# Organic-inorganic hybrid lead halide perovskites for optoelectronic and electronic applications

DOI: 10.1039/c4cs00458b
Chemical Society Reviews, 2016, 45, 655-89.

| # | Paper | IF | Citations |
|---|---|---|---|
| 1158 | ASite Cation Effect on Growth Thermodynamics and Photoconductive Properties in Ultrapure Lead Iodine Perovskite Monocrystalline Wires. | | |
| 1157 | Cobalt-Based Electrolytes for Dye-Sensitized Solar Cells: Recent Advances towards Stable Devices. **2016**, 9, 384 | | 80 |
| 1156 | Multi-Length Scaled Silver Nanowire Grid for Application in Efficient Organic Solar Cells. **2016**, 26, 4822-4828 | | 42 |
| 1155 | Inverted Perovskite Solar Cells: Progresses and Perspectives. **2016**, 6, 1600457 | | 294 |
| 1154 | Hole-Transporting Materials for Perovskite-Sensitized Solar Cells. **2016**, 4, 891-938 | | 42 |
| 1153 | ChemInform Abstract: Organic□norganic Hybrid Lead Halide Perovskites for Optoelectronic and Electronic Applications. **2016**, 47, no-no | | |
| 1152 | Coarsening of one-step deposited organolead triiodide perovskite films via Ostwald ripening for high efficiency planar-heterojunction solar cells. **2016**, 45, 7856-65 | | 46 |
| 1151 | Highly reproducible perovskite solar cells with excellent CH3NH3PbI3□Clx film morphology fabricated via high precursor concentration. **2016**, 6, 51279-51285 | | 9 |
| 1150 | In situ investigation of the formation and metastability of formamidinium lead tri-iodide perovskite solar cells. **2016**, 9, 2372-2382 | | 64 |
| 1149 | Recent progress in the synthesis of hybrid halide perovskite single crystals. **2016**, 18, 4476-4484 | | 91 |
| 1148 | Third-order nonlinear optical properties of methylammonium lead halide perovskite films. **2016**, 4, 4847-4852 | | 36 |
| 1147 | Ion-Exchange-Induced 2D-3D Conversion of HMA FA PbI Cl Perovskite into a High-Quality MA FA PbI Perovskite. **2016**, 55, 13460-13464 | | 71 |
| 1146 | First-Principles Study of Molecular Adsorption on Lead Iodide Perovskite Surface: A Case Study of Halogen Bond Passivation for Solar Cell Application. **2016**, 120, 23536-23541 | | 26 |
| 1145 | Ion-Exchange-Induced 2D□D Conversion of HMA1□FAxPbI3Cl Perovskite into a High-Quality MA1□FAxPbI3 Perovskite. **2016**, 128, 13658-13662 | | 7 |
| 1144 | Hybrid perovskites: Approaches towards light-emitting devices. **2016**, | | |
| 1143 | Optical constants of CH3NH3PbBr3 perovskite thin films measured by spectroscopic ellipsometry. **2016**, 24, 16586-94 | | 76 |
| 1142 | In situ gas/solid reaction for the formation of luminescent quantum confined CH3NH3PbBr3 perovskite planar film. **2016**, 52, 11080-3 | | 18 |

| | | |
|---|---|---|
| 1141 | Hysteresis in organic-inorganic hybrid perovskite solar cells. **2016**, 157, 476-509 | 116 |
| 1140 | Defect Physics of CH3NH3PbX3 (X = I, Br, Cl) Perovskites. **2016**, 79-105 | 17 |
| 1139 | Colloidal Synthesis of Strongly Fluorescent CsPbBr Nanowires with Width Tunable down to the Quantum Confinement Regime. **2016**, 28, 6450-6454 | 177 |
| 1138 | Optical Properties of Hybrid Organic-Inorganic Materials and their Applications. **2016**, 26, 6506-6544 | 156 |
| 1137 | Improved Ambient-Stable Perovskite Solar Cells Enabled by a Hybrid Polymeric Electron-Transporting Layer. **2016**, 9, 2586-2591 | 24 |
| 1136 | Potentials and challenges towards application of perovskite solar cells. **2016**, 59, 769-778 | 13 |
| 1135 | Enhanced Optical and Electrical Properties of Polymer-Assisted All-Inorganic Perovskites for Light-Emitting Diodes. **2016**, 28, 8983-8989 | 283 |
| 1134 | Dynamics of Photocarrier Separation in MAPbI3 Perovskite Multigrain Films under a Quasistatic Electric Field. **2016**, 120, 19595-19602 | 15 |
| 1133 | Metal-nanostructures – a modern and powerful platform to create transparent electrodes for thin-film photovoltaics. **2016**, 4, 14481-14508 | 63 |
| 1132 | Crystalline Intermediates and Their Transformation Kinetics during the Formation of Methylammonium Lead Halide Perovskite Thin Films. **2016**, 28, 9041-9048 | 26 |
| 1131 | Shape-Tunable Charge Carrier Dynamics at the Interfaces between Perovskite Nanocrystals and Molecular Acceptors. **2016**, 7, 3913-3919 | 38 |
| 1130 | Bi- and Multilayered Assembly of Amphiphilic Pd(II) and Pt(II) Complexes withN-Alkyl-4,4?-bipyridinium Ligands. **2016**, 89, 1069-1071 | 0 |
| 1129 | Regulating Carrier Dynamics in Single Crystal Halide Perovskite via Interface Engineering and Optical Doping. **2016**, 2, 1600248 | 11 |
| 1128 | Effect of Cation Rotation on Charge Dynamics in Hybrid Lead Halide Perovskites. **2016**, 120, 16577-16585 | 46 |
| 1127 | Dramatically promoted crystallization control of organolead triiodide perovskite film by a homogeneous cap for high efficiency planar-heterojunction solar cells. **2016**, 4, 12535-12542 | 37 |
| 1126 | Effects of molecular dipole orientation on the exciton binding energy of CH3NH3PbI3. **2016**, 94, | 6 |
| 1125 | Ultrastable, Highly Luminescent Organic-Inorganic Perovskite-Polymer Composite Films. **2016**, 28, 10710-10717 | 299 |
| 1124 | Designing new fullerene derivatives as electron transporting materials for efficient perovskite solar cells with improved moisture resistance. **2016**, 30, 341-346 | 60 |

| | | |
|---|---|---|
| 1123 | Humidity controlled sol-gel Zr/TiO2 with optimized band alignment for efficient planar perovskite solar cells. **2016**, 139, 290-296 | 21 |
| 1122 | Towards stable and commercially available perovskite solar cells. **2016**, 1, | 763 |
| 1121 | A Low-Temperature, Solution-Processable Organic Electron-Transporting Layer Based on Planar Coronene for High-performance Conventional Perovskite Solar Cells. **2016**, 28, 10786-10793 | 91 |
| 1120 | Controlled Synthesis of Lead-Free and Stable Perovskite Derivative Cs2SnI6 Nanocrystals via a Facile Hot-Injection Process. **2016**, 28, 8132-8140 | 239 |
| 1119 | Doping and alloying for improved perovskite solar cells. **2016**, 4, 17623-17635 | 126 |
| 1118 | Lead-Free, Blue Emitting Bismuth Halide Perovskite Quantum Dots. **2016**, 55, 15012-15016 | 343 |
| 1117 | Lead-Free, Blue Emitting Bismuth Halide Perovskite Quantum Dots. **2016**, 128, 15236-15240 | 46 |
| 1116 | Benign-by-Design Solventless Mechanochemical Synthesis of Three-, Two-, and One-Dimensional Hybrid Perovskites. **2016**, 55, 14972-14977 | 107 |
| 1115 | Organic Dye-Sensitized CHNHPbI Hybrid Flexible Photodetector with Bulk Heterojunction Architectures. **2016**, 8, 31289-31294 | 34 |
| 1114 | Benign-by-Design Solventless Mechanochemical Synthesis of Three-, Two-, and One-Dimensional Hybrid Perovskites. **2016**, 128, 15196-15201 | 17 |
| 1113 | Microwave Induced Crystallization of the Hybrid Perovskite CH3NH3PbI3 from a Supramolecular Single-Source Precursor. **2016**, 28, 4134-4138 | 7 |
| 1112 | Origin of J-V Hysteresis in Perovskite Solar Cells. **2016**, 7, 905-17 | 530 |
| 1111 | Efficient charge extraction and slow recombination in organic□inorganic perovskites capped with semiconducting single-walled carbon nanotubes. **2016**, 9, 1439-1449 | 109 |
| 1110 | Ultrasmooth Perovskite Film via Mixed Anti-Solvent Strategy with Improved Efficiency. **2017**, 9, 3667-3676 | 86 |
| 1109 | Multilayer light emitting devices with organometal halide perovskite: Polymer composite emission layer: The relationship of device performance with the compositions of emission layer and device configurations. **2017**, 43, 167-174 | 27 |
| 1108 | Cu(II) Complexes as p-Type Dopants in Efficient Perovskite Solar Cells. **2017**, 2, 497-503 | 56 |
| 1107 | Creative Synthesis of Organic□inorganic Molecular Hybrid Materials. **2017**, 90, 463-474 | 67 |
| 1106 | Nucleation mediated interfacial precipitation for architectural perovskite films with enhanced photovoltaic performance. **2017**, 9, 2569-2578 | 22 |

| | | |
|---|---|---|
| 1105 | Efficient and stable solution-processed planar perovskite solar cells via contact passivation. **2017**, 355, 722-726 | 1667 |
| 1104 | Lead-Free Organic-Inorganic Hybrid Perovskites for Photovoltaic Applications: Recent Advances and Perspectives. **2017**, 29, 1605005 | 437 |
| 1103 | Optimization of substrates and physical properties of CdS thin films for perovskite solar cell applications. **2017**, 28, 6852-6859 | 18 |
| 1102 | A simple fabrication of CH3NH3PbI3 perovskite for solar cells using low-purity PbI2. **2017**, 38, 014004 | 8 |
| 1101 | Recent Advances in Energetics of Metal Halide Perovskite Interfaces. **2017**, 4, 1600694 | 47 |
| 1100 | Do grain boundaries dominate non-radiative recombination in CHNHPbI perovskite thin films?. **2017**, 19, 5043-5050 | 141 |
| 1099 | High efficiency planar Sn□Pb binary perovskite solar cells: controlled growth of large grains via a one-step solution fabrication process. **2017**, 5, 2360-2367 | 49 |
| 1098 | Covalently Connecting Crystal Grains with Polyvinylammonium Carbochain Backbone To Suppress Grain Boundaries for Long-Term Stable Perovskite Solar Cells. **2017**, 9, 6064-6071 | 29 |
| 1097 | Facile Face-Down Annealing Triggered Remarkable Texture Development in CHNHPbI Films for High-Performance Perovskite Solar Cells. **2017**, 9, 6104-6113 | 52 |
| 1096 | Wafer-Scale Highly Ordered Anodic Aluminum Oxide by Soft Nanoimprinting Lithography for Optoelectronics Light Management. **2017**, 4, 1601116 | 20 |
| 1095 | Recent advances in perovskite solar cells: efficiency, stability and lead-free perovskite. **2017**, 5, 11462-11482 | 307 |
| 1094 | Ternary solvent boosts two-dimensional perovskites. **2017**, 62, 462-463 | 1 |
| 1093 | Photoelectrochemical water splitting over mesoporous CuPbI3 films prepared by electrophoretic technique. **2017**, 148, 981-989 | 7 |
| 1092 | Synergy of ammonium chloride and moisture on perovskite crystallization for efficient printable mesoscopic solar cells. **2017**, 8, 14555 | 234 |
| 1091 | Electrochemical impedance analysis of perovskite-electrolyte interfaces. **2017**, 53, 2467-2470 | 31 |
| 1090 | Terpyridine-Functionalized NanoSiO2 Multi-Dentate Linkers: Preparation, Characterization and Luminescent Properties of Their Metal□Organic Hybrid Materials. **2017**, 121, 2234-2242 | 14 |
| 1089 | Crystallography as Forensic Tool for Understanding Electrolyte Degradation in Dye□ensitized Solar Cells. **2017**, 2, 1675-1680 | 2 |
| 1088 | Two-Dimensional Materials for Halide Perovskite-Based Optoelectronic Devices. **2017**, 29, 1605448 | 231 |

| | | |
|---|---|---|
| 1087 | Nickel oxide nanoparticles for efficient hole transport in p-i-n and n-i-p perovskite solar cells. **2017**, 5, 6597-6605 | 159 |
| 1086 | A Triarylamine-Based Anode Modifier for Efficient Organohalide Perovskite Solar Cells. **2017**, 9, 9096-9101 | 7 |
| 1085 | Rational Design: A High-Throughput Computational Screening and Experimental Validation Methodology for Lead-Free and Emergent Hybrid Perovskites. **2017**, 2, 837-845 | 142 |
| 1084 | Photo-electrochemical characterization of CH3NH3PbI3 Perovskite deposited on ZnO and TiO2 mesoporous structures during its dynamic restoration. **2017**, 47, 305-313 | 4 |
| 1083 | Extrinsic ion migration in perovskite solar cells. **2017**, 10, 1234-1242 | 336 |
| 1082 | Chemical Reduction of Intrinsic Defects in Thicker Heterojunction Planar Perovskite Solar Cells. **2017**, 29, 1606774 | 267 |
| 1081 | Numerical simulation and analysis of hybrid physical-chemical vapor deposition to grow uniform perovskite MAPbI3. **2017**, 121, 144903 | 5 |
| 1080 | High-performance gas sensors based on a thiocyanate ion-doped organometal halide perovskite. **2017**, 19, 12876-12881 | 51 |
| 1079 | Impact of moisture on efficiency-determining electronic processes in perovskite solar cells. **2017**, 5, 10917-10927 | 76 |
| 1078 | New Acetylene-Bridged 9,10-Conjugated Anthracene Sensitizers: Application in Outdoor and Indoor Dye-Sensitized Solar Cells. **2017**, 7, 1700032 | 114 |
| 1077 | High-performance piezoelectric nanogenerators composed of formamidinium lead halide perovskite nanoparticles and poly(vinylidene fluoride). **2017**, 37, 126-135 | 113 |
| 1076 | Improved Performance and Stability of All-Inorganic Perovskite Light-Emitting Diodes by Antisolvent Vapor Treatment. **2017**, 27, 1700338 | 173 |
| 1075 | Perovskite Tandem Solar Cells. **2017**, 7, 1602761 | 138 |
| 1074 | Recent progress in hybrid perovskite solar cells based on n-type materials. **2017**, 5, 10092-10109 | 118 |
| 1073 | Enhanced Photovoltaic Properties Induced by Ferroelectric Domain Structures in Organometallic Halide Perovskites. **2017**, 121, 11151-11158 | 38 |
| 1072 | Lasing characteristics of single-crystalline CsPbCl3 perovskite microcavities under multiphoton excitation. **2017**, 50, 225101 | 16 |
| 1071 | Efficient Bulk Heterojunction CHNHPbI-TiO Solar Cells with TiO Nanoparticles at Grain Boundaries of Perovskite by Multi-Cycle-Coating Strategy. **2017**, 9, 16202-16214 | 17 |
| 1070 | A new formation strategy of hybrid perovskites via room temperature reactive polyiodide melts. **2017**, 4, 625-632 | 42 |

| | | |
|---|---|---|
| 1069 | Organic-Inorganic Hybrid Perovskite Solar Cells with Scalable and Roll-to-Roll Compatible Printing/Coating Processes. **2017**, 313-362 | 2 |
| 1068 | Organometal Trihalide Perovskite Absorbers: Optoelectronic Properties and Applications for Solar Cells. **2017**, 289-312 | |
| 1067 | Embedding lead halide perovskite quantum dots in carboxybenzene microcrystals improves stability. **2017**, 10, 2692-2698 | 27 |
| 1066 | Considerations for Upscaling of Organohalide Perovskite Solar Cells. **2017**, 5, 1600819 | 14 |
| 1065 | Stabilit□ von Perowskit-Solarzellen: Einfluss der Substitution von A-Kation und X-Anion. **2017**, 129, 1210-1233 | 24 |
| 1064 | Configuration-centered photovoltaic applications of metal halide perovskites. **2017**, 5, 902-909 | 16 |
| 1063 | Perovskite solar cells: An integrated hybrid lifecycle assessment and review in comparison with other photovoltaic technologies. **2017**, 80, 1321-1344 | 150 |
| 1062 | Hole transporting materials for mesoscopic perovskite solar cells □towards a rational design?. **2017**, 5, 16446-16466 | 105 |
| 1061 | The optimization of organic□norganic perovskite films by annealing atmosphere for applications in transistors. **2017**, 214, 1700170 | 14 |
| 1060 | Thermally Stable MAPbI Perovskite Solar Cells with Efficiency of 19.19% and Area over 1 cm achieved by Additive Engineering. **2017**, 29, 1701073 | 447 |
| 1059 | Methylammonium-Mediated Evolution of Mixed-Organic-Cation Perovskite Thin Films: A Dynamic Composition-Tuning Process. **2017**, 129, 7782-7786 | 12 |
| 1058 | Methylammonium-Mediated Evolution of Mixed-Organic-Cation Perovskite Thin Films: A Dynamic Composition-Tuning Process. **2017**, 56, 7674-7678 | 53 |
| 1057 | BaZrO 3 perovskite nanoparticles as emissive material for organic/inorganic hybrid light-emitting diodes. **2017**, 145, 399-403 | 7 |
| 1056 | Fully-Inorganic Trihalide Perovskite Nanocrystals: A New Research Frontier of Optoelectronic Materials. **2017**, 29, 1700775 | 183 |
| 1055 | Efficient electron transfer layer based on Al2O3 passivated TiO2 nanorod arrays for high performance evaporation-route deposited FAPbI3 perovskite solar cells. **2017**, 170, 187-196 | 24 |
| 1054 | Pressure-Induced Effects in Organic-Inorganic Hybrid Perovskites. **2017**, 8, 2613-2622 | 72 |
| 1053 | Recent advances in hierarchical three-dimensional titanium dioxide nanotree arrays for high-performance solar cells. **2017**, 5, 12699-12717 | 40 |
| 1052 | Perovskite solar cells - An overview of critical issues. **2017**, 53, 1-37 | 87 |

| | | |
|---|---|---|
| 1051 | Ternary oxide BaSnO3 nanoparticles as an efficient electron-transporting layer for planar perovskite solar cells. **2017**, 722, 196-206 | 19 |
| 1050 | Top-Down Fabrication of Stable Methylammonium Lead Halide Perovskite Nanocrystals by Employing a Mixture of Ligands as Coordinating Solvents. **2017**, 56, 9571-9576 | 84 |
| 1049 | Top-Down Fabrication of Stable Methylammonium Lead Halide Perovskite Nanocrystals by Employing a Mixture of Ligands as Coordinating Solvents. **2017**, 129, 9699-9704 | 26 |
| 1048 | Phosphorus-Containing Polycyclic Aromatic Hydrocarbons. **2017**, 18, 2618-2630 | 48 |
| 1047 | The Evolution of Quantum Confinement in CsPbBr3 Perovskite Nanocrystals. **2017**, 29, 3644-3652 | 183 |
| 1046 | Performance improvement of dual processed perovskite solar cell□cid-modified ZnO nanorods with Cl-doped light harvesting layer. **2017**, 41, 1847-1854 | 7 |
| 1045 | Cadmium-doped flexible perovskite solar cells with a low-cost and low-temperature-processed CdS electron transport layer. **2017**, 7, 19457-19463 | 41 |
| 1044 | Femtosecond Laser Direct Ablating Micro/Nanostructures and Micropatterns on CH3NH3 PbI3 Single Crystal. **2017**, 9, 1-10 | 3 |
| 1043 | Rapid, stable and self-powered perovskite detectors via a fast chemical vapor deposition process. **2017**, 7, 18224-18230 | 50 |
| 1042 | Construction of a bicontinuous donor-acceptor hybrid material at the molecular level by inserting inorganic nanowires into porous MOFs. **2017**, 53, 4481-4484 | 34 |
| 1041 | High-performance UV□is photodetectors based on electrospun ZnO nanofiber-solution processed perovskite hybrid structures. **2017**, 10, 2244-2256 | 62 |
| 1040 | Addressing Toxicity of Lead: Progress and Applications of Low-Toxic Metal Halide Perovskites and Their Derivatives. **2017**, 7, 1602512 | 217 |
| 1039 | High-performance nanotube-enhanced perovskite photodetectors. **2017**, 7, 45543 | 38 |
| 1038 | Shining a light on transition metal chalcogenides for sustainable photovoltaics. **2017**, 8, 4177-4187 | 66 |
| 1037 | CH NH PbBr Perovskite Nanocrystals as Efficient Light-Harvesting Antenna for Fluorescence Resonance Energy Transfer. **2017**, 12, 988-995 | 10 |
| 1036 | Elucidating the role of chlorine in perovskite solar cells. **2017**, 5, 7423-7432 | 76 |
| 1035 | Mixed cation hybrid lead halide perovskites with enhanced performance and stability. **2017**, 5, 11450-11461 | 123 |
| 1034 | Synthesis, Crystal Structures, Optical Properties, and Phase Transitions of the Layered Guanidinium-Based Hybrid Perovskites [C(NH2)3]2MI4; M = Sn, Pb. **2017**, 2017, 1120-1126 | 50 |

| | | |
|---|---|---|
| 1033 | Boron and phosphorus co-doped carbon counter electrode for efficient hole-conductor-free perovskite solar cell. **2017**, 313, 791-800 | 64 |
| 1032 | Channeling Exciton Migration into Electron Transfer in Formamidinium Lead Bromide Perovskite Nanocrystal/Fullerene Composites. **2017**, 56, 1214-1218 | 30 |
| 1031 | Channeling Exciton Migration into Electron Transfer in Formamidinium Lead Bromide Perovskite Nanocrystal/Fullerene Composites. **2017**, 129, 1234-1238 | 11 |
| 1030 | Thiophene-Functionalized Hybrid Perovskite Microrods and their Application in Photodetector Devices for Investigating Charge Transport Through Interfaces in Particle-Based Materials. **2017**, 9, 1077-1085 | 16 |
| 1029 | Novel efficient hole-transporting materials based on a 1,1?-bi-2-naphthol core for perovskite solar cells. **2017**, 7, 482-492 | 7 |
| 1028 | Di-isopropyl ether assisted crystallization of organic-inorganic perovskites for efficient and reproducible perovskite solar cells. **2017**, 9, 17893-17901 | 13 |
| 1027 | Virtual Issue on Metal-Halide Perovskite NanocrystalsÂ Bright Future for Optoelectronics. **2017**, 29, 8915-8917 | 10 |
| 1026 | Lead- and Iodide-Deficient (CH NH )PbI (d-MAPI): The Bridge between 2D and 3D Hybrid Perovskites. **2017**, 56, 16067-16072 | 60 |
| 1025 | Synergistic effect of caprolactam as lewis base and interface engineering for efficient and stable planar perovskite solar cells. **2017**, 42, 222-231 | 28 |
| 1024 | Intermediate Phase Intermolecular Exchange Triggered Defect Elimination in CHNHPbI toward Room-Temperature Fabrication of Efficient Perovskite Solar Cells. **2017**, 9, 40378-40385 | 11 |
| 1023 | Vapor-Deposited Perovskites: The Route to High-Performance Solar Cell Production?. **2017**, 1, 431-442 | 205 |
| 1022 | Bication lead iodide 2D perovskite component to stabilize inorganic ÐCsPbI perovskite phase for high-efficiency solar cells. **2017**, 3, e1700841 | 450 |
| 1021 | Numerical simulation and experimental validation of inverted planar perovskite solar cells based on NiOx hole transport layer. **2017**, 112, 383-393 | 17 |
| 1020 | Lead- and Iodide-Deficient (CH3NH3)PbI3 (d-MAPI): The Bridge between 2D and 3D Hybrid Perovskites. **2017**, 129, 16283-16288 | 11 |
| 1019 | Self-Powered Nanoscale Photodetectors. **2017**, 13, 1701848 | 130 |
| 1018 | Crystal and geometry-optimized structure, Hirshfeld surface analysis and spectroscopic studies of tetrachlorocuprate and nitrate salts of 1-(2-fluorophenyl)piperazine cations, (C10H15FN2)[CuCl4] (I) and (C10H14FN2)[NO3] (II). **2017**, 86, 118-127 | 1 |
| 1017 | Chemistry at high pressure: Tuning functional materials properties. **2017**, 42, 718-723 | 6 |
| 1016 | Effect of Extended Conjugation of N-Heterocyclic Carbene-Based Sensitizers on the Performance of Dye-Sensitized Solar Cells. **2017**, 56, 12987-12995 | 8 |

| | | |
|---|---|---|
| 1015 | Cove-Edge Nanoribbon Materials for Efficient Inverted Halide Perovskite Solar Cells. **2017**, 129, 14840-14844 | 13 |
| 1014 | Cove-Edge Nanoribbon Materials for Efficient Inverted Halide Perovskite Solar Cells. **2017**, 56, 14648-14652 | 40 |
| 1013 | Naphthalene Diimide Based n-Type Conjugated Polymers as Efficient Cathode Interfacial Materials for Polymer and Perovskite Solar Cells. **2017**, 9, 36070-36081 | 33 |
| 1012 | Organometal Trihalide Perovskites with Intriguing Ferroelectric and Piezoelectric Properties. **2017**, 27, 1702207 | 25 |
| 1011 | Investigation on the role of Lewis bases in the ripening process of perovskite films for highly efficient perovskite solar cells. **2017**, 5, 20874-20881 | 88 |
| 1010 | Dopant-free and low-cost molecular Beehole-transporting materials for efficient and stable perovskite solar cells. **2017**, 5, 11429-11435 | 36 |
| 1009 | Solvent-Coordinated Tin Halide Complexes as Purified Precursors for Tin-Based Perovskites. **2017**, 2, 7016-7021 | 61 |
| 1008 | Thermally evaporated hybrid perovskite for hetero-structured green light-emitting diodes. **2017**, 111, 163301 | 14 |
| 1007 | Unraveling the Charge Extraction Mechanism of Perovskite Solar Cells Fabricated with Two-Step Spin Coating: Interfacial Energetics between Methylammonium Lead Iodide and C. **2017**, 8, 5423-5429 | 25 |
| 1006 | Growth, characterization, and thin film transistor application of CH3NH3PbI3 perovskite on polymeric gate dielectric layers. **2017**, 7, 49353-49360 | 18 |
| 1005 | Stable Inverted Planar Perovskite Solar Cells with Low-Temperature-Processed Hole-Transport Bilayer. **2017**, 7, 1700763 | 97 |
| 1004 | Novel Low-Temperature Process for Perovskite Solar Cells with a Mesoporous TiO Scaffold. **2017**, 9, 30567-30574 | 27 |
| 1003 | Temperature-assisted rapid nucleation: a facile method to optimize the film morphology for perovskite solar cells. **2017**, 5, 20327-20333 | 125 |
| 1002 | Pressure-induced dramatic changes in organic-inorganic halide perovskites. **2017**, 8, 6764-6776 | 57 |
| 1001 | Influence of processing temperature and precursor composition on phase region of solution processed methylammonium lead iodide perovskite. **2017**, 4, 096201 | 0 |
| 1000 | Reduction of intrinsic defects in hybrid perovskite films via precursor purification. **2017**, 53, 10548-10551 | 24 |
| 999 | Room temperature nanoparticulate interfacial layers for perovskite solar cells via solvothermal synthesis. **2017**, 5, 20381-20389 | 25 |
| 998 | Additive-Assisted Controllable Growth of Perovskites. **2017**, 1-26 | 4 |

| | | |
|---|---|---|
| 997 | Flexible Photodetectors Based on Novel Functional Materials. **2017**, 13, 1701822 | 185 |
| 996 | Enhanced electronic transport in Fe3+-doped TiO2 for high efficiency perovskite solar cells. **2017**, 5, 10754-10760 | 69 |
| 995 | Synthesis and Characterization of Alkylamine-Functionalized Si(111) for Perovskite Adhesion With Minimal Interfacial Oxidation or Electronic Defects. **2017**, 9, 34377-34388 | 16 |
| 994 | Enhancing Performance and Uniformity of Perovskite Solar Cells via a Solution-Processed C Interlayer for Interface Engineering. **2017**, 9, 33810-33818 | 20 |
| 993 | Improved performance of CH3NH3PbBr3 perovskite solar cells utilizing PbI2 precursors. **2017**, 687, 106-109 | 4 |
| 992 | Hybrid Organic-Inorganic Perovskite Photodetectors. **2017**, 13, 1702107 | 206 |
| 991 | Highly Efficient and Stable Planar Perovskite Solar Cells With Large-Scale Manufacture of E-Beam Evaporated SnO2 Toward Commercialization. **2017**, 1, 1700118 | 53 |
| 990 | Zero-Dimensional Methylammonium Bismuth Iodide-Based Lead-Free Perovskite Capacitor. **2017**, 2, 5798-5802 | 38 |
| 989 | Constructing Efficient and Stable Perovskite Solar Cells via Interconnecting Perovskite Grains. **2017** , 9, 35200-35208 | 89 |
| 988 | Nucleation and Crystallization Control via Polyurethane to Enhance the Bendability of Perovskite Solar Cells with Excellent Device Performance. **2017**, 27, 1703061 | 116 |
| 987 | Preparation of CHNHPbI thin films with tens of micrometer scale at high temperature. **2017**, 7, 8458 | 13 |
| 986 | Solvent-Mediated Intragranular-Coarsening of CHNHPbI Thin Films toward High-Performance Perovskite Photovoltaics. **2017**, 9, 31959-31967 | 20 |
| 985 | Enhanced Moisture Stability of Cesium-Containing Compositional Perovskites by a Feasible Interfacial Engineering. **2017**, 4, 1700598 | 49 |
| 984 | Unraveling the High Open Circuit Voltage and High Performance of Integrated Perovskite/Organic Bulk-Heterojunction Solar Cells. **2017**, 17, 5140-5147 | 61 |
| 983 | DMF as an Additive in a Two-Step Spin-Coating Method for 20% Conversion Efficiency in Perovskite Solar Cells. **2017**, 9, 26937-26947 | 57 |
| 982 | Efficient Solid-State Electrochemiluminescence from High-Quality Perovskite Quantum Dot Films. **2017**, 89, 8212-8216 | 37 |
| 981 | Tailored Engineering of an Unusual (C4H9NH3)2(CH3NH3)2Pb3Br10 Two-Dimensional Multilayered Perovskite Ferroelectric for a High-Performance Photodetector. **2017**, 129, 12318-12322 | 52 |
| 980 | Investigation of Thermally Induced Degradation in CHNHPbI Perovskite Solar Cells using In-situ Synchrotron Radiation Analysis. **2017**, 7, 4645 | 135 |

| | | |
|---|---|---|
| 979 | Homogenous Alloys of Formamidinium Lead Triiodide and Cesium Tin Triiodide for Efficient Ideal-Bandgap Perovskite Solar Cells. **2017**, 56, 12658-12662 | 56 |
| 978 | Synthesis of Cesium Lead Halide Perovskite Quantum Dots. **2017**, 94, 1150-1156 | 38 |
| 977 | Vertical recrystallization for highly efficient and stable formamidinium-based inverted-structure perovskite solar cells. **2017**, 10, 1942-1949 | 309 |
| 976 | A-Site Cation Effect on Growth Thermodynamics and Photoconductive Properties in Ultrapure Lead Iodine Perovskite Monocrystalline Wires. **2017**, 9, 25985-25994 | 9 |
| 975 | Long-Lasting Nanophosphors Applied to UV-Resistant and Energy Storage Perovskite Solar Cells. **2017**, 7, 1700758 | 83 |
| 974 | Homogenous Alloys of Formamidinium Lead Triiodide and Cesium Tin Triiodide for Efficient Ideal-Bandgap Perovskite Solar Cells. **2017**, 129, 12832-12836 | 3 |
| 973 | Carbon-Dot/Natural-Dye Sensitizer for TiO2 Solar Cells Prepared by a One-Step Treatment of Celery Leaf Extract. **2017**, 1, 470-478 | 8 |
| 972 | Vertically Oriented 2D Layered Perovskite Solar Cells with Enhanced Efficiency and Good Stability. **2017**, 13, 1700611 | 158 |
| 971 | Tailored Engineering of an Unusual (C H NH ) (CH NH ) Pb Br Two-Dimensional Multilayered Perovskite Ferroelectric for a High-Performance Photodetector. **2017**, 56, 12150-12154 | 182 |
| 970 | Enhancing the Performance of Perovskite Solar Cells by Hybridizing SnS Quantum Dots with CH NH PbI. **2017**, 13, 1700953 | 64 |
| 969 | Emerging Semitransparent Solar Cells: Materials and Device Design. **2017**, 29, 1700192 | 154 |
| 968 | Fabrication of high-performance and low-hysteresis lead halide perovskite solar cells by utilizing a versatile alcohol-soluble bispyridinium salt as an efficient cathode modifier. **2017**, 5, 17943-17953 | 23 |
| 967 | From colossal magnetoresistance to solar cells: An overview on 66 years of research into perovskites. **2017**, 214, 1700394 | 11 |
| 966 | Interfacial Modification of Perovskite Solar Cells Using an Ultrathin MAI Layer Leads to Enhanced Energy Level Alignment, Efficiencies, and Reproducibility. **2017**, 8, 3947-3953 | 76 |
| 965 | Bromination-induced stability enhancement with a multivalley optical response signature in guanidinium [C(NH2)3]+-based hybrid perovskite solar cells. **2017**, 5, 18561-18568 | 8 |
| 964 | Reduction in the Interfacial Trap Density of Mechanochemically Synthesized MAPbI. **2017**, 9, 28418-28425 | 55 |
| 963 | Perovskite-based photodetectors: materials and devices. *Chemical Society Reviews*, **2017**, 46, 5204-5236 58.5 | 498 |
| 962 | Combining theory and experiment in the design of a lead-free ((CH3NH3)2AgBiI6) double perovskite. **2017**, 41, 9598-9601 | 51 |

| | | |
|---|---|---|
| 961 | Photoelectrochemical Solar Cells with Semiconductor Nanoparticles and Liquid Electrolytes: a Review. **2017**, 53, 145-179 | 5 |
| 960 | Assembly of donor-acceptor hybrid heterostructures based on iodoplumbates and viologen coordination polymers. **2017**, 46, 11556-11560 | 28 |
| 959 | Synthetic Manipulation of Hybrid Perovskite Systems in Search of New and Enhanced Functionalities. **2017**, 10, 3722-3739 | 10 |
| 958 | Photocatalytic Polymerization of 3,4-Ethylenedioxythiophene over Cesium Lead Iodide Perovskite Quantum Dots. **2017**, 139, 12267-12273 | 157 |
| 957 | Lead Iodide Microcrystals in Carbon Composite Matrix for Low Power Photodetectors. **2017**, 2, 11025-11029 | 8 |
| 956 | Enhanced Performance of Perovskite Solar Cells with Zinc Chloride Additives. **2017**, 9, 42875-42882 | 81 |
| 955 | Effect of Low Temperature on Charge Transport in Operational Planar and Mesoporous Perovskite Solar Cells. **2017**, 9, 42769-42778 | 3 |
| 954 | Hybrid Organic/Inorganic Perovskite-Polymer Nanocomposites: Toward the Enhancement of Structural and Electrical Properties. **2017**, 8, 5981-5986 | 15 |
| 953 | Segregation of Native Defects to the Grain Boundaries in Methylammonium Lead Iodide Perovskite. **2017**, 8, 5935-5942 | 40 |
| 952 | One-pot scalable synthesis of all-inorganic perovskite nanocrystals with tunable morphology, composition and photoluminescence. **2017**, 19, 7041-7049 | 26 |
| 951 | High-efficiency near-infrared enabled planar perovskite solar cells by embedding upconversion nanocrystals. **2017**, 9, 18535-18545 | 48 |
| 950 | Controlled Synthesis of Lead-Free Cesium Tin Halide Perovskite Cubic Nanocages with High Stability. **2017**, 29, 6493-6501 | 101 |
| 949 | Effects of deposition methods and processing techniques on band gap, interband electronic transitions, and optical absorption in perovskite CH3NH3PbI3 films. **2017**, 111, 011906 | 9 |
| 948 | Power output and carrier dynamics studies of perovskite solar cells under working conditions. **2017** , 19, 19922-19927 | 3 |
| 947 | Profiling Light Absorption Enhancement in Two-Dimensional Photonic-Structured Perovskite Solar Cells. **2017**, 7, 1324-1328 | 14 |
| 946 | Composite Perovskites of Cesium Lead Bromide for Optimized Photoluminescence. **2017**, 8, 3266-3271 | 89 |
| 945 | Hybrid organic-inorganic lead and tin halide perovskites with saturated heterocyclic cations (CH2)nNH2+ and (CH2)nOH+, (n = 2–5): Ab initio study. **2017**, 138, 99-104 | 5 |
| 944 | Large grained and high charge carrier lifetime CH3NH3PbI3 thin-films: implications for perovskite solar cells. **2017**, 17, 1335-1340 | 17 |

| | | |
|---|---|---|
| 943 | Acid Additives Enhancing the Conductivity of Spiro-OMeTAD Toward High-Efficiency and Hysteresis-Less Planar Perovskite Solar Cells. **2017**, 7, 1601451 | 90 |
| 942 | Hybrid Perovskite Thin-Film Photovoltaics: In Situ Diagnostics and Importance of the Precursor Solvate Phases. **2017**, 29, 1604113 | 120 |
| 941 | Transamidation of dimethylformamide during alkylammonium lead triiodide film formation for perovskite solar cells. **2017**, 32, 45-55 | 31 |
| 940 | Dynamic electrical behavior of halide perovskite based solar cells. **2017**, 159, 197-203 | 26 |
| 939 | Development of a Control Method for Conduction and Magnetism in Molecular Crystals. **2017**, 90, 89-136 | 14 |
| 938 | Stability of Perovskite Solar Cells: A Prospective on the Substitution of the A Cation and X Anion. **2017**, 56, 1190-1212 | 376 |
| 937 | Demonstration of stimulated emission in CsPbBrs nanocrystals integrating silica microsphere structure. **2017**, | |
| 936 | Material and Device Architecture Engineering Toward High Performance Two-Dimensional (2D) Photodetectors. **2017**, 7, 149 | 14 |
| 935 | High-sensitivity optical-fiber-compatible photodetector with an integrated CsPbBr_3graphene hybrid structure. **2017**, 4, 835 | 34 |
| 934 | CH3NH3Cl Assisted Solvent Engineering for Highly Crystallized and Large Grain Size Mixed-Composition (FAPbI3)0.85(MAPbBr3)0.15 Perovskites. **2017**, 7, 272 | 20 |
| 933 | Nanostructured Semiconductor Materials for Dye-Sensitized Solar Cells. **2017**, 2017, 1-31 | 71 |
| 932 | Optical Properties of Hybrid Organicnorganic Materials and their Applications Part I: Luminescence and Photochromism. **2017**, 275-316 | |
| 931 | Semiconductor Photocatalytic Systems for the Reductive Conversion of CO2 and N2. **2018**, 53, 359-386 | 5 |
| 930 | Ultrafast, Self-Driven, and Air-Stable Photodetectors Based on Multilayer PtSe/Perovskite Heterojunctions. **2018**, 9, 1185-1194 | 119 |
| 929 | Synthesis by Low Temperature Solution Processing of Ferroelectric Perovskite Oxide Thin Films as Candidate Materials for Photovoltaic Applications. **2018**, 45-81 | 1 |
| 928 | Nanosecond Time-Resolved Microscopic Gate-Modulation Imaging of Polycrystalline Organic Thin-Film Transistors. **2018**, 9, | 3 |
| 927 | Structure, thermal, and impedance study of a new organicnorganic hybrid [(CH 2 ) 7 (NH 3 ) 2 ]CoCl 4. **2018**, 118, 6-13 | 9 |
| 926 | Mixed halide hybrid perovskites: a paradigm shift in photovoltaics. **2018**, 6, 5507-5537 | 80 |

| | | | |
|---|---|---|---|
| 925 | Vacuum Deposited Triple-Cation Mixed-Halide Perovskite Solar Cells. **2018**, 8, 1703506 | | 115 |
| 924 | Efficient and Selective Photocatalytic Oxidation of Benzylic Alcohols with Hybrid Organic□Inorganic Perovskite Materials. **2018**, 3, 755-759 | | 147 |
| 923 | Coating Evaporated MAPI Thin Films with Organic Molecules: Improved Stability at High Temperature and Implementation in High-Efficiency Solar Cells. **2018**, 3, 835-839 | | 21 |
| 922 | Flexible Photovoltaic Systems. **2018**, 105-137 | | |
| 921 | Adsorption of molecular additive onto lead halide perovskite surfaces: A computational study on Lewis base thiophene additive passivation. **2018**, 443, 176-183 | | 34 |
| 920 | Graphene/Semiconductor Hybrid Heterostructures for Optoelectronic Device Applications. **2018**, 19, 41-83 | | 124 |
| 919 | Crystallization of CH3NH3PbI3□Brx perovskite from micro-droplets of lead acetate precursor solution. **2018**, 20, 3058-3065 | | 4 |
| 918 | Continuous Grain-Boundary Functionalization for High-Efficiency Perovskite Solar Cells with Exceptional Stability. **2018**, 4, 1404-1415 | | 124 |
| 917 | Defects in metal triiodide perovskite materials towards high-performance solar cells: origin, impact, characterization, and engineering. *Chemical Society Reviews*, **2018**, 47, 4581-4610 | 58.5 | 300 |
| 916 | Curtailing Perovskite Processing Limitations via Lamination at the Perovskite/Perovskite Interface. **2018**, 3, 1192-1197 | | 17 |
| 915 | Supramolecular Organization of [TeCl] with Ionic Liquid Cations: Studies on the Electrical Conductivity and Luminescent Properties. **2018**, 57, 5282-5291 | | 24 |
| 914 | One-Dimensional Organic-Inorganic Hybrid Perovskite Incorporating Near-Infrared-Absorbing Cyanine Cations. **2018**, 9, 2438-2442 | | 17 |
| 913 | Distinguishable Detection of Ultraviolet, Visible, and Infrared Spectrum with High-Responsivity Perovskite-Based Flexible Photosensors. **2018**, 14, e1800527 | | 29 |
| 912 | Fully doctor-bladed planar heterojunction perovskite solar cells under ambient condition. **2018**, 58, 153-158 | | 63 |
| 911 | Simplified Perovskite Solar Cell with 4.1% Efficiency Employing Inorganic CsPbBr as Light Absorber. **2018**, 14, e1704443 | | 91 |
| 910 | High-Quality Cs AgBiBr Double Perovskite Film for Lead-Free Inverted Planar Heterojunction Solar Cells with 2.2 % Efficiency. **2018**, 19, 1696-1700 | | 193 |
| 909 | Versatility of Carbon Enables All Carbon Based Perovskite Solar Cells to Achieve High Efficiency and High Stability. **2018**, 30, e1706975 | | 79 |
| 908 | High-Performance Perovskite Solar Cells with Large Grain-Size obtained by using the Lewis Acid-Base Adduct of Thiourea. **2018**, 2, 1800034 | | 71 |

| | | |
|---|---|---|
| 907 | Performance Enhancement of Perovskite Solar Cells Induced by Lead Acetate as an Additive. **2018**, 2, 1800066 | 74 |
| 906 | A method towards 100% internal quantum efficiency for all-inorganic cesium halide perovskite light-emitting diodes. **2018**, 58, 88-93 | 9 |
| 905 | Efficient planar perovskite solar cells based on low-cost spin-coated ultrathin Nb2O5 films. **2018**, 166, 187-194 | 22 |
| 904 | Ultrahigh-Performance Self-Powered Flexible Double-Twisted Fibrous Broadband Perovskite Photodetector. **2018**, 30, e1706986 | 132 |
| 903 | Recent Advances in Halide Perovskite Photodetectors Based on Different Dimensional Materials. **2018**, 6, 1701302 | 79 |
| 902 | The effects of interfacial recombination and injection barrier on the electrical characteristics of perovskite solar cells. **2018**, 8, 025312 | 12 |
| 901 | Pseudohalide-Induced 2D (CH NH ) PbI (SCN) Perovskite for Ternary Resistive Memory with High Performance. **2018**, 14, e1703667 | 65 |
| 900 | Bilateral Interface Engineering toward Efficient 2D□3D Bulk Heterojunction Tin Halide Lead-Free Perovskite Solar Cells. **2018**, 3, 713-721 | 151 |
| 899 | Novel synthesis process of methyl ammonium bromide and effect of particle size on structural, optical and thermodynamic behavior of CH3NH3PbBr3 organometallic perovskite light harvester. **2018**, 743, 728-736 | 21 |
| 898 | Low-Dimensional Plasmonic Photodetectors: Recent Progress and Future Opportunities. **2018**, 6, 1701282 | 47 |
| 897 | Electronic Properties of Cs-Based Halide Perovskites: An Ab Initio Study. **2018**, 215, 1700941 | 4 |
| 896 | Synthesis of highly efficient and stable CH3NH3PbBr3 perovskite nanocrystals within mesoporous silica through excess CH3NH3Br method. **2018**, 155, 23-29 | 5 |
| 895 | Effects of Spin□Orbit Coupling on Nonequilibrium Quantum Transport Properties of Hybrid Halide Perovskites. **2018**, 122, 4150-4155 | 7 |
| 894 | Grain Boundary Engineering of Halide Perovskite CH3NH3PbI3 Solar Cells with Photochemically Active Additives. **2018**, 122, 4817-4821 | 21 |
| 893 | Orientation Regulation of Phenylethylammonium Cation Based 2D Perovskite Solar Cell with Efficiency Higher Than 11%. **2018**, 8, 1702498 | 240 |
| 892 | Efficient Perovskite Solar Cells Fabricated by Co Partially Substituted Hybrid Perovskite. **2018**, 8, 1703178 | 88 |
| 891 | Incredible PCE enhancement induced by damaged perovskite layers: deeply understanding the working principle of additives in bulk heterojunction perovskite solar cells. **2018**, 6, 4365-4373 | 15 |
| 890 | Unraveling surface and bulk trap states in lead halide perovskite solar cells using impedance spectroscopy. **2018**, 51, 095501 | 17 |

| | | |
|---|---|---|
| 889 | Three dimensional photovoltaic fibers for wearable energy harvesting and conversion. **2018**, 27, 611-621 | 18 |
| 888 | Characterization of the influences of morphology on the intrinsic properties of perovskite films by temperature-dependent and time-resolved spectroscopies. **2018**, 20, 6575-6581 | 10 |
| 887 | Metal Oxides in Photovoltaics: All-Oxide, Ferroic, and Perovskite Solar Cells. **2018**, 267-356 | 22 |
| 886 | Improving the Stability of Metal Halide Perovskite Materials and Light-Emitting Diodes. **2018**, 30, e1704587 | 276 |
| 885 | Halide Perovskites for Applications beyond Photovoltaics. **2018**, 2, 1700310 | 63 |
| 884 | Subdiffraction Infrared Imaging of Mixed Cation Perovskites: Probing Local Cation Heterogeneities. **2018**, 3, 469-475 | 34 |
| 883 | Ternary Iodido Bismuthates and the Special Role of Copper. **2018**, 57, 633-640 | 23 |
| 882 | Manipulation of cation combinations and configurations of halide double perovskites for solar cell absorbers. **2018**, 6, 1809-1815 | 50 |
| 881 | Superior Self-Powered Room-Temperature Chemical Sensing with Light-Activated Inorganic Halides Perovskites. **2018**, 14, 1702571 | 54 |
| 880 | Chemical Stabilization of Perovskite Solar Cells with Functional Fulleropyrrolidines. **2018**, 4, 216-222 | 10 |
| 879 | All-Solid-State Mechanochemical Synthesis and Post-Synthetic Transformation of Inorganic Perovskite-type Halides. **2018**, 24, 1811-1815 | 77 |
| 878 | Realizing Efficient Lead-Free Formamidinium Tin Triiodide Perovskite Solar Cells via a Sequential Deposition Route. **2018**, 30, 1703800 | 151 |
| 877 | Role of Lead Vacancies for Optoelectronic Properties of Lead-Halide Perovskites. **2018**, 122, 5216-5226 | 15 |
| 876 | Temperature Gradient-Induced Instability of Perovskite via Ion Transport. **2018**, 10, 835-844 | 12 |
| 875 | Dual-Phase CsPbBr -CsPb Br Perovskite Thin Films via Vapor Deposition for High-Performance Rigid and Flexible Photodetectors. **2018**, 14, 1702523 | 100 |
| 874 | A Facile Low Temperature Fabrication of High Performance CsPbI2Br All-Inorganic Perovskite Solar Cells. **2018**, 2, 1700180 | 124 |
| 873 | Enhanced performance of perovskite/organic-semiconductor hybrid heterojunction photodetectors with the electron trapping effects. **2018**, 6, 1338-1342 | 43 |
| 872 | Highly Efficient Perovskite Solar Modules by Scalable Fabrication and Interconnection Optimization. **2018**, 3, 322-328 | 111 |

| | | |
|---|---|---|
| 871 | Cyclic Utilization of Lead in Carbon-Based Perovskite Solar Cells. **2018**, 6, 7558-7564 | 13 |
| 870 | Monodisperse and brightly luminescent CsPbBr/CsPbBr perovskite composite nanocrystals. **2018**, 10, 9840-9844 | 81 |
| 869 | One-step mechanochemical incorporation of an insoluble cesium additive for high performance planar heterojunction solar cells. **2018**, 49, 523-528 | 70 |
| 868 | White-light emission in a chiral one-dimensional organic□norganic hybrid perovskite. **2018**, 6, 6033-6037 | 96 |
| 867 | Ultrafast frequency-agile terahertz devices using methylammonium lead halide perovskites. **2018**, 4, eaar7353 | 38 |
| 866 | High throughput two-step ultrasonic spray deposited CH3NH3PbI3 thin film layer for solar cell application. **2018**, 390, 270-277 | 21 |
| 865 | Enhancing photovoltaic performance of perovskite solar cells with silica nanosphere antireflection coatings. **2018**, 169, 128-135 | 32 |
| 864 | Interfacial Energy-Level Alignment for High-Performance All-Inorganic Perovskite CsPbBr Quantum Dot-Based Inverted Light-Emitting Diodes. **2018**, 10, 13236-13243 | 36 |
| 863 | Secondary crystal growth for efficient planar perovskite solar cells in ambient atmosphere. **2018**, 58, 119-125 | 3 |
| 862 | Control of PbI2 nucleation and crystallization: towards efficient perovskite solar cells based on vapor-assisted solution process. **2018**, 5, 045507 | 3 |
| 861 | Dietary grape seed proanthocyanidin extract regulates metabolic disturbance in rat liver exposed to lead associated with PPAR□signaling pathway. **2018**, 237, 377-387 | 23 |
| 860 | First-Principles Screening of All-Inorganic Lead-Free ABX3 Perovskites. **2018**, 122, 7670-7675 | 50 |
| 859 | What Remains Unexplained about the Properties of Halide Perovskites?. **2018**, 30, e1800691 | 174 |
| 858 | Thermo-mechanical behavior of organic-inorganic halide perovskites for solar cells. **2018**, 150, 36-41 | 60 |
| 857 | High crystallization of a multiple cation perovskite absorber for low-temperature stable ZnO solar cells with high-efficiency of over 20. **2018**, 10, 7218-7227 | 41 |
| 856 | A novel ball milling technique for room temperature processing of TiO2 nanoparticles employed as the electron transport layer in perovskite solar cells and modules. **2018**, 6, 7114-7122 | 26 |
| 855 | Effect of interface defect density on performance of perovskite solar cell: Correlation of simulation and experiment. **2018**, 221, 150-153 | 33 |
| 854 | Hansen theory applied to the identification of nonhazardous solvents for hybrid perovskite thin-films processing. **2018**, 147, 9-14 | 8 |

| | | |
|---|---|---|
| 853 | First-principles investigation of the Lewis acid-base adduct formation at the methylammonium lead iodide surface. **2018**, 20, 11183-11195 | 7 |
| 852 | Enhancing Hybrid Perovskite Detectability in the Deep Ultraviolet Region with Down-Conversion Dual-Phase (CsPbBr-CsPbBr) Films. **2018**, 9, 1592-1599 | 67 |
| 851 | Recent progress on low dimensional perovskite solar cells. **2018**, 27, 1091-1100 | 21 |
| 850 | Recent progress in organometal halide perovskite photodetectors. **2018**, 52, 172-183 | 54 |
| 849 | A mixed-cation lead iodide MA1EAxPbI3 absorber for perovskite solar cells. **2018**, 27, 215-218 | 18 |
| 848 | Stability of Molecular Devices: Halide Perovskite Solar Cells. **2018**, 477-531 | 1 |
| 847 | Improving the efficiency and environmental stability of inverted planar perovskite solar cells via silver-doped nickel oxide hole-transporting layer. **2018**, 427, 782-790 | 62 |
| 846 | Photodetectors Based on Organic-Inorganic Hybrid Lead Halide Perovskites. **2018**, 5, 1700256 | 160 |
| 845 | A brief review on the lead element substitution in perovskite solar cells. **2018**, 27, 1054-1066 | 28 |
| 844 | On the performance of polymer:organometal halide perovskite composite light emitting devices: The effects of polymer additives. **2018**, 52, 350-355 | 22 |
| 843 | Applications of Phosphorene and Black Phosphorus in Energy Conversion and Storage Devices. **2018**, 8, 1702093 | 272 |
| 842 | Chip-Scale Fabrication of Uniform Lead Halide Perovskites Microlaser Array and Photodetector Array. **2018**, 12, 1700234 | 48 |
| 841 | Exploration of Crystallization Kinetics in Quasi Two-Dimensional Perovskite and High Performance Solar Cells. **2018**, 140, 459-465 | 248 |
| 840 | First principles investigation on pressure induced phase transition and photocatalytic properties in RbPbCl3. **2018**, 143, 403-410 | 5 |
| 839 | Highly Efficient and Stable Perovskite Solar Cells Enabled by All-Crosslinked Charge-Transporting Layers. **2018**, 2, 168-183 | 84 |
| 838 | All-Inorganic Perovskite Quantum Dots/p-Si Heterojunction Light-Emitting Diodes under DC and AC Driving Modes. **2018**, 6, 1700897 | 25 |
| 837 | Inorganic Hole-Transporting Materials for Perovskite Solar Cells. **2018**, 2, 1700280 | 100 |
| 836 | Photophysical Model for Non-Exponential Relaxation Dynamics in Hybrid Perovskite Semiconductors. **2018**, 122, 1119-1124 | 11 |

| | | |
|---|---|---|
| 835 | Interface Engineering for Highly Efficient and Stable Planar p-i-n Perovskite Solar Cells. **2018**, 8, 1701883 | 249 |
| 834 | Interactions between molecules and perovskites in halide perovskite solar cells. **2018**, 175, 1-19 | 54 |
| 833 | Rod-shaped thiocyanate-induced abnormal band gap broadening in SCN□doped CsPbBr3 perovskite nanocrystals. **2018**, 11, 2715-2723 | 30 |
| 832 | Basic Concepts of the Photochemistry of Semiconductor Nanoparticles. **2018**, 1-37 | |
| 831 | Semiconductor-Based Liquid-Junction Photoelectrochemical Solar Cells. **2018**, 161-240 | |
| 830 | Photonic Single Crystal Heterostructures based on Perovskites/Molybdenum disulfide. **2018**, | |
| 829 | Stimuli-responsive switchable organic-inorganic nanocomposite materials. **2018**, 23, 97-123 | 40 |
| 828 | New Helicene-Type Hole-Transporting Molecules for High-Performance and Durable Perovskite Solar Cells. **2018**, 10, 41439-41449 | 28 |
| 827 | Pressure effects on the inductive loop, mixed conduction, and photoresponsivity in formamidinium lead bromide perovskite. **2018**, 113, 262105 | 10 |
| 826 | High-performance lead-free two-dimensional perovskite photo transistors assisted by ferroelectric dielectrics. **2018**, 6, 12714-12720 | 25 |
| 825 | Phosphonium-Templated Iodoplumbates. **2018**, 3, 17077-17082 | 1 |
| 824 | Computational Prediction of Electronic and Photovoltaic Properties of Anthracene-Based Organic Dyes for Dye-Sensitized Solar Cells. **2018**, 2018, 1-17 | 1 |
| 823 | Robust Stability of Efficient Lead-Free Formamidinium Tin Iodide Perovskite Solar Cells Realized by Structural Regulation. **2018**, 9, 6999-7006 | 79 |
| 822 | Low Power Consumption Red Light-Emitting Diodes Based on Inorganic Perovskite Quantum Dots under an Alternating Current Driving Mode. **2018**, 8, | 11 |
| 821 | Facile Nanogold□Perovskite Enabling Ultrasensitive Flexible Broadband Photodetector with pW Scale Detection Limit. **2018**, 6, 1800996 | 9 |
| 820 | Band-Aligned Polymeric Hole Transport Materials for Extremely Low Energy Loss □CsPbI3 Perovskite Nanocrystal Solar Cells. **2018**, 2, 2450-2463 | 195 |
| 819 | Large and Ultrastable All-Inorganic CsPbBr Monocrystalline Films: Low-Temperature Growth and Application for High-Performance Photodetectors. **2018**, 30, e1802110 | 65 |
| 818 | Highly Stable New Organic-Inorganic Hybrid 3D Perovskite CHNHPdI and 2D Perovskite (CHNH)PdI: DFT Analysis, Synthesis, Structure, Transition Behavior, and Physical Properties. **2018**, 9, 5862-5872 | 16 |

| | | |
|---|---|---|
| 817 | Effects of post cure treatment in the glass transformation range on the structure and fire behavior of in situ generated silica/epoxy hybrids. **2018**, 87, 156-169 | 9 |
| 816 | Recent progress in photodetectors based on low-dimensional nanomaterials. **2018**, 7, 393-411 | 20 |
| 815 | Recent Studies of Semitransparent Solar Cells. **2018**, 8, 329 | 27 |
| 814 | Bandgap Engineering of Single-Crystalline Perovskite Arrays for High-Performance Photodetectors. **2018**, 28, 1804349 | 42 |
| 813 | Fast Room-Temperature Cation Exchange Synthesis of Mn-Doped CsPbCl Nanocrystals Driven by Dynamic Halogen Exchange. **2018**, 10, 39872-39878 | 45 |
| 812 | Band-Gap Tuning of Organic-Inorganic Hybrid Palladium Perovskite Materials for a Near-Infrared Optoelectronics Response. **2018**, 3, 13960-13966 | 19 |
| 811 | Scalable Ultrasonic Spray-Processing Technique for Manufacturing Large-Area CHNHPbI Perovskite Solar Cells. **2018**, 10, 38042-38050 | 29 |
| 810 | Progress on synthesis and applications of hybrid perovskite semiconductor nanomaterials□A review. **2018**, 246, 64-95 | 17 |
| 809 | Large guanidinium cation enhance photovoltage for perovskite solar cells via solution-processed secondary growth technique. **2018**, 176, 118-125 | 10 |
| 808 | Intermolecular Exchange Boosts Efficiency of Air-Stable, Carbon-Based All-Inorganic Planar CsPbIBr2 Perovskite Solar Cells to Over 9%. **2018**, 8, 1802080 | 173 |
| 807 | Heavy pnictogen chalcohalides: the synthesis, structure and properties of these rediscovered semiconductors. **2018**, 54, 12133-12162 | 17 |
| 806 | Switchable dielectric phase transition behaviors in two organic□inorganic copper(II) halides with distinct coordination geometries. **2018**, 20, 6261-6266 | 6 |
| 805 | Graphdiyne-Based Bulk Heterojunction for Efficient and Moisture-Stable Planar Perovskite Solar Cells. **2018**, 8, 1802012 | 53 |
| 804 | One-pot synthesis of D-□D-□D type hole-transporting materials for perovskite solar cells by sequential C-H (hetero)arylations. **2018**, 54, 11495-11498 | 11 |
| 803 | Investigation of Interface Effect on the Performance of CHNHPbCl/ZnO UV Photodetectors. **2018**, 10, 34744-34750 | 32 |
| 802 | Multifunctional RbCl dopants for efficient inverted planar perovskite solar cell with ultra-high fill factor, negligible hysteresis and improved stability. **2018**, 53, 567-578 | 47 |
| 801 | Large-Area, Solution-Processed, Hierarchical MAPbI3 Nanoribbon Arrays for Self-Powered Flexible Photodetectors. **2018**, 6, 1800615 | 29 |
| 800 | Fluorinated dopant-free hole-transporting material for efficient and stable perovskite solar cells with carbon cathode. **2018**, 401, 29-36 | 28 |

| | | | |
|---|---|---|---|
| 799 | Giant barocaloric tunability in [(CH3CH2CH2)4N]Cd[N(CN)2]3 hybrid perovskite. **2018**, 6, 9867-9874 | | 36 |
| 798 | Properties of MAPbI3 perovskite layers grown with HCl additions. **2018**, 120, 136-140 | | |
| 797 | Synthesis and optical properties of lead-free cesium germanium halide perovskite quantum rods.. **2018**, 8, 18396-18399 | | 63 |
| 796 | Solar light harvesting with multinary metal chalcogenide nanocrystals. *Chemical Society Reviews*, **2018**, 47, 5354-5422 | 58.5 | 122 |
| 795 | Improved performance and reproducibility of perovskite solar cells by jointly tuning the hole transport layer and the perovskite layer deposition. **2018**, 29, 12652-12661 | | 1 |
| 794 | Efficient and stable green-emitting CsPbBr3 perovskite nanocrystals in a microcapsule for light emitting diodes. **2018**, 352, 957-963 | | 28 |
| 793 | In situ identification of cation-exchange-induced reversible transformations of 3D and 2D perovskites. **2018**, 54, 5879-5882 | | 8 |
| 792 | Photonics and Optoelectronics of 2D Metal-Halide Perovskites. **2018**, 14, e1800682 | | 128 |
| 791 | Theoretical perspective to light outcoupling and management in perovskite light-emitting diodes. **2018**, 61, 351-358 | | 28 |
| 790 | Fully solution processed semi-transparent perovskite solar cells with spray-coated silver nanowires/ZnO composite top electrode. **2018**, 185, 399-405 | | 80 |
| 789 | Molecular design enabled reduction of interface trap density affords highly efficient and stable perovskite solar cells with over 83% fill factor. **2018**, 52, 300-306 | | 74 |
| 788 | Silicon/Perovskite Core-Shell Heterojunctions with Light-Trapping Effect for Sensitive Self-Driven Near-Infrared Photodetectors. **2018**, 10, 27850-27857 | | 39 |
| 787 | Super air stable quasi-2D organic-inorganic hybrid perovskites for visible light-emitting diodes. **2018**, 26, A66-A74 | | 38 |
| 786 | Polarized Ferroelectric Field-Enhanced Self-Powered Perovskite Photodetector. **2018**, 5, 3731-3738 | | 20 |
| 785 | Ultrasensitive Perovskite Photodetectors by Co Partially Substituted Hybrid Perovskite. **2018**, 6, 12055-12060 | | 12 |
| 784 | Li dopant induces moisture sensitive phase degradation of an all-inorganic CsPbIBr perovskite. **2018**, 54, 9809-9812 | | 66 |
| 783 | Recent advances toward practical use of halide perovskite nanocrystals. **2018**, 6, 21729-21746 | | 62 |
| 782 | Interfacial crosslinked quasi-2D perovskite with boosted carrier transport and enhanced stability. **2018**, 51, 404001 | | 18 |

| | | | |
|---|---|---|---|
| 781 | High-Performance Photodiode-Type Photodetectors Based on Polycrystalline Formamidinium Lead Iodide Perovskite Thin Films. **2018**, 8, 11157 | | 70 |
| 780 | Efficient charge separation at multiple quantum well perovskite/PCBM interface. **2018**, 113, 041103 | | 7 |
| 779 | Progress in tailoring perovskite based solar cells through compositional engineering: Materials properties, photovoltaic performance and critical issues. **2018**, 9, 440-486 | | 40 |
| 778 | Organic□horganic Composites Based on Gel-Type Sulfonic Resin KU-2-8 and Zirconia: Acid and Catalytic Properties in the Etherification Reaction of iso-Butylene with Ethanol. **2018**, 57, 10859-10865 | | 1 |
| 777 | Metal Halide Perovskite Single Crystals: From Growth Process to Application. **2018**, 8, 220 | | 24 |
| 776 | A fluorene-terminated hole-transporting material for highly efficient and stable perovskite solar cells. **2018**, 3, 682-689 | | 1537 |
| 775 | Rational Energy Band Alignment and Au Nanoparticles in Surface Plasmon Enhanced Si-Based Perovskite Quantum Dot Light-Emitting Diodes. **2018**, 6, 1800693 | | 24 |
| 774 | Interface Engineering of Graphene/CH3NH3PbI3 Heterostructure for Novel p□ Structural Perovskites Solar Cells. **2018**, 122, 17228-17237 | | 15 |
| 773 | Inorganic CsPb1□SnxIBr2 for Efficient Wide-Bandgap Perovskite Solar Cells. **2018**, 8, 1800525 | | 154 |
| 772 | Boosting the electroluminescence efficiency of solution-processed thermally activated delayed fluorescence OLEDs with a versatile hole-transporting layer of organic□horganic hybrid perovskite. **2018**, 6, 6305-6311 | | 3 |
| 771 | Application of Compact TiO2 Layer Fabricated by Pulsed Laser Deposition in Organometal Trihalide Perovskite Solar Cells. **2018**, 2, 1800097 | | 14 |
| 770 | 1D Organic□horganic Hybrid Perovskite Micro/Nanocrystals: Fabrication, Assembly, and Optoelectronic Applications. **2018**, 2, 1700340 | | 18 |
| 769 | Enhanced performance of TiO2-based perovskite solar cells with Ru-doped TiO2 electron transport layer. **2018**, 169, 335-342 | | 51 |
| 768 | Perovskite Carrier Transport: Disentangling the Impacts of Effective Mass and Scattering Time Through Microscopic Optical Detection. **2018**, 9, 2808-2813 | | 15 |
| 767 | Long-Term Stability of the Oxidized Hole-Transporting Materials used in Perovskite Solar Cells. **2018**, 24, 9910-9918 | | 54 |
| 766 | Structural effects on optoelectronic properties of halide perovskites. *Chemical Society Reviews*, **2018**, 47, 7045-7077 | 58.5 | 73 |
| 765 | Oxygen management in carbon electrode for high-performance printable perovskite solar cells. **2018**, 53, 160-167 | | 59 |
| 764 | Lead-free hybrid perovskites for photovoltaics. **2018**, 9, 2209-2235 | | 14 |

| | | |
|---|---|---|
| 763 | Metal-Doped Lead Halide Perovskites: Synthesis, Properties, and Optoelectronic Applications. **2018**, 30, 6589-6613 | 324 |
| 762 | Ellipsometric study of the complex optical constants of a CsPbBr3 perovskite thin film. **2018**, 6, 10450-10455 | 52 |
| 761 | Defects engineering for high-performance perovskite solar cells. **2018**, 2, | 207 |
| 760 | Simultaneous Formation of CH3NH3PbI3 and electron transport layers using antisolvent method for efficient perovskite solar cells. **2018**, 660, 75-81 | 6 |
| 759 | Polystyrene with a methoxytriphenylamine-conjugated-thiophene moiety side-chain as a dopant-free hole-transporting material for perovskite solar cells. **2018**, 6, 13123-13132 | 21 |
| 758 | Aqueous Synthesis of Methylammonium Lead Halide Perovskite Nanocrystals. **2018**, 130, 9798-9802 | 8 |
| 757 | Aqueous Synthesis of Methylammonium Lead Halide Perovskite Nanocrystals. **2018**, 57, 9650-9654 | 58 |
| 756 | Tailoring the Band Gap in 3D Hybrid Perovskites by Substitution of the Organic Cations: (CH NH ) (NH (CH ) NH ) Pb I (0 0.25). **2018**, 24, 9075-9082 | 10 |
| 755 | Improved performance and stability of perovskite solar cells by incorporating gamma-aminobutyric acid in CH3NH3PbI3. **2018**, 6, 12370-12379 | 9 |
| 754 | Self-Powered Photodetector Based on Electric-Field-Induced Effects in MAPbI Perovskite with Improved Stability. **2018**, 10, 21066-21072 | 49 |
| 753 | Solution-Processed High-Performance Hybrid Photodetectors Enhanced by Perovskite/MoS2 Bulk Heterojunction. **2018**, 5, 1800505 | 35 |
| 752 | Facile Surface Engineering of Nickel Oxide Thin Film for Enhanced Power Conversion Efficiency of Planar Heterojunction Perovskite Solar Cells. **2019**, 7, 15495-15503 | 17 |
| 751 | Quantifying multiple crystallite orientations and crystal heterogeneities in complex thin film materials. **2019**, 21, 5707-5720 | 10 |
| 750 | Single-Step Synthesis of Dual Phase Bright Blue-Green Emitting Lead Halide Perovskite Nanocrystal Thin Films. **2019**, 31, 6824-6832 | 14 |
| 749 | Metal halide perovskite nanocrystals and their applications in optoelectronic devices. **2019**, 1, 430-459 | 49 |
| 748 | New insights into the predicament of DFT assisted optimized energy, stability and distortions of optimized topologies of some novel complexes of Zirconium (IV) and enhancement of antimicrobial potential. **2019**, 33, e5080 | 3 |
| 747 | Using Silver Nanoparticles-Embedded Silica Metafilms as Substrates to Enhance the Performance of Perovskite Photodetectors. **2019**, 11, 32301-32309 | 20 |
| 746 | High-performance carbon-based perovskite solar cells through the dual role of PC61BM. **2019**, 6, 2767-2775 | 4 |

| | | |
|---|---|---|
| 745 | A mixed solvent for rapid fabrication of large-area methylammonium lead iodide layers by one-step coating at room temperature. **2019**, 7, 18275-18284 | 20 |
| 744 | Recent progress of d10 iodoargentate(I)/iodocuprate(I) hybrids: Structural diversity, directed synthesis, and photochromic/thermochromic properties. **2019**, 397, 91-111 | 77 |
| 743 | Functional Oxides for Photoneuromorphic Engineering: Toward a Solar Brain. **2019**, 6, 1900471 | 14 |
| 742 | Recent progress in fundamental understanding of halide perovskite semiconductors. **2019**, 106, 100580 | 69 |
| 741 | Light capacitances in silicon and perovskite solar cells. **2019**, 189, 103-110 | 12 |
| 740 | Bacteriorhodopsin Enhances Efficiency of Perovskite Solar Cells. **2019**, 11, 30728-30734 | 16 |
| 739 | First-principles insights of electronic and optical properties of Zn-doped CH3NH3PbI3 for photovoltaic applications. **2019**, 12, 082011 | 3 |
| 738 | Monochromatic LEDs based on perovskite quantum dots: Opportunities and challenges. **2019**, 27, 667-678 | 7 |
| 737 | Ultrahighly Photosensitive and Highly Stretchable Rippled Structure Photodetectors Based on Perovskite Nanocrystals and Graphene. **2019**, 1, 1517-1526 | 3 |
| 736 | Lead halide perovskites for photocatalytic organic synthesis. **2019**, 10, 2843 | 163 |
| 735 | Inorganic CsPbI3 Perovskites toward High-Efficiency Photovoltaics. **2019**, 2, 73-78 | 27 |
| 734 | Additional Organic-Solvent-Rinsing Process to Enhance Perovskite Photovoltaic Performance. **2019**, 5, 1900244 | 6 |
| 733 | Quantum Dots Supply Bulk- and Surface-Passivation Agents for Efficient and Stable Perovskite Solar Cells. **2019**, 3, 1963-1976 | 154 |
| 732 | Improving the performance of lead acetate-based perovskite solar cells via solvent vapor annealing. **2019**, 21, 4753-4762 | 9 |
| 731 | Review on Recent Progress of All-Inorganic Metal Halide Perovskites and Solar Cells. **2019**, 31, e1902851 | 191 |
| 730 | Hybrid Metal Halides with Multiple Photoluminescence Centers. **2019**, 58, 18670-18675 | 93 |
| 729 | Controlled Growth of CH3NH3PbBr3 Perovskite Nanocrystals via a Water□Oil Interfacial Synthesis Method. **2019**, 131, 17795-17799 | 3 |
| 728 | Recent advances in atomic imaging of organic-inorganic hybrid perovskites. **2019**, 1, 260-267 | 5 |

| | | |
|---|---|---|
| 727 | Role of the solvent in large crystal grain growth of inorganic-organic halide FA0.8Cs0.2PbIxBr3 □x perovskite thin films monitored by ellipsometry. **2019**, 37, 062401 | 1 |
| 726 | Supercompliant and Soft (CH_{3}NH_{3})_{3}Bi_{2}I_{9} Crystal with Ultralow Thermal Conductivity. **2019**, 123, 155901 | 20 |
| 725 | Band structure engineering in metal halide perovskite nanostructures for optoelectronic applications. **2019**, 1, 268-287 | 65 |
| 724 | Organic salt mediated growth of phase pure and stable all-inorganic CsPbX3 (X = I, Br) perovskites for efficient photovoltaics. **2019**, 64, 1773-1779 | 29 |
| 723 | Core-Shell ZnO@SnO Nanoparticles for Efficient Inorganic Perovskite Solar Cells. **2019**, 141, 17610-17616 | 69 |
| 722 | Investigation of Oxygen Passivation for High-Performance All-Inorganic Perovskite Solar Cells. **2019**, 141, 18075-18082 | 76 |
| 721 | Solution-Processed Inorganic Perovskite Flexible Photodetectors with High Performance. **2019**, 14, 284 | 12 |
| 720 | Mechanoperovskites for Photovoltaic Applications: Preparation, Characterization, and Device Fabrication. **2019**, 52, 3233-3243 | 46 |
| 719 | CH3NH3PbBr3 Nanocrystals Formed in situ in Polystyrene Used for Increasing the Color Rendering Index of White Leds. **2019**, 55, 223-231 | 3 |
| 718 | Vacuum-Deposited 2D/3D Perovskite Heterojunctions. **2019**, 4, 2893-2901 | 38 |
| 717 | Structures and Properties of Higher-Degree Aggregates of Methylammonium Iodide toward Halide Perovskite Solar Cells. **2019**, 93, 2250-2255 | 1 |
| 716 | Controlled Growth of CH NH PbBr Perovskite Nanocrystals via a Water-Oil Interfacial Synthesis Method. **2019**, 58, 17631-17635 | 7 |
| 715 | Effect of CsCl Additive on the Morphological and Optoelectronic Properties of Formamidinium Lead Iodide Perovskite. **2019**, 3, 1900294 | 18 |
| 714 | A Sound Source Localization Device Based on Rectangular Pyramid Structure for Mobile Robot. **2019**, 2019, 1-13 | 1 |
| 713 | Hybrid Metal Halides with Multiple Photoluminescence Centers. **2019**, 131, 18843-18848 | 21 |
| 712 | Sensitive Deep Ultraviolet Photodetector and Image Sensor Composed of Inorganic Lead-Free CsCuI Perovskite with Wide Bandgap. **2019**, 10, 5343-5350 | 99 |
| 711 | Green-Emitting Powders of Zero-Dimensional CsPbBr: Delineating the Intricacies of the Synthesis and the Origin of Photoluminescence. **2019**, 31, 7761-7769 | 47 |
| 710 | Engineering of perovskite light-emitting diodes based on quasi-2D perovskites formed by diamine cations. **2019**, 75, 105400 | 12 |

| | | |
|---|---|---|
| 709 | . **2019**, 7, 90999-91008 | 5 |
| 708 | NaSbSe2 as a promising light-absorber semiconductor in solar cells: First-principles insights. **2019**, 7, 081122 | 6 |
| 707 | Spontaneous low-temperature crystallization of FAPbI3 for highly efficient perovskite solar cells. **2019**, 64, 1608-1616 | 27 |
| 706 | Pathways toward high-performance inorganic perovskite solar cells: challenges and strategies. **2019**, 7, 20494-20518 | 44 |
| 705 | Lead-Free Hybrid Metal Halides with a Green-Emissive [MnBr] Unit as a Selective Turn-On Fluorescent Sensor for Acetone. **2019**, 58, 13464-13470 | 56 |
| 704 | Cyclic Peptide Stabilized Lead Halide Perovskite Nanoparticles. **2019**, 9, 12966 | 7 |
| 703 | Photoactive Ag(I)-Based Coordination Polymer as a Potential Semiconductor for Photocatalytic Water Splitting and Environmental Remediation: Experimental and Theoretical Approach. **2019**, 123, 23940-23950 | 10 |
| 702 | Revealing the Origin of Luminescence Center in 0D Cs4PbBr6 Perovskite. **2019**, 31, 9098-9104 | 47 |
| 701 | Electrical-Field-Driven Tunable Spectral Responses in a Broadband-Absorbing Perovskite Photodiode. **2019**, 11, 39018-39025 | 5 |
| 700 | MAPbI3 Single Crystals Free from Hole-Trapping Centers for Enhanced Photodetectivity. **2019**, 4, 2579-2584 | 28 |
| 699 | Organic composition tailored perovskite solar cells and light-emitting diodes: Perspectives and advances. **2019**, 14, 100338 | 8 |
| 698 | Highly efficient perovskite light-emitting devices containing a cuprous thiocyanate hole injection layer. **2019**, 75, 105420 | 3 |
| 697 | Enhancing the Phase Stability of Inorganic CsPbI by the Bication-Conjugated Organic Molecule for Efficient Perovskite Solar Cells. **2019**, 11, 37720-37725 | 36 |
| 696 | Vibrational modes, chemical states and thermal stability of mechanochemically synthesized methylammonium lead iodide (CH3NH3PbI3) perovskites. **2019**, 241, 140-143 | 2 |
| 695 | Atomic layer deposition for efficient and stable perovskite solar cells. **2019**, 55, 2403-2416 | 52 |
| 694 | Structural and optical properties of 2D Ruddlesden-Popper perovskite (BA)2(FA)n1PbnI3n+1 compounds for photovoltaic applications. **2019**, 102, 4152-4160 | 3 |
| 693 | All-inorganic lead-free perovskites for optoelectronic applications. **2019**, 3, 365-375 | 77 |
| 692 | Gradient Energy Band Driven High-Performance Self-Powered Perovskite/CdS Photodetector. **2019**, 31, e1806725 | 130 |

| | | |
|---|---|---|
| 691 | 2D perovskite hybrid with both semiconductive and yellow light emission properties. **2019**, 102, 90-94 | 6 |
| 690 | First-Principles Modeling of Lead-Free Perovskites for Photovoltaic Applications. **2019**, 123, 3795-3800 | 11 |
| 689 | Redox-Active 1D Coordination Polymers of Iron-Sulfur Clusters. **2019**, 141, 3940-3951 | 23 |
| 688 | Syntheses of two-dimensional propylammonium lead halide perovskite microstructures by a solution route. **2019**, 21, 1458-1465 | 7 |
| 687 | Nanomaterials for luminescent detection of water and humidity. **2019**, 144, 388-395 | 38 |
| 686 | The capricious nature of iodine catenation in I excess, perovskite-derived hybrid Pt(iv) compounds. **2019**, 55, 588-591 | 11 |
| 685 | Charge transfer dynamics in CsPbBr perovskite quantum dots-anthraquinone/fullerene (C) hybrids. **2019**, 11, 862-869 | 17 |
| 684 | Low-temperature processed inorganic perovskites for flexible detectors with a broadband photoresponse. **2019**, 11, 2871-2877 | 57 |
| 683 | Inorganic CsBi3I10 perovskite/silicon heterojunctions for sensitive, self-driven and air-stable NIR photodetectors. **2019**, 7, 863-870 | 34 |
| 682 | Halide perovskites for resistive random-access memories. **2019**, 7, 5226-5234 | 61 |
| 681 | Transition metal complex dye-sensitized 3D iodoplumbates: syntheses, structures and photoelectric properties. **2019**, 55, 6874-6877 | 30 |
| 680 | Bifunctional π-conjugated ligand assisted stable and efficient perovskite solar cell fabrication via interfacial stitching. **2019**, 7, 16533-16540 | 24 |
| 679 | Discrete SnO2 Nanoparticle-Modified Poly(3,4-Ethylenedioxythiophene):Poly(Styrenesulfonate) for Efficient Perovskite Solar Cells. **2019**, 3, 1900162 | 10 |
| 678 | Benign Pinholes in CsPbIBr2 Absorber Film Enable Efficient Carbon-Based, All-Inorganic Perovskite Solar Cells. **2019**, 2, 5254-5262 | 26 |
| 677 | Boosting the external quantum efficiency in perovskite light-emitting diodes by an exciton retrieving layer. **2019**, 7, 8705-8711 | 4 |
| 676 | First-principles insight on the electronic and optical properties of Ge-based inorganic perovskites. **2019**, 12, 071007 | 3 |
| 675 | Extrinsic Green Photoluminescence from the Edges of 2D Cesium Lead Halides. **2019**, 31, e1902492 | 48 |
| 674 | Scintillation Properties of Perovskite Single Crystals. **2019**, 123, 17449-17453 | 20 |

| | | |
|---|---|---|
| 673 | Modulating optoelectronic properties of organo-metal halide perovskites with unsaturated heterocyclic cations via ring substitution. **2019**, 135, 109078 | 3 |
| 672 | Strategies toward High-Performance Solution-Processed Lateral Photodetectors. **2019**, 31, e1901473 | 26 |
| 671 | Size- and Morphology-Dependent Auger Recombination in CsPbBr Perovskite Two-Dimensional Nanoplatelets and One-Dimensional Nanorods. **2019**, 19, 5620-5627 | 38 |
| 670 | Ultrahydrophobic 3D/2D fluoroarene bilayer-based water-resistant perovskite solar cells with efficiencies exceeding 22. **2019**, 5, eaaw2543 | 362 |
| 669 | Improving the Performance of Planar Perovskite Solar Cells through a Preheated, Delayed Annealing Process To Control Nucleation and Phase Transition of Perovskite Films. **2019**, 19, 4314-4323 | 3 |
| 668 | Ultrasonic synthesis of Mn-doped CsPbCl3 quantum dots (QDs) with enhanced photoluminescence. **2019**, 94, 41-46 | 12 |
| 667 | Pressure-Induced Phase Transition and Band Gap Engineering in Propylammonium Lead Bromide Perovskite. **2019**, 123, 15204-15208 | 8 |
| 666 | Memristors with organic-inorganic halide perovskites. **2019**, 1, 183 | 50 |
| 665 | Accelerated crystallization and encapsulation for the synthesis of water- and oxygen-resistant perovskite nanoparticles in micro-droplets. **2019**, 11, 11093-11098 | 9 |
| 664 | An Improved Strategy for High-Quality Cesium Bismuth Bromine Perovskite Quantum Dots with Remarkable Electrochemiluminescence Activities. **2019**, 91, 8607-8614 | 45 |
| 663 | A comparative study of structural, electronic and optical properties based on metal-doped methylammonium lead halides via first-principles calculations. **2019**, 43, 9453-9457 | 4 |
| 662 | Low-dimensional nanomaterial/Si heterostructure-based photodetectors. **2019**, 1, 140 | 38 |
| 661 | 2D Intermediate Suppression for Efficient Ruddlesden–Popper (RP) Phase Lead-Free Perovskite Solar Cells. **2019**, 4, 1513-1520 | 121 |
| 660 | High-Performance Nanofloating Gate Memory Based on Lead Halide Perovskite Nanocrystals. **2019**, 11, 24367-24376 | 15 |
| 659 | In Situ Observation of Crystallization Dynamics and Grain Orientation in Sequential Deposition of Metal Halide Perovskites. **2019**, 29, 1902319 | 34 |
| 658 | To Greatly Reduce Defects via Photoannealing for High-Quality Perovskite Films. **2019**, 11, 20943-20948 | 12 |
| 657 | High Responsivity and Response Speed Single-Layer Mixed-Cation Lead Mixed-Halide Perovskite Photodetectors Based on Nanogap Electrodes Manufactured on Large-Area Rigid and Flexible Substrates. **2019**, 29, 1901371 | 22 |
| 656 | Stable mixed-cation perovskite light-emitting diodes. **2019**, 71, 58-64 | 13 |

| | | |
|---|---|---|
| 655 | Polyoxometalate-Based Inorganic□Organic Hybrid [Cu(phen)2]2[(□Mo8O26)]: A New Additive to Spiro-OMeTAD for Efficient and Stable Perovskite Solar Cells. **2019**, 2, 4224-4233 | 8 |
| 654 | Recent Progress in Organic Electron Transport Materials in Inverted Perovskite Solar Cells. **2019**, 15, e1900854 | 141 |
| 653 | Compositional, Processing, and Interfacial Engineering of Nanocrystal- and Quantum-Dot-Based Perovskite Solar Cells. **2019**, 31, 6387-6411 | 66 |
| 652 | Recent advantages of colloidal photonic crystals and their applications for luminescence enhancement. **2019**, 6, 100039 | 24 |
| 651 | Enhancing the performance of mixed-halide perovskite-based light-emitting devices by organic additive inclusion. **2019**, 253, 88-93 | 4 |
| 650 | Halide Perovskite Nanocrystals for Next-Generation Optoelectronics. **2019**, 15, e1900801 | 37 |
| 649 | Efficient perovskite solar cells with negligible hysteresis achieved by sol□gel-driven spinel nickel cobalt oxide thin films as the hole transport layer. **2019**, 7, 7288-7298 | 13 |
| 648 | 47-Fold EQE improvement in CsPbBr3 perovskite light-emitting diodes via double-additives assistance. **2019**, 70, 264-271 | 9 |
| 647 | Saddle-like, □conjugated, cyclooctatetrathiophene-based, hole-transporting material for perovskite solar cells. **2019**, 7, 6656-6663 | 21 |
| 646 | Formation and optical properties of hybrid organic-inorganic MAPbI3 perovskite films. **2019**, 498, 012012 | |
| 645 | Photovoltaic Performance of Lead-Less Hybrid Perovskites from Theoretical Study. **2019**, | 28 |
| 644 | Solution-Phase Epitaxial Growth of Perovskite Films on 2D Material Flakes for High-Performance Solar Cells. **2019**, 31, e1807689 | 115 |
| 643 | Harnessing MOF materials in photovoltaic devices: recent advances, challenges, and perspectives. **2019**, 7, 17079-17095 | 182 |
| 642 | Semitransparent, Flexible, and Self-Powered Photodetectors Based on Ferroelectricity-Assisted Perovskite Nanowire Arrays. **2019**, 29, 1901280 | 51 |
| 641 | Resistive switching behavior of organic-metallic halide perovskites CH3NH3Pb1□Bi Br3. **2019**, 70, 252-257 | 9 |
| 640 | Metal Halide Perovskite Light-Emitting Devices: Promising Technology for Next-Generation Displays. **2019**, 29, 1902008 | 203 |
| 639 | Enhanced performance of mesostructured perovskite solar cells with a composite Sn4+-doped TiO2 electron transport layer. **2019**, 25, 4509-4516 | 6 |
| 638 | Data mining new energy materials from structure databases. **2019**, 107, 554-567 | 19 |

| | | |
|---|---|---|
| 637 | Novel hybrid semiconducting lead and tin halide perovskites with saturated heterocyclic cations (CH2)nPH2+ and (CH2)nSH+, (n=2–8): Ab initio study. **2019**, 229, 387-391 | 2 |
| 636 | Guanidinium induced phase separated perovskite layer for efficient and highly stable solar cells. **2019**, 7, 9486-9496 | 51 |
| 635 | Aqueous acid-based synthesis of lead-free tin halide perovskites with near-unity photoluminescence quantum efficiency. **2019**, 10, 4573-4579 | 77 |
| 634 | Ethylammonium as an alternative cation for efficient perovskite solar cells from first-principles calculations.. **2019**, 9, 7356-7361 | 18 |
| 633 | Chemical stability and instability of inorganic halide perovskites. **2019**, 12, 1495-1511 | 335 |
| 632 | Bright Blue Light-Emitting Doped Cesium Bromide Nanocrystals: Alternatives of Lead-Free Perovskite Nanocrystals for White LEDs. **2019**, 7, 1900108 | 21 |
| 631 | 20.7% highly reproducible inverted planar perovskite solar cells with enhanced fill factor and eliminated hysteresis. **2019**, 12, 1622-1633 | 134 |
| 630 | Asymmetric Contact-Induced Self-Driven Perovskite-Microwire-Array Photodetectors. **2019**, 5, 1900135 | 27 |
| 629 | In situ growth of CsPbI3 on carbon nanofibers via electrospinning. **2019**, 723, 11-15 | 5 |
| 628 | Facile synthesis of 1D organic-inorganic perovskite micro-belts with high water stability for sensing and photonic applications. **2019**, 10, 4567-4572 | 159 |
| 627 | Hot airflow deposition: Toward high quality MAPbI3 perovskite films. **2019**, 790, 1101-1107 | 3 |
| 626 | Recent Challenges in Perovskite Solar Cells Toward Enhanced Stability, Less Toxicity, and Large-Area Mass Production. **2019**, 6, 1801758 | 36 |
| 625 | Graphene-Assisted Growth of Patterned Perovskite Films for Sensitive Light Detector and Optical Image Sensor Application. **2019**, 15, e1900730 | 31 |
| 624 | Understanding adsorption of nucleobases on CH3NH3PbI3 surfaces toward biological applications of halide perovskite materials. **2019**, 483, 1052-1057 | 5 |
| 623 | Interface modification by a multifunctional ammonium salt for high performance and stable planar perovskite solar cells. **2019**, 7, 11867-11876 | 30 |
| 622 | Simple fabrication of layered halide perovskite platelets and enhanced photoluminescence from mechanically exfoliated flakes. **2019**, 11, 8334-8342 | 16 |
| 621 | Hexagonal MASnI3 exhibiting strong absorption of ultraviolet photons. **2019**, 114, 101906 | 4 |
| 620 | Origin of Luminescent Centers and Edge States in Low-Dimensional Lead Halide Perovskites: Controversies, Challenges and Instructive Approaches. **2019**, 11, 26 | 35 |

| | | |
|---|---|---|
| 619 | Mechanochemical synthesis of 0D and 3D cesium lead mixed halide perovskites. **2019**, 55, 5079-5082 | 56 |
| 618 | 2D-Organic Hybrid Heterostructures for Optoelectronic Applications. **2019**, 31, e1803831 | 46 |
| 617 | Thiourea Bismuth Iodide: Crystal Structure, Characterization and High Performance as an Electrode Material for Supercapacitors. **2019**, 2, 568-575 | 8 |
| 616 | Improving Performance of Perovskite Solar Cells Using [7]Helicenes with Stable Partial Biradical Characters as the Hole-Extraction Layers. **2019**, 29, 1808625 | 29 |
| 615 | A promising europium-based down conversion material: organic–inorganic perovskite solar cells with high photovoltaic performance and UV-light stability. **2019**, 7, 6467-6474 | 32 |
| 614 | Solution Route to Single-Crystalline Ethylammonium Lead Halide Microstructures. **2019**, 4, 2174-2180 | 1 |
| 613 | Water-stable and ion exchange-free inorganic perovskite quantum dots encapsulated in solid paraffin and their application in light emitting diodes. **2019**, 11, 5557-5563 | 29 |
| 612 | Slow Hot-Carrier Cooling in Halide Perovskites: Prospects for Hot-Carrier Solar Cells. **2019**, 31, e1802486 | 104 |
| 611 | Minimalist Design of Efficient, Stable Perovskite Solar Cells. **2019**, 11, 12460-12466 | 7 |
| 610 | Structure optimization of perovskite quantum dot light-emitting diodes. **2019**, 11, 5021-5029 | 36 |
| 609 | Hydrophilic perovskite microdisks with excellent stability and strong fluorescence for recyclable temperature sensing. **2019**, 62, 1065-1070 | 9 |
| 608 | Enhanced optical absorption and efficient cascade electron extraction based on energy band alignment double absorbers perovskite solar cells. **2019**, 194, 168-176 | 12 |
| 607 | Influence of A-site cations on the open-circuit voltage of efficient perovskite solar cells: a case of rubidium and guanidinium additives. **2019**, 7, 8218-8225 | 31 |
| 606 | Optimized opto-electronic and mechanical properties of orthorhombic methylamunium lead halides (MAPbX3) (X = I, Br and Cl) for photovoltaic applications. **2019**, 182, 9-15 | 11 |
| 605 | Metal Halide Perovskite Nanocrystals: Synthesis, Post-Synthesis Modifications, and Their Optical Properties. **2019**, 119, 3296-3348 | 712 |
| 604 | Influence of a lecithin additive on the performance of all-inorganic perovskite light-emitting diodes. **2019**, 7, 2905-2910 | 16 |
| 603 | All-Perovskite Photodetector with Fast Response. **2019**, 14, 291 | 31 |
| 602 | Crystal Structure, Morphology, and Surface Termination of Cyan-Emissive, Six-Monolayers-Thick CsPbBr Nanoplatelets from X-ray Total Scattering. **2019**, 13, 14294-14307 | 47 |

| | | | |
|---|---|---|---|
| 601 | Structural and electronic properties of multifunctional carbon composites of organometal halide perovskites. **2019**, 7, 25020-25031 | | 5 |
| 600 | Optical Behaviors of a Microsized Single-Crystal MAPbI3 Plate under High Pressure. **2019**, 123, 30221-30227 | | 7 |
| 599 | Restraining effect of film thickness on the behaviour of amplified spontaneous emission from methylammonium lead iodide perovskite. **2019**, 13, 2-6 | | 10 |
| 598 | Intermolecular Interactions of Hybrid Organic Dyes Based on Coumarin 343 for Optoelectronic Applications. **2019**, 93, 2542-2549 | | |
| 597 | Enhanced terahertz emission from imprinted halide perovskite nanostructures. **2019**, 9, 187-194 | | 7 |
| 596 | Spectral Characteristics of Mechanochemically Prepared Perovskite CH3NH3PbBr3 Nanoparticles Passivated by Amines with Different Alkyl Chain Length. **2019**, 55, 316-323 | | 2 |
| 595 | Zn-Alloyed All-Inorganic Halide Perovskite-Based White Light-Emitting Diodes with Superior Color Quality. **2019**, 9, 18636 | | 30 |
| 594 | A novel photochromic hybrid containing trinuclear [CdCl] clusters and protonated tripyridyl-triazines. **2019**, 48, 16497-16501 | | 26 |
| 593 | Influence of drying temperature on morphology of MAPbI3 thin films and the performance of solar cells. **2019**, 773, 511-518 | | 19 |
| 592 | Rational chemical doping of metal halide perovskites. *Chemical Society Reviews*, **2019**, 48, 517-539 | 58.5 | 130 |
| 591 | Lead-free, stable, and effective double FA4GeIISbIIICl12 perovskite for photovoltaic applications. **2019**, 192, 140-146 | | 19 |
| 590 | Exploring wide bandgap metal oxides for perovskite solar cells. **2019**, 7, 022401 | | 33 |
| 589 | Reduced Graphene Oxide/CZTSxSe1-x Composites as a Novel Hole-Transport Functional Layer in Perovskite Solar Cells. **2019**, 6, 1500-1507 | | 8 |
| 588 | Electronic mobility and crystal structures of 2,5-dimethylanilinium triiodide and tin-based organic-inorganic hybrid compounds. **2019**, 270, 593-600 | | 5 |
| 587 | Excess Cesium Iodide Induces Spinodal Decomposition of CsPbIBr Perovskite Films. **2019**, 10, 194-199 | | 55 |
| 586 | Facet-Dependent Control of PbI2 Colloids for over 20% Efficient Perovskite Solar Cells. **2019**, 4, 358-367 | | 27 |
| 585 | Lead-Halide Perovskites for Photocatalytic □Alkylation of Aldehydes. **2019**, 141, 733-738 | | 182 |
| 584 | Mix and Match: Organic and Inorganic Ions in the Perovskite Lattice. **2019**, 31, e1802697 | | 23 |

| | | |
|---|---|---|
| 583 | Investigation on Crystallization of CH3NH3PbI3 Perovskite and Its Intermediate Phase from Polar Aprotic Solvents. **2019**, 19, 959-965 | 17 |
| 582 | Management of Crystallization Kinetics for Efficient and Stable Low-Dimensional Ruddlesden-Popper (LDRP) Lead-Free Perovskite Solar Cells. **2019**, 6, 1800793 | 68 |
| 581 | The external and internal influences on the tuning of the properties of perovskites: An overview. **2019**, 45, 4152-4166 | 26 |
| 580 | Improved stability of perovskite solar cells with enhanced moisture-resistant hole transport layers. **2019**, 296, 508-516 | 14 |
| 579 | Two-dimensional perovskite materials: From synthesis to energy-related applications. **2019**, 11, 61-82 | 93 |
| 578 | Efficient Charge Collection Promoted by Interface Passivation Using Amino Acid Toward High Performance Perovskite Solar Cells. **2019**, 13, 1800505 | 9 |
| 577 | Surface modification of SnO2 blocking layers for hysteresis elimination of MAPbI3 photovoltaics. **2019**, 470, 613-621 | 12 |
| 576 | Fully Air-Bladed High-Efficiency Perovskite Photovoltaics. **2019**, 3, 402-416 | 95 |
| 575 | Vacuum thermal-evaporated SnO2 as uniform electron transport layer and novel management of perovskite intermediates for efficient and stable planar perovskite solar cells. **2019**, 65, 207-214 | 21 |
| 574 | Fe2+/Fe3+ Doped into MAPbCl3 Single Crystal: Impact on Crystal Growth and Optical and Photoelectronic Properties. **2019**, 123, 1669-1676 | 13 |
| 573 | Predicted photovoltaic performance of lead-based hybrid perovskites under the influence of a mixed-cation approach: theoretical insights. **2019**, 7, 371-379 | 17 |
| 572 | Fluoro- and Amino-Functionalized Conjugated Polymers as Electron Transport Materials for Perovskite Solar Cells with Improved Efficiency and Stability. **2019**, 11, 5289-5297 | 23 |
| 571 | Photoexcited Dynamics in Metal Halide Perovskites: From Relaxation Mechanisms to Applications. **2019**, 123, 3255-3269 | 7 |
| 570 | Ultrafast Charge Separation in Two-Dimensional CsPbBr Perovskite Nanoplatelets. **2019**, 10, 566-573 | 51 |
| 569 | High-performance perovskite solar cells with large grain-size obtained by the synergy of urea and dimethyl sulfoxide. **2019**, 467-468, 708-714 | 38 |
| 568 | The Relation of Phase-Transition Effects and Thermal Stability of Planar Perovskite Solar Cells. **2019**, 6, 1801079 | 20 |
| 567 | Precursor solution temperature dependence of the optical constants, band gap and Urbach tail in organic–inorganic hybrid halide perovskite films. **2019**, 52, 045103 | 5 |
| 566 | Perovskite Methylammonium Lead Trihalide Heterostructures: Progress and Challenges. **2019**, 18, 1-12 | 58 |

| | | | |
|---|---|---|---|
| 565 | An overview on enhancing the stability of lead halide perovskite quantum dots and their applications in phosphor-converted LEDs. *Chemical Society Reviews*, **2019**, 48, 310-350 | 58.5 | 545 |
| 564 | Light Emitting Diodes Based on Inorganic Composite Halide Perovskites. **2019**, 29, 1807345 | | 42 |
| 563 | Rapid Crystallization for Efficient 2D Ruddlesden–Popper (2DRP) Perovskite Solar Cells. **2019**, 29, 1806831 | | 68 |
| 562 | Organic-inorganic hybrid Sn-based perovskite photodetectors with high external quantum efficiencies and wide spectral responses from 300 to 1000 nm. **2019**, 62, 790-796 | | 14 |
| 561 | Performance enhancements in poly(vinylidene fluoride)-based piezoelectric nanogenerators for efficient energy harvesting. **2019**, 56, 662-692 | | 95 |
| 560 | Organic and hybrid resistive switching materials and devices. *Chemical Society Reviews*, **2019**, 48, 1531-1565 | | 172 |
| 559 | Molecular Engineering of Copper Phthalocyanines: A Strategy in Developing Dopant-Free Hole-Transporting Materials for Efficient and Ambient-Stable Perovskite Solar Cells. **2019**, 9, 1803287 | | 105 |
| 558 | A solution-processed cobalt-doped nickel oxide for high efficiency inverted type perovskite solar cells. **2019**, 412, 425-432 | | 38 |
| 557 | Fabrication of morphology-controlled and highly-crystallized perovskite microwires for long-term stable photodetectors. **2019**, 191, 275-282 | | 26 |
| 556 | Fabrication of large size nanoporous BiVO4 photoanode by a printing-like method for efficient solar water splitting application. **2020**, 340, 145-151 | | 12 |
| 555 | Evaluation of seismic evacuation behavior in complex urban environments based on GIS: A case study of Xi'an, China. **2020**, 43, 101366 | | 4 |
| 554 | Highly Efficient (110) Orientated FA-MA Mixed Cation Perovskite Solar Cells via Functionalized Carbon Nanotube and Methylammonium Chloride Additive. **2020**, 4, 1900511 | | 13 |
| 553 | Polyelectrolyte-Doped SnO2 as a Tunable Electron Transport Layer for High-Efficiency and Stable Perovskite Solar Cells. **2020**, 4, 1900336 | | 38 |
| 552 | 2D and Quasi-2D Halide Perovskites: Applications and Progress. **2020**, 14, 1900435 | | 23 |
| 551 | Photoresponsive Transistors Based on Lead-Free Perovskite and Carbon Nanotubes. **2020**, 30, 1906335 | | 60 |
| 550 | Recent Progress and Development in Inorganic Halide Perovskite Quantum Dots for Photoelectrochemical Applications. **2020**, 16, e1903398 | | 69 |
| 549 | Synergistic interactions between N3 dye and perovskite CH3NH3PbI3 for aqueous-based photoresponsiveness under visible light. **2020**, 173, 107925 | | 8 |
| 548 | First-principles study of structural stability, electronic and optical properties of GA-doped MAPbI. **2020**, 226, 117638 | | 8 |

| | | |
|---|---|---|
| 547 | Characterization of halide perovskite/titania interfaces as a function of the interlayer composition: A theoretical study. **2020**, 138, 109243 | 2 |
| 546 | Low-Temperature Electron Beam Deposition of Zn-SnOx for Stable and Flexible Perovskite Solar Cells. **2020**, 4, 1900266 | 12 |
| 545 | Perovskite-Based Phototransistors and Hybrid Photodetectors. **2020**, 30, 1903907 | 127 |
| 544 | High-efficiency colorful perovskite solar cells using TiO2 nanobowl arrays as a structured electron transport layer. **2020**, 63, 35-46 | 22 |
| 543 | Halide Versus Nonhalide Salts: The Effects of Guanidinium Salts on the Structural, Morphological, and Photovoltaic Performances of Perovskite Solar Cells. **2020**, 4, 1900234 | 10 |
| 542 | Sequential Processing: Crystallization of Ultrasmooth FA1−xMAxPbI3 Perovskite Layers for Highly Efficient and Stable Planar Solar Cells. **2020**, 4, 1900183 | 2 |
| 541 | Material and Interface Engineering for High-Performance Perovskite Solar Cells: A Personal Journey and Perspective. **2020**, 20, 209-229 | 6 |
| 540 | Highly efficient perovskite solar cells based on symmetric hole transport material constructed with indaceno[1,2-b:5,6-b']dithiophene core building block. **2020**, 43, 98-103 | 24 |
| 539 | Electronic and Optical Properties of Organic–Inorganic MASn1−xGexI3 Perovskites: A First-Principles Study. **2020**, 31, 1103-1109 | 4 |
| 538 | Molecularly imprinted polymers and PEG double engineered perovskite: an efficient platform for constructing aqueous solution feasible photoelectrochemical sensor. **2020**, 304, 127321 | 20 |
| 537 | Enhanced photovoltaic performance and stability of planar perovskite solar cells by introducing dithizone. **2020**, 206, 110290 | 4 |
| 536 | Recent Progress of All-Bromide Inorganic Perovskite Solar Cells. **2020**, 8, 1900961 | 33 |
| 535 | Atomistic understanding on molecular halide perovskite/organic/TiO2 interface with bifunctional interfacial modifier: A case study on halogen bond and carboxylic acid group. **2020**, 502, 144274 | 7 |
| 534 | Semiconducting crystalline inorganic-organic hybrid metal halide nanochains. **2020**, 12, 4771-4789 | 16 |
| 533 | Raman Spectroscopy of Formamidinium-Based Lead Halide Perovskite Single Crystals. **2020**, 124, 2265-2272 | 19 |
| 532 | Crystal structure features of CH3NH3PbI3−xBrx hybrid perovskites prepared by ball milling: a route to more stable materials. **2020**, 22, 767-775 | 9 |
| 531 | Non-transient thermo-/photochromism of iodobismuthate hybrids directed by solvated metal cations. **2020**, 49, 1847-1853 | 7 |
| 530 | Preparation of Ordered MAPbI3 Perovskite Needle-Like Crystal Films by Electric Field and Microdroplet Jetting 3D Printing. **2020**, 20, 1405-1414 | 4 |

| | | |
|---|---|---|
| 529 | Charge transfer between lead halide perovskite nanocrystals and single-walled carbon nanotubes. **2020**, 2, 808-813 | 5 |
| 528 | Dopant-free F-substituted benzodithiophene copolymer hole-transporting materials for efficient and stable perovskite solar cells. **2020**, 8, 1858-1864 | 37 |
| 527 | Insight into the Improved Phase Stability of CsPbI from First-Principles Calculations. **2020**, 5, 893-896 | 21 |
| 526 | Hot Polarons with Trapped Excitons and Octahedra-Twist Phonons in CH3NH3PbBr3 Hybrid Perovskite Nanowires. **2020**, 14, 1900267 | 4 |
| 525 | High performance phototransistors with organic/quantum dot composite materials channels. **2020**, 78, 105565 | 4 |
| 524 | Exciton-Polariton Properties in Planar Microcavity of Millimeter-Sized Two-Dimensional Perovskite Sheet. **2020**, 12, 5081-5089 | 7 |
| 523 | Double layer mesoscopic electron contact for efficient perovskite solar cells. **2020**, 4, 843-851 | 17 |
| 522 | Substantially Improving Device Performance of All-Inorganic Perovskite-Based Phototransistors via Indium Tin Oxide Nanowire Incorporation. **2020**, 16, e1905609 | 19 |
| 521 | Low-Temperature Preparation of CsPbI2Br for Efficient and Stable Perovskite Solar Cells. **2020**, 3, 1076-1081 | 9 |
| 520 | Emerging New-Generation Photodetectors Based on Low-Dimensional Halide Perovskites. **2020**, 7, 10-28 | 65 |
| 519 | Tailored interfacial crystal facets for efficient CH3NH3PbI3 perovskite solar cells. **2020**, 78, 105598 | 3 |
| 518 | Homo- and Heterovalent Doping-Mediated Self-Trapped Exciton Emission and Energy Transfer in Mn-Doped CsNaAgBiCl Double Perovskites. **2020**, 11, 340-348 | 56 |
| 517 | Reversible Ultra-Slow Crystal Growth of Mixed Lead Bismuth Perovskite Nanocrystals: The Presence of Dynamic Capping. **2020**, 26, 1506-1510 | 4 |
| 516 | X-ray diffraction and Raman spectroscopy for lead halide perovskites. **2020**, 23-47 | 1 |
| 515 | Enhancing aqueous stability and radiative-charge-transfer efficiency of CsPbBr3 perovskite nanocrystals via conductive silica gel coating. **2020**, 330, 135332 | 9 |
| 514 | Carbon nanomaterials with sp2 or/and sp hybridization in energy conversion and storage applications: A review. **2020**, 26, 349-370 | 35 |
| 513 | Tetrasubstituted Thieno[3,2-]thiophenes as Hole-Transporting Materials for Perovskite Solar Cells. **2020**, 85, 224-233 | 12 |
| 512 | A review on the preparation, characterization and potential application of perovskites as adsorbents for wastewater treatment. **2020**, 244, 125474 | 30 |

| | | |
|---|---|---|
| 511 | Research Direction toward Scalable, Stable, and High Efficiency Perovskite Solar Cells. **2020**, 10, 1903106 | 118 |
| 510 | Carbon Encapsulation of Organic–Inorganic Hybrid Perovskite toward Efficient and Stable Photo-Electrochemical Carbon Dioxide Reduction. **2020**, 10, 2002105 | 15 |
| 509 | Indirect-to-direct band gap transition and optical properties of metal alloys of CsTe Ti I: a theoretical study.. **2020**, 10, 36734-36740 | 6 |
| 508 | Lead-Free Antimony Halide Perovskite with Heterovalent Mn Doping. **2020**, 59, 15289-15294 | 9 |
| 507 | Investigation of strain behavior and carrier mobility of organic-inorganic hybrid perovskites: (CHNH)GeI and (CHNH)SnI. **2020**, 12, 22551-22563 | 3 |
| 506 | Improving the Stability and Optoelectronic Properties of All Inorganic Less-Pb Perovskites by B-Site Doping for High-Performance Inorganic Perovskite Solar Cells. **2020**, 4, 2000528 | 10 |
| 505 | Sensitively switchable visible/infrared multispectral detection and imaging based on a tandem perovskite device. **2020**, 12, 20386-20395 | 7 |
| 504 | Traps in metal halide perovskites: characterization and passivation. **2020**, 12, 22425-22451 | 14 |
| 503 | Photochromism and photocatalysis of organic–inorganic hybrid iodoargentates modulated by argentophilic interactions. **2020**, 7, 3184-3194 | 21 |
| 502 | Room-Temperature-Processed Fullerene/TiO2 Nanocomposite Electron Transporting Layer for High-Efficiency Rigid and Flexible Planar Perovskite Solar Cells. **2020**, 4, 2000247 | 9 |
| 501 | Review on Sensing Applications of Perovskite Nanomaterials. **2020**, 8, 55 | 42 |
| 500 | Atomic Layer Deposition of an Effective Interface Layer of TiN for Efficient and Hysteresis-Free Mesoscopic Perovskite Solar Cells. **2020**, 12, 8098-8106 | 18 |
| 499 | Fluorescent methylammonium lead halide perovskite quantum dots as a sensing material for the detection of polar organochlorine pesticide residues. **2020**, 145, 6683-6690 | 4 |
| 498 | Identifying the Soft Nature of Defective Perovskite Surface Layer and Its Removal Using a Facile Mechanical Approach. **2020**, 4, 2661-2674 | 34 |
| 497 | First-principles exploration of oxygen vacancy impact on electronic and optical properties of ABO (A = La, Sr; B = Cr, Mn) perovskites. **2020**, 22, 27163-27172 | 10 |
| 496 | Enhancing the Efficiency and Stability of Triple-Cation Perovskite Solar Cells by Eliminating Excess PbI from the Perovskite/Hole Transport Layer Interface. **2020**, 12, 54824-54832 | 19 |
| 495 | Crystallization control and multisite passivation of perovskites with amino acid to boost the efficiency and stability of perovskite solar cells. **2020**, 8, 17482-17490 | 19 |
| 494 | Potassium Acetate-Based Treatment for Thermally Co-Evaporated Perovskite Solar Cells. **2020**, 10, 1163 | 5 |

| | | |
|---|---|---|
| 493 | Low-Dimensional Hybrid Indium/Antimony Halide Perovskites: Supramolecular Assembly and Electronic Properties. **2020**, 124, 25686-25700 | 10 |
| 492 | Enhanced brightness of red light-emitting diodes based on CsPbBr I3-□EOXA composite films. **2020**, 845, 156272 | 7 |
| 491 | The effect of organic cation doping on the stability and optoelectronic properties of □CsPbI3. **2020**, 290, 121577 | 4 |
| 490 | Unclonable Perovskite Fluorescent Dots with Fingerprint Pattern for Multilevel Anticounterfeiting. **2020**, 12, 39649-39656 | 20 |
| 489 | Photoinduced Dynamics of Charge Carriers in Metal Halide Perovskites from an Atomistic Perspective. **2020**, 11, 7066-7082 | 28 |
| 488 | Ink-Based Additive Nanomanufacturing of Functional Materials for Human-Integrated Smart Wearables. **2020**, 2, 2000117 | 9 |
| 487 | Controllable optical emission wavelength in all-inorganic halide perovskite alloy microplates grown by two-step chemical vapor deposition. **2020**, 13, 2939-2949 | 12 |
| 486 | Composition-dependent chemical and structural stabilities of mixed tin-lead inorganic halide perovskites. **2020**, 22, 19787-19794 | 2 |
| 485 | Electronic and Optical Modulation of Metal-Doped Hybrid Organic□Inorganic Perovskites Crystals by Post-Treatment Control. **2020**, 3, 7500-7511 | 4 |
| 484 | Symmetry Breaking Induced Anisotropic Carrier Transport and Remarkable Thermoelectric Performance in Mixed Halide Perovskites CsPb(IBr). **2020**, 12, 40453-40464 | 21 |
| 483 | Lead iodide and cesium lead halide perovskite highly oriented films deposited by spin coating. **2020**, 10, 105305 | 2 |
| 482 | Imine□arbene-based ruthenium complexes for dye-sensitized solar cells: the effect of isomeric mixture on the photovoltaic performance. **2020**, 44, 20568-20573 | 2 |
| 481 | Formamidinium Lead Iodide Perovskite Nanocrystal/Squaraine Dye Composite based Visibly Opaque and Near-Infrared Transmitting Material. **2020**, 8, 2001130 | 2 |
| 480 | Metal Halide Perovskites for High-Energy Radiation Detection. **2020**, 7, 2002098 | 55 |
| 479 | Organic-Inorganic Hybrid Perovskite Nanomaterials: Synthesis and Application. **2020**, 5, 12641-12659 | 4 |
| 478 | High-Performance Perovskite Dual-Band Photodetectors for Potential Applications in Visible Light Communication. **2020**, 12, 48765-48772 | 12 |
| 477 | Visible light driven perovskite-based photocatalysts: A new candidate for green organic synthesis by photochemical protocol. **2020**, 3, 100031 | 11 |
| 476 | Incorporating quantum dots for high efficiency and stable perovskite photovoltaics. **2020**, 8, 25017-25027 | 13 |

| | | |
|---|---|---|
| 475 | Improving Efficiency and Stability in Quasi-2D Perovskite Light-Emitting Diodes by a Multifunctional LiF Interlayer. **2020**, 12, 43018-43023 | 24 |
| 474 | Chemically Stable Black Phase CsPbI Inorganic Perovskites for High-Efficiency Photovoltaics. **2020**, 32, e2001025 | 48 |
| 473 | Contrasting Electron and Hole Transfer Dynamics from CH(NH2)2PbI3 Perovskite Quantum Dots to Charge Transport Layers. **2020**, 10, 5553 | 2 |
| 472 | Hysteretic Ion Migration and Remanent Field in Metal Halide Perovskites. **2020**, 7, 2001176 | 14 |
| 471 | Exciton Relaxation Dynamics in Perovskite CsPbBr Nanocrystals. **2020**, 5, 22299-22304 | 9 |
| 470 | Multifunctional Quaternary Phosphorus/Bromoargentate Hybrids: The Achievement of Greenish Blue Luminescence, Repeatable Photocurrent Responses and Durable Antimicrobial Activities with Enhanced Water Stability. **2020**, 15, 6225-6237 | 1 |
| 469 | Bioinspired Molecular Bridging in a Hybrid Perovskite Leads to Enhanced Stability and Tunable Properties. **2020**, 30, 2005136 | 5 |
| 468 | Deep Mining Stable and Nontoxic Hybrid Organic-Inorganic Perovskites for Photovoltaics via Progressive Machine Learning. **2020**, 12, 57821-57831 | 7 |
| 467 | Materials Chemistry Approach for Efficient Lead-Free Tin Halide Perovskite Solar Cells. **2020**, 2, 3794-3804 | 14 |
| 466 | Molecular engineer halide perovskite/lead chalcogenide heterostructure toward optoelectronic applications: A case study on CsPbBr3/PbS interface. **2020**, 534, 147599 | 2 |
| 465 | Mapping temperature-dependent energy–structure–property relationships for solid solutions of inorganic halide perovskites. **2020**, 8, 16815-16825 | 4 |
| 464 | Mechanism of Photoanodes for Dye-Sensitized and Perovskite Solar Cells. **2020**, 25-44 | |
| 463 | Three-Dimensional Lead Bromide Hybrid Ferroelectric Realized by Lattice Expansion. **2020**, 142, 19698-19704 | 8 |
| 462 | A review: crystal growth for high-performance all-inorganic perovskite solar cells. **2020**, 13, 1971-1996 | 78 |
| 461 | Recent Progress in Engineering Metal Halide Perovskites for Efficient Visible-Light-Driven Photocatalysis. **2020**, 13, 4005-4025 | 43 |
| 460 | Tailorable Indirect to Direct Band-Gap Double Perovskites with Bright White-Light Emission: Decoding Chemical Structure Using Solid-State NMR. **2020**, 142, 10780-10793 | 35 |
| 459 | Efficient Trap Passivation of MAPbI3 via Multifunctional Anchoring for High-Performance and Stable Perovskite Solar Cells. **2020**, 4, 2000078 | 19 |
| 458 | Synthesis and Localized Photoluminescence Blinking of Lead-Free 2D Nanostructures of Cs Bi I Cl Perovskite. **2020**, 59, 13093-13100 | 21 |

| | | |
|---|---|---|
| 457 | Polymer-Controlled Growth and Wrapping of Perovskite Single Crystals Leading to Better Device Stability and Performance. **2020**, 12, 25011-25019 | 12 |
| 456 | Complexes of BiCl3 with hydrazone derived ligands: a Möbius-like discrete metal chelate versus a salt-like porous polymeric structure. **2020**, 44, 9429-9437 | 4 |
| 455 | Stabilization of Highly Efficient and Stable Phase-Pure FAPbI Perovskite Solar Cells by Molecularly Tailored 2D-Overlayers. **2020**, 59, 15688-15694 | 115 |
| 454 | Synthesis and Localized Photoluminescence Blinking of Lead-Free 2D Nanostructures of Cs3Bi2I6Cl3 Perovskite. **2020**, 132, 13193-13200 | 3 |
| 453 | Identifying, understanding and controlling defects and traps in halide perovskites for optoelectronic devices: a review. **2020**, 53, 373001 | 16 |
| 452 | Three-Dimensional Cuprous Lead Bromide Framework with Highly Efficient and Stable Blue Photoluminescence Emission. **2020**, 132, 16607 | |
| 451 | Three-Dimensional Cuprous Lead Bromide Framework with Highly Efficient and Stable Blue Photoluminescence Emission. **2020**, 59, 16465-16469 | 26 |
| 450 | Methylammonium Polyiodides in Perovskite Photovoltaics: From Fundamentals to Applications. **2020**, 8, 418 | 1 |
| 449 | Stabilization of Highly Efficient and Stable Phase-Pure FAPbI3 Perovskite Solar Cells by Molecularly Tailored 2D-Overlayers. **2020**, 132, 15818-15824 | 11 |
| 448 | New Oxindole-Bridged Acceptors for Organic Sensitizers: Substitution and Performance Studies in Dye-Sensitized Solar Cells. **2020**, 25, | 2 |
| 447 | Integrated POSS-dendrimer nanohybrid materials: current status and future perspective. **2020**, 12, 11395-11415 | 35 |
| 446 | Encapsulation of CsPbBr3 perovskite quantum dots into PPy conducting polymer: Exceptional water stability and enhanced charge transport property. **2020**, 526, 146735 | 24 |
| 445 | Vapor-Phase Photocatalytic Overall Water Splitting Using Hybrid Methylammonium Copper and Lead Perovskites. **2020**, 10, | 6 |
| 444 | Large-scale synthesis of CH3NH3BF4 crystal and its application on CH3NH3PbBrx(BF4)(3-x) perovskite thin films. **2020**, 754, 137638 | 4 |
| 443 | Resistive Switching Property of Organic-Inorganic Tri-Cation Lead Iodide Perovskite Memory Device. **2020**, 10, | 3 |
| 442 | Ligand Orientation-Induced Lattice Robustness for Highly Efficient and Stable Tin-Based Perovskite Solar Cells. **2020**, 5, 2327-2334 | 55 |
| 441 | Sn(IV)-free tin perovskite films realized by in situ Sn(0) nanoparticle treatment of the precursor solution. **2020**, 11, 3008 | 114 |
| 440 | One-Dimensional All-Inorganic K2CuBr3 with Violet Emission as Efficient X-ray Scintillators. **2020**, 2, 2242-2249 | 30 |

| | | |
|---|---|---|
| 439 | Synergistic morphology control and non-radiative defect passivation using a crown ether for efficient perovskite light-emitting devices. **2020**, 8, 9986-9992 | 3 |
| 438 | Bioinspired Multifunctional Organic Transistors Based on Natural Chlorophyll/Organic Semiconductors. **2020**, 32, e2001227 | 56 |
| 437 | Robot-Accelerated Perovskite Investigation and Discovery. **2020**, 32, 5650-5663 | 56 |
| 436 | Perovskite Materials: Recent Advancements and Challenges. **2020**, | 2 |
| 435 | First-Principles Study on the Oxygen□light-Induced Iodide Vacancy Formation in FASnI3 Perovskite. **2020**, 124, 14147-14157 | 9 |
| 434 | Photochromic and luminescent switchable iodoargentate hybrids directed by solvated lanthanide cations. **2020**, 49, 8883-8890 | 9 |
| 433 | Large-scale synthesis of layered double hydroxide nanosheet-stabilized CsPbBr3 perovskite quantum dots for WLEDs. **2020**, 843, 155819 | 9 |
| 432 | Computational Investigation of the Folded and Unfolded Band Structure and Structural and Optical Properties of CsPb(I1□Brx)3 Perovskites. **2020**, 10, 342 | 4 |
| 431 | Photoredox Organic Synthesis Employing Heterogeneous Photocatalysts with Emphasis on Halide Perovskite. **2020**, 26, 13118-13136 | 17 |
| 430 | Elaboration, crystal structure, characterization and DFT calculation of a new Hg(II) inorganic-organic hybrid salt [C6H16N2O]HgCl4. **2020**, 286, 121280 | 5 |
| 429 | Perovskite Transparent Conducting Oxide for the Design of a Transparent, Flexible, and Self-Powered Perovskite Photodetector. **2020**, 12, 16462-16468 | 24 |
| 428 | Effect of Sr substitution on the property and stability of CH3NH3SnI3 perovskite: A first-principles investigation. **2020**, 44, 5765-5778 | 11 |
| 427 | Lead-Free Perovskite/Organic Semiconductor Vertical Heterojunction for Highly Sensitive Photodetectors. **2020**, 12, 18769-18776 | 16 |
| 426 | Reversible luminescent humidity chromism of organic-inorganic hybrid PEAMnBr single crystals. **2020**, 49, 5662-5668 | 30 |
| 425 | In situ study of the film formation mechanism of organic□inorganic hybrid perovskite solar cells: controlling the solvate phase using an additive system. **2020**, 8, 7695-7703 | 25 |
| 424 | Recent progress in high-performance photo-detectors enabled by the pulsed laser deposition technology. **2020**, 8, 4988-5014 | 11 |
| 423 | Carbon electrode engineering for high efficiency all-inorganic perovskite solar cells.. **2020**, 10, 12298-12303 | 18 |
| 422 | Hybrid Organic□inorganic Materials and Composites for Photoelectrochemical Water Splitting. **2020**, 5, 1487-1497 | 58 |

| | | |
|---|---|---|
| 421 | Two-dimensional highly oxidized ilmenite nanosheets equipped with Z-scheme heterojunction for regulating tumor microenvironment and enhancing reactive oxygen species generation. **2020**, 390, 124524 | 20 |
| 420 | Recent advances in hybrid organic-inorganic materials with spatial architecture for state-of-the-art applications. **2020**, 112, 100663 | 93 |
| 419 | Solution preparation of molybdenum oxide on graphene: a hole transport layer for efficient perovskite solar cells with a 1.12 V high open-circuit voltage. **2020**, 31, 6248-6254 | 7 |
| 418 | A-Site Cation Engineering of Metal Halide Perovskites: Version 3.0 of Efficient Tin-Based Lead-Free Perovskite Solar Cells. **2020**, 30, 2000794 | 49 |
| 417 | Azatruxene-Based, Dumbbell-Shaped, Donor-Bridge-Donor Hole-Transporting Materials for Perovskite Solar Cells. **2020**, 26, 11039-11047 | 4 |
| 416 | Metal-Free Hybrid Organic-Inorganic Perovskites for Photovoltaics. **2020**, 11, 5938-5947 | 6 |
| 415 | Aqueous Precursor Induced Morphological Change and Improved Water Stability of CsPbBr Nanocrystals. **2020**, 26, 12242-12248 | 11 |
| 414 | An unusual frequency dispersion of the dielectric permittivity maxima at temperatures around the tetragonal–cubic phase transition of methylammonium lead iodide. **2020**, 127, 244103 | 0 |
| 413 | Phase transitions, screening and dielectric response of CsPbBr3. **2020**, 8, 14015-14022 | 12 |
| 412 | Thermal stability of CH3NH3PbIxCl3-x versus [HC(NH2)2]0.83Cs0.17PbI2.7Br0.3 perovskite films by X-ray photoelectron spectroscopy. **2020**, 513, 145596 | 10 |
| 411 | Mixed-Cation Mixed-Metal Halide Perovskites for Photovoltaic Applications: A Theoretical Study. **2020**, 5, 4347-4351 | 7 |
| 410 | Quest for Lead-Free Perovskite-Based Solar Cells. **2020**, | |
| 409 | Organic–inorganic hybrid perovskites: Game-changing candidates for solar fuel production. **2020**, 71, 104647 | 24 |
| 408 | Low-Temperature Solution-Processed Amorphous Titania Nanowire Thin Films for 1 cm Perovskite Solar Cells. **2020**, 12, 11450-11458 | 7 |
| 407 | Low-frequency lattice phonons in halide perovskites explain high defect tolerance toward electron-hole recombination. **2020**, 6, eaaw7453 | 99 |
| 406 | Luminescent macrocyclic Sm(III) complex probe for turn-off fluorescent and colorimetric water detection in organic solvents and liquid fuels. **2020**, 311, 127887 | 16 |
| 405 | Strategies for Improving the Stability of Tin-Based Perovskite (ASnX) Solar Cells. **2020**, 7, 1903540 | 69 |
| 404 | Optical Functional Units in Zero-Dimensional Metal Halides as a Paradigm of Tunable Photoluminescence and Multicomponent Chromophores. **2020**, 8, 1902114 | 24 |

| | | | |
|---|---|---|---|
| 403 | Lattice Dynamics and Electron-Phonon Coupling in Lead-Free CsAgInBiCl Double Perovskite Nanocrystals. **2020**, 11, 2113-2120 | | 30 |
| 402 | Correlating the Composition-Dependent Structural and Electronic Dynamics of Inorganic Mixed Halide Perovskites. **2020**, 32, 2470-2481 | | 14 |
| 401 | Thermal Stability and Performance Enhancement of Perovskite Solar Cells Through Oxalic Acid-Induced Perovskite Formation. **2020**, 3, 2432-2439 | | 34 |
| 400 | Stable CsPbBr3:[email protected]2 and Cs4PbBr6:[email protected]2 Core–Shell Quantum Dots with Tunable Color Emission for Light-Emitting Diodes. **2020**, 3, 3019-3027 | | 20 |
| 399 | Synthesis and model simulation of the hexagonal to circular transition of perovskite cesium lead halide nanosheets by rapidly changing the temperature.. **2020**, 10, 4211-4217 | | 1 |
| 398 | Progress on the controllable synthesis of all-inorganic halide perovskite nanocrystals and their optoelectronic applications. **2020**, 41, 011201 | | 9 |
| 397 | Materials chemistry and engineering in metal halide perovskite lasers. *Chemical Society Reviews*, **2020**, 49, 951-982 | 58.5 | 143 |
| 396 | Stability enhancement of lead-free CsSnI3 perovskite photodetector with reductive ascorbic acid additive. **2020**, 2, 577-584 | | 25 |
| 395 | Highly (100)-oriented CH3NH3PbI3 thin film fabricated by bar-coating method and its additive effect of ammonium chloride. **2020**, 208, 110409 | | 7 |
| 394 | Multifunctional nanostructured materials for next generation photovoltaics. **2020**, 70, 104480 | | 25 |
| 393 | Strain–Chemical Gradient and Polarization in Metal Halide Perovskites. **2020**, 6, 1901235 | | 14 |
| 392 | Pressure responses of halide perovskites with various compositions, dimensionalities, and morphologies. **2020**, 5, 018201 | | 35 |
| 391 | Impact of Diethyl Ether Dripping Delay Time on the Electronic Structure of Methylammonium Lead Triiodide Perovskite Film. **2020**, 76, 162-166 | | 1 |
| 390 | Frequency- and Power-Dependent Photoresponse of a Perovskite Photodetector Down to the Single-Photon Level. **2020**, 20, 2144-2151 | | 15 |
| 389 | Highly Efficient Thermally Co-evaporated Perovskite Solar Cells and Mini-modules. **2020**, 4, 1035-1053 | | 145 |
| 388 | Broadband Emission Enhancement Induced by Self-Trapped Excited States in One-Dimensional EAPbI3 Perovskite under Pressure. **2020**, 124, 8984-8991 | | 8 |
| 387 | Design of high-performance perovskite solar cells adapted to the tandem configuration. **2020**, 783, 012020 | | 1 |
| 386 | The influence of fullerene on hysteresis mechanism in planar perovskite solar cells. **2020**, 750, 137443 | | 3 |

| | | |
|---|---|---|
| 385 | CoCl2 as film morphology controller for efficient planar CsPbIBr2 perovskite solar cells. **2020**, 349, 136162 | 11 |
| 384 | Electronic Structure and Trap States of Two-Dimensional Ruddlesden□Popper Perovskites with the Relaxed Goldschmidt Tolerance Factor. **2020**, 2, 1402-1412 | 11 |
| 383 | Highly efficient bifacial CsPbIBr solar cells with a TeO/Ag transparent electrode and unsymmetrical carrier transport behavior. **2020**, 49, 6012-6019 | 9 |
| 382 | Glass rod-sliding and low pressure assisted solution processing composition engineering for high-efficiency perovskite solar cells. **2020**, 211, 110532 | 9 |
| 381 | Tunable Mie Resonances of Tin-based Iodide Perovskite Islandlike Films with Enhanced Infrared Photoluminescence. **2020**, 11, 3332-3338 | 3 |
| 380 | Design and development of a coating device: Multiple-droplet drop-casting (MDDC-Alpha). **2020**, 91, 033902 | 2 |
| 379 | Scope for Spherical Bi2WO6 Quazi-Perovskites in the Artificial Photosynthesis Reaction□The Effects of Surface Modification with Amine Groups. **2021**, 151, 293-305 | 2 |
| 378 | Solvent-Mediated 1,□Bis(isoquinoline)alkane/Iodobismuthate Hybridized Isomers: Structures and Packing Mode Dependent-Photoluminescence/Thermochromisms. **2021**, 32, 727-735 | 1 |
| 377 | Advanced Characterization Techniques for Overcoming Challenges of Perovskite Solar Cell Materials. **2021**, 11, 2001753 | 13 |
| 376 | Ultrasensitive detection of hydrogen sulfide gas based on perovskite vertical channel chemo-sensor. **2021**, 326, 128988 | 9 |
| 375 | Efficient and stable inverted perovskite solar cells enabled by inhibition of self-aggregation of fullerene electron-transporting compounds. **2021**, 66, 339-346 | 11 |
| 374 | Perovskite Nanocrystals-Based Heterostructures: Synthesis Strategies, Interfacial Effects, and Photocatalytic Applications. **2021**, 5, 2000419 | 8 |
| 373 | Effect of positional isomerism on electron-transfer photochromism and photoluminescence of two pyromellitic diimide-based organic molecules. **2021**, 186, 108941 | 6 |
| 372 | Recent advances in bacteriorhodopsin-based energy harvesters and sensing devices. **2021**, 79, 105482 | 4 |
| 371 | Effect of defects on high efficient perovskite solar cells. **2021**, 111, 110601 | 7 |
| 370 | Environmental risks and strategies for the long-term stability of carbon-based perovskite solar cells. **2021**, 19, 100590 | 9 |
| 369 | Multi-Channel Pumped Ultrasonic Spray-Coating for High-Throughput and Scalable Mixed Halide Perovskite Solar Cells. **2021**, 8, 2001509 | 2 |
| 368 | Research and progress of black metastable phase CsPbI3 solar cells. **2021**, 5, 1221-1235 | 13 |

| | | | |
|---|---|---|---|
| 367 | Surface Termination of Solution-Processed CHNHPbI Perovskite Film Examined using Electron Spectroscopies. **2021**, 33, e2004981 | | 15 |
| 366 | The effect of methyl ammonium chloride doping for perovskite solar cells on structure, crystallization and power conversion efficiency. **2021**, 35, 2150096 | | 1 |
| 365 | Cubic-cubic perovskite quantum dots/PbS mixed dimensional materials for highly efficient CO2 reduction. **2021**, 481, 228838 | | 9 |
| 364 | Enhancing efficiency and decreasing photocatalytic degradation of perovskite solar cells using a hydrophobic copper-modified titania electron transport layer. **2021**, 284, 119714 | | 12 |
| 363 | Why Do Perovskite Nanocrystals Form Nanocubes and How Can Their Facets Be Tuned? A Perspective from Synthetic Prospects. **2021**, 6, 92-99 | | 21 |
| 362 | Strain Engineering of Metal□Halide Perovskites toward Efficient Photovoltaics: Advances and Perspectives. **2021**, 5, 2000672 | | 9 |
| 361 | Discrete composition control of two-dimensional morphologic all-inorganic metal halide perovskite nanocrystals. **2021**, 59, 257-275 | | 5 |
| 360 | Evidence of improved power conversion efficiency in lead-free CsGeI3 based perovskite solar cell heterostructure via scaps simulation. **2021**, 39, 012401 | | 13 |
| 359 | Synthesis, structure, third-order nonlinear optical properties and Hirshfeld surface analysis of tetrakis(azepanium) hexachlorostannate(IV) dichloride and tetrakis(azepanium) hexabromostannate(IV) dibromide. **2021**, 1227, 129515 | | 3 |
| 358 | Lead-Free Halide Double Perovskites: Structure, Luminescence, and Applications. **2021**, 2, 2000071 | | 25 |
| 357 | Origins of pressure-induced enhancement in thermal conductivity of hybrid inorganic-organic perovskites. **2021**, 13, 685-691 | | 1 |
| 356 | A donor-acceptor ligand boosting the performance of FACsPbBr nanocrystal light-emitting diodes. **2021**, 13, 1791-1799 | | 4 |
| 355 | Recent progress in meniscus coating for large-area perovskite solar cells and solar modules. **2021**, 5, 1926-1951 | | 6 |
| 354 | Preparation and Properties of Films of Organic-Inorganic Perovskites MAPbX3 (MA = CH3NH3; X = Cl, Br, I) for Solar Cells: A Review. **2021**, 56, 359-386 | | 2 |
| 353 | Crystallization in one-step solution deposition of perovskite films: Upward or downward?. **2021**, 7, | | 56 |
| 352 | Photon management to reduce energy loss in perovskite solar cells. *Chemical Society Reviews*, **2021**, 50, 7250-7329 | 58.5 | 29 |
| 351 | Revealing the Local Sn and Pb Arrangements in CsSnxPb1□Br3 Perovskites with Solid-State NMR Spectroscopy. **2021**, 3, 261-267 | | 15 |
| 350 | Temperature-driven phase transition and transition dipole moment of two-dimensional (BA)CsPbBr perovskite. **2021**, 23, 16341-16348 | | 0 |

| | | |
|---|---|---|
| 349 | Suppressed Degradation and Enhanced Performance of CsPbI Perovskite Quantum Dot Solar Cells via Engineering of Electron Transport Layers. **2021**, 13, 6119-6129 | 14 |
| 348 | The precursor-compensation strategy boosts the photoresponse performance of air-stable, self-powered Cs2SnI6 photodetectors. | 4 |
| 347 | Recent progress in tin-based perovskite solar cells. **2021**, 14, 1286-1325 | 88 |
| 346 | Proton sponge lead halides containing 1D polyoctahedral chains. **2021**, 23, 1126-1139 | 3 |
| 345 | Quasi-2D lead-free halide perovskite using superalkali cations for red-light-emitting diodes. **2021**, 13, 13152-13157 | 0 |
| 344 | Tetra-indole core as a dual agent: a hole selective layer that passivates defects in perovskite solar cells. **2021**, 9, 7074-7082 | 4 |
| 343 | All-in-one: a new approach toward robust and solution-processable copper halide hybrid semiconductors by integrating covalent, coordinate and ionic bonds in their structures. **2021**, 12, 3805-3817 | 13 |
| 342 | Scalable Fabrication of >90 cm2 Perovskite Solar Modules with >1000 h Operational Stability Based on the Intermediate Phase Strategy. **2021**, 11, 2003712 | 33 |
| 341 | Self-trapped exciton emission in an Sn(II)-doped all-inorganic zero-dimensional zinc halide perovskite variant. **2021**, 13, 15285-15291 | 6 |
| 340 | Perovskite-inspired materials for photovoltaics and beyond-from design to devices. **2021**, 32, 132004 | 47 |
| 339 | Metal halide perovskite nanocrystals: application in high-performance photodetectors. **2021**, 2, 856-879 | 7 |
| 338 | Improved efficiency and air stability of two-dimensional p-i-n inverted perovskite solar cells by Cs doping.. **2021**, 11, 20200-20206 | 1 |
| 337 | All-inorganic perovskite quantum dots as light-harvesting, interfacial, and light-converting layers toward solar cells. **2021**, 9, 18947-18973 | 2 |
| 336 | 2,2?-Bipyridyl-1,1?-dioxide based bismuth(III) bromide hybrids: studies on crystal structure and luminescence. **2021**, 23, 3744-3752 | 6 |
| 335 | Using steric hindrance to manipulate and stabilize metal halide perovskites for optoelectronics. **2021**, 12, 7231-7247 | 14 |
| 334 | Anion Substitution Effects on the Structural, Electronic, and Optical Properties of Inorganic CsPb(I1⊠Brx)3 and CsPb(Br1⊠Clx)3 Perovskites: Theoretical and Experimental Approaches. **2021**, 125, 886-897 | 12 |
| 333 | High-Pressure Structural Phase Transformation of Ferroelectric Bis-benzylammonium Lead Tetrachloride Studied by Raman Spectroscopy and X-ray Diffraction. **2021**, 60, 3657-3666 | 2 |
| 332 | Role of Metal-Chloride Anions in Photoluminescence Regulations for Hybrid Metal Halides. **2021**, 12, 1918-1925 | 9 |

| | | |
|---|---|---|
| 331 | Polarization-Sensitive Halide Perovskites for Polarized Luminescence and Detection: Recent Advances and Perspectives. **2021**, 33, e2003615 | 34 |
| 330 | Nonlinear Photonics Using Low-Dimensional Metal-Halide Perovskites: Recent Advances and Future Challenges. **2021**, 33, e2004446 | 24 |
| 329 | Carbon Nanoparticles as Versatile Auxiliary Components of Perovskite-Based Optoelectronic Devices. **2021**, 31, 2010768 | 13 |
| 328 | From 1D to 3D: Perovskites within the System HSC(NH)I/CHNHI/PbI with Maintenance of the Cubic Closest Packing. **2021**, 60, 3082-3093 | 4 |
| 327 | Raman spectroscopy real-time detection for the performance of perovskite solar cell. **2021**, 112, 110806 | 2 |
| 326 | Photocurrent enhancement of hybrid perovskite CsGeBr3 assisted two-dimensional WS2 nano-flakes based on electron-hole mobility improvement. **2021**, 112, 110754 | 1 |
| 325 | Factors influencing the nucleation and crystal growth of solution-processed organic lead halide perovskites: a review. **2021**, 54, 163001 | 10 |
| 324 | (C5H9N2)[BiI4]: A One-Dimensional Bismuth-Based Organic□horganic Hybrid Material for Fast Rhodamine B Degradation Under Dark Condition. 1 | 0 |
| 323 | In Situ Construction of Direct Z-Scheme CsxWO3/CsPbBr3 Heterojunctions via Cosharing Cs Atom. **2021**, 5, 2100036 | 2 |
| 322 | Recent Progress of Methods to Enhance Photovoltaic Effect for Self-Powered Heterojunction Photodetectors and Their Applications in Inorganic Low-Dimensional Structures. **2021**, 31, 2011284 | 20 |
| 321 | First-principles investigation on the photovoltaic properties of lead free earth abundant (CH3NH3)2SnI6 perovskite. **2021**, 129, 125701 | 0 |
| 320 | Crystalline Porous Materials for Nonlinear Optics. **2021**, 17, e2006416 | 16 |
| 319 | Photostrictive Effect: Characterization Techniques, Materials, and Applications. **2021**, 31, 2010706 | 6 |
| 318 | Solvent Engineering of the Precursor Solution toward Large-Area Production of Perovskite Solar Cells. **2021**, 33, e2005410 | 57 |
| 317 | Highly crystalline methylammonium lead iodide films: Phase transition from tetragonal to cubic structure by thermal annealing. **2021**, 39, 022801 | |
| 316 | A thioacetamide interlayer anchoring TiO2 and (FAPbI3)1□(MAPbBr3)x for high-performance perovskite solar cells. **2021**, 104, 5120-5126 | 0 |
| 315 | In Situ Spectroelectrochemical Investigation of Perovskite Quantum Dots for Tracking Their Transformation. **2021**, 8, | 3 |
| 314 | Recent advances and perspective on the synthesis and photocatalytic application of metal halide perovskite nanocrystals. **2021**, 14, 3773 | 7 |

| | | |
|---|---|---|
| 313 | Understanding the Molten Salt Synthesis of MAPbI3 Characterization of New Lead(II)-Ammine Complexes as Intermediates. **2021**, 2021, 1490-1497 | 1 |
| 312 | Enhanced Weak-Light Detection of Perovskite Photodetectors through Perovskite/Hole-Transport Material Interface Treatment. **2021**, 13, 16775-16783 | 5 |
| 311 | Flexible Image Sensors with Semiconducting Nanowires for Biomimic Visual Applications. **2021**, 2, 2000152 | 16 |
| 310 | Origin, Influence, and Countermeasures of Defects in Perovskite Solar Cells. **2021**, 17, e2005495 | 13 |
| 309 | Review on recent advances of zinc substituted cobalt ferrite nanoparticles: Synthesis characterization and diverse applications. **2021**, 47, 10512-10535 | 12 |
| 308 | Large-Area Blade-Coated Solar Cells: Advances and Perspectives. **2021**, 11, 2100378 | 28 |
| 307 | Low-Temperature Induced Enhancement of Photoelectric Performance in Semiconducting Nanomaterials. **2021**, 11, | 3 |
| 306 | Adsorption and Diffusion of Halogen Gas Molecules on CH3NH3PbI3 Halide Perovskite Surfaces. **2021**, 95, 792-798 | |
| 305 | General Synthesis of Ultrafine Monodispersed Hybrid Nanoparticles from Highly Stable Monomicelles. **2021**, 33, e2100820 | 11 |
| 304 | Structural, optical and flexible properties of CH3NH3PbI3 perovskite films deposited on paper substrates. **2021**, 114, 110926 | 4 |
| 303 | Interface effects on the phase transition of MnS nanocrystal. **2021**, 23, 101015 | 1 |
| 302 | Transition of the Type of Band Alignments for All-Inorganic Perovskite van der Waals Heterostructures CsSnBr/WSSe. **2021**, 12, 3809-3818 | 13 |
| 301 | Effect of Ag nanoparticles on performance of CH3NH3PbI3 perovskite photodetectors. **2021**, 861, 158608 | 4 |
| 300 | Broadband Ultraviolet Photodetectors Based on Cerium Doped Lead-Free Cs3MnBr5 Metal Halide Nanocrystals. **2021**, 9, 4980-4987 | 8 |
| 299 | Perovskite random lasers: a tunable coherent light source for emerging applications. **2021**, 32, | 13 |
| 298 | g-C3N4-Stabilised Organic Inorganic Halide Perovskites for Efficient Photocatalytic Selective Oxidation of Benzyl Alcohol. **2021**, 11, 505 | 2 |
| 297 | Polymer Additive Assisted Fabrication of Compact and Ultra-Smooth Perovskite Thin Films with Fast Lamp Annealing. **2021**, 14, 2656 | 0 |
| 296 | Impact of A-Site Cations on Fluorescence Quenching in Organic Inorganic Hybrid Perovskite Materials. **2021**, 125, 11524-11531 | 0 |

| | | |
|---|---|---|
| 295 | Halide Perovskites: A New Era of Solution-Processed Electronics. **2021**, 33, e2005000 | 48 |
| 294 | Mobile Media Promotes Orientation of 2D/3D Hybrid Lead Halide Perovskite for Efficient Solar Cells. **2021**, 15, 8350-8362 | 5 |
| 293 | Paper-Based Stable Broad Band Optical Detector Made from Mixed Cation Organic Perovskite Halides. **2021**, 125, 10646-10652 | 5 |
| 292 | Improved stability and efficiency of perovskite via a simple solid diffusion method. **2021**, 18, 100374 | 8 |
| 291 | Dimethyl Sulfoxide Vapor-Assisted Cs2AgBiBr6 Homogenous Film Deposition for Solar Cell Application. **2021**, 4, 6797-6805 | 6 |
| 290 | Phenyl Ethylammonium Iodide introduction into inverted triple cation perovskite solar cells for improved VOC and stability. **2021**, 93, 106121 | 1 |
| 289 | Reducing Defects in Organic-Lead Halide Perovskite Film by Delayed Thermal Annealing Combined with KI/I for Efficient Perovskite Solar Cells. **2021**, 11, | 4 |
| 288 | Perovskite Solar Cells with Front Surface Gradient. **2021**, 11, 2101080 | 4 |
| 287 | Preparation of nanoscale inorganic CsPbIxBr3-x perovskite photosensitizers on the surface of mesoporous TiO2 film for solid-state sensitized solar cells. **2021**, 551, 149387 | 2 |
| 286 | The effects of heteroatoms-doping on the stability, electronic and magnetic properties of CH3NH3PbI3 perovskite. **2021**, 24, 101027 | 4 |
| 285 | Multimodal host-guest complexation for efficient and stable perovskite photovoltaics. **2021**, 12, 3383 | 17 |
| 284 | Theoretical study of mixed-halide influence on the stability and electronic properties of CsCd(Cl/Br)3. **2021**, 1200, 113251 | 0 |
| 283 | Current Development toward Commercialization of Metal-Halide Perovskite Photovoltaics. **2021**, 9, 2100390 | 9 |
| 282 | Application of Metal Halide Perovskites as Photocatalysts in Organic Reactions. **2021**, 9, 56 | 4 |
| 281 | Broadband emission of corner-sharing halometalate templated by benzyltrimethylammonium. **2021**, 129, 108622 | |
| 280 | Tuning Facets and Controlling Monodispersity in Organic–Inorganic Hybrid Perovskite FAPbBr3 Nanocrystals. **2021**, 6, 2682-2689 | 8 |
| 279 | Selenophene-Based Hole-Transporting Materials for Perovskite Solar Cells. **2021**, 86, 1006-1013 | 1 |
| 278 | ELECTRONIC AND OPTICAL MODIFICATION OF ORGANIC-HYBRID PEROVSKITES. **2021**, 28, 2140010 | 0 |

| | | |
|---|---|---|
| 277 | Cut from the Same Cloth: Enamine-Derived Spirobifluorenes as Hole Transporters for Perovskite Solar Cells. **2021**, 33, 6059-6067 | 3 |
| 276 | Light-Emitting 0D Hybrid Metal Halide (CHN)SbCl with Antimony Dimers. **2021**, 60, 11429-11434 | 5 |
| 275 | Synthesis and application of perovskite-based photocatalysts in environmental remediation: A review. **2021**, 334, 116029 | 25 |
| 274 | Ferroelastic Hybrid Bismuth Bromides with Dual Dielectric Switches. **2021**, 33, 5790-5799 | 6 |
| 273 | Stability Improvement of Tin-Based Halide Perovskite by Precursor-Solution Regulation with Dual-Functional Reagents. **2021**, 31, 2104344 | 14 |
| 272 | Uncovering Halogen Mixing and Octahedral Dynamics in Cs2SnX6 by Multinuclear Magnetic Resonance Spectroscopy. **2021**, 33, 6078-6090 | 9 |
| 271 | DFT Study of Lead-Free Mixed-Halide Materials Cs2X2Y2 (X, Y = F, Cl, Br, I) for Optoelectronic Applications. **2021**, 50, 5647-5655 | |
| 270 | Two-Dimensional Hybrid Perovskite-Based van der Waals Heterostructures. **2021**, 12, 8178-8187 | 4 |
| 269 | Uniaxially Oriented Monolithically Grained Perovskite Films for Enhanced Performance of Solar Cells. **2021**, 125, 19131-19141 | 2 |
| 268 | Recent progress of flexible perovskite solar cells. **2021**, 39, 101155 | 22 |
| 267 | A hybrid organic-inorganic perovskite with robust SHG switching. **2021**, | 4 |
| 266 | Incorporation of Zr-doped TiO2 nanoparticles in electron transport layer for efficient planar perovskite solar cells. **2021**, 25, 101299 | 4 |
| 265 | Perovskite based gas sensors: thin-film versus capillary-filled microchannel designs. **2021**, | |
| 264 | Light-Mediated Polymerization Induced by Semiconducting Nanomaterials: State-of-the-Art and Future Perspectives. | 10 |
| 263 | Highly Stable Inorganic Lead Halide Perovskite toward Efficient Photovoltaics. **2021**, 54, 3452-3461 | 9 |
| 262 | Structural and Electronic Properties of Small Perovskite Nanoparticles of the Form ABX3 (A = MA, DEA, FA, GA, B = Pb, Sn, X = Cl, Br, I). **2021**, 2, 382-393 | 0 |
| 261 | Metal-organic hybrids of tin(IV): Synthesis, crystal structure, third-order nonlinear optical properties and Hirshfeld surface analysis of bis(1,2,3,4-tetrahydroquinolinium) hexahalostannate(IV). **2021**, 1237, 130421 | 2 |
| 260 | First-principles study of the quasi-one-dimensional organic-inorganic hybrid perovskites (MV)AI3Cl2 (MV=methylviologen; A=Bi,Sb). **2021**, 104, | 1 |

| | | |
|---|---|---|
| 259 | Graphene quantum dot-embedded perovskite photodetectors with fast response and enhanced sensitivity through bulk defect passivation. **2021**, 100, 383-389 | 0 |
| 258 | Abnormal Phase Transition and Band Renormalization of Guanidinium-Based Organic-Inorganic Hybrid Perovskite. **2021**, 13, 44964-44971 | 2 |
| 257 | The Trapped Charges at Grain Boundaries in Perovskite Solar Cells. 2107125 | 9 |
| 256 | A review on two-dimensional (2D) and 2D-3D multidimensional perovskite solar cells: Perovskites structures, stability, and photovoltaic performances. **2021**, 48, 100405 | 25 |
| 255 | Organic Matrix Assisted Low-temperature Crystallization of Black Phase Inorganic Perovskites. | 1 |
| 254 | High efficient and stable Tin-based perovskite solar cells via short-chain ligand modification. **2021**, 96, 106198 | |
| 253 | Efficient and Stable CsPbI Inorganic Perovskite Photovoltaics Enabled by Crystal Secondary Growth. **2021**, 33, e2103688 | 24 |
| 252 | Organic-Inorganic Perovskite Films and Efficient Planar Heterojunction Solar Cells by Magnetron Sputtering. **2021**, 8, e2102081 | 4 |
| 251 | 3D/2D Perovskite Single Crystals Heterojunction for Suppressed Ions Migration in Hard X-Ray Detection. 2104880 | 14 |
| 250 | High-performance and stable perovskite photodetector with mixed 2D/3D perovskite surface passivation layer. | 2 |
| 249 | Interfacial engineering designed on CuSCN for highly efficient and stable carbon-based perovskite solar cells. **2021**, 21, 100801 | 2 |
| 248 | Lead-Free Double Perovskite Cs2AgBiBr6: Fundamentals, Applications, and Perspectives. 2105898 | 35 |
| 247 | Photo-induced defects in MAPbBr3 single crystals. **2021**, 3, 044005 | 2 |
| 246 | Temperature-dependent structural fluctuation and its effect on the electronic structure and charge transport in hybrid perovskite CH NH PbI. **2021**, 42, 2213-2220 | 1 |
| 245 | Bandgap and Carrier Dynamic Controls in CsPbBr3 Nanocrystals Encapsulated in Polydimethylsiloxane. **2021**, 11, 1132 | 2 |
| 244 | Organic Matrix Assisted Low-temperature Crystallization of Black Phase Inorganic Perovskites. **2021**, | 9 |
| 243 | Ultrafast photo-induced carrier dynamics of FAPbI3-MAPbBr3 perovskite films fabricated with additives and a hole transport material. **2021**, 784, 139100 | 1 |
| 242 | The structural, electronic and optical properties of all-inorganic CsPb1⊠SnxBr3 perovskite: A theoretical study. **2021**, 1205, 113444 | 1 |

| | | |
|---|---|---|
| 241 | Theoretical analysis of effects of doping MAPbI into p-n homojunction on several types of perovskite solar cells. **2021**, 121, 111491 | 4 |
| 240 | Flexible light-responsive self-healing polymeric composite film based on two-dimensional MoS2 - organic halide perovskite longitudinal heterostructure. **2021**, 425, 131450 | 2 |
| 239 | Self-assembled organic-inorganic hybrids: Synthesis, structural, third-order nonlinear optical properties and Hirshfeld surface analysis of bis(1,2,3,4-tetrahydroisoquinolin-2-ium) hexahalostannate(IV). **2021**, 1245, 131092 | 1 |
| 238 | Novel ytterbium-doped CsPbI2Br thin-films□based inorganic perovskite solar cells toward improved phase stability. **2021**, 22, 100557 | 2 |
| 237 | Influence of surface passivation on perovskite CsPbBr1.2I1.8 quantum dots and application of high purity red light-emitting diodes. **2022**, 892, 162140 | 7 |
| 236 | Incorporation of □aminobutyric acid and cesium cations to formamidinium lead halide perovskites for highly efficient solar cells. **2022**, 64, 561-567 | 12 |
| 235 | Ion-exchange-induced MAPbI3 thin-film 3D□2D and 3D□1D conversions: unveiling structural transformations in films via synergistic and competitive approaches. **2021**, 45, 7103-7108 | |
| 234 | Metal Halide Perovskite/2D Material Heterostructures: Syntheses and Applications.. **2021**, 5, e2000937 | 6 |
| 233 | Influence of hidden halogen mobility on local structure of CsSn(Cl Br ) mixed-halide perovskites by solid-state NMR. **2020**, 12, 3253-3263 | 17 |
| 232 | Comment on □Phase transitions, screening and dielectric response of CsPbBr3□by ¯. Svirskas, S. Bali□□as, M. ¯im□as, G. Usevi□us, M. Kinka, M. Veli□a, D. Kubicki, M. E. Castillo, A. Karabanov, V. V. Shvartsman, M. R. Soares, V. ¯ablinskas, A. N. Salak, D. C. Lupascu and J. Banys, J. Mater. Chem. A, 2020, 8, 14015. **2021**, 9, 11450-11452 | 1 |
| 231 | Wide-bandgap organic□inorganic hybrid and all-inorganic perovskite solar cells and their application in all-perovskite tandem solar cells. | 25 |
| 230 | Spontaneous interface engineering for dopant-free poly(3-hexylthiophene) perovskite solar cells with efficiency over 24%. **2021**, 14, 2419-2428 | 56 |
| 229 | Halide Ion Migration in Perovskite Nanocrystals and Nanostructures. **2021**, 54, 520-531 | 38 |
| 228 | Solid-state NMR Studies of Halide Perovskite Materials with Photoconversion Potential. **2021**, | 2 |
| 227 | Environment-Induced Reversible Modulation of Optical and Electronic Properties of Lead Halide Perovskites and Possible Applications to Sensor Development: A Review. **2021**, 26, | 6 |
| 226 | Perovskite CH3NH3PbI3□xClx Solar Cells and their Degradation (Part 1: A Short Review). **2021**, 58, 44-52 | 1 |
| 225 | Lead-Free Perovskite Materials for Solar Cells. **2021**, 13, 62 | 42 |
| 224 | A review on the stability of inorganic metal halide perovskites: challenges and opportunities for stable solar cells. **2021**, 14, 2090-2113 | 63 |

| | | |
|---|---|---|
| 223 | Toward Perovskite Solar Cell Commercialization: A Perspective and Research Roadmap Based on Interfacial Engineering. **2018**, 30, e1800455 | 244 |
| 222 | Quantum confinement and strain effects on the low-dimensional all-inorganic halide Cs2XI2Cl2 (X= Pb, Sn) perovskites: A theoretical approach for modulating electronic and optical properties. **2020**, 124, 114226 | 8 |
| 221 | Stable lead-free perovskite solar cells: A first-principles investigation. **2020**, 239, 118493 | 3 |
| 220 | Emerging 2D Organic-Inorganic Heterojunctions. **2020**, 1, 100166 | 9 |
| 219 | Manipulating the Photoluminescence and Carrier Characteristics of Excited FAPbBr3 Nanocrystals with Pressure. **2021**, 125, 1041-1047 | 6 |
| 218 | Temperature-Dependent Ultrafast Spectral Response of FAPb(Br0.4I0.6)3 Nanocrystals. **2021**, 125, 1157-1166 | 5 |
| 217 | Theoretical investigation of halide perovskites for solar cell and optoelectronic applications. **2020**, 29, 108401 | 7 |
| 216 | Two-dimensional transition metal dichalcogenides for lead halide perovskites-based photodetectors: band alignment investigation for the case of CsPbBr3/MoSe2. **2020**, 41, 052206 | 8 |
| 215 | A system for the deterministic transfer of 2D materials under inert environmental conditions. **2020**, 7, 025034 | 11 |
| 214 | Design of p-type transparent conductors from inverted band structure: The case of inorganic metal halide perovskites. **2019**, 3, | 16 |
| 213 | Improved performance of pure red perovskite light-emitting devices based on CsPb(BrI) with variable content of iodine and bromine. **2020**, 45, 2724-2727 | 1 |
| 212 | Amplified spontaneous emission properties of solution processed CsPbBr3 perovskite thin films doped with large-group ammonium cations. **2020**, 10, 981 | 4 |
| 211 | Flexible and stretchable inorganic optoelectronics. **2019**, 9, 4023 | 26 |
| 210 | High detectivity photodetectors based on perovskite nanowires with suppressed surface defects. **2020**, 8, 1862 | 12 |
| 209 | Conjugated polymers as functional hole selective layers in efficient metal halide perovskite solar cells. **2017**, 4, 956-969 | 3 |
| 208 | Recent Progress of Photocatalysis Based on Metal Halide Perovskites. **2019**, 77, 1075 | 7 |
| 207 | Photocatalytic reduction of CO2 by halide perovskites: recent advances and future perspectives. | 7 |
| 206 | Physics and applications of semiconductor nanowire lasers. **2021**, 20, 389-438 | |

| | | |
|---|---|---|
| 205 | Improvement of Photoluminescence of Perovskite CH3NH3PbI3 by Adding Additional CH3NH3I during Grinding. **2021**, 38, 087801 | 1 |
| 204 | Ionic Liquid for Perovskite Solar Cells: An Emerging Solvent Engineering Technology. | 6 |
| 203 | Exploring point defects and trap states in undoped SrTiO3 single crystals. **2021**, 42, 1510-1510 | 5 |
| 202 | Tuning Dielectric Transitions in Two-Dimensional Organic-Inorganic Hybrid Lead Halide Perovskites. **2021**, 60, 16871-16877 | 2 |
| 201 | Photogeneration of thiyl radicals using metal-halide perovskite for highly efficient synthesis of thioethers. e6492 | 0 |
| 200 | Progress in Piezoelectric Nanogenerators Based on PVDF Composite Films. **2021**, 12, | 3 |
| 199 | Realization of an Artificial Visual Nervous System using an Integrated Optoelectronic Device Array. **2021**, 33, e2105485 | 7 |
| 198 | Lead Sources in Perovskite Solar Cells: Toward Controllable, Sustainable, and Large-Scalable Production. **2021**, 5, 2100665 | 4 |
| 197 | Synthesis, structure, optical properties and Hirshfeld surface analysis of bis(azepanium) hexachlorostannate(IV). 1-14 | 0 |
| 196 | Pressure Effects on Lead-Free Metal Halide Perovskites: a Route to Design Optimized Materials for Photovoltaics. **2021**, 5, 2100550 | 3 |
| 195 | High performance all-fiber photodetector with hybrid CsPbBr3 nanocrystals and multi-layered graphene. **2016**, | |
| 194 | Photovoltaic performance of planar CH3NH3PbI3 perovskite solar cells based on CdS and high transmittance Cd(S,O) electron transport layers stacked with ZnO hole blocking layer. **2018**, 8, 1 | 1 |
| 193 | Investigation of Structural, Electronic, Optic and Elastic Properties of Perovskite RbGeCl3 Crystal: A First Principles Study. **2019**, 32, 1008-1019 | 1 |
| 192 | Bio-Inspired Molecular Bridging in a Hybrid Perovskite Leads to Enhanced Stability and Tunable Properties. | |
| 191 | The Promise of Perovskite Solar Cells. **2021**, | |
| 190 | Investigation of Structural, Electronic and Optical Properties of Na2InAgCl6, K2InAgCl6, and Rb2InAgCl6 Lead-Free Halide Double Perovskites Regarding with Cs2InAgCl6 Perovskites Cell and a Comparative Study by DFT Functionals. **2021**, 24, | 1 |
| 189 | 1T-2H MoSe2 modified MAPbI3 for effective photocatalytic hydrogen evolution. **2022**, 893, 162329 | 2 |
| 188 | Lead-free perovskite Cs3Bi2Br9 heterojunctions for highly efficient and selective photocatalysis under mild conditions. **2022**, 893, 162326 | 7 |

| | | |
|---|---|---|
| 187 | A visualized ratiometric fluorescence sensing system for copper ions based on gold nanoclusters/perovskite quantum dot@SiO nanocomposites. **2021**, 146, 7545-7553 | 1 |
| 186 | Perovskite Self-Passivation with PCBM for Small Open-Circuit Voltage Loss. **2020**, 12, 257-272 | 3 |
| 185 | Growth and NO2 sensing properties of Cs2SnI6 thin film. **2021**, 111628 | 0 |
| 184 | MoS/pentacene hybrid complementary inverter based photodetector with amplified voltage-output. **2021**, 32, 015203 | 4 |
| 183 | Metal halide perovskites for photocatalysis applications. | 14 |
| 182 | Spin selectivity in chiral metal-halide semiconductors. **2021**, 13, 18925-18940 | 3 |
| 181 | Accelerated interfacial charge transfer in Br-gradient MAPbI3-xBrx perovskite thin films **2021**, 34, 613-620 | |
| 180 | Internal Electric Field on Steering Charge Migration: Modulations, Determinations and Energy-Related Applications. 2110258 | 4 |
| 179 | Hybrid Perovskite/Polymer Materials: Preparation and Physicochemical Properties. **2021**, 5, 304 | 1 |
| 178 | Formamidinium dopant effects on double perovskite Cs2AgBiBr6. **2022**, 122, e26846 | |
| 177 | Gateway towards recent developments in quantum dot-based light-emitting diodes.. **2022**, | 3 |
| 176 | Dual-Functional Quantum Dot Seeding Growth of High-Quality Air-Processed CsPbI2Br Film for Carbon-Based Perovskite Solar Cells. 2100989 | 6 |
| 175 | Strain relaxation and domain enlargement via phase transition towards efficient CsPbI2Br solar cells. | 4 |
| 174 | Surface Defect Formation and Passivation in Formamidinium Lead Triiodide (FAPbI) Perovskite Solar Cell Absorbers.. **2022**, 324-330 | 4 |
| 173 | Synergistic stabilization of CsPbI3 inorganic perovskite via 1D capping and secondary growth. **2022**, 68, 387-392 | 1 |
| 172 | Enhanced crystallization in the CsPbBr3 all-inorganic perovskite via an advanced nucleation method. | 1 |
| 171 | Dimensional Control over Metal Halide Perovskite Crystallization Guided by Active Learning. **2022**, 34, 756-767 | 3 |
| 170 | Dynamics of Strong Coupling Between Free Charge Carriers in Organometal Halide Perovskites and Aluminum Plasmonic States.. **2021**, 9, 818459 | |

| | | |
|---|---|---|
| 169 | MOF-triggered formation of MAPbBr3@PbBr(OH) with enhanced stability. **2022**, 10, 616-625 | 1 |
| 168 | Free and self-trapped exciton emission in perovskite CsPbBr microcrystals.. **2021**, 12, 1035-1042 | 0 |
| 167 | Mechanosynthesis strategy towards a high-efficiency CsPbBr3/Cs4PbBr6 perovskite phosphor. **2022**, 12, 665 | 1 |
| 166 | Bi3+ doping in 1D ((CH3)3SO)PbI3: a model for defect interactions in halide perovskites. **2022**, 10, 1458-1469 | 2 |
| 165 | Unusual luminescence and its decay behavior of CH3NH3PbBr3 single crystals at orthorhombic phase. **2022**, 22, 100621 | 0 |
| 164 | In situ, seed-free formation of a Ruddlesden Popper perovskite Cs2PbI2Cl2 nanowires/PbI2 heterojunction for a high-responsivity, self-powered photodetector. | 1 |
| 163 | Cation-Doping in Organic-Inorganic Perovskites to Improve the Structural Stability from Theoretical Prediction.. **2022**, 1180-1186 | 1 |
| 162 | Optical Properties of Inorganic Halide Perovskite Nanorods: Role of Anisotropy, Temperature, Pressure, and Nonlinearity. **2022**, 126, 2003-2012 | 0 |
| 161 | Carbon nanotubes in perovskite-based optoelectronic devices. **2022**, 5, 448-481 | 1 |
| 160 | Harnessing chemical functions of ionic liquids for perovskite solar cells. **2022**, 68, 797-810 | 3 |
| 159 | Greatly Improved Photoresponse in the MAPbBr 3/Si Heterojunction by Introducing an ITO Layer and Optimizing MAPbBr 3 Layer Thickness. | |
| 158 | First-principles insight into the structural and optoelectronic properties of Sn- and Pb-based hybrid halide perovskites for photovoltaic applications. | 1 |
| 157 | Magnetism in a 2D Hybrid Ruddlesden-Popper Perovskite through Charge Redistribution Driven by an Organic Functional Spacer.. **2022**, 1406-1415 | 1 |
| 156 | New Pb(II)-Ammine complexes as intermediates from the interaction of CH3NH2 with PbX2 and CH3NH3PbX3 (X = Cl, Br). | 0 |
| 155 | Revealing the influence of B-site doping on the physical properties of CsPbI3: A DFT investigation. **2022**, 309, 122956 | 2 |
| 154 | Bulk Mn2+ Doped 1D Hybrid Lead Halide Perovskite with Highly Efficient, Tunable and Stable Broadband Light Emissions. **2021**, | 1 |
| 153 | Metal Halide-Based Adsorption and Substitution at Halide Perovskite Surfaces: Study of CuBr2/CH3NH3PbI3. **2022**, 96, 190-197 | |
| 152 | Mobility driven thermoelectric and optical properties of two-dimensional halide-based hybrid perovskites: impact of organic cation rotation.. **2022**, | 3 |

| | | |
|---|---|---|
| 151 | Novel Photoelectrochemical Sensor for Cholesterol Based on Ch3nh3pbbr3 Perovskite /Tio2 Inverse Opal Heterojunction Coated with Molecularly Imprinted Polymers. | |
| 150 | White-emitting film of diblock copolymer micelles with perovskite nanocrystals.. **2022**, 12, 6389-6395 | 0 |
| 149 | Effects of Electron-Phonon Coupling and Spin-Spin Coupling on the Photoluminescence of Low-Dimensional Metal Halides.. **2022**, 1752-1764 | 6 |
| 148 | Formamidinium Perovskitizers and Aromatic Spacers Synergistically Building Bilayer Dion-Jacobson Perovskite Photoelectric Bulk Crystals.. **2022**, | 2 |
| 147 | Polycrystalline Formamidinium Lead Bromide X-ray Detectors. **2022**, 12, 2013 | 1 |
| 146 | Highly Luminescent and Multifunctional Zero-Dimensional Cesium Lanthanide Chloride (Cs 3 LnCl 6 ) Colloidal Nanocrystals. 2102727 | 1 |
| 145 | Photocatalytic Anaerobic Oxidation of Aromatic Alcohols Coupled With H Production Over CsPbBr/GO-Pt Catalysts.. **2022**, 10, 833784 | 3 |
| 144 | Greatly improved photoresponse in the MAPbBr/Si heterojunction by introducing an ITO layer and optimizing MAPbBr layer thickness.. **2022**, 30, 11536-11548 | 1 |
| 143 | The effect of argon plasma treatment on surface engineering in an inverted perovskite solar cell. **2022**, 134, 1 | 0 |
| 142 | Inorganic CsPbBr 3 Perovskite Nanocrystals as Interfacial Ion Reservoirs to Stabilize FAPbI 3 Perovskite for Efficient Photovoltaics. 2200203 | 1 |
| 141 | Boosted Inner Surface Charge Transfer in Perovskite Nanodots@Mesoporous Titania Frameworks for Efficient and Selective Photocatalytic CO 2 Reduction to Methane. | 0 |
| 140 | Revealing the Correlation of Light Soaking Effect with Ion Migration in Perovskite Solar Cells. 2200050 | 1 |
| 139 | Recent Advances in Colloidal Quantum Dots or Perovskite Quantum Dots as a Luminescent Downshifting Layer Embedded on Solar Cells.. **2022**, 12, | 1 |
| 138 | Synergetic Effect on Enhanced Photovoltaic Performance of Spray-Coated Perovskite Solar Cells Enabled by Additive Doping and Antisolvent Additive Spraying Treatment. | 1 |
| 137 | Controlling the Decomposition of Hybrid Perovskite by a Dithienopyrrole-Based Hole Transport Layer toward Thermostable Solar Cells. **2022**, 4, 600-608 | 0 |
| 136 | Boosted Inner Surface Charge Transfer in Perovskite Nanodots@Mesoporous Titania Framework for Efficient CO2 Photoreduction to Methane.. **2022**, | 12 |
| 135 | Design of Active Defects in Semiconductors: 3D Electron Diffraction Revealed Novel Organometallic Lead Bromide Phases Containing Ferrocene as Redox Switches. 2201126 | 1 |
| 134 | Synthesis of Two-Dimensional CsPbX (X = Br and I) with a Stable Structure and Tunable Bandgap by CsPbX Phase Separation.. **2022**, 2555-2562 | 1 |

| | | |
|---|---|---|
| 133 | Lattice strain suppresses point defect formation in halide perovskites. 1 | 5 |
| 132 | H/F Substitution on the Spacer Cations Leads to 1D-to-2D Increment of the Pyrrolidinium-Containing Lead Iodide Hybrid Perovskites.. **2022**, | 0 |
| 131 | Modulated crystal growth enables efficient and stable perovskite solar cells in humid air. **2022**, 136267 | 0 |
| 130 | Lead-Free Alloyed Double Perovskites: An Emerging Class of Materials for Optoelectronic Applications. | |
| 129 | The difference on the physical properties between CsPbX3 and Cs2PbX6: A comparative study. **2022**, 310, 123055 | 0 |
| 128 | Durability engineering in all-inorganic CsPbX3 perovskite solar cells: strategies and challenges. **2022**, 24, 100792 | 0 |
| 127 | Multi-site passivation-based antisolvent additive engineering with gradient distribution for superior triple cation P-I-N perovskite solar cells. **2022**, 97, 107193 | 1 |
| 126 | Effect of transparent polymer encapsulation overlayers on bending fracture behavior of flexible organic lead halide perovskite thin films. **2022**, 908, 164607 | 1 |
| 125 | Beyond the Phase Segregation: Probing the Irreversible Phase Reconstruction of Mixed-Halide Perovskites.. **2021**, e2103948 | 7 |
| 124 | Recent Progress of Critical Interface Engineering for Highly Efficient and Stable Perovskite Solar Cells. **2022**, 12, 2102730 | 17 |
| 123 | Lead-Free Halide CsAg 2 I 3 with 1D Electronic Structure and High Stability for Ultraviolet Photodetector. 2202894 | 1 |
| 122 | Recent Advances on the Strategies to Stabilize the □Phase of Formamidinium Based Perovskite Materials. **2022**, 12, 573 | 0 |
| 121 | Tuning Spin Texture and Spectroscopic Limited Maximum Efficiency through Chemical Composition Space in Double Halide Perovskites. | 2 |
| 120 | Investigation of resistive switching in lead-free bismuth-silver halide double perovskite. | 0 |
| 119 | In Situ Synthesis of MAPbX3 Perovskite Quantum Dot-Polycaprolactone Composites for Fluorescent 3D Printing Filament. **2022**, 164961 | 0 |
| 118 | A Quasi-Two-Dimensional Trilayered CsPbBr3-based Dion-Jacobson Hybrid Perovskite toward High-Performance Photodetection.. **2022**, | 2 |
| 117 | Optical absorption and stability enhancement in mixed lead, tin, and germanium hybrid halide perovskites for photovoltaic applications. **2022**, 111106 | 3 |
| 116 | Could two dimensional perovskites fundamentally solve the instability of perovskite photovoltaics?. | |

| | | |
|---|---|---|
| 115 | Analysis of the temperature dependent electrical parameters of the heterojunction obtained with Au nanoparticles decorated perovskite strontium titanate nanocubes. **2022**, 165140 | 1 |
| 114 | Synthesis and Characterization of High-Efficiency Halide Perovskite Nanomaterials for Light-Absorbing Applications. | 3 |
| 113 | Enhancing the Intrinsic and Extrinsic Stability of Halide Perovskite Nanocrystals for Efficient and Durable Optoelectronics.. **2022**, | 4 |
| 112 | All-Inorganic Perovskite Solar Cells: Recent Advancements and Challenges. **2022**, 12, 1651 | 0 |
| 111 | Colorimetric paper test strips based on cesium lead bromide perovskite nanocrystals for rapid detection of ciprofloxacin hydrochloride.. **2022**, | |
| 110 | Terahertz Detection with Optically Gated Halide Perovskites. | |
| 109 | Halogen substitution assisted modification on phase transition point and band gap of (DBU) PbX3 (X = Cl, Br, I). **2022**, 123198 | |
| 108 | Mechanism of transient inverse pulse current in hybrid perovskite photodetector induced by proton beam irradiation. **2019**, | |
| 107 | Reconfigurable self-powered imaging photodetectors by reassembling and disassembling ZnO/perovskite heterojunction. | 2 |
| 106 | Morphological, Optical and Electrical Analysis of Ag Polymer-Nickel Low Temperature Top Electrode in Silicon Solar Cell for Tandem Application. | 0 |
| 105 | Two-dimensional material inks. | 11 |
| 104 | Novel Photoelectrochemical Sensor for Cholesterol Based on CH3NH3PbBr3 Perovskite /TiO2 Inverse Opal Heterojunction Coated with Molecularly Imprinted Polymers. **2022**, 132121 | 0 |
| 103 | Drop-Casting Halide Microcrystals Enabled by Green Glycol Solvent for High-Performance Photodetectors. 2200041 | |
| 102 | Acoustic Anomalies and the Critical Slowing-Down Behavior of MAPbCl3 Single Crystals Studied by Brillouin Light Scattering. **2022**, 15, 3692 | 0 |
| 101 | Probing the electronic, optical and transport properties of halide double perovskites Rb2InSb(Cl,Br)6 for solar cells and thermoelectric applications. **2022**, 123262 | 0 |
| 100 | Ultra-high efficiency, stability and low-cost perovskite solar cell materials Cs2Zr1-xTixI6. **2022**, 282, 115794 | 1 |
| 99 | Properties, performance and multidimensional applications of stable lead-free Cs2AgBiBr6 double perovskite. **2022**, 26, 100731 | 2 |
| 98 | A Review on Sensing Mechanisms and Recent Developments on Metal Halide Based Perovskite Gas Sensors. | 2 |

| | | |
|---|---|---|
| 97 | Large-area Perovskite Optoelectronic Devices and the Fabrication Techniques. **2022**, 433-477 | 1 |
| 96 | Ni-Doped SnO2 as an Electron Transport Layer by a Low-Temperature Process in Planar Perovskite Solar Cells. | |
| 95 | Stability of Perovskite Materials and Devices. **2022**, 479-526 | |
| 94 | Temperature-induced structural transition in an organic□inorganic hybrid layered perovskite (MA)2PbI2□Brx(SCN)2. | |
| 93 | Regulating Interface Schottky Barriers Towar High-Performance Self-Powered Imaging Photodetector. | |
| 92 | Controllable Perovskite Single Crystal Heterojunction for Stable Self-Powered Photo-Imaging and X-Ray Detection. 2200449 | 4 |
| 91 | Ferroelasticity□n Organic-inorganic Hybrid Perovskites. | 1 |
| 90 | Structural Asymmetry and Chiroptical Activity of Chiral Antimony-Halide Hybrids. | 1 |
| 89 | Customizing a coordinative crab molecule BCP-3N with multifunctionality for high-performance inverted perovskite solar cells. | 1 |
| 88 | Unraveling the effect of mixed charge carrier on the electrical conductivity in MAPbBr3 perovskite due to ions incorporation. | |
| 87 | Energy band tuning induced by g-C3N4 interface engineering for efficient and stable perovskite solar cells. **2022**, 32, 103899 | 0 |
| 86 | New Lead-free Organic□norganic Hybrid Semiconductor Single Crystals for a UV□Vis□NIR Broadband Photodetector. **2022**, 14, 33850-33860 | 0 |
| 85 | Stabilisation and Performance Enhancement Strategies for Halide Perovskite Photocatalysts. 2203836 | 1 |
| 84 | Doping Mechanism of Perovskite Films with PbCl2 Prepared by Magnetron Sputtering for Enhanced Efficiency of Solar Cells. | 1 |
| 83 | Life cycle assessment of inkjet printed perovskite solar cells. **2022**, 133665 | 1 |
| 82 | Gated Photodetector with a Bipolar Response from Single-Crystal Halide Perovskite Using a Polymeric Electrolyte as the Gate Dielectric. | 0 |
| 81 | First-principles calculations to Investigate Emerging Double Perovskites K2NaMoX6 (X=Cl, I) Compounds for Magnetic and Optoelectronic Applications. **2022**, 414252 | 1 |
| 80 | Synergistic enhancement of potassium halide and SnOx:Cl to weak hysteresis in perovskite photovoltaics. | |

| | | |
|---|---|---|
| 79 | High-performance CsGeBr3 perovskite/ WS2 Nano-Flakes Field-Effect Transistor at high temperature. **2022**, 132, 112757 | |
| 78 | Stability strategies of perovskite quantum dots and their extended applications in extreme environment: A review. **2022**, 156, 111987 | 2 |
| 77 | Acetylacetone modulated TiO 2 nanoparticles for low-temperature solution processable perovskite solar cell. | 0 |
| 76 | Surface passivation of perovskite with organic hole transport materials for highly efficient and stable perovskite solar cells. **2022**, 16, 100300 | 3 |
| 75 | Influence of self-doping on band-edges and Fermi energy of CsPbBr3. **2022**, 248, 112014 | 0 |
| 74 | Recent promise of lead-free halide perovskites in optoelectronic applications. **2023**, 451, 138926 | 0 |
| 73 | High-efficiency luminescent organic□inorganic hybrid manganese(ii) halides applied to X-ray imaging. **2022**, 10, 12286-12291 | 3 |
| 72 | Highly stable and water dispersible polymer-coated CsPbBr3 nanocrystals for Cu-ion detection in water. | 1 |
| 71 | Rational design of mixed Sn□e based hybrid halide perovskites for optoelectronic applications: a first principles study. **2022**, 12, 25511-25519 | 0 |
| 70 | Perovskite-transition metal dichalcogenides heterostructures: recent advances and future perspectives. **2022**, 1, 220006-220006 | 2 |
| 69 | High efficiency near-infrared light emission and ultra-high stability of the lead-free double perovskite Cs2Na1□AgxBi1□AlyCl6. | 0 |
| 68 | Regulating interface Schottky barriers toward a high-performance self-powered imaging photodetector. **2022**, 12, 25881-25889 | 0 |
| 67 | Performance Regulation of Perovskite Solar Cells via Bifacial Modification by F4-TCNQ and PFN-Br. **2022**, 126, 15128-15134 | 0 |
| 66 | In Situ Observing and Tuning the Crystal Orientation of Two-Dimensional Layered Perovskite via the Chlorine Additive. | 1 |
| 65 | Realizing High-Efficiency Yellow Emission of Organic Antimony Halides via Rational Structural Design. | 3 |
| 64 | Facet Chemistry and the Impact of Surface Ligands on the Photoluminescence of Different Polyhedral-Shaped CsPbBr3 Perovskite Nanocrystals. **2022**, 126, 16759-16766 | 0 |
| 63 | Analysis of HTL and ETL materials in the efficiency improvement of Sb 2 (Se 1-x S x ) 3 solar cell. | 0 |
| 62 | Lead Halide Perovskite Quantum Dots for Photovoltaics and Photocatalysis: A Review. | 2 |

| | | |
|---|---|---|
| 61 | Double-side modification strategy for efficient carbon-based, all-inorganic CsPbIBr2 perovskite solar cells with high photovoltage. **2022**, | 0 |
| 60 | Lead-Free Copper-Based Perovskite Nanonets for Deep Ultraviolet Photodetectors with High Stability and Better Performance. **2022**, 12, 3264 | 0 |
| 59 | A First-Principles Study on ABBr 3 (A = Cs, Rb, K, Na; B = Ge, Sn) Halide Perovskites for Photovoltaic Applications. 2200511 | 0 |
| 58 | Grain Boundary Passivation Using D131 Organic Dye Molecule for Efficient and Thermally Stable Perovskite Solar Cells. | 1 |
| 57 | Photovoltaic Performance Improvement of All-Inorganic CsPbBr 3 Perovskite Solar Cells by Antisolvent Assisted Crystallization. **2022**, 7, | 0 |
| 56 | Mapping the Room-Temperature Dynamic Stabilities of Inorganic Halide Double Perovskites. | 0 |
| 55 | NH4Ac boosts the efficiency of carbon-based all-inorganic perovskite solar cells fabricated in the full ambient air to 15.43%. **2022**, 155175 | 1 |
| 54 | Recent Progress in Large-Area Perovskite Photovoltaic Modules. | 0 |
| 53 | ZrCl4 for energy level alignment at the perovskite/TiO2 interface. **2022**, 433, 141214 | 0 |
| 52 | Controllable Synthesis of Cu-based quantum dots/nanocrystals and Application in White Light-Emitting Diodes. | 0 |
| 51 | Spectral Tuning, Stabilities under External Exposures, and Spontaneous Enhancement of Emission Intensity in Grown-into-Glass All-Inorganic Metal Halide Perovskite Nanocrystals. 2200166 | 1 |
| 50 | Inactive impurity stabilizes the highly efficient perovskite photovoltaics. **2022**, 6, 2248-2250 | 0 |
| 49 | Multifunctional Ionic Fullerene Additive for Synergistic Boundary and Defect Healing of Tin Perovskite to Achieve High-Efficiency Solar Cells. **2022**, 14, 46603-46614 | 0 |
| 48 | In Situ Tetraalkylammonium Ligand Engineering of Organic□norganic Hybrid Perovskite Nanoparticles for Enhancing Long-Term Stability and Optical Tunability. | 0 |
| 47 | Defect Pair Formation in FAPbI3 Perovskite Solar Cell Absorbers. **2022**, 13, 9718-9724 | 0 |
| 46 | Sn-Based Perovskites for Photovoltaic Applications. **2023**, 303-310 | 0 |
| 45 | □FAPbI3 phase stabilization using aprotic trimethylsulfonium cation for efficient perovskite solar cells. **2022**, 551, 232207 | 0 |
| 44 | High-quality all-inorganic CsPbI2Br thin films derived from phase-pure intermediate for efficient wide-bandgap perovskite solar cells. **2022**, 123728 | 0 |

| | | |
|---|---|---|
| 43 | Advanced Stretchable Photodetectors: Strategies, Materials and Devices. | 1 |
| 42 | Structural Phase Transitions and Thermal Degradation Process of MAPbCl3 Single Crystals Studied by Raman and Brillouin Scattering. **2022**, 15, 8151 | 1 |
| 41 | Low turn-on voltage CsPbBr3 perovskite light-emitting diodes with regrowth crystal MAPbBr3 hole transport layer. **2023**, 22, 375-381 | 0 |
| 40 | Polar Side-Chain Tuning of Perylene Diimide and Fluorene-Based Cathode Interfacial Material for High-Performance Inverted Perovskite Solar Cells. | 0 |
| 39 | Synergistic trifluoroacetamide regulating crystal orientation and energy alignment for tin-based perovskite solar cells. **2023**, 113, 106707 | 0 |
| 38 | Recent Progress Toward Commercialization of Flexible Perovskite Solar Cells: From Materials and Structures to Mechanical Stabilities. 2200133 | 0 |
| 37 | Composition–Property Mapping in Bromide-Containing Tin Perovskite Using High-Purity Starting Materials. **2022**, 5, 14789-14798 | 1 |
| 36 | Highly Electrochemiluminescent Cs4PbBr6@CsPbBr3 Perovskite Nanoacanthospheres and Their Application for Sensing Bisphenol A. **2022**, 94, 17142-17150 | 0 |
| 35 | Acetamidinium bromoplumbate CH 3 C ( NH 2 ) 2 PbBr 3 with 4H BaRuO 3 structure. | 0 |
| 34 | Antisolvent Choice Determines the Domain Distribution of Quasi-2D Perovskite for Blue-Emitting Perovskites-Based Light Emitting Devices. 2202029 | 0 |
| 33 | Compositional texture engineering for highly stable wide-bandgap perovskite solar cells. **2022**, 378, 1295-1300 | 0 |
| 32 | Suppressing High-Order Phase for Efficient Pure Red Quasi-2D Perovskite Light-Emitting Diodes. 73-79 | 0 |
| 31 | Centimeter-Sized Piezoelectric Single Crystal of Chiral Bismuth-Based Hybrid Halide with Superior Electrostrictive Coefficient. 2207663 | 0 |
| 30 | Stabilizing CsPbI3 perovskite for photovoltaic applications. **2023**, | 0 |
| 29 | Rational Selection of the Lewis Base Molecules Targeted for Lead-Based Defects of Perovskite Solar Cells: The Synergetic Co-passivation of Carbonyl and Carboxyl Groups. 653-662 | 0 |
| 28 | Surface treatment of triple cation mixed perovskite for highly stable lateral photodetectors with low dark current. **2023**, 939, 168712 | 0 |
| 27 | Carbon Dots in Perovskite Solar Cells: Properties, Applications, and Perspectives. **2023**, 37, 876-901 | 0 |
| 26 | Halide Composition Engineered a Non-Toxic Perovskite–Silicon Tandem Solar Cell with 30.7% Conversion Efficiency. | 4 |

| | | |
|---|---|---|
| 25 | Tuning the Photoelectric Properties of Perovskite Materials Using Mg/Ge/Si and Br Double-Doped to FASnI3. **2023**, 127, 2215-2222 | 0 |
| 24 | All-inorganic halide perovskite CsPbBr3: a DFT study of a self-powered formaldehyde sensor. | 0 |
| 23 | Strategies for Optimizing the Morphology of CsSnI3 Perovskite Solar Cells. **2023**, 13, 410 | 0 |
| 22 | Hybrid 1D/3D-Structured Perovskite as a Highly Selective and Stable Sensor for NO2 Detection at Room Temperature. **2023**, 28, 2615 | 0 |
| 21 | Highly Stable Perovskite Solar Cells by Reducing Residual Water-Induced Decomposition of Perovskite. | 0 |
| 20 | Two-dimensional materials for boosting the performance of perovskite solar cells: Fundamentals, materials and devices. **2023**, 153, 100727 | 0 |
| 19 | A robust rationally designed multinarydouble perovskites microplates as an efficient visible-light photocatalyst. **2023**, 38, 102794 | 0 |
| 18 | Stable MAPbBr3@PbBr(OH) composites with high photoluminescence quantum yield: Synthesis, optical properties, formation mechanism, and catalytic application. **2023**, 616, 156442 | 0 |
| 17 | Treasure trove for efficient hydrogen evolution through water splitting using diverse perovskite photocatalysts. **2023**, 29, 101387 | 0 |
| 16 | Review of Defect Passivation for NiOx-Based Inverted Perovskite Solar Cells. **2023**, 6, 2098-2121 | 0 |
| 15 | Water-Stable CsPbBr 3 /Reduced Graphene Oxide Nanoscrolls for High-Performance Photoelectrochemical Sensing. 2213814 | 0 |
| 14 | A one-dimensional organic-inorganic hybrid copper(I)-halide with broadband emission. **2023**, 29, 101408 | 0 |
| 13 | 2D-3D perovskite memristor with low energy consumption and high stability for neural morphology calculation. | 0 |
| 12 | Recycling Useful Materials of Perovskite Solar Cells toward Sustainable Development. 2300014 | 0 |
| 11 | Lead-Free Semiconducting Organic□Inorganic Hybrid Perovskite with Mixed Organic Cations. **2023**, 23, 2042-2047 | 0 |
| 10 | Technological Evolution of Image Sensing Designed by Nanostructured Materials. **2023**, 5, 1027-1060 | 0 |
| 9 | Bilayered Dion□Jacobson Hybrid Perovskite Bulk Single Crystals Constructed with Aromatic Diammonium for Ultraviolet□Visible□Near-Infrared Photodetection. **2023**, 35, 2541-2548 | 0 |
| 8 | Long Persistent Luminescence from Metal□Organic Compounds: State of the Art. 2300735 | 0 |

| | | |
|---|---|---|
| 7 | Buried interface passivation strategies for high-performance perovskite solar cells. | 0 |
| 6 | CsPbBr 3 Quantum Dots-Sensitized Mesoporous TiO 2 Electron Transport Layers for High-Efficiency Perovskite Solar Cells. | 0 |
| 5 | A facile, time-saving fabrication method of high purity CsPbBr3 films for efficient solar cells. **2023**, | 0 |
| 4 | Metal halide perovskite nanomaterials for battery applications. **2023**, 537-568 | 0 |
| 3 | Lead-free Metal Halide Perovskites for Solar Energy. **2023**, 189-222 | 0 |
| 2 | Solid-State synthesis of cesium manganese halide nanocrystals in glass with bright and broad red emission for white LEDs. | 0 |
| 1 | Solution Processable Metal-Halide Perovskites for Printable and Flexible Ionizing Radiation Detectors. **2023**, 141-167 | 0 |