Perovskite Phosphors: Cs ₄ Cd _{1-x} MnxBi ₂ Cl ₁₂ . 2020 , 32, 9307-9315	17
454	Edge Influence on Charge Carrier Localization and Lifetime in CH ₃ NH ₃ PbBr Perovskite: Quantum Dynamics Simulation. 2020 , 11, 9100-9109	20
453	Epitaxial and quasiepitaxial growth of halide perovskites: New routes to high end optoelectronics. 2020 , 8, 100904	7
452	Thin film solar cell efficiency enhancement using a gradient doping absorbent layer. 2020 , 108, 110443	3
451	A review on atomic layer deposited buffer layers for Cu(In,Ga)Se ₂ (CIGS) thin film solar cells: Past, present, and future. 2020 , 209, 515-537	8
450	Strategy for the Complete Conversion of Thermally Grown PbI ₂ Layers in Inverted Perovskite Solar Cells. 2020 , 16, 588-594	4
449	Effects of Bromine Doping on the Structural Properties and Band Gap of CH ₃ NH ₃ Pb(I Br) Perovskite. 2020 , 5, 26946-26953	7
448	Insight into the Origins of Figures of Merit and Design Strategies for Organic/Inorganic Lead-Halide Perovskite Solar Cells. 2020 , 4, 2000452	6
447	Optoelectronic properties of the novel perovskite materials LiPb(Cl:Br:I) ₃ for enhanced hydrogen production by visible photo-catalytic activity: Theoretical prediction based on empirical formulae and DFT. 2020 , 45, 33466-33477	4
446	Perovskite solar cells: importance, challenges, and plasmonic enhancement. 2020 , 17, 1022-1035	11
445	Perovskite Solar Cells for BIPV Application: A Review. 2020 , 10, 129	22
444	Environmental assessment of transparent conductive oxide-free efficient flexible organo-lead halide perovskite solar cell. 2020 , 1-10	1

443	Structure and Optical Properties of Layered Perovskite (MA)PbIBr(SCN) (0 2020, 59, 17379-17384	2
442	Interfacial electronic features in methyl-ammonium lead iodide and p-type oxide heterostructures: new insights for inverted perovskite solar cells. 2020 , 22, 28401-28413	5
441	Influence of Dimethyl Sulfoxide on the Structural Topology during Crystallization of Pbl. 2020 , 59, 16799-16803	
440	Microscopic Picture of Electron-Phonon Interaction in Two-Dimensional Halide Perovskites. 2020 , 11, 9975-9982	8
439	Perovskite Tandem Solar Cells: From Fundamentals to Commercial Deployment. 2020 , 120, 9835-9950	93
438	Halide Perovskite Materials for Energy Storage Applications. 2020 , 30, 2003653	26
437	Effects of compositional engineering and surface passivation on the properties of halide perovskites: a theoretical understanding. 2020 , 22, 19718-19724	4
436	High-Efficiency Perovskite Solar Cells. 2020 , 120, 7867-7918	587
435	Photoinduced Dynamics of Charge Carriers in Metal Halide Perovskites from an Atomistic Perspective. 2020 , 11, 7066-7082	28
434	The surface of halide perovskites from nano to bulk. 2020 , 5, 809-827	119
433	Indium Doping of Lead-Free Perovskite CsSnI. 2020 , 8, 564	3
432	Symmetry Breaking Induced Anisotropic Carrier Transport and Remarkable Thermoelectric Performance in Mixed Halide Perovskites CsPb(I,Br). 2020 , 12, 40453-40464	21
431	Physical and optoelectronic features of lead-free A ₂ AgRhBr ₆ (A = Cs, Rb, K, Na, Li) with halide double perovskite composition. 2020 , 8, 12968-12983	9
430	High mechanical strength and broad optical absorption in underexplored group IV nitride chalcogenides. 2020 , 56, 10962-10965	2
429	Defects and Their Passivation in Hybrid Halide Perovskites toward Solar Cell Applications. 2020 , 4, 2000505	19
428	Durable strategies for perovskite photovoltaics. 2020 , 8, 100703	3
427	Photo-excited charge carrier imaging by time-resolved pattern illumination phase microscopy. 2020 , 153, 054201	8
426	Near-Infrared-Transparent Perovskite Solar Cells and Perovskite-Based Tandem Photovoltaics. 2020 , 4, 2000395	27

425	Modulating Charge Carrier Dynamics and Transfer via Surface Modifications in Organometallic Halide Perovskite Quantum Dots. 2020 , 11, 7886-7892	7
424	Structural, optical, transport, and solar cell properties of 2D halide perovskite MAZX ₃ (Z = Pb, Sn, and X = Cl, Br, I). 2020 , 128, 114304	4
423	Superior Carrier Lifetimes Exceeding 6 μ s in Polycrystalline Halide Perovskites. 2020 , 32, e2002585	64
422	Recent Progress in Metal Halide Perovskite-Based Tandem Solar Cells. 2020 , 32, e2002228	19
421	Isothermally crystallized perovskites at room-temperature. 2020 , 13, 3412-3422	71
420	Importance of tailoring lattice strain in halide perovskite crystals. 2020 , 12,	30
419	All inkjet-printed perovskite-based bolometers. 2020 , 4,	6
418	Efficiency of TiO ₂ /Perovskites/Cu ₂ O Solar Cells with Optimal Thickness at Varying of Environment Temperature. 2020 , 928, 072044	1
417	Low Energy Beta Emitter Measurement: A Review. 2020 , 8, 106	6
416	Deep insights into interface engineering by buffer layer for efficient perovskite solar cells: a first-principles study. 2020 , 63, 1588-1596	3
415	Structural Deformation Controls Charge Losses in MAPbI ₃ : Unsupervised Machine Learning of Nonadiabatic Molecular Dynamics. 2020 , 5, 1930-1938	32
414	Dopant-Free Triazatruxene-Based Hole Transporting Materials with Three Different End-Capped Acceptor Units for Perovskite Solar Cells. 2020 , 10,	3
413	Optical Properties and First-Principles Study of CHNHPbBr Perovskite Structures. 2020 , 5, 12313-12319	4
412	Double perovskite Ba ₂ BiTaO ₆ as a promising p-type transparent conductive oxide: A first-principles defect study. 2020 , 127, 175703	6
411	Recent Advancements and Challenges for Low-Toxicity Perovskite Materials. 2020 , 12, 26776-26811	44
410	Low Lattice Mismatch InSeBe Vertical Van der Waals Heterostructure for High-performance Transistors via Strong Fermi-Level Depinning. 2020 , 4, 2000238	11
409	CsNaGaBr: a new lead-free and direct band gap halide double perovskite.. 2020 , 10, 17444-17451	23
408	Lead-free perovskite solar cells enabled by hetero-valent substitutes. 2020 , 13, 2363-2385	58

407	Defect suppression and passivation for perovskite solar cells: from the birth to the lifetime operation. 2020 , 2, 100032	12
406	Metal Organic hybrids of tin(IV) with tuneable band gap: Synthesis, spectral, single crystal X-ray structural, BVS and CSM analysis of morpholinium hexahalostannate(IV). 2020 , 1218, 128489	4
405	Fabrication of high efficiency, low-temperature planar perovskite solar cells via scalable double-step crystal engineering deposition method fully out of glove box. 2020 , 206, 181-187	4
404	High-Performance Photovoltaic Materials Based on the Superlattice Structures of Organic-Inorganic Halide Perovskite and Superhalogen Hybrid Perovskite. 2020 , 11, 5282-5294	10
403	Construction of High Field-Effect Mobility Multilayer MoS ₂ Field-Effect Transistors with Excellent Stability through Interface Engineering. 2020 , 2, 2132-2140	14
402	Green perovskite light-emitting diodes with simultaneous high luminance and quantum efficiency through charge injection engineering. 2020 , 65, 1832-1839	15
401	Layered perovskite materials: key solutions for highly efficient and stable perovskite solar cells. 2020 , 83, 086502	23
400	Organic-inorganic hybrid perovskite electronics. 2020 , 22, 13347-13357	12
399	Emerging memory devices for artificial synapses. 2020 , 8, 9163-9183	20
398	Recent advances in synthesis, surface chemistry of cesium lead-free halide perovskite nanocrystals and their potential applications. 2020 , 157-228	1
397	Enhancement of Cu(In,Ga)Se ₂ solar cells efficiency by controlling the formation of Cu-deficient layer. 2020 , 59, 041003	8
396	Methylamine-Dimer-Induced Phase Transition toward MAPbI Films and High-Efficiency Perovskite Solar Modules. 2020 , 142, 6149-6157	32
395	Dynamical properties of organo lead-halide perovskites and their interfaces to titania: insights from Density Functional Theory. 2020 , 6, e03427	2
394	Reviewing and understanding the stability mechanism of halide perovskite solar cells. 2020 , 2, 1034-1056	29
393	Photovoltaic parameters and stability study of HTM-free mixed-cation perovskite solar cells by incorporating additives to absorbing layers. 2020 , 31, 7123-7132	2
392	Choline Chloride-Modified SnO ₂ Achieving High Output Voltage in MAPbI ₃ Perovskite Solar Cells. 2020 , 3, 3504-3511	29
391	Electrodeposition of CuI Thin Film for Perovskite Solar Cells. 2020 , 979, 180-184	
390	Active circuit model of low-frequency behavior in perovskite solar cells. 2020 , 85, 105804	3

389	A-Site Cation Engineering of Metal Halide Perovskites: Version 3.0 of Efficient Tin-Based Lead-Free Perovskite Solar Cells. 2020 , 30, 2000794	49	
388	Insights of Hysteresis Behaviors in Perovskite Solar Cells from a Mixed Drift-Diffusion Model Coupled with Recombination. 2020 , 7, 47	6	
387	Flexible Solar Yarns with 15.7% Power Conversion Efficiency, Based on Electrospun Perovskite Composite Nanofibers. 2020 , 4, 2000269	15	
386	Theoretical Progress on the Relationship between the Structures and Properties of Perovskite Solar Cells. 2020 , 3, 2000022	4	
385	Metal contamination and bioremediation of agricultural soils for food safety and sustainability. 2020 , 1, 366-381	171	
384	Defect Energetics in Pseudo-Cubic Mixed Halide Lead Perovskites from First-Principles. 2020 , 124, 16729-16738		
383	A study of structural and dielectric properties of Ba ²⁺ doped CH ₃ NH ₃ PbI ₃ crystals. 2020 , 2, 1	2	
382	A Nonionic and Low-Entropic MA(MMA) _n PbI ₃ -Ink for Fast Crystallization of Perovskite Thin Films. 2020 , 4, 615-630	23	
381	From Distortion to Disconnection: Linear Alkyl Diammonium Cations Tune Structure and Photoluminescence of Lead Bromide Perovskites. 2020 , 8, 1902051	14	
380	Arranging strategies for A-site cations: impact on the stability and carrier migration of hybrid perovskite materials. 2020 , 7, 1741-1749	10	
379	Perovskite hetero-anionic-sublattice interfaces for optoelectronics and nonconventional electronics. 2020 , 12, 7263-7272	3	
378	Incorporating self-assembled silane-crosslinked carbon dots into perovskite solar cells to improve efficiency and stability. <i>Journal of Materials Chemistry A</i> , 2020 , 8, 5629-5637	13	16
377	An Effective Strategy for Photoelectric Performance Enhancement of 2D Perovskite via Halogenating Organic Cation: A Theoretical Prediction. 2020 , 257, 1900599	1	
376	Ammoniated aqueous precursor ink processed copper iodide as hole transport layer for inverted planar perovskite solar cells. 2020 , 210, 110486	15	
375	Pb dimerization greatly accelerates charge losses in MAPbI ₃ : Time-domain ab initio analysis. 2020 , 152, 064707	7	
374	Extraordinary Strong Band-Edge Absorption in Distorted Chalcogenide Perovskites. 2020 , 4, 1900555	31	
373	Layer-dependent optoelectronic property for all-inorganic two-dimensional mixed halide perovskite Cs ₂ PbI ₂ Cl ₂ with a Ruddlesden-Popper structure. 2020 , 451, 227732	36	
372	Stable and High-Efficiency Methylammonium-Free Perovskite Solar Cells. 2020 , 32, e1905502	86	

371	Optoelectronic Properties and Defect Physics of Lead-Free Photovoltaic Absorbers Cs ₂ AuI ₃ AuIIX ₆ (X=I,Br). 2020 , 13,		8
370	Structure, electronic and optical properties of Cs ₂ Ti(Br _{1-x} Y _x) ₆ (Y = Cl, I; x = 0, 0.25, 0.5, 0.75, 1) perovskites: The first principles investigations. 2020 , 284, 121213		13
369	2-Methylimidazole as an interlayer for the enhancement of the open-circuit voltage in perovskite solar cells. 2020 , 450, 227714		5
368	Effect of Affinity Discontinuity on Heterojunction p-i-n Solar Cell Performance. 2020 , 10, 458-466		2
367	Pressure responses of halide perovskites with various compositions, dimensionalities, and morphologies. 2020 , 5, 018201		35
366	Effects of halogen substitutions on the properties of CH ₃ NH ₃ Sn _{0.5} Pb _{0.5} I ₃ perovskites. 2020 , 177, 109576		1
365	Bandgap Engineering and Efficient Conversion of a Ternary Perovskite (Cs ₃ Bi ₂ I ₉) to a Double Perovskite (Cs ₂ NaBiI ₆) with the Aid of Alkali Metal Sulfide. 2020 , 124, 10878-10886		9
364	New Pigeonholing Approach for Selection of Solvents Relevant to Lead Halide Perovskite Processing. 2020 , 124, 11117-11123		18
363	Recent progress in morphology optimization in perovskite solar cell. <i>Journal of Materials Chemistry A</i> , 2020 , 8, 21356-21386	13	76
362	Halogen-containing semiconductors: From artificial photosynthesis to unconventional computing. 2020 , 415, 213316		9
361	Nature of terrace edge states (TES) in lower-dimensional halide perovskite. <i>Journal of Materials Chemistry A</i> , 2020 , 8, 7659-7670	13	8
360	Theoretical prediction of double perovskite Cs ₂ Ag _x Cu _{1-x} In _y Tb _{1-y} Cl ₆ for infrared detection. 2020 , 53, 265302		21
359	Recent Advances and Optoelectronic Applications of Lead-Free Halide Double Perovskites. 2020 , 26, 16975-16984		15
358	Charge localization control of electron-hole recombination in multilayer two-dimensional DionJacobson hybrid perovskites. <i>Journal of Materials Chemistry A</i> , 2020 , 8, 9168-9176	13	23
357	Highly efficient sandwich structured Perovskite solar cell using PEDOT:PSS in room ambient conditions. 2021 , 34, 675-678		2
356	Intermediates transformation for efficient perovskite solar cells. 2021 , 52, 102-114		14
355	Development of tin-based perovskite materials for solar cell applications: A minireview. 2021 , 49, 91-105		5
354	Advanced Characterization Techniques for Overcoming Challenges of Perovskite Solar Cell Materials. 2021 , 11, 2001753		13

353	High-throughput computational screening of oxide double perovskites for optoelectronic and photocatalysis applications. 2021 , 57, 351-358		4
352	Study of recombination process of lead-free cesium titanium (IV) based single halide and mixed halide perovskite compounds absorbing layer. 2021 , 46, 5194-5197		1
351	Universal sensing of ammonia gas by family of lead halide perovskites based on paper sensors: Experiment and molecular dynamics. 2021 , 136, 111142		10
350	Phase transitions and properties of 0D hybrid iodoantimonate(III) and iodobismuthate(III) semiconducting ferroics: $[\text{C}(\text{NH}_2)_3]_3\text{Bi}_2\text{I}_9$ and $[\text{C}(\text{NH}_2)_3]_3\text{Sb}_2\text{I}_9$. 2021 , 1226, 129387		2
349	Effects of A site doping on the crystallization of perovskite films. <i>Journal of Materials Chemistry A</i> , 2021 , 9, 1372-1394	13	14
348	Liquid metal technology in solar power generation - Basics and applications. 2021 , 222, 110925		12
347	Lead or no lead? Availability, toxicity, sustainability and environmental impact of lead-free perovskite solar cells. 2021 , 9, 67-76		47
346	Semi-transparent perovskite solar cells with bidirectional transparent electrodes. 2021 , 82, 105703		29
345	High-throughput computational design of halide perovskites and beyond for optoelectronics. 2021 , 11, e1500		5
344	Ambient Fabrication of Organic-Inorganic Hybrid Perovskite Solar Cells.. 2021 , 5, e2000744		23
343	Graphene dispersion as a passivation layer for the enhancement of perovskite solar cell stability. 2021 , 257, 123798		8
342	Preparation and Properties of Films of Organic-Inorganic Perovskites MAPbX_3 (MA = CH_3NH_3 ; X = Cl, Br, I) for Solar Cells: A Review. 2021 , 56, 359-386		2
341	Theoretical study of the influence of doped niobium on the electronic properties of CsPbBr_3 . 2021 , 3, 1910-1916		1
340	First-principles study of defect control in thin-film solar cell materials. 2021 , 64, 1		7
339	Dye-Sensitized and Perovskite Solar Cells: Theory and Applications. 2021 , 558-594		
338	Accelerated design of promising mixed lead-free double halide organic-inorganic perovskites for photovoltaics using machine learning. 2021 , 13, 12250-12259		5
337	Photo-energy conversion efficiency of $\text{CH}_3\text{NH}_3\text{PbI}_3/\text{C}_60$ heterojunction perovskite solar cells from first-principles. 2021 , 2, 1665-1675		0
336	Lead-free halide perovskites: a review of the structure-property relationship and applications in light emitting devices and radiation detectors. <i>Journal of Materials Chemistry A</i> , 2021 , 9, 11931-11943	13	8

- 335 A high-throughput study of oxynitride, oxyfluoride and nitrofluoride perovskites. *Journal of Materials Chemistry A*, **2021**, 9, 8501-8513 13 7
- 334 Perovskite solar cells as modern nano tools and devices in solar power energy. **2021**, 377-427 3
- 333 Pushing commercialization of perovskite solar cells by improving their intrinsic stability. **2021**, 14, 3233-3255 55
- 332 Understanding liquefaction in halide perovskites upon methylamine gas exposure.. **2021**, 11, 20423-20428
- 331 Sublattice mixing in Cs₂AgInCl₆ for enhanced optical properties from first-principles. **2021**, 118, 021901 4
- 330 Tuning Ionic and Electronic Conductivities in the Hollow Perovskite MAPbI₃. **2021**, 33, 719-726 12
- 329 Effect of Heat Treatment on Performance of Perovskite Solar Cells. **2021**, 11, 801-809
- 328 Optimizing kesterite solar cells from Cu₂ZnSnS₄ to Cu₂CdGe(S,Se)₄. *Journal of Materials Chemistry A*, **2021**, 9, 9882-9897 13 5
- 327 Lead-Free Perovskite Nanocomposites: An Aspect for Environmental Application.
- 326 Nanoscale light- and voltage-induced lattice strain in perovskite thin films. **2021**, 13, 746-752 5
- 325 Kinetic Monte Carlo Simulation of Perovskite Solar Cells to Probe Film Coverage and Thickness. **2021**, 2, 2000068 1
- 324 Polyhydroxy Ester Stabilized Perovskite for Low Noise and Large Linear Dynamic Range of Self-Powered Photodetectors. **2021**, 21, 1500-1507 9
- 323 Interface Engineering of Perovskite/Hole Transport Layer Using Nano-Network Formation in Small Molecule Polymer Blend for Efficient Inverted Perovskite Solar Cells. **2021**, 8, 2001891 0
- 322 Influence of Fluorinated Components on Perovskite Solar Cells Performance and Stability. **2021**, 17, e2004081 10
- 321 Flexible MAPbI₃ perovskite solar cells with the high efficiency of 16.11% by low-temperature synthesis of compact anatase TiO₂ film. **2021**, 854, 155488 5
- 320 A review of experimental and computational attempts to remedy stability issues of perovskite solar cells. **2021**, 7, e06211 4
- 319 Smoothing the energy transfer pathway in quasi-2D perovskite films using methanesulfonate leads to highly efficient light-emitting devices. **2021**, 12, 1246 113
- 318 Monte-Carlo Study of Ion-Sputtering Parameters and Ab-Initio Calculations of Selected Perovskites for Solar-Powered Electricity. **2021**, 655, 012061

317	Comparison of spectral responses of Cs ₂ TiI ₆ -XBrX based Perovskite device with CdS and TiO ₂ Electron transport layer. 2021 , 1080, 012007	1
316	1D Perovskitoid as Absorbing Material for Stable Solar Cells. 2021 , 11, 241	7
315	Reconfiguring the band-edge states of photovoltaic perovskites by conjugated organic cations. 2021 , 371, 636-640	69
314	Electronic States Modulation by Coherent Optical Phonons in 2D Halide Perovskites. 2021 , 33, e2006233	9
313	Passivation Properties and Formation Mechanism of Amorphous Halide Perovskite Thin Films. 2021 , 31, 2010330	4
312	Cathode luminescence analysis of Cu(In,Ga)Se ₂ solar cells treated with thiourea solution. 2021 , 60, 031001	1
311	Preliminary Studies of Perovskite-Loaded Plastic Scintillator Prototypes for Radioactive Strontium Detection. 2021 , 9, 53	6
310	Accelerating the development of new solar absorbers by photoemission characterization coupled with density functional theory. 2021 , 3, 032001	1
309	First-principles investigation on the photovoltaic properties of lead free earth abundant (CH ₃ NH ₃) ₂ SnI ₆ perovskite. 2021 , 129, 125701	0
308	Predicting efficiencies >25% A ₃ MX ₃ photovoltaic materials and Cu ion implantation modification. 2021 , 118, 111902	4
307	Study of Physical, Optical, and Electrical Properties of Cesium Titanium (IV)-Based Single Halide Perovskite Solar Cell. 2021 , 11, 386-390	7
306	High thermoelectric efficiency fluoride perovskite materials of AgMF ₃ (M = Zn, Cd). 2021 , 19, 100611	3
305	Lead-free and electron transport layer-free perovskite yarns: Designed for knitted solar fabrics. 2021 , 410, 128384	3
304	Photovoltaic properties of metal-free semiconductor DMEDA ¹⁶ : A first-principles investigation. 2021 , 8, 045901	
303	Adsorption and Diffusion of Halogen Gas Molecules on CH ₃ NH ₃ PbI ₃ Halide Perovskite Surfaces. 2021 , 95, 792-798	
302	Role of octahedral deformation in the broad-band emission in Mn-doped lead halide perovskite: First-principles investigation for the case of CsPbX ₃ (X = Cl, Br, I). 2021 , 118, 163901	2
301	Scalable synthesis of highly luminescent and stable thiocyanate based CsPbX ₃ perovskite nanocrystals for efficient white light-emitting diodes. 2021 , 860, 158501	6
300	Guanidinium tin halide perovskites: structural, electronic, and thermodynamic properties by quantum chemical study. 2021 , 127, 1	0

299	Elpasolite structures based on A_2AgBiX_6 (A: MA, Cs, X: I, Br): Application in double perovskite solar cells. 2021 , 125, 105639	8
298	Electronic structure and optical properties of $SnO_2/HC(NH_2)_2PbI_3$ interfaces from first-principles calculations. 2021 , 23, 100913	3
297	Optimizing Research on Solar Cell Semiconductor Materials in Optoelectronic Materials and Devices. 2021 , 1865, 022078	1
296	Recent Progress on Electrical and Optical Manipulations of Perovskite Photodetectors. 2021 , 8, e2100569	37
295	Phase transition pathway of hybrid halide perovskites under compression: Insights from first-principles calculations. 2021 , 5,	3
294	Adsorption and diffusion of lithium ions on lead-free two-dimensional halide perovskite surface toward energy storage applications. 2021 , 45, 16524-16537	1
293	A new lead free double perovskites $K_2Ti(Cl/Br)_6$; a promising materials for optoelectronic and transport properties; probed by DFT. 2021 , 264, 124435	12
292	Polar or nonpolar? That is not the question for perovskite solar cells. 2021 , 8, nwab094	7
291	Morphology evolution towards ultra-stable mixed tin-lead perovskite via compositional engineering. 2021 , 115, 106586	0
290	Toward Large-Area and Fully Solution-Sheared Perovskite Solar Cells. 2021 , 13, 25926-25936	4
289	Exploring inorganic and nontoxic double perovskites $Cs_2AgInBr_6(1-x)Cl_6x$ from material selection to device design in material genome approach. 2021 , 862, 158575	4
288	Impact of A-Site Cations on Fluorescence Quenching in Organic-Inorganic Hybrid Perovskite Materials. 2021 , 125, 11524-11531	0
287	Halide Perovskites: A New Era of Solution-Processed Electronics. 2021 , 33, e2005000	48
286	Pressure induced semiconductor to metal phase transition in cubic $CsSnBr_3$ perovskite. 2021 , 11, 055024	5
285	Molecular Disorder Induces an Unusual Phase Transition in a Potential 2D Chiral Ferroelectric Perovskite. 2021 , 27, 9054-9059	6
284	Alternative Lone-Pair ns ² -Cation-Based Semiconductors beyond Lead Halide Perovskites for Optoelectronic Applications. 2021 , 33, e2008574	9
283	Open for Bismuth: Main Group Metal-to-Ligand Charge Transfer. 2021 , 60, 10137-10146	5
282	Comparative analysis of machine learning approaches on the prediction of the electronic properties of perovskites: A case study of ABX_3 and A_2BBX_6 . 2021 , 27, 102462	2

281	Theoretical study on defect properties of two-dimensional multilayer Ruddlesden-Popper lead iodine perovskite. 2021 , 194, 110457	4
280	Methylammonium lead bromide based planar perovskite solar cells using various electron transport layers. 2021 , 221, 456-467	4
279	Study of performance and stability of hole transport layer-free perovskite solar cells with modified electron transport layer. 2021 , 32, 17602-17611	2
278	Universal Strategy for Improving Perovskite Photodiode Performance: Interfacial Built-In Electric Field Manipulated by Unintentional Doping. 2021 , 8, e2101729	6
277	Structural and Magnetic Properties of BaFeO Synthesized by Oxidizing BaFeO Obtained via Nebulized Spray Pyrolysis. 2021 , 60, 10923-10933	1
276	Halide-modulated self-assembly of metal-free perovskite single crystals for bio-friendly X-ray detection. 2021 , 4, 2490-2507	12
275	Stable and low-photovoltage-loss perovskite solar cells by multifunctional passivation. 2021 , 15, 681-689	72
274	Lead acetate precursors for preparing CsPbI ₃ light harvester layers of inorganic perovskite solar cells. 2021 , 222, 212-218	4
273	Fiber-Shaped Electronic Devices. 2021 , 11, 2101443	15
272	Layered metal halide perovskite solar cells: A review from structure-properties perspective towards maximization of their performance and stability. 2021 , 3, e12124	12
271	Electronic structure transition of cubic CsSnCl under pressure: effect of rPBE and PBEsol functionals and GW method. 2021 , 7, e07796	1
270	Perspective on the band structure engineering and doping control of transparent conducting materials. 2021 , 119, 070502	1
269	Band-Gap-Engineered Transparent Perovskite Solar Modules to Combine Photovoltaics with Photosynthesis. 2021 , 13, 39230-39238	1
268	A review on perovskite materials with solar cell prospective.	4
267	A highly-efficient concentrated perovskite solar cell-thermoelectric generator tandem system. 2021 , 59, 730-735	2
266	First-principles prediction of the ground-state crystal structure of double-perovskite halides Cs ₂ AgCrX ₆ (X = Cl, Br, and I). 2021 , 110302	10
265	Unusual defect properties in multivalent perovskite Cs ₂ Au ₂ I ₆ : A first-principles study. 2021 , 5,	0
264	First principle study of structural, mechanical, electronic and optical properties of K ₂ TiX ₆ (X=Cl, Br, I) for photovoltaic applications. 2021 , 118, 106654	1

263	Study of optical and thermoelectric properties of ZYbI ₃ (Z = Rb, Cs) for solar cells and renewable energy; Modelling by density functional theory. 2021 , 155, 110117	6
262	Dimension-controlled halide perovskites using templates. 2021 , 39, 101181	5
261	Cost-Effective High-Throughput Calculation Based on Hybrid Density Functional Theory: Application to Cubic, Double, and Vacancy-Ordered Halide Perovskites. 2021 , 12, 7885-7891	4
260	Highly controllable synthesis of MAPbI ₃ perovskite nanocrystals with long carrier lifetimes and narrow band gap for application in photodetectors. 2021 , 872, 159589	4
259	Computational discovery of energy materials in the era of big data and machine learning: A critical review. 2021 , 1, 100047	7
258	Large-area fabrication: The next target of perovskite light-emitting diodes*. 2021 , 30, 088502	1
257	Chlorides, other Halides, and Pseudo-Halides as Additives for the Fabrication of Efficient and Stable Perovskite Solar Cells. 2021 , 14, 3665-3692	5
256	Stability study of large-area perovskite solar cells fabricated with copper as low-cost metal contact.	8
255	First-principles investigation on the thickness-dependent optoelectronic properties of two-dimensional perovskite BA ₂ SnI ₄ . 2021 , 616, 413070	1
254	Progress of Pb-Sn Mixed Perovskites for Photovoltaics: A Review.	3
253	High Efficiency (9.60) of CI Perovskites base solar cells with PCBM (ETM) and P3HT (HTM). 2021 , 1999, 012049	
252	Design and Numerical Investigation of a Lead-Free Inorganic Layered Double Perovskite CsCuSbCl Nanocrystal Solar Cell by SCAPS-1D. 2021 , 11,	9
251	Integration of buildings with third-generation photovoltaic solar cells: a review. 2021 , 5, 505-526	1
250	Promising Lead-Free Double-Perovskite Photovoltaic Materials Cs ₂ MM ² Br ₆ (M = Cu, Ag, and Au; M ² = Ga, In, Sb, and Bi) with an Ideal Band Gap and High Power Conversion Efficiency. 2021 , 125, 21160-21168	4
249	Synthesis, characterization and optoelectronic properties of 2D hybrid RPbX ₄ semiconductors based on an isomer mixture of hexanediamine-based dications. 2021 ,	
248	Atomic-scale understanding on the physics and control of intrinsic point defects in lead halide perovskites. 2021 , 8, 031302	15
247	Roll-To-Roll Friendly Solution-Processing of Ultrathin, Sintered CdTe Nanocrystal Photovoltaics. 2021 , 13, 44165-44173	2
246	Density Functional Study of Structural, Electronic and Optical Properties of Bromine-Doped CsPbI ₃ with the Tetragonal Symmetry. 2021 , 892, 162165	3

245	Direct band gap halide-double-perovskite absorbers for solar cells and light emitting diodes: Ab initio study of bulk and layers. 2021 , 5,	3
244	Strain engineering in metal halide perovskite materials and devices: Influence on stability and optoelectronic properties. 2021 , 2, 031302	8
243	Phenylformamidinium-enabled quasi-2D Ruddlesden-Popper perovskite solar cells with improved stability. 2021 , 66, 680-680	5
242	Life cycle assessment of high-performance monocrystalline titanium dioxide nanorod-based perovskite solar cells. 2021 , 230, 111288	1
241	Solving the equivalent circuit of a planar heterojunction perovskite solar cell using Lambert W-function. 2021 , 337, 114439	1
240	Photosensitive antimony triiodide thin films by rapid iodization of chemically deposited antimony sulfide. 2021 , 142, 111382	1
239	Optimizing photovoltaic conversion of solar energy. 2021 , 11, 100701	2
238	Atomic-resolution investigation of structural transformation caused by oxygen vacancy in La _{0.9} Sr _{0.1} TiO ₃ + titanate layer perovskite ceramics. 2022 , 104, 172-182	4
237	Perovskite light-emitting diodes with low roll-off efficiency via interfacial ionic immobilization. 2022 , 429, 132347	1
236	All inorganic lead free solar cell material Cs ₂ PdI ₆ : a first-principles study. 2021 , 14, 021005	1
235	On the crystal chemistry of inorganic nitrides: crystal-chemical parameters, bonding behavior, and opportunities in the exploration of their compositional space. 2021 , 12, 4599-4622	3
234	Inner Strain Regulation in Perovskite Single Crystals through Fine-Tuned Halide Composition. 2021 , 21, 1741-1750	7
233	Computational Modeling and the Design of Perovskite Solar Cells. 2019 , 1-16	1
232	Magnetic, Electronic, and Optical Properties of Perovskite Materials. 2020 , 43-59	3
231	The photophysical anisotropy and electronic structure of new narrow band gap perovskites Ln ₂ AlMnO ₆ (Ln = La, Pr, Nd): An experimental and DFT perspective. 2020 , 46, 21021-21032	5
230	Insight into the structural, electronic, mechanical and optical properties of inorganic lead bromide perovskite APbBr ₃ (A' = Li, Na, K, Rb, and Cs). 2020 , 24, e00478	4
229	Combined optical-electrical modeling of perovskite solar cell with an optimized design. 2020 , 109, 110259	11
228	Modified Antisolvent Method for Improving the Performance and Stability of Triple-Cation Perovskite Solar Cells. 2021 , 6, 172-179	10

227	Chapter 8:First Principles Modeling of Perovskite Solar Cells: Interplay of Structural, Electronic and Dynamical Effects. 2016 , 234-296	2
226	CHAPTER 4:Halide Perovskites With Ambipolar Transport Properties for Transistor Applications. 2020 , 41-82	2
225	Dopant-free novel hole-transporting materials based on quinacridone dye for high-performance and humidity-stable mesoporous perovskite solar cells. <i>Journal of Materials Chemistry A</i> , 2019 , 7, 5315-5323	55
224	Microstructural and photoconversion efficiency enhancement of compact films of lead-free perovskite derivative Rb ₃ Sb ₂ I ₉ . <i>Journal of Materials Chemistry A</i> , 2020 , 8, 4396-4406	13 21
223	Photovoltaic properties of all-inorganic lead-free perovskite Cs ₂ PdBr ₆ : A first-principles study. 2020 , 10, 115203	7
222	Theoretical investigation of halide perovskites for solar cell and optoelectronic applications. 2020 , 29, 108401	7
221	Two-dimensional transition metal dichalcogenides for lead halide perovskites-based photodetectors: band alignment investigation for the case of CsPbBr ₃ /MoSe ₂ . 2020 , 41, 052206	8
220	Simulating complex crystal structures using the phase-field crystal model. 2017 , 1,	8
219	CsPbBr ₃ perovskites: Theoretical and experimental investigation on water-assisted transition from nanowire formation to degradation. 2018 , 2,	45
218	Double perovskites overtaking the single perovskites: A set of new solar harvesting materials with much higher stability and efficiency. 2018 , 2,	35
217	Inducing spontaneous electric polarizations in double perovskite iodide superlattices for ferroelectric photovoltaic materials. 2018 , 2,	5
216	Design of p-type transparent conductors from inverted band structure: The case of inorganic metal halide perovskites. 2019 , 3,	16
215	Impact of organic molecule rotation on the optoelectronic properties of hybrid halide perovskites. 2019 , 3,	15
214	Phase diagram and stability of mixed-cation lead iodide perovskites: A theory and experiment combined study. 2020 , 4,	6
213	Role of fluoride and fluorocarbons in enhanced stability and performance of halide perovskites for photovoltaics. 2020 , 4,	6
212	Bond-length distributions for ions bonded to oxygen: results for the transition metals and quantification of the factors underlying bond-length variation in inorganic solids. 2020 , 7, 581-629	18
211	Density functional theory study of mixed halide influence on structures and optoelectronic attributes of CsPb(I/Br). 2020 , 59, 3751-3759	5
210	Lead-free metal-halide double perovskites: from optoelectronic properties to applications. 2021 , 10, 2181-2219	9

209	Recent Advances and Challenges in Halide Perovskite Crystals in Optoelectronic Devices from Solar Cells to Other Applications. 2021 , 11, 39	4
208	Photocatalytic reduction of CO ₂ by halide perovskites: recent advances and future perspectives.	7
207	Decoding the charge carrier dynamics in triple cation-based perovskite solar cells.	4
206	Halide Perovskites: Advanced Photovoltaic Materials Empowered by a Unique Bonding Mechanism. 2110166	11
205	Efficient passivation of DY center in CH ₃ NH ₃ PbBr ₃ by chlorine: Quantum molecular dynamics. 1	11
204	Printable Solar Cells from Solution Processable Materials. 2022 , 401-432	
203	Metal Halide Semiconductors beyond Lead-Based Perovskites for Promising Optoelectronic Applications. 2021 , 12, 10532-10550	9
202	Electronic and optical properties of bulk and surface of CsPbBr inorganic halide perovskite a first principles DFT 1/2 approach. 2021 , 11, 20622	9
201	Perovskite Solar Cells. 2021 , 107-131	
200	Performance improvement of photovoltaic: Utilization of two-dimensional Ti ₃ C ₂ T _x MXene. 2021 , 27, 101566	0
199	Atomic Level Insights into Metal Halide Perovskite Materials by Scanning Tunneling Microscopy and Spectroscopy. 2021 ,	
198	Atomic Level Insights into Metal Halide Perovskite Materials by Scanning Tunneling Microscopy and Spectroscopy. 2022 , 134, e202112352	
197	Design Principles of Large Cation Incorporation in Halide Perovskites. 2021 , 26,	0
196	Probing the microscopic mechanisms in photovoltaic degradation behaviors of CH ₃ NH ₃ PbI ₃ perovskite films via photoconductive atomic force microscopy. 2021 , 27, 101540	0
195	Computational prediction of lattice defects in multinary compound semiconductors as photovoltaic materials. 2015 , 64, 186102	2
194	Chapter 6:Structural, Electronic, and Optical Properties of Lead Halide Perovskites. 2016 , 177-201	
193	Role of Fractals in Perovskite Solar Cells. 2017 , 18, 293	1
192	Current state and perspectives for organo-halide perovskite solar cells: Crystal structures and thin film formation, morphology, processing, degradation, stability improvement by carbon nanotube. 2017 , 20, 153-193	

- 191 Oligomeric Silica-Wrapped Perovskites Enable Synchronous Defect Passivation and Grain Stabilization for Efficient and Stable Perovskite Photovoltaics. 1
- 190 Simultaneous Inhibition and Redistribution of Spontaneous Emission from Perovskite Photonic Crystals. **2019**,
- 189 Organic-inorganic hybrid perovskite photodetectors achieved via brush-coating process. **2019**,
- 188 Displacive phase-field crystal model. **2020**, 4, 4
- 187 Numerical Simulation of Tunneling Effect in High-Efficiency Perovskite/Silicon Tandem Solar Cell. **2020**,
- 186 Characterization of the $\Sigma(210) / [001]$ Grain Boundary of Methyl-Ammonium Lead Triiodide Perovskite using Density Functional Theory. **2020**, 45, 67-71
- 185 The Study of Photoactive Materials. **2020**, 10, 73-111 0
- 184 TNT/LaFeO₃ composite as novel condition catalyst for ameliorating hydrogen evolution reaction. **2021**, 133, 107149
- 183 Computational Modeling and the Design of Perovskite Solar Cells. **2020**, 2849-2864
- 182 Methylamine Gas Healing of Perovskite Films: A Short Review and Perspective. 1
- 181 Fabrication and Characterization of Graphene Incorporated Cu Based Perovskite in Application of Perovskite Solar Cell under Ambient Condition. **2020**, 10, 1-16 4
- 180 Theoretical and computational study on defects of solar cell materials. **2020**, 69, 177101 1
- 179 Introduction. **2021**, 1-27
- 178 Physical Properties Determined by Density Functional Theory. **2021**, 123-149
- 177 Growth and Degradation Kinetics of Organic-Inorganic Hybrid Perovskite Films Determined by In Situ Grazing-Incidence X-Ray Scattering Techniques. **2021**, 5, e2100829 3
- 176 Theoretical investigation of the structural, elastic, electronic, and dielectric properties of alkali-metal-based bismuth ternary chalcogenides. **2020**, 4, 4
- 175 Metal halide perovskites for photocatalysis applications. *Journal of Materials Chemistry A*, 13 14
- 174 Optimized Perovskite Solar Cell Design using Suitable Defects in Layers for Enhanced Efficiency. **2021**,

173	Perovskite solar cell using HTLs copper iodide and spiro-OMeTAD comparative analysis in terms of efficiency and resource utilization.. 2022 , 61, 101-107	0
172	Tuning the Band Gaps of Oxide and Halide Perovskite Compounds via Biaxial Strain in All Directions. 2021 , 125, 25951-25958	0
171	Ambient Fabrication of Efficient Triple Cation Perovskite-Based Near-Infrared Light-Emitting Diodes.	1
170	Microstructures and Grain Boundaries of Halide Perovskite Thin Films. 2022 , 81-105	
169	Cotton soot derived carbon nanoparticles for NiO supported processing temperature tuned ambient perovskite solar cells. 2021 , 11, 23388	2
168	Studying the influence of heat treatment on structural and morphological properties of thin CH ₃ NH ₃ PbI ₃ -xCl _x films prepared by spin coating method. 2021 ,	
167	Modeling of Perovskite solar cells containing hexagonal-shaped nanorods. 2022 , 54, 1	
166	Perovskite solar cells based self-charging power packs: Fundamentals, applications and challenges. 2022 , 94, 106910	8
165	A short review on progress in perovskite solar cells. 2022 , 149, 111700	6
164	Defects and doping engineering towards high performance lead-free or lead-less perovskite solar cells. 2022 , 68, 420-438	1
163	Machine Learning and First-Principles Insights on Molecularly Modified CH ₃ NH ₃ PbI ₃ Film in Water.	
162	Probing the Band Gap of XInO ₃ (X = as, Sb) Compound for Solar Cell Applications by Dft.	
161	Ferromagnetic half-metallicity of the cubic NaMgO perovskite: from bulk to (001) surfaces.. 2022 ,	0
160	Effects of the incorporation amounts of CdS and Cd(SCN ₂ H ₄) ₂ Cl ₂ on the performance of perovskite solar cells. 2022 , 29, 283-291	6
159	First-principles study on optoelectronic properties of CsPbX-PtSe van der Waals heterostructures.. 2022 , 12, 2292-2299	1
158	Constructing Monolithic Perovskite/Organic Tandem Solar Cell with Efficiency of 22.0% via Reduced Open-circuit Voltage Loss and Broadened Absorption Spectra.. 2022 , e2108829	11
157	Stabilization of Metastable Halide Perovskite Lattices in the 2D Limit.. 2022 , e2108556	7
156	Interactions between gas molecules and two-dimensional Ruddlesden-Popper halide perovskite. 2022 , 131, 025307	1

155	Assessment of Photon Recycling in Perovskite Solar Cells by Fully Coupled Optoelectronic Simulation. 2022 , 17,		0
154	Defect tolerance in CsPbI ₃ : reconstruction of the potential energy landscape and band degeneracy in spin-orbit coupling. <i>Journal of Materials Chemistry A</i> , 2022 , 10, 3018-3024	13	3
153	Strain-induced bandgap engineering in CsGeX (X = I, Br or Cl) perovskites: insights from first-principles calculations.. 2022 ,		3
152	DFT study of electronic structure and mobility of pristine and fluorinated methylammonium lead halide perovskites (CH ₃ NH ₃ PbX ₃ , X = I, Br, Cl).		0
151	Toward stable lead halide perovskite solar cells: A knob on the A/X sites components.. 2022 , 25, 103599		3
150	Double Cascading Charge Transfer at Integrated Perovskite/Organic Bulk Heterojunctions for Extended Near-Infrared Photoresponse and Enhanced Photocurrent.. 2022 , e2106083		1
149	Halide Ions Distribution and Charge Dynamics in Mixed Halide Perovskites.		2
148	Techno-economic and environmental sustainability of industrial-scale productions of perovskite solar cells. 2022 , 158, 112146		3
147	Density functional theory analysis of structural and electronic properties of hexagonal hybrid perovskite (CH ₃ NH ₃) ₃ Bi ₂ I ₉ . 2022 , 630, 413695		1
146	Surface-Anchored Acetylcholine Regulates Band-Edge States and Suppresses Ion Migration in a 21%-Efficient Quadruple-Cation Perovskite Solar Cell. 2021 , e2105184		9
145	Optoelectronic properties and interfacial interactions of two-dimensional CsPbX-MSe (M = Mo, W) heterostructures.. 2022 , 12, 9883-9890		
144	Predicting compositional changes of organic-inorganic hybrid materials with Augmented CycleGAN.		0
143	First-Principles Investigation of Stable Lead-Free Halide Perovskite Materials Cs ₂ SnCl ₂ Br ₂ Y ₂ for Solar Cell Applications.		
142	Nanostructured perovskites for nonvolatile memory devices.. 2022 ,		7
141	Recent Development of Lead-Free Halide Double Perovskites: A New Superstar in Optoelectronic Field.		2
140	Unveiling the roles of halogen ions in the surface passivation of CsPbI ₃ perovskite solar cells.. 2022 ,		2
139	Unified picture for the pressure-controlled band gap in inorganic halide perovskites: Role of strain-phonon and phonon-phonon couplings. 2022 , 105,		
138	Effect of Chlorine Addition on the Performance and Stability of Electrodeposited Mixed Perovskite Solar Cells. 2022 , 34, 2218-2230		2

137	Accelerated screening of functional atomic impurities in halide perovskites using high-throughput computations and machine learning. 1	1
136	Hybrid Halide Perovskite-Based Near-Infrared Photodetectors and Imaging Arrays. 2102656	5
135	Gradient Doping in Sn-Pb Perovskites by Barium Ions for Efficient Single-junction and Tandem Solar Cells.. 2022, e2110351	19
134	First-principles investigation of structural, optoelectronic, and thermoelectric properties of Cs ₂ Tl(As/Sb)I ₆ .	1
133	A Photovoltaic Technology Review: History, Fundamentals and Applications. 2022, 15, 1823	4
132	Quick screening stable double perovskite oxides for photovoltaic applications by machine learning. 2022,	2
131	Optimizing Perovskite Solar Cell Architecture in Multistep Routes Including Electrodeposition.	3
130	Approaching high-performance light-emitting devices upon perovskite quantum dots: Advances and prospects. 2022, 43, 101449	5
129	First-principles investigation of Rb ₂ Ag(Ga/In)Br ₆ for thermoelectric and photovoltaic applications.	
128	Minimizing and Controlling Hydrogen for Highly Efficient Formamidinium Lead Triiodide Solar Cells.. 2022,	2
127	Electronic and Optical Properties of Lead Halide Perovskite (MAPbX ₃) (X = I, Br, and Cl) by First Principles Calculations.	0
126	Perovskite CsPbBr ₃ decorating PbS nanocrystals for efficient near-infrared light-emitting diodes: A first-principles study. 2022, 209, 111361	0
125	Investigating the Sequential Deposition Route for Mixed Cation Mixed Halide Wide Bandgap Perovskite Absorber Layer. 2021, 14, 8401	1
124	Hybrid Halide Perovskite-Based Electrochemical Supercapacitors: Recent Progress and Perspective. 2022, 10, 2100889	1
123	Structural, elastic, electronic and optical investigations of fluoride-perovskite NaBeF ₃ : first-principles calculations. 2022, 102, 634-649	2
122	Perovskite Solar Cells Go Bifacial-Mutual Benefits for Efficiency and Durability.. 2021, e2106805	2
121	Nonmonotonic Photostability of BAMAPbI Homologous Layered Perovskites.. 2021,	1
120	Perovskite Fiber-Shaped Optoelectronic Devices for Wearable Applications.	3

119	Highly Luminescent Copper(I) Halide Phosphors Encapsulated in Fumed Silica for Anti-Counterfeiting and Color-Converting Applications. 2200278	2
118	Machine learning and first-principles insights on molecularly modified CH ₃ NH ₃ PbI ₃ film in water. 2022 , 593, 153428	2
117	CHAPTER 9. Hybrid Solar Cells. 298-340	
116	The optimized of tunable all-inorganic metal halide perovskites CsNBr ₃ as promising renewable materials for future designing of photovoltaic solar cells technologies. 2022 , 95, 1	0
115	Effect of vertical strain and in-plane biaxial strain on type-II MoSi ₂ N ₄ /Cs ₃ Bi ₂ I ₉ van der Waals heterostructure. 2022 , 131, 163102	1
114	Anomalous Structural Evolution and Glassy Lattice in Mixed-Halide Hybrid Perovskites.. 2022 , e2200847	1
113	A review on theoretical studies of structural and optoelectronic properties of FA -based perovskite materials with a focus on FAPbI ₃ .	0
112	Improving the Stability and Efficiency of Perovskite Solar Cells by a Bidentate Anilinium Salt.	1
111	Multifunctional and Transformative Metaphotonics with Emerging Materials.. 2022 ,	4
110	Exploration of structural, electronic, optical, mechanical, thermoelectric, and thermodynamic properties of XInO ₃ (X=As, Sb) compounds for energy harvesting applications.	
109	First-principles study on the electronic structures and optical properties of Cs ₂ XInCl ₆ (X= Ag, Na). 2022 , 114812	1
108	Colorimetric paper test strips based on cesium lead bromide perovskite nanocrystals for rapid detection of ciprofloxacin hydrochloride.. 2022 ,	
107	Discovery of direct band gap perovskites for light harvesting by using machine learning. 2022 , 210, 111476	3
106	Recent advancements in batteries and photo-batteries using metal halide perovskites. 2022 , 10, 040905	2
105	A review on high performance photovoltaic cells and strategies for improving their efficiency.	1
104	Exploration of charge transport materials to improve the radiation tolerance of lead halide perovskite solar cells.	1
103	Analysis of electrical parameters of p-i-n perovskites solar cells during passivation via N-doped graphene quantum dots. 2022 , 102066	2
102	Electronic structure of oxide and halide perovskites. 2022 ,	

101	A molecular route to fluoro-perovskite materials: synthesis of CsCaF3 films through a sol-gel/spin-coating process. 2022 , 2,	0
100	Composition gradient-enabled circular photogalvanic effect in inorganic halide perovskites. 2022 , 120, 211901	
99	2,3-Diphenylthieno[3,4-b]pyrazines as Hole-Transporting Materials for Stable, High-Performance Perovskite Solar Cells. 2118-2127	4
98	Solution-processed perovskite crystals for electronics: Moving forward. 2022 , 5, 1700-1733	1
97	Quantum hybridization negative differential resistance from non-toxic halide perovskite nanowire heterojunctions and its strain control. 2022 , 9,	1
96	Incorporating an Aromatic Cationic Spacer to Assemble 2D Polar Perovskite Crystals toward Self-Powered Detection of Quite Weak Polarized Light. 6017-6023	2
95	All-inorganic CsPbX ₃ Perovskite Solar Cells. 2022 , 1-42	
94	The role of Nb ₂ O ₅ deposition process on perovskite solar cells.	0
93	Lead-Tin Laminated All-Perovskite Solar Cells: Verification of Feasibility from the Perspective of Device Simulation. 2022 , 11, 063011	
92	2D or not 2D? Selectively formed low-dimensional perovskitoids based on chiral organic cation to passivate perovskite solar cells. 2022 , 28, 101550	0
91	First-principles calculations to investigate structural, electronic, thermoelectric, and optical properties of heavy thallium perovskite TlPbX ₃ (X = Cl, Br, I). 2022 , 283, 115781	0
90	Investigating the band gap on the performance of tin-based perovskite solar cells by device simulation. 2022 , 54,	
89	Efficient Eco-Friendly Flexible X-ray Detectors Based on Molecular Perovskite.	1
88	The Recent Progress and the state-of-art applications of Perovskite Solar Cells. 5, 216-222	
87	Enhanced efficiency, photocurrent and device stabilities of guanidinium chloride-based double cation mixed halide perovskite solar cells fabricated under humid conditions. 2022 , 149, 106880	0
86	Polar methylammonium organic cations detune state coupling and extend hot-carrier lifetime in lead halide perovskites. 2022 ,	
85	Recent advancement in efficient metal oxide-based flexible perovskite solar cells: a short review.	1
84	?????????????????????. 2022 ,	

83	Impact of Hole-Transport Layer and Interface Passivation on Halide Segregation in Mixed-Halide Perovskites. 2204825	2
82	Simulations for Photocatalytic Materials. 2022 , 159-193	
81	Study of lead-free vacancy ordered double perovskites Cs ₂ TeX ₆ (X = Cl, Br, I) for solar cells, and renewable energy. 2022 , 97, 095801	
80	Regulation of Quantum Wells Width Distribution in 2D Perovskite Films for Photovoltaic Application. 2205289	3
79	Geometric Optimization of Perovskite Solar Cells with Metal Oxide Charge Transport Layers. 2022 , 12, 2692	1
78	Missed ferroelectricity in methylammonium lead iodide. 2022 , 8,	1
77	Phase Stability and Electronic Properties of Hybrid Organic/Inorganic Perovskite Solid Solution (CH ₃ NH ₂) ₂ x(CH ₃ NH ₃) _{1-x} Pb(BryI _{1-y}) ₃ as a Function of Composition. 2022 , 126, 13640-13648	
76	Mixed tin-lead perovskite nanorod-based resistive memory device. 2022 , 758, 139437	
75	First-principles studies on electronic and optical properties of formate-doped organic-inorganic perovskites MAPbI ₃ . 2022 , 246, 111941	0
74	First principles study of structural, electronic, elastic and optical properties of Cs ₂ LiTlBr ₆ and Cs. 2022 , 151, 106993	
73	An ab-initio investigation of novel double halide perovskite Cs ₂ InCoX ₆ (X=F, Cl, Br) materials with direct band structure and broadband light absorption. 2022 , 152, 107047	1
72	Low temperature preparation of W-doped In ₂ O ₃ transparent electrodes for p-i-n structured perovskite solar cells. 2022 , 926, 166827	1
71	Structural evolution, dielectric relaxation, and charge transport characteristics of formamidinium lead iodide (FAPbI ₃) perovskite. 2023 , 157, 112012	1
70	Recent promise of lead-free halide perovskites in optoelectronic applications. 2023 , 451, 138926	0
69	Soil heavy metal pollution: impact on plants and methods of bioremediation. 2022 , 73-84	0
68	Strain effects on halide perovskite solar cells. 2022 , 51, 7509-7530	13
67	Perovskite Solar Cells: Concepts and Prospects. 2022 , 97-133	0
66	Structural and compositional properties of 2D CH ₃ NH ₃ PbI ₃ hybrid halide perovskite: a DFT study. 2022 , 12, 25924-25931	1

65	Hollow MoS ₂ -supported MAPbI ₃ composites for effective photocatalytic hydrogen evolution.	0
64	Effect of orientation of the cation CH ₃ NH ₃ on exciton mobility in CH ₃ NH ₃ PbI ₃ . 2022 ,	0
63	A Way to Reach 10% Efficiency with Carbon-Based Electrodeposited Mixed Perovskite Solar Cells. 2200777	1
62	First-principles study on structural, electronic, elastic, mechanical, thermodynamic, and thermoelectric properties of RbSnX ₃ (X = F, Cl, and Br) perovskites.	0
61	High-Performance Perovskite Light-Emitting Diodes Enabled by Passivating Defect and Constructing Dual Energy-Transfer Pathway through Functional Perovskite Nanocrystals. 2207445	4
60	Synthesis and optical study of ultra stable inorganic double perovskite Cs ₂ CuBiCl ₆ for optoelectronic applications. 2022 ,	0
59	Dielectric effects, crystal field, and shape anisotropy tuning of the exciton fine structure of halide perovskite nanocrystals. 2022 , 6,	0
58	Ecotoxicity and Sustainability of Emerging Pb-Based Photovoltaics. 2200699	0
57	Lead-Free Metal Halide Perovskite Nanocrystals: From Fundamentals to Applications.	0
56	Photonic Processing of MAPbI ₃ Films by Flash Annealing and Rapid Growth for High-Performance Perovskite Solar Cells.	1
55	Structural, Electronic, and Optical Properties of Cs ₂ SnX ₄ (X = Cl, Br, and I) Multilayers: A Density Functional Theory Study. 2200220	0
54	Structure-bandgap tunability of metal halide perovskites: Synthesis, spectral, single crystal X-ray structural, BVS, CShM and Hirshfield surface analysis of piperidinium hexahalostannates(IV). 2022 , 134285	0
53	Landfill factors in tetragonal halide perovskite: A multiband k.p model. 2022 , 106,	0
52	Argon Plasma treated Silver-Nanowire-based Perovskite Light Emitting Diode. 2022 , 292, 126807	0
51	Effects of Ammonium and Alkali Metal Additives on Anisotropic Photoconductivities and Solar Cell Efficiencies of Two-Dimensional Lead Halide Perovskites. 2022 , 126, 17894-17903	0
50	High-throughput computations and machine learning for halide perovskite discovery.	0
49	Defect Pair Formation in FAPbI ₃ Perovskite Solar Cell Absorbers. 2022 , 13, 9718-9724	0
48	First-principles study on the mechanical, electronic and optical properties of double halide perovskite Cs ₂ TlSbX ₆ (X=Cl, Br, I).	0

- 47 Influences of Mg concentration in ZnMgO film on energy band alignment at CIGSSe/Zn_{1-x}Mg_xO interface and performances of CIGSSe solar cells. **2022**, 246, 216-223 ○
- 46 Reduced Self-Absorption of Quasi-2D Perovskites and Their Application in Color Conversion Layers. 2202118 ○
- 45 Performance and stability of electrodeposited mixed perovskites $\text{MAPbI}_{3-x}\text{Cl}_x$ and $\text{MA}_{1-y}\text{FA}_y\text{PbI}_{3-x}\text{Br}_x$. **2022**, ○
- 44 A residual strain regulation strategy based on quantum dots for efficient perovskite solar cells. ○
- 43 Perovskite solar cells: Thermal and chemical stability improvement, and economic analysis. **2023**, 27, 101284 ○
- 42 Emerging Chalcogenide Materials for Energy Applications. 1
- 41 A Comprehensive Review on Current Performance, Challenges and Progress in Thin-Film Solar Cells. **2022**, 15, 8688 2
- 40 A tailored direct-to-indirect band structure transition in double perovskite oxides influences its photocatalysis efficiency. **2022**, ○
- 39 Self-Assembled Amphiphilic Monolayer for Efficient and Stable Wide-Bandgap Perovskite Solar Cells. 2202802 ○
- 38 Editorial. **2023**, 66, ○
- 37 Structural, Electronic and Optical Properties of Titanium Based Fluoro-Perovskites MTiF₃ (M = Rb and Cs) via Density Functional Theory Computation. **2022**, 7, 47662-47670 ○
- 36 Biomolecules incorporated in halide perovskite nanocrystals: synthesis, optical properties, and applications. ○
- 35 Strategic Compositional Engineering in Quasi-2D Ruddlesden-Popper Perovskites to Decipher Deep Blue Emission. 395-402 ○
- 34 First-principles calculations to investigate pressure-driven electronic phase transition of lead-free halide perovskites KMCl₃ (M = Ge, Sn) for superior optoelectronic performance. **2023**, 44, 106212 ○
- 33 Insights into the relationship between ferroelectric and photovoltaic properties in CsGeI₃ for solar energy conversion. **2023**, 13, 1955-1963 ○
- 32 Ab initio studies on perovskites. **2023**, 153-185 ○
- 31 Metal halide perovskite nanomaterials for solar energy. **2023**, 149-168 ○
- 30 Zn²⁺ ion doping for structural modulation of lead-free Sn-based perovskite solar cells. ○

- 29 Lead-free 2D MASnBr₃ and Ruddlesden-Popper BA₂MASn₂Br₇ as light harvesting materials. **2023**, 13, 7939-7951 ○
- 28 Theoretical Insights on the Defect Performance in Wide Bandgap Semiconductor BaS. ○
- 27 Enhanced photovoltaic properties of halide perovskites due to multi-centered XB₂ bonding and p_z orbital coupling. **2023**, 133, 115701 ○
- 26 A New Descriptor for Complicated Effects of Electronic Density of States on Ion Migration. ○
- 25 Metal halide perovskite materials in photocatalysis: Design strategies and applications. **2023**, 481, 215031 ○
- 24 Physical and optoelectronic properties of double halide perovskites A₂CuSbX₆ (A' = Cs, Rb, K; X = Cl, Br, I) based on first principles calculations. **2023**, 570, 111897 ○
- 23 Pressure-induced tuning of structure and electronic properties in lead-free hybrid halide perovskite HC(NH₂)₂SnI₃ for photovoltaic solar cells. **2023**, 293, 116468 ○
- 22 Structural, electronic, optical, and mechanical properties of the all-inorganic lead-free metal halides double perovskites Cs₂RbInX₆ (X = Cl, Br, I): A first-principles based study. **2023**, 290, 116299 ○
- 21 Room temperature synthesis and experimental study of novel double perovskite MA₂KBiCl₆ for photovoltaic application. **2023**, ○
- 20 La-Doped Alumina, Lanthanum Aluminate, Lanthanum Hexaaluminate, and Related Compounds: A Review Covering Synthesis, Structure, and Practical Importance. **2023**, 62, 2353-2386 ○
- 19 Instability of solution-processed perovskite films: origin and mitigation strategies. **2023**, 2, 012102 ○
- 18 Studies of Performance of Cs₂TiI_{6-x}Br_x (Where x = 0 to 6)-Based Mixed Halide Perovskite Solar Cell with CdS Electron Transport Layer. **2023**, 14, 447 ○
- 17 Room temperature synthesis of double perovskite Cs₂AlBiCl₆ for photovoltaic applications. **2023**, 137, 113570 ○
- 16 First Demonstration of Top Contact-Free Perovskite/Silicon Two-Terminal Tandem Solar Cells for Overcoming the Current Density Hurdle. **2023**, 6, 2687-2697 ○
- 15 Cesium-metalloid halide perovskites MBX₃ (M₁ = Cs; B₂ = Si, Ge, Sn, Pb; X = Cl, Br, I) as semiconductor photovoltaic materials for sustainable renewable-energy applications. **2023**, 19, 113-140 ○
- 14 Numerical Analysis of High-Efficiency CH₃NH₃PbI₃ Perovskite Solar Cell with PEDOT:PSS Hole Transport Material Using SCAPS 1D Simulator. ○
- 13 Bulk Perovskite Crystal Properties Determined by Heterogeneous Nucleation and Growth. **2023**, 16, 2110 ○
- 12 Modification of Two-Dimensional Tin-Based Perovskites by Pentanoic Acid for Improved Performance of Field-Effect Transistors. 2207426 ○

- 11 Effects of Solvent Vapor Atmosphere on Photovoltaic Performance of Perovskite Solar Cells. **2023**, 13, 549
- 10 Strong Electron-Phonon Coupling Induced Self-Trapped Excitons in Double Halide Perovskites.
- 9 Machine Learning for Halide Perovskite Materials ABX₃ (B = Pb, X = I, Br, Cl) Assessment of Structural Properties and Band Gap Engineering for Solar Energy. **2023**, 16, 2657
- 8 Polarizable Anionic Sublattices Can Screen Molecular Dipoles in Noncentrosymmetric Inorganic/Organic Hybrids. **2023**, 15, 18006-18011
- 7 Advances in the large-scale production, fabrication, stability, and lifetime considerations of electronic materials for clean energy applications. **2023**, 27-60
- 6 Bridging the Buried Interface with Piperazine Dihydriodide Layer for High Performance Inverted Solar Cells.
- 5 Investigation of Structural with Electronic Properties of Methylammonium Lead Iodide Perovskite Using Density Functional Theory. **2022**, 107-113
- 4 Highly stable lead-free Cs₂AgBiI₆-GO composite photocatalysts for efficient organic pollutant degradation. **2023**, 11, 109960
- 3 Defect Origin of the Light-Soaking Effects in Hybrid Perovskite Solar Cells. **2023**, 239-263
- 2 Single-Crystal Halide Perovskites for Transistor Applications. **2023**, 265-296
- 1 Strain and Optoelectronic Tuning in Mixed-Halide Perovskites with Ion Irradiation.