Citation Report

List of articles citing

Sequential deposition as a route to high-performance perovskite-sensitized solar cells

DOI: 10.1038/nature12340
Nature, 2013, 499, 316-9.

#	Paper	IF	Citations
2233	Approaching Bulk Carrier Dynamics in Organo-Halide Perovskite Nanocrystalline Films by Surface Passivation.		
2232	In Situ Monitoring the Uptake of Moisture into Hybrid Perovskite Thin Films.		
2231	One-Pot Electrodeposition of Compact Layer and Mesoporous Scaffold for Perovskite Solar Cells.		
2230	Monitoring a Silent Phase Transition in CH3NH3PbI3 Solar Cells via Operando Xray Diffraction.		
2229	Persistent Energetic Electrons in Methylammonium Lead Iodide Perovskite Thin Films.		
2228	Trends in overweight and obesity among children and adolescents in China from 1981 to 2010: a meta-analysis. **2012**, 7, e51949		103
2227	The Swift Surge of Perovskite Photovoltaics. **2013**, 4, 2597-2598		75
2226	Direct Imaging of the Recombination/Reduction Sites in Porous TiO2 Electrodes. **2013**, 4, 2822-8		23
2225	Using a two-step deposition technique to prepare perovskite (CH3NH3PbI3) for thin film solar cells based on ZrO2 and TiO2 mesostructures. **2013**, 3, 18762		369
2224	Two steps towards efficiency. **2013**, 12, 778-778		4
2223	Molecular Engineering of Indoline-Based D□A Organic Sensitizers toward High Efficiency Performance from First-Principles Calculations. **2013**, 117, 17382-17398		72
2222	Importance of Spin□Orbit Coupling in Hybrid Organic/Inorganic Perovskites for Photovoltaic Applications. **2013**, 4, 2999-3005		853
2221	AgBiS2 Semiconductor-Sensitized Solar Cells. **2013**, 117, 18308-18314		94
2220	Charge Transport and Recombination in Perovskite (CH3NH3)PbI3 Sensitized TiO2 Solar Cells. **2013**, 4, 2880-2884		255
2219	Depleted hole conductor-free lead halide iodide heterojunction solar cells. **2013**, 6, 3249		626
2218	Resonant-size spherical bottom scatterers for dye-sensitized solar cells. **2013**, 3, 25417		11
2217	Flexible, low-temperature, solution processed ZnO-based perovskite solid state solar cells. **2013**, 49, 11089-91		481

2216	Perovskites: The Emergence of a New Era for Low-Cost, High-Efficiency Solar Cells. **2013**, 4, 3623-3630		2120
2215	Evolution of Perovskite Photovoltaics and Decrease in Energy Payback Time. **2013**, 4, 3733-3734		29
2214	A perspective of mesoscopic solar cells based on metal chalcogenide quantum dots and organometal-halide perovskites. **2013**, 5, e68-e68		129
2213	Influence of Cationic Precursors on CdS Quantum-Dot-Sensitized Solar Cell Prepared by Successive Ionic Layer Adsorption and Reaction. **2013**, 117, 26948-26956		71
2212	Hybrid solar cells: Perovskites under the Sun. **2013**, 12, 1087-9		84
2211	Small Photocarrier Effective Masses Featuring Ambipolar Transport in Methylammonium Lead Iodide Perovskite: A Density Functional Analysis. **2013**, 4, 4213-6		543
2210	CdS Nanowire Solar Cells: Dual Role of Squaraine Dye as a Sensitizer and a Hole Transporter. **2013**, 4, 3983-3991		36
2209	Structural and electronic properties of hybrid perovskites for high-efficiency thin-film photovoltaics from first-principles. **2013**, 1, 042111		462
2208	Preparation and performance of organic□inorganic halide perovskites. **2013**, 24, 4862-4867		7
2207	Overcoming ultraviolet light instability of sensitized TiO□with meso-superstructured organometal tri-halide perovskite solar cells. **2013**, 4, 2885		1367
2206	Full printable processed mesoscopic CH□NH□PbI□/TiO□heterojunction solar cells with carbon counter electrode. **2013**, 3, 3132		574
2205	Efficient inorganic-organic hybrid perovskite solar cells based on pyrene arylamine derivatives as hole-transporting materials. **2013**, 135, 19087-90		456
2204	Applied physics. Perovskite-based solar cells. **2013**, 342, 317-8		628
2203	Electron-hole diffusion lengths exceeding 1 micrometer in an organometal trihalide perovskite absorber. **2013**, 342, 341-4		7280
2202	Long-range balanced electron- and hole-transport lengths in organic-inorganic CH3NH3PbI3. **2013**, 342, 344-7		5214
2201	Photoinduced processes in lead iodide perovskite solid-state solar cells. **2013**,		11
2200	Recent progress and the status of dye-sensitised solar cell (DSSC) technology with state-of-the-art conversion efficiencies. **2013**, 119, 291-295		112
2199	Stem cells: Down's syndrome link to ageing. *Nature*, **2013**, 501, 325-6	50.4	7

2198	Materials science: Fast-track solar cells. *Nature*, **2013**, 501, 323-5	50.4	103
2197	Economical, green and dual-function pyridyl iodides as electrolyte components for high efficiency dye-sensitized solar cells. **2013**, 49, 9003-5		4
2196	Glucose aided synthesis of molybdenum sulfide/carbon nanotubes composites as counter electrode for high performance dye-sensitized solar cells. **2013**, 112, 655-662		45
2195	Recent molecular engineering of room temperature ionic liquid electrolytes for mesoscopic dye-sensitized solar cells. **2013**, 3, 23521		15
2194	Band structure, shape controllable synthesis and luminescence properties of the precursor and final product Lu6O5F8:Eu/Tb/Ce/Dy nano/microstructures. **2013**, 1, 7952		9
2193	Collective hydrogen-bond dynamics dictates the electronic structure of aqueous I3(-). **2013**, 15, 20189-96		26
2192	The research of a new polyoxometalates based photosensitizer on dye sensitized solar cell. **2013**, 38, 78-82		22
2191	Enhanced Performance in Perovskite Organic Lead Iodide Heterojunction Solar Cells with Metal-Insulator-Semiconductor Back Contact. **2013**, 30, 128402		26
2190	Attempt to improve the performance of pyrrole-containing dyes in dye sensitized solar cells by adjusting isolation groups. **2013**, 5, 12469-77		42
2189	Formation of a passivating CH3NH3PbI3/PbI2 interface during moderate heating of CH3NH3PbI3 layers. **2013**, 103, 183906		232
2188	50 & 100 Years Ago. *Nature*, **2013**, 501, 325-325	50.4	4
2187	Effect of Varying Illumination and Temperature on Steady-State and Dynamic Parameters of Dye-Sensitized Solar Cell Using AC Impedance Modeling. **2013**, 2013, 1-10		16
2186	Dye-Sensitized Solar Cells: From Materials to Devices. **2013**, 2013, 1-2		1
2185	Effect of TiO2 nanostructure's shape on the DSSCs performance. **2013**,		4
2184	Product-to-parent reversion of trenbolone: unrecognized risks for endocrine disruption. **2013**, 342, 347-51		62
2183	Plasmonic structure enhanced exciton generation at the interface between the perovskite absorber and copper nanoparticles. **2014**, 2014, 128414		10
2182	A Review on Current Status of Stability and Knowledge on Liquid Electrolyte-Based Dye-Sensitized Solar Cells. **2014**, 2014, 1-23		18
2181	Mesoscopic photosystems for solar light harvesting and conversion: facile and reversible transformation of metal-halide perovskites. **2014**, 176, 251-69		32

2180	Rutherford Backscattering Spectroscopy of Mass Transport by Transformation of PbI2 into CH3NH3PbI3 within np-TiO2. **2014**, 1,	1
2179	Optical properties of organometallic perovskite: An ab initio study using relativistic GW correction and Bethe-Salpeter equation. **2014**, 108, 67015	44
2178	EFFECT OF THE CHROMOPHORES STRUCTURES ON THE PERFORMANCE OF SOLID-STATE DYE SENSITIZED SOLAR CELLS. **2014**, 09, 1440005	5
2177	Development of Dye-Sensitized Solid-State ZnO/D149/CuSCN Solar Cell. **2014**, 13, 1440007	3
2176	Pyramidal surface textures for light trapping and antireflection in perovskite-on-silicon tandem solar cells. **2014**, 22 Suppl 6, A1422-30	82
2175	Controlling coverage of solution cast materials with unfavourable surface interactions. **2014**, 104, 091602	33
2174	THE PAST AND PRESENT. **2014**, 1-39	
2173	Effects of Core-modification on Porphyrin Sensitizers to the Efficiencies of Dye-sensitized Solar Cells. **2014**, 61, 545-555	12
2172	White-light-controlled resistive switching and photovoltaic effects in TiO2/ZnO composite nanorods array at room temperature. **2014**, 25, 4306-4311	17
2171	Spatial Distribution of Light Scattering and Absorption Interactions with TiO2- Nanoparticles from Monte Carlo and Generalized-Multiparticle-Mie based Simulations for Dye-Sensitized Solar Cell Analysis and Optimization. **2014**, 20, 548-549	
2170	DYE- AND PEROVSKITE-SENSITISED MESOSCOPIC SOLAR CELLS. **2014**, 413-452	1
2169	Improving the efficiency of cadmium sulfide-sensitized titanium dioxide/indium tin oxide glass photoelectrodes using silver sulfide as an energy barrier layer and a light absorber. **2014**, 9, 605	7
2168	Enhanced Photovoltaic Performance in AgSbS2Liquid-Junction Semiconductor-Sensitized Solar Cells. **2014**, 161, H92-H96	25
2167	A Ruthenium-Based Light-Harvesting Antenna Bearing an Anthracene Moiety in Dye-Sensitized Solar Cells. **2014**, 3, 953-962	9
2166	Novel D-π-A dye sensitizers of polymeric metal complexes with phenylethyl or carbazole derivatives as donors for dye-sensitized solar cells: synthesis, characterization, and photovoltaic application. **2014**, 25, 5144-5152	2
2165	GW quasiparticle band gap of the hybrid organic-inorganic perovskite CH3NH3PbI3: Effect of spin-orbit interaction, semicore electrons, and self-consistency. **2014**, 90,	101
2164	Improvement of Dye Solar Cell Efficiency by Photoanode Posttreatment. **2014**, 2014, 1-10	4
2163	Enhanced light-harvesting of the conical TiO 2 nanotube arrays used as the photoanodes in flexible dye-sensitized solar cells. **2014**, 146, 838-844	25

2162	Towards High Performance Organic Photovoltaic Cells: A Review of Recent Development in Organic Photovoltaics. **2014**, 6, 2473-2509	132
2161	Manipulation of MWCNT Concentration in MWCNT/TiO2Nanocomposite Thin Films for Dye-Sensitized Solar Cell. **2014**, 2014, 1-9	5
2160	Density Functional Theory Simulations of Semiconductors for Photovoltaic Applications: Hybrid Organic-Inorganic Perovskites and III/V Heterostructures. **2014**, 2014, 1-11	14
2159	Fused-Thiophene Based Materials for Organic Photovoltaics and Dye-Sensitized Solar Cells. **2014**, 6, 2645-2669	61
2158	Ultrafast charge generation, high and balanced charge carrier mobilities in organo halide perovskite solar cell. **2014**,	2
2157	CHAPTER 7:Perovskite Solar Cells. 242-257	3
2156	CHAPTER 6:Chemistry of Sensitizers for Dye-sensitized Solar Cells. 186-241	2
2155	Random lasing in organo-lead halide perovskite microcrystal networks. **2014**, 105, 151112	112
2154	Steric engineering of metal-halide perovskites with tunable optical band gaps. **2014**, 5, 5757	605
2153	Origin and elimination of photocurrent hysteresis by fullerene passivation in CH3NH3PbI3 planar heterojunction solar cells. **2014**, 5, 5784	2089
2152	An applied light-beam induced current study of dye-sensitised solar cells: Photocurrent uniformity mapping and true photoactive area evaluation. **2014**, 116, 043104	6
2151	Mesh-Shaped Nanopatterning of Pt Counter Electrodes for Dye-Sensitized Solar Cells with Enhanced Light Harvesting. **2014**, 4, 1400414	30
2150	Efficient methylammonium lead iodide perovskite solar cells with active layers from 300 to 900 nm. **2014**, 2, 081504	91
2149	Tunable ferroelectric polarization and its interplay with spin-orbit coupling in tin iodide perovskites. **2014**, 5, 5900	215
2148	Integrating Perovskite Solar Cells into a Flexible Fiber. **2014**, 126, 10593-10596	16
2147	Fabrication of a dye-sensitized solar cell module using spray pyrolysis deposition of a TiO2 colloid. **2014**, 4, 23299-23303	15
2146	Hole-transport material variation in fully vacuum deposited perovskite solar cells. **2014**, 2, 081503	150
2145	Engineering nanostructures by binding single molecules to single-walled carbon nanotubes. **2014**, 8, 12748-54	9

2144	Charge separation at disordered semiconductor heterojunctions from random walk numerical simulations. **2014**, 16, 4082-91	10
2143	Perovskite-based low-cost and high-efficiency hybrid halide solar cells. **2014**, 2, 111	72
2142	Mechanical properties of hybrid organic-inorganic CH3NH3BX3 (B = Sn, Pb; X = Br, I) perovskites for solar cell absorbers. **2014**, 2, 081801	234
2141	Use of Kelvin probe force microscopy to achieve a locally and time-resolved analysis of the photovoltage generated in dye-sensitized ZnO electrodes. **2014**, 211, 1960-1965	2
2140	Fully crystalline perovskite-perylene hybrid photovoltaic cell capable of 1.2 V output with a minimized voltage lossa). **2014**, 2, 091102	35
2139	Chloride in Lead Chloride-Derived Organo-Metal Halides for Perovskite-Absorber Solar Cells. **2014**, 26, 7158-7165	230
2138	Bi2S3Liquid-Junction Semiconductor-Sensitized SnO2Solar Cells. **2014**, 161, H1-H5	51
2137	An easy-to-fabricate low-temperature TiO2 electron collection layer for high efficiency planar heterojunction perovskite solar cells. **2014**, 2, 081505	86
2136	CH□NH□PbI□based planar solar cells with magnetron-sputtered nickel oxide. **2014**, 6, 22862-70	180
2135	Moisture assisted perovskite film growth for high performance solar cells. **2014**, 105, 183902	598
2134	Mesoporous TiO2 Beads Offer Improved Mass Transport for Cobalt-Based Redox Couples Leading to High Efficiency Dye-Sensitized Solar Cells. **2014**, 4, 1400168	60
2133	Photon energy upconversion through thermal radiation with the power efficiency reaching 16%. **2014**, 5, 5669	92
2132	Data mining with molecular design rules identifies new class of dyes for dye-sensitised solar cells. **2014**, 16, 26684-90	49
2131	Diffusion length in nanoporous TiO2 films under above-band-gap illumination. **2014**, 4, 067106	10
2130	Magnetron sputtered zinc oxide nanorods as thickness-insensitive cathode interlayer for perovskite planar-heterojunction solar cells. **2014**, 6, 20585-9	57
2129	Reproducible One-Step Fabrication of Compact MAPbI3□Clx Thin Films Derived from Mixed-Lead-Halide Precursors. **2014**, 26, 7145-7150	76
2128	Extraction of Schottky barrier at the F-doped SnO2/TiO2 interface in Dye Sensitized solar cells. **2014**, 6, 013142	10
2127	Synthesis and characterization of Ag8(Ge1-x,Snx)(S6-y ,Sey) colloidal nanocrystals. **2014**, 20, 12426-31	7

2126	Parameters influencing the deposition of methylammonium lead halide iodide in hole conductor free perovskite-based solar cells. **2014**, 2, 081502	91
2125	Microstructures and photovoltaic properties of perovskite-type CH3NH3PbI3compounds. **2014**, 7, 121601	73
2124	The influence of blocking layer on the photovoltaic performance of organometal halide perovskite solar cell. **2014**,	1
2123	Mesoscopic perovskite solar cells and modules. **2014**,	2
2122	Tuning the light emission properties by band gap engineering in hybrid lead halide perovskite. **2014** , 136, 17730-3	479
2121	Impact of the organic halide salt on final perovskite composition for photovoltaic applications. **2014**, 2, 081802	47
2120	Green-engineered all-substrate mesoporous TiO(2) photoanodes with superior light-harvesting structure and performance. **2014**, 7, 813-21	17
2119	Layered double hydroxide: a new promising nanomaterial in energy application. **2014**, 3, 177-191	11
2118	SYNERGISTIC EFFECT OF SURFACE PLASMON RESONANCE AND CONSTRUCTED THREE-DIMENSIONAL INTERWOVEN STRUCTURED TiO2 PHOTOANODE FOR DYE-SENSITIZED SOLAR CELLS. **2014**, 09, 1440012	1
2117	Diffraction-Grating-Embedded Dye-Sensitized Solar Cells with Good Light Harvesting. **2014**, 4, 1300978	16
2116	Theoretical insights into multibandgap hybrid perovskites for photovoltaic applications. **2014**,	8
2115	Perovskite based solar cells: A milestone towards cheaper PV technology. **2014**,	1
2114	Efficient perovskite solar cells based on low-temperature solution-processed (CH3NH3)PbI3 perovskite/CuInS2 planar heterojunctions. **2014**, 9, 457	15
2113	On the degradation mechanism of functioning solar cells based on organic-inorganic perovskites. **2014**, 50, 255-259	12
2112	Perovskite Based Hybrid Solar Cells with Transparent Carbon Nanotube electrodes. **2014**, 1667, 20	2
2111	Silicon wafer-based tandem cells: The ultimate photovoltaic solution?. **2014**,	9
2110	Switchable S = 1/2 and J = 1/2 Rashba bands in ferroelectric halide perovskites. **2014**, 111, 6900-4	207
2109	Photosynthesis at the forefront of a sustainable life. **2014**, 2, 36	48

2108	Solution processed flexible planar hybrid perovskite solar cells. **2014**,	5
2107	Transparent electrodes for organic optoelectronic devices: a review. **2014**, 4, 040990	191
2106	Reproducible Fabrication of Efficient Perovskite-based Solar Cells: X-ray Crystallographic Studies on the Formation of CH3NH3PbI3 Layers. **2014**, 43, 711-713	235
2105	Effect of the Size of Bi2Te3 nanoplates on the Performance of TiO2-based Novel Hybrid DSSC Combined PV and TE Effect. **2014**, 1640, 1	0
2104	Impacts of temperature on the stability of tropical plant pigments as sensitizers for dye sensitized solar cells. **2014**, 2014, 739514	25
2103	Hierarchical Structures from Inorganic Nanocrystal Self-Assembly for Photoenergy Utilization. **2014** , 2014, 1-15	10
2102	Titania Nanotubes by Electrochemical Anodization for Solar Energy Conversion. **2014**, 161, D3066-D3077	26
2101	Graphene-based cathodes for liquid-junction dye sensitized solar cells: Electrocatalytic and mass transport effects. **2014**, 128, 349-359	84
2100	Analysis of dye-sensitized solar cells with current collecting electrodes using electrochemical impedance spectroscopy, with a finite element method. **2014**, 247, 475-480	4
2099	Photoanodes with mesoporous TiO2 beads and nanoparticles for enhanced performance of CdS/CdSe quantum dot co-sensitized solar cells. **2014**, 135, 284-292	39
2098	Quasi-solid-state Dye-sensitized Solar Cells with Macropore-containing Hierarchical Electrodes. **2014**, 135, 192-198	3
2097	Synthesis of monodisperse colloidal TiO2 microspheres and performance of their dye-sensitized solar cells. **2014**, 308, 301-305	11
2096	Nanoporous TiO2 aerogel blocking layer with enhanced efficiency for dye-sensitized solar cells. **2014**, 590, 33-40	23
2095	Interface-dependent electrochemical behavior of nanostructured manganese (IV) oxide (Mn3O4). **2014**, 130, 810-817	14
2094	Enhancing dye-sensitized solar cell efficiency by anode surface treatments. **2014**, 570, 204-208	5
2093	Arrays of ZnO/AZO (Al-doped ZnO) nanocables: a higher open circuit voltage and remarkable improvement of efficiency for CdS-sensitized solar cells. **2014**, 418, 277-82	29
2092	Correlation between palladium chemical state and photocatalytic performance of TiO2-Pd based nanoparticles. **2014**, 570, 371-375	12
2091	Blocking recombination in Ru(II) complex-sensitized solar cells by incorporating co-adsorbents as additives in the Co(II)/(III)-based redox electrolytes. **2014**, 82, 109-115	10

2090	Inorganic–organic hybrid with one-dimensional face-sharing iodoplumbate chain showing novel dielectric anomaly and semiconductor emission. **2014**, 46, 29-32	20
2089	A maskless synthesis of TiO2-nanofiber-based hierarchical structures for solid-state dye-sensitized solar cells with improved performance. **2014**, 9, 14	22
2088	Interaction of ultra-short laser pulses with CIGS and CZTSe thin films. **2014**, 114, 231-241	8
2087	Nickel oxide electrode interlayer in CH3 NH3 PbI3 perovskite/PCBM planar-heterojunction hybrid solar cells. **2014**, 26, 4107-13	588
2086	Mixed solvents for the optimization of morphology in solution-processed, inverted-type perovskite/fullerene hybrid solar cells. **2014**, 6, 6679-83	255
2085	Mesoporous materials for clean energy technologies. **2014**, 43, 7681-717	358
2084	Low-temperature solution-processed wavelength-tunable perovskites for lasing. **2014**, 13, 476-80	2291
2083	A dual functional additive for the HTM layer in perovskite solar cells. **2014**, 50, 5020-2	93
2082	Interface energetics in organo-metal halide perovskite-based photovoltaic cells. **2014**, 7, 1377	554
2081	Conditions for diffusion-limited and reaction-limited recombination in nanostructured solar cells. **2014**, 140, 134702	9
2080	Simple way to engineer metal-semiconductor interface for enhanced performance of perovskite organic lead iodide solar cells. **2014**, 6, 5651-6	88
2079	High performance of Pt-free dye-sensitized solar cells based on two-step electropolymerized polyaniline counter electrodes. **2014**, 2, 3452-3460	77
2078	Highly connected hierarchical textured TiO2 spheres as photoanodes for dye-sensitized solar cells. **2014**, 2, 8902-8909	52
2077	Atomic and electronic structures of interfaces in dye-sensitized, nanostructured solar cells. **2014**, 15, 1006-17	19
2076	Hybrid perovskites for photovoltaics: Insights from first principles. **2014**, 89,	168
2075	Excitons versus free charges in organo-lead tri-halide perovskites. **2014**, 5, 3586	1231
2074	The Importance of Perovskite Pore Filling in Organometal Mixed Halide Sensitized TiO2-Based Solar Cells. **2014**, 5, 1096-102	200
2073	Perovskite as light harvester: a game changer in photovoltaics. **2014**, 53, 2812-24	783

2072	Terawatt Solar Photovoltaics. **2014**,	15
2071	Arising applications of ferroelectric materials in photovoltaic devices. **2014**, 2, 6027-6041	317
2070	High charge carrier mobilities and lifetimes in organolead trihalide perovskites. **2014**, 26, 1584-9	2282
2069	Simulation on the carrier transport process inside the semiconductor of dye sensitized solar cells by wxAMPS software. **2014**, 125, 218-224	4
2068	Investigating charge dynamics in halide perovskite-sensitized mesostructured solar cells. **2014**, 7, 1889-1894	137
2067	A swivel-cruciform thiophene based hole-transporting material for efficient perovskite solar cells. **2014**, 2, 6305-6309	156
2066	Recent progress in metal-organic complexes for optoelectronic applications. **2014**, 43, 3259-302	823
2065	Elucidating the charge carrier separation and working mechanism of CH3NH3PbI(3-x)Cl(x) perovskite solar cells. **2014**, 5, 3461	461
2064	A molecular ferroelectric thin film of imidazolium perchlorate that shows superior electromechanical coupling. **2014**, 53, 5064-8	80
2063	11% Efficient Perovskite Solar Cell Based on ZnO Nanorods: An Effective Charge Collection System. **2014**, 118, 16567-16573	519
2062	Dispersion controlled platinum/multi-walled carbon nanotube hybrid for counter electrodes of dye-sensitized solar cells. **2014**, 22, 397-404	8
2061	Carbon-double-bond-free printed solar cells from TiO$_2$/CH$_3$NH$_3$PbI$_3$/CuSCN/Au: structural control and photoaging effects. **2014**, 15, 1194-200	132
2060	High Photoluminescence Efficiency and Optically Pumped Lasing in Solution-Processed Mixed Halide Perovskite Semiconductors. **2014**, 5, 1421-6	1292
2059	Current progress and future perspectives for organic/inorganic perovskite solar cells. **2014**, 17, 16-23	293
2058	Mixed-Organic-Cation Perovskite Photovoltaics for Enhanced Solar-Light Harvesting. **2014**, 126, 3215-3221	112
2057	Updated assessment of possibilities and limits for solar cells. **2014**, 26, 1622-8	90
2056	Perovskite-based hybrid solar cells exceeding 10% efficiency with high reproducibility using a thin film sandwich approach. **2014**, 26, 2041-6	581
2055	Organometal halide perovskite solar cell materials rationalized: ultrafast charge generation, high and microsecond-long balanced mobilities, and slow recombination. **2014**, 136, 5189-92	948

2054	Insights of close contact between polyaniline and FTO substrate for enhanced photovoltaic performances of dye-sensitized solar cells. **2014**, 125, 163-169	20
2053	Novel meso-superstructured solar cells with a high efficiency exceeding 12%. **2014**, 26, 2102-4	27
2052	Sol-gel titanium dioxide blocking layers for dye-sensitized solar cells: electrochemical characterization. **2014**, 15, 1056-61	34
2051	Highly efficient and stable dye-sensitized solar cells based on nanographite/polypyrrole counter electrode. **2014**, 129, 229-236	31
2050	Control of charge dynamics through a charge-separation interface for all-solid perovskite-sensitized solar cells. **2014**, 15, 1062-9	65
2049	Study on the stability of CH3NH3PbI3 films and the effect of post-modification by aluminum oxide in all-solid-state hybrid solar cells. **2014**, 2, 705-710	861
2048	Additive enhanced crystallization of solution-processed perovskite for highly efficient planar-heterojunction solar cells. **2014**, 26, 3748-54	1242
2047	Perovskite solar cells based on nanocolumnar plasma-deposited ZnO thin films. **2014**, 15, 1148-53	56
2046	Semi-closed tubular light-trapping geometry dye sensitized solar cells with stable efficiency in wide light intensity range. **2014**, 261, 75-85	9
2045	Unusual defect physics in CH3NH3PbI3 perovskite solar cell absorber. **2014**, 104, 063903	1720
2044	New light on an old story: perovskites go solar. **2014**, 53, 635-7	151
2043	Oxide heterostructures: Thin spin ice under investigation. **2014**, 13, 430-1	5
2042	One-dimensional titania nanostructures: Synthesis and applications in dye-sensitized solar cells. **2014**, 558, 1-19	40
2041	Ordered Organic Nanostructures Fabricated from Anodic Alumina Oxide Templates for Organic Bulk-Heterojunction Photovoltaics. **2014**, 215, 584-596	14
2040	Materials for lasers: All-round perovskites. **2014**, 13, 429-30	14
2039	White-light-controlled resistance switching in TiO2/Fe2O3 composite nanorods array. **2014**, 16, 1	14
2038	ITO@Cu2S tunnel junction nanowire arrays as efficient counter electrode for quantum-dot-sensitized solar cells. **2014**, 14, 365-72	111
2037	Star-shaped carbazole derivative based efficient solid-state dye sensitized solar cell. **2014**, 253, 230-238	17

2036	Understanding low bandgap polymer PTB7 and optimizing polymer solar cells based on it. **2014**, 26, 4413-30	406
2035	Solid-state perovskite-sensitized p-type mesoporous nickel oxide solar cells. **2014**, 7, 2150-3	66
2034	Band-gap tuning of lead halide perovskites using a sequential deposition process. **2014**, 2, 9221-9225	398
2033	Highly ordered mesoporous carbon for mesoscopic CH3NH3PbI3/TiO2 heterojunction solar cell. **2014**, 2, 8607	80
2032	Phosphorus-containing materials for organic electronics. **2014**, 9, 1212-25	114
2031	Titanium oxide nanosheets: graphene analogues with versatile functionalities. **2014**, 114, 9455-86	482
2030	A new in-situ preparation method to CuS electrodes for CdS/CdSe co-sensitized solar cells. **2014**, 127, 180-185	33
2029	A metallocene molecular complex as visible-light absorber for high-voltage organic-inorganic hybrid photovoltaic cells. **2014**, 15, 1028-32	10
2028	Atomistic origins of high-performance in hybrid halide perovskite solar cells. **2014**, 14, 2584-90	1756
2027	Crystal Structures, Optical Properties, and Effective Mass Tensors of CH3NH3PbX3 (X = I and Br) Phases Predicted from HSE06. **2014**, 5, 1278-82	182
2026	The Role of Intrinsic Defects in Methylammonium Lead Iodide Perovskite. **2014**, 5, 1312-7	633
2025	Charge Trapping in Photovoltaically Active Perovskites and Related Halogenoplumbate Compounds. **2014**, 5, 1066-71	100
2024	Supramolecular halogen bond passivation of organic-inorganic halide perovskite solar cells. **2014**, 14, 3247-54	527
2023	Lead-free organic–inorganic tin halide perovskites for photovoltaic applications. **2014**, 7, 3061-3068	1635
2022	Lead-free solid-state organic–inorganic halide perovskite solar cells. **2014**, 8, 489-494	1966
2021	Quantum-confined ZnO nanoshell photoanodes for mesoscopic solar cells. **2014**, 14, 1190-5	40
2020	Ambient pressure aerosol-assisted chemical vapour deposition of $(CH_3NH_3)PbBr_3$ an inorganic-organic perovskite important in photovoltaics. **2014**, 50, 6319-21	67
2019	Organohalide lead perovskites for photovoltaic applications. **2014**, 7, 2448-2463	1049

2018	Electrical characterization of TiO2/CH3NH3PbI3 heterojunction solar cells. **2014**, 2, 10244-10249	70
2017	Rutile TiO2-based perovskite solar cells. **2014**, 2, 9251	166
2016	Depletion region effect of highly efficient hole conductor free CH3NH3PbI3 perovskite solar cells. **2014**, 16, 10512-8	232
2015	Passivation of ZnO Nanowire Guests and 3D Inverse Opal Host Photoanodes for Dye-Sensitized Solar Cells. **2014**, 4, 1400217	37
2014	Sub-nanometer conformal TiO□blocking layer for high efficiency solid-state perovskite absorber solar cells. **2014**, 26, 4309-12	136
2013	Titanium dioxide nanomaterials for photovoltaic applications. **2014**, 114, 10095-130	567
2012	o-Methoxy substituents in spiro-OMeTAD for efficient inorganic-organic hybrid perovskite solar cells. **2014**, 136, 7837-40	597
2011	Modified two-step deposition method for high-efficiency TiO2/CH3NH3PbI3 heterojunction solar cells. **2014**, 6, 9711-8	153
2010	Cobalt dopant with deep redox potential for organometal halide hybrid solar cells. **2014**, 7, 1909-14	43
2009	Three-Dimensional Structural Engineering for Energy-Storage Devices: From Microscope to Macroscope. **2014**, 1, 975-1002	45
2008	TiO2 nanoparticles as functional building blocks. **2014**, 114, 9283-318	340
2007	Nanocrystalline rutile electron extraction layer enables low-temperature solution processed perovskite photovoltaics with 13.7% efficiency. **2014**, 14, 2591-6	352
2006	Voltage output of efficient perovskite solar cells with high open-circuit voltage and fill factor. **2014**, 7, 2614-2618	599
2005	Synthesis of Organic□norganic Lead Halide Perovskite Nanoplatelets: Towards High-Performance Perovskite Solar Cells and Optoelectronic Devices. **2014**, 2, 838-844	316
2004	Efficient, high yield perovskite photovoltaic devices grown by interdiffusion of solution-processed precursor stacking layers. **2014**, 7, 2619-2623	1059
2003	Modeling materials and processes in hybrid/organic photovoltaics: from dye-sensitized to perovskite solar cells. **2014**, 47, 3349-60	104
2002	Enhancing the Performance of Sensitized Solar Cells with PbS/CH3NH3PbI3 Core/Shell Quantum Dots. **2014**, 5, 2015-20	57
2001	Enhancement of the photovoltaic performance of CH□NH□PbI□perovskite solar cells through a dichlorobenzene-functionalized hole-transporting material. **2014**, 15, 2595-603	42

2000	Anomalous band gap behavior in mixed Sn and Pb perovskites enables broadening of absorption spectrum in solar cells. **2014**, 136, 8094-9	1010
1999	CH3NH3Cl-Assisted One-Step Solution Growth of CH3NH3PbI3: Structure, Charge-Carrier Dynamics, and Photovoltaic Properties of Perovskite Solar Cells. **2014**, 118, 9412-9418	461
1998	Solar cell efficiency tables (version 43). **2014**, 22, 1-9	420
1997	Recombination Study of Combined Halides (Cl, Br, I) Perovskite Solar Cells. **2014**, 5, 1628-35	345
1996	Hybrid Lead Halide Iodide and Lead Halide Bromide in Efficient Hole Conductor Free Perovskite Solar Cell. **2014**, 118, 17160-17165	193
1995	Optimization of absorption bands of dye-sensitized and perovskite tandem solar cells based on loss-in-potential values. **2014**, 16, 14116-26	13
1994	Inorganic Hole Conducting Layers for Perovskite-Based Solar Cells. **2014**, 5, 1748-53	275
1993	Status of dye solar cell technology as a guideline for further research. **2014**, 15, 1076-87	39
1992	Cesium-doped methylammonium lead iodide perovskite light absorber for hybrid solar cells. **2014**, 7, 80-85	381
1991	Large fill-factor bilayer iodine perovskite solar cells fabricated by a low-temperature solution-process. **2014**, 7, 2359-2365	688
1990	Mohammad K. Nazeeruddin. **2014**, 53, 9416-9416	
1989	Recent progress in degradation and stabilization of organic solar cells. **2014**, 264, 168-183	113
1988	Mesoscopic TiO2/CH3NH3PbI3 perovskite solar cells with new hole-transporting materials containing butadiene derivatives. **2014**, 50, 6931-4	157
1987	Insight into the liquid state of organo-lead halide perovskites and their new roles in dye-sensitized solar cells. **2014**, 2, 10355	8
1986	Advancements in perovskite solar cells: photophysics behind the photovoltaics. **2014**, 7, 2518-2534	605
1985	Cation-induced band-gap tuning in organohalide perovskites: interplay of spin-orbit coupling and octahedra tilting. **2014**, 14, 3608-16	837
1984	Inorganic hole conductor-based lead halide perovskite solar cells with 12.4% conversion efficiency. **2014**, 5, 3834	670
1983	Unique properties of halide perovskites as possible origins of the superior solar cell performance. **2014**, 26, 4653-8	1321

1982	All-Solid Perovskite Solar Cells with HOCO-R-NH3+I Anchor-Group Inserted between Porous Titania and Perovskite. **2014**, 118, 16651-16659	162
1981	Analysis of Multivalley and Multibandgap Absorption and Enhancement of Free Carriers Related to Exciton Screening in Hybrid Perovskites. **2014**, 118, 11566-11572	404
1980	Solution Deposition-Conversion for Planar Heterojunction Mixed Halide Perovskite Solar Cells. **2014**, 4, 1400355	305
1979	Near-band-edge optical responses of solution-processed organic inorganic hybrid perovskite CH3NH3PbI3on mesoporous TiO2electrodes. **2014**, 7, 032302	239
1978	Homogeneous Emission Line Broadening in the Organo Lead Halide Perovskite CH3NH3PbI3-xClx. **2014**, 5, 1300-6	286
1977	Toward Higher Energy Conversion Efficiency for Solid Polymer Electrolyte Dye-Sensitized Solar Cells: Ionic Conductivity and TiO2 Pore-Filling. **2014**, 5, 1249-58	62
1976	Relaxation of Electron Carriers in the Density of States of Nanocrystalline TiO2. **2014**, 5, 689-94	37
1975	Carbazole based A-D-A dyes with double electron acceptor for dye-sensitized solar cell. **2014**, 15, 266-275	58
1974	High efficiency CH3NH3PbI(3)Clx perovskite solar cells with poly(3-hexylthiophene) hole transport layer. **2014**, 251, 152-156	164
1973	Electronic properties of 2D and 3D hybrid organic/inorganic perovskites for optoelectronic and photovoltaic applications. **2014**, 46, 1225-1232	49
1972	Low-temperature processed electron collection layers of graphene/TiO2 nanocomposites in thin film perovskite solar cells. **2014**, 14, 724-30	917
1971	Perovskite solar cells employing organic charge-transport layers. **2014**, 8, 128-132	1196
1970	Planar heterojunction perovskite solar cells via vapor-assisted solution process. **2014**, 136, 622-5	1921
1969	Structure of methylammonium lead iodide within mesoporous titanium dioxide: active material in high-performance perovskite solar cells. **2014**, 14, 127-33	258
1968	The Raman Spectrum of the CH3NH3PbI3 Hybrid Perovskite: Interplay of Theory and Experiment. **2014**, 5, 279-84	476
1967	High efficiency perovskite solar cells: from complex nanostructure to planar heterojunction. **2014**, 2, 5994-6003	237
1966	DFT and k p modelling of the phase transitions of lead and tin halide perovskites for photovoltaic cells. **2014**, 8, 31-35	158
1965	The origin of high efficiency in low-temperature solution-processable bilayer organometal halide hybrid solar cells. **2014**, 7, 399-407	838

1964	High performance PbS quantum dot sensitized solar cells via electric field assisted in situ chemical deposition on modulated TiO2 nanotube arrays. **2014**, 6, 931-8	77
1963	The reorganization energy of intermolecular hole hopping between dyes anchored to surfaces. **2014**, 5, 281-290	54
1962	All-organic chromophores for dye-sensitized solar cells: A theoretical study on aggregation. **2014**, 101, 203-211	21
1961	Predicting Energy Conversion Efficiency of Dye Solar Cells from First Principles. **2014**, 118, 16447-16457	89
1960	Flexible high efficiency perovskite solar cells. **2014**, 7, 994	357
1959	Yttrium-substituted nanocrystalline TiO photoanodes for perovskite based heterojunction solar cells. **2014**, 6, 1508-14	151
1958	High efficiency electrospun TiO nanofiber based hybrid organic-inorganic perovskite solar cell. **2014**, 6, 1675-9	163
1957	Electron transport analysis in zinc oxide-based dye-sensitized solar cells: A review. **2014**, 31, 149-157	72
1956	Unravelling the mechanism of photoinduced charge transfer processes in lead iodide perovskite solar cells. **2014**, 8, 250-255	567
1955	Quasi-Solid-State Dye-Sensitized Solar Cells on Plastic Substrates. **2014**, 118, 16366-16374	19
1954	On global energy scenario, dye-sensitized solar cells and the promise of nanotechnology. **2014**, 16, 6838-58	76
1953	Solid-State Mesostructured Perovskite CH3NH3PbI3 Solar Cells: Charge Transport, Recombination, and Diffusion Length. **2014**, 5, 490-4	244
1952	Materials Chemistry in 3D Templates for Functional Photonics. **2014**, 26, 277-286	46
1951	Mg-doped TiO2 nanorods improving open-circuit voltages of ammonium lead halide perovskite solar cells. **2014**, 4, 9652-9655	86
1950	Silicon carbide's quantum aspects. **2014**, 8, 88-90	12
1949	NH2CH?NH2PbI3: An Alternative Organolead Iodide Perovskite Sensitizer for Mesoscopic Solar Cells. **2014**, 26, 1485-1491	447
1948	Electronic Structure of TiO2/CH3NH3PbI3 Perovskite Solar Cell Interfaces. **2014**, 5, 648-53	384
1947	Perovskite cells roll forward. **2014**, 8, 87-88	125

1946	Organolead Halide Perovskite: New Horizons in Solar Cell Research. **2014**, 118, 5615-5625	549
1945	A diketopyrrolopyrrole-containing hole transporting conjugated polymer for use in efficient stable organic–inorganic hybrid solar cells based on a perovskite. **2014**, 7, 1454	337
1944	Materials and interfaces in quantum dot sensitized solar cells: challenges, advances and prospects. **2014**, 30, 7264-73	107
1943	Role of the Selective Contacts in the Performance of Lead Halide Perovskite Solar Cells. **2014**, 5, 680-5	527
1942	High voltage and efficient bilayer heterojunction solar cells based on an organic-inorganic hybrid perovskite absorber with a low-cost flexible substrate. **2014**, 16, 6033-40	79
1941	Why lead methylammonium tri-iodide perovskite-based solar cells require a mesoporous electron transporting scaffold (but not necessarily a hole conductor). **2014**, 14, 1000-4	505
1940	Efficient dye-sensitized solar cells from polyaniline–single wall carbon nanotube complex counter electrodes. **2014**, 2, 3119	99
1939	Molecular artificial photosynthesis. **2014**, 43, 7501-19	639
1938	Neutral color semitransparent microstructured perovskite solar cells. **2014**, 8, 591-8	365
1937	An inorganic hole conductor for organo-lead halide perovskite solar cells. Improved hole conductivity with copper iodide. **2014**, 136, 758-64	1048
1936	Perovskite solar cells with a planar heterojunction structure prepared using room-temperature solution processing techniques. **2014**, 8, 133-138	2165
1935	Density functional theory analysis of structural and electronic properties of orthorhombic perovskite CH3NH3PbI3. **2014**, 16, 1424-9	284
1934	Low-temperature solution-processed perovskite solar cells with high efficiency and flexibility. **2014** , 8, 1674-80	1216
1933	Solid-state solar modules based on mesoscopic organometal halide perovskite: a route towards the up-scaling process. **2014**, 16, 3918-23	145
1932	Nontemplate synthesis of CH3NH3PbBr3 perovskite nanoparticles. **2014**, 136, 850-3	937
1931	Sub-150 °C processed meso-superstructured perovskite solar cells with enhanced efficiency. **2014**, 7, 1142-1147	511
1930	Sequentially Layered CdSe/CdS Nanowire Architecture for Improved Nanowire Solar Cell Performance. **2014**, 118, 206-213	33
1929	Composite catalyst of rosin carbon/Fe3O4: highly efficient counter electrode for dye-sensitized solar cells. **2014**, 50, 1701-3	61

1928	General working principles of CH3NH3PbX3 perovskite solar cells. **2014**, 14, 888-93	696
1927	Formamidinium lead trihalide: a broadly tunable perovskite for efficient planar heterojunction solar cells. **2014**, 7, 982	2706
1926	Optical bleaching of perovskite (CH3NH3)PbI3 through room-temperature phase transformation induced by ammonia. **2014**, 50, 1605-7	141
1925	Electrochemical Characterization of TiO2 Blocking Layers for Dye-Sensitized Solar Cells. **2014**, 118, 16408-16418	181
1924	Enhanced performance of supported HfO2 counter electrodes for redox couples used in dye-sensitized solar cells. **2014**, 7, 442-50	100
1923	Performance of fruit extract of Melastoma malabathricum L. as sensitizer in DSSCs. **2014**, 118, 938-43	40
1922	Biophotovoltaics: Natural pigments in dye-sensitized solar cells. **2014**, 115, 216-225	265
1921	Organometal halide perovskites as useful materials in sensitized solar cells. **2014**, 43, 5247-51	57
1920	Interface Engineering in Inorganic-Absorber Nanostructured Solar Cells. **2014**, 5, 348-60	45
1919	Nanostructured TiO2 diffraction grating fabricated via imprinting and TiCl4 treatment. **2014**, 2, 981-985	8
1918	Fabrication of Flexible Plastic Solid-State Dye-Sensitized Solar Cells Using Low Temperature Techniques. **2014**, 118, 16352-16357	15
1917	First-principles study on the electronic and optical properties of cubic ABX3 halide perovskites. **2014**, 378, 290-293	174
1916	Improved morphology control using a modified two-step method for efficient perovskite solar cells. **2014**, 6, 18751-7	54
1915	Qualifying composition dependent p and n self-doping in CH3NH3PbI3. **2014**, 105, 163508	417
1914	Cesium carbonate as a surface modification material for organic□inorganic hybrid perovskite solar cells with enhanced performance. **2014**, 4, 60131-60134	29
1913	Effect of CH3NH3PbI3 thickness on device efficiency in planar heterojunction perovskite solar cells. **2014**, 2, 19873-19881	264
1912	Water-repellent perovskite solar cell. **2014**, 2, 20017-20021	55
1911	Perovskite processing for photovoltaics: a spectro-thermal evaluation. **2014**, 2, 19338-19346	86

1910	Influence of the orientation of methylammonium lead iodide perovskite crystals on solar cell performance. **2014**, 2, 081508	82
1909	Composition-tunable Cu2(Ge(1-x),Sn(x))(S(3-y),Se(y)) colloidal nanocrystals: synthesis and characterization. **2014**, 50, 12738-41	8
1908	p-i-n heterojunctions with BiFeO3 perovskite nanoparticles and p- and n-type oxides: photovoltaic properties. **2014**, 6, 20479-86	65
1907	Polyfluorene Derivatives are High-Performance Organic Hole-Transporting Materials for Inorganic□Organic Hybrid Perovskite Solar Cells. **2014**, 24, 7357-7365	150
1906	Effect of SiO2 and TiO2 Nanoparticles on the Performance of Dye- Sensitized Solar Cells Using PVDF-HFP/PVA Gel Electrolytes. **2014**, 56, 378-385	36
1905	Room-Temperature Optical Tunability and Inhomogeneous Broadening in 2D-Layered Organic-Inorganic Perovskite Pseudobinary Alloys. **2014**, 5, 3958-63	71
1904	Modeling of Lead Halide Perovskites for Photovoltaic Applications. **2014**, 118, 28344-28349	115
1903	Visible photon multiplication in Ce3+□b3+doped borate glasses for enhanced solar cells. **2014**, 47, 445101	4
1902	Nickel-Cathoded Perovskite Solar Cells. **2014**, 118, 25878-25883	50
1901	Lattice dynamics in perovskite halides CsSnX3 with X=I, Br, Cl. **2014**, 90,	54
1900	Double-layered ZnO nanostructures for efficient perovskite solar cells. **2014**, 6, 14674-8	66
1899	Controllable perovskite crystallization at a gas-solid interface for hole conductor-free solar cells with steady power conversion efficiency over 10%. **2014**, 136, 16411-9	340
1898	Morphology and Carrier Extraction Study of Organic-Inorganic Metal Halide Perovskite by One- and Two-Photon Fluorescence Microscopy. **2014**, 5, 3849-53	80
1897	Titania single crystals with a curved surface. **2014**, 5, 5355	73
1896	Perovskite Oxide SrTiO3 as an Efficient Electron Transporter for Hybrid Perovskite Solar Cells. **2014** , 118, 28494-28501	209
1895	Research Update: Physical and electrical characteristics of lead halide perovskites for solar cell applications. **2014**, 2, 040701	114
1894	Reduced ultraviolet light induced degradation and enhanced light harvesting using YVO4:Eu3+ down-shifting nano-phosphor layer in organometal halide perovskite solar cells. **2014**, 105, 033904	123
1893	Solution-processed hybrid perovskite photodetectors with high detectivity. **2014**, 5, 5404	1749

1892	Remnant PbI2, an unforeseen necessity in high-efficiency hybrid perovskite-based solar cells?a). **2014**, 2, 091101	238
1891	Heterojunction modification for highly efficient organic-inorganic perovskite solar cells. **2014**, 8, 12701-9	546
1890	Compact layer free perovskite solar cells with 13.5% efficiency. **2014**, 136, 17116-22	361
1889	Electron injection dynamics in dye-sensitized semiconductor nanocrystalline films. **2014**, 69, 389-441	33
1888	Sn-doped TiO2 nanorod arrays and application in perovskite solar cells. **2014**, 4, 64001-64005	80
1887	Efficient perovskite solar cells with 13.63 % efficiency based on planar triphenylamine hole conductors. **2014**, 20, 10894-9	122
1886	Defect density and dielectric constant in perovskite solar cells. **2014**, 105, 153502	164
1885	Electrochemical Doping of Compact TiO2 Thin Layers. **2014**, 118, 25970-25977	23
1884	Formation Mechanism of Freestanding CH3NH3PbI3 Functional Crystals: In Situ Transformation vs Dissolution□Crystallization. **2014**, 26, 6705-6710	130
1883	CuS nano flakes and nano platelets as counter electrode for quantum dots sensitized solar cells. **2014**, 149, 364-369	53
1882	Nanowires of methylammonium lead iodide (CH3NH3PbI3) prepared by low temperature solution-mediated crystallization. **2014**, 14, 6761-6	221
1881	Surface Effects and Adsorption of Methoxy Anchors on Hybrid Lead Iodide Perovskites: Insights for Spiro-MeOTAD Attachment. **2014**, 118, 26947-26954	95
1880	Enhanced dye illumination in dye-sensitized solar cells using TiO2/GeO2 photo-anodes. **2014**, 2, 12459	47
1879	Nickel cobalt sulfide nanoneedle array as an effective alternative to Pt as a counter electrode in dye sensitized solar cells. **2014**, 4, 8289	75
1878	Vapor deposition of organic-inorganic hybrid perovskite thin-films for photovoltaic applications. **2014**,	2
1877	Fabrication and encapsulation of perovskites sensitized solid state solar cells. **2014**,	5
1876	Understanding the solvent-assisted crystallization mechanism inherent in efficient organic□inorganic halide perovskite solar cells. **2014**, 2, 20454-20461	129
1875	Characterization of ion-assisted, coevaporated CH3NH3PbI3 thin films. **2014**,	

1874	Substrate placement angle-dependent growth of dandelion-like TiO2 nanorods for solid-state semiconductor-sensitized solar cells. **2014**, 4, 53335-53343	12
1873	Power from the sun: Perovskite solar cells. **2014**,	4
1872	Predictions for p-Type CH3NH3PbI3 Perovskites. **2014**, 118, 25350-25354	59
1871	One-pot synthesis of hierarchical mesoporous SnO2 spheres using a graft copolymer: enhanced photovoltaic and photocatalytic performance. **2014**, 4, 31452-31461	19
1870	Improved charge transport of Nb-doped TiO2 nanorods in methylammonium lead iodide bromide perovskite solar cells. **2014**, 2, 19616-19622	117
1869	An all-carbon counter electrode for highly efficient hole-conductor-free organo-metal perovskite solar cells. **2014**, 4, 52825-52830	158
1868	The role of the hole-transport layer in perovskite solar cells - reducing recombination and increasing absorption. **2014**,	19
1867	Intermediate band in the gap of photosensitive hybrid gel based on titanium oxide: role of coordinated ligands during photoreduction. **2014**, 2, 11499-11508	18
1866	Low temperature TiOx compact layer by chemical bath deposition method for vapor deposited perovskite solar cells. **2014**,	2
1865	Third-generation solar cells: a review and comparison of polymer:fullerene, hybrid polymer and perovskite solar cells. **2014**, 4, 43286-43314	182
1864	Femtosecond Excitonic Relaxation Dynamics of Perovskite on Mesoporous Films of Al2O3 and NiO Nanoparticles. **2014**, 126, 9493-9496	29
1863	Surface Photovoltage Spectroscopy Study of Organo-Lead Perovskite Solar Cells. **2014**, 5, 2408-13	75
1862	PEDOT:PSS and glucose assisted preparation of molybdenum disulfide/single-wall carbon nanotubes counter electrode and served in dye-sensitized solar cells. **2014**, 142, 68-75	27
1861	Recent advances in hierarchical macroporous composite structures for photoelectric conversion. **2014**, 7, 3887-3901	34
1860	Double functions of porous TiO2 electrodes on CH3NH3PbI3 perovskite solar cells: Enhancement of perovskite crystal transformation and prohibition of short circuiting. **2014**, 2, 081511	47
1859	Enhancing the efficiency of TiO2/perovskite heterojunction solar cell via evaporating Cs2CO3 on TiO2. **2014**, 8, 912-916	11
1858	Device modeling of perovskite solar cells based on structural similarity with thin film inorganic semiconductor solar cells. **2014**, 116, 054505	177
1857	Cost-efficient clamping solar cells using candle soot for hole extraction from ambipolar perovskites. **2014**, 7, 3326-3333	234

1856	High performance perovskite solar cells by hybrid chemical vapor deposition. **2014**, 2, 18742-18745	233
1855	Influence of moisture on the preparation, crystal structure, and photophysical properties of organohalide perovskites. **2014**, 50, 15819-22	135
1854	Effective improvement of the photovoltaic performance of black dye sensitized quasi-solid-state solar cells. **2014**, 4, 31759-31763	8
1853	The photophysics of perovskite solar cells. **2014**,	
1852	High efficiency P3HT:PCBM solar cells with an inserted PCBM layer. **2014**, 2, 4383	83
1851	Effect of a deposition container on the nanostructural growth and DSSC application of rutile TiO2. **2014**, 2, 478-483	8
1850	Construction of one-dimensional nanostructures on graphene for efficient energy conversion and storage. **2014**, 7, 2559	155
1849	Novel poly-pyridyl ruthenium complexes with bis- and tris-tetrazolate mono-dentate ligands for dye sensitized solar cells. **2014**, 4, 18336-18340	6
1848	Quadrupolar (donor)2acceptor-acid chromophores for dye-sensitized solar cells: influence of the core acceptor. **2014**, 2, 9866	11
1847	On the Uniqueness of Ideality Factor and Voltage Exponent of Perovskite-Based Solar Cells. **2014**, 5, 4115-21	56
1846	Investigation of regeneration kinetics in quantum-dots-sensitized solar cells with scanning electrochemical microscopy. **2014**, 6, 20913-8	18
1845	Organic photovoltaics: key photophysical, device and design aspects. **2014**, 61, 1703-1713	3
1844	Graphene oxide as dual functional interface modifier for improving wettability and retarding recombination in hybrid perovskite solar cells. **2014**, 2, 20105-20111	165
1843	Recombination Kinetics in Organic-Inorganic Perovskites: Excitons, Free Charge, and Subgap States. **2014**, 2,	874
1842	Enhanced Performance of Flexible Dye-Sensitized Solar Cell based on Nickel Sulfide/Polyaniline/Titanium Counter Electrode. **2014**, 149, 117-125	27
1841	Energy level alignment at the methylammonium lead iodide/copper phthalocyanine interface. **2014** , 2, 081512	70
1840	MODULATING CH3NH3PbI3 PEROVSKITE CRYSTALLIZATION BEHAVIOR THROUGH PRECURSOR CONCENTRATION. **2014**, 09, 1440003	8
1839	Investigation regarding the role of chloride in organic-inorganic halide perovskites obtained from chloride containing precursors. **2014**, 14, 6991-6	176

1838	Solution Chemistry Engineering toward High-Efficiency Perovskite Solar Cells. **2014**, 5, 4175-86	209
1837	All-solid Sn/Pb halide perovskite sensitized solar cells. **2014**,	
1836	Photovoltaic characteristics and stability of flexible dye-sensitized solar cells on ITO/PEN substrates. **2014**, 4, 1393-1400	15
1835	Novel barium-organic incorporated iodometalates: do they have template properties for constructing rare heterotrimetallic hybrids?. **2014**, 53, 11721-31	52
1834	Triple-Layer Structured Composite Separator Membranes with Dual Pore Structures and Improved Interfacial Contact for Sustainable Dye-Sensitized Solar Cells. **2014**, 4, 1400477	11
1833	Photovoltaic properties of bis(octyloxy)benzo-[c][1,2,5]thiadiazole sensitizers based on an N,N-diphenylthiophen-2-amine donor. **2014**, 2, 4063-4072	18
1832	Improved External Quantum Efficiency from Solution-Processed (CH3NH3)PbI3 Perovskite/PC71BM Planar Heterojunction for High Efficiency Hybrid Solar Cells. **2014**, 118, 25899-25905	37
1831	Hysteresis Analysis Based on the Ferroelectric Effect in Hybrid Perovskite Solar Cells. **2014**, 5, 3937-45	291
1830	Strong Photocurrent Amplification in Perovskite Solar Cells with a Porous TiO2 Blocking Layer under Reverse Bias. **2014**, 5, 3931-6	96
1829	Reply to the 'Comment on "Density functional theory analysis of structural and electronic properties of orthorhombic perovskite CH3NH3PbI3"' by J. Even et al., Phys. Chem. Chem. Phys., 2014, 10.1039/C3CP55006K. **2014**, 16, 8699-700	2
1828	Optimized Organometal Halide Perovskite Planar Hybrid Solar Cells via Control of Solvent Evaporation Rate. **2014**, 118, 26513-26520	57
1827	Energy level tuning of TPB-based hole-transporting materials for highly efficient perovskite solar cells. **2014**, 50, 15239-42	128
1826	Periodic layered inverse micelle multilayers with tunable photonic band gap: fabrication and application in dye-sensitized solar cells. **2014**, 6, 4204-10	6
1825	Enhancement of diffusion kinetics in porous MoN nanorods-based counter electrode in a dye-sensitized solar cell. **2014**, 2, 10041	47
1824	Interplay of Orientational Order and Electronic Structure in Methylammonium Lead Iodide: Implications for Solar Cell Operation. **2014**, 26, 6557-6569	252
1823	High voltage in hole conductor free organo metal halide perovskite solar cells. **2014**, 2, 20776-20781	54
1822	Spray-deposited zinc titanate films obtained via sol–gel synthesis for application in dye-sensitized solar cells. **2014**, 2, 15008-15014	24
1821	Solar cells based on inks of n-type colloidal quantum dots. **2014**, 8, 10321-7	141

1820	Room-temperature ABX3-typed molecular ferroelectric: [C5H9NH3][CdCl3]. **2014**, 1, 118	95
1819	Planar CH3NH3PbBr3 hybrid solar cells with 10.4% power conversion efficiency, fabricated by controlled crystallization in the spin-coating process. **2014**, 26, 8179-83	410
1818	Facile formation of a micro-crater structure for light scattering in quasi-solid state dye-sensitized solar cells. **2014**, 4, 28133-28139	3
1817	Creating electrochemical gradients by light: from bio-inspired concepts to photoelectric conversion. **2014**, 16, 19781-9	18
1816	Low temperature solution processed planar heterojunction perovskite solar cells with a CdSe nanocrystal as an electron transport/extraction layer. **2014**, 2, 9087-9090	75
1815	Enhanced electrocatalytic activity of plasma functionalized multi-walled carbon nanotube-entrapped poly(3,4-ethylendioxythiophene):poly(styrene sulfonate) photocathode. **2014**, 146, 68-72	16
1814	Effect of the LHCII pigment-protein complex aggregation on photovoltaic properties of sensitized TiO2 solar cells. **2014**, 16, 20856-65	22
1813	Perovskite photovoltaics featuring solution-processable TiO2 as an interfacial electron-transporting layer display to improve performance and stability. **2014**, 6, 11403-10	23
1812	Thermal Behavior of Methylammonium Lead-Trihalide Perovskite Photovoltaic Light Harvesters. **2014**, 26, 6160-6164	433
1811	Size and concentration effects of gold nanoparticles on optical and electrical properties of plasmonic dye sensitized solar cells. **2014**, 109, 11-23	61
1810	CH3NH3PbI(3-x)(BF4)x: molecular ion substituted hybrid perovskite. **2014**, 50, 9741-4	75
1809	Efficient Planar Heterojunction Perovskite Solar Cells Based on Formamidinium Lead Bromide. **2014**, 5, 2791-5	221
1808	Solvent annealing of perovskite-induced crystal growth for photovoltaic-device efficiency enhancement. **2014**, 26, 6503-9	1348
1807	ORGANOMETAL HALIDE PEROVSKITE PHOTOVOLTAICS: A DIAMOND IN THE ROUGH. **2014**, 09, 1440002	23
1806	Photophysics of Voltage Increase by Photoinduced Dipole Layers in Sensitized Solar Cells. **2014**, 5, 2717-22	12
1805	The Impact of the Crystallization Processes on the Structural and Optical Properties of Hybrid Perovskite Films for Photovoltaics. **2014**, 5, 3836-42	218
1804	First-Principles Investigation of the TiO2/Organohalide Perovskites Interface: The Role of Interfacial Chlorine. **2014**, 5, 2619-25	228
1803	Understanding quantum confinement of charge carriers in layered 2D hybrid perovskites. **2014**, 15, 3733-41	175

1802	Shape-controlled synthesis of organolead halide perovskite nanocrystals and their tunable optical absorption. **2014**, 1, 015034	35
1801	Comparative experiments of graphene covalently and physically binding CdSe quantum dots to enhance the electron transport in flexible photovoltaic devices. **2014**, 6, 9241-9	26
1800	Engineering the interfaces of ITO@Cu2S nanowire arrays toward efficient and stable counter electrodes for quantum-dot-sensitized solar cells. **2014**, 6, 15448-55	24
1799	Optics and Light Trapping for Tandem Solar Cells on Silicon. **2014**, 4, 1380-1386	90
1798	Acetonitrile Solution Effect on Ru N749 Dye Adsorption and Excitation at TiO2 Anatase Interface. **2014**, 118, 16863-16871	11
1797	High-performance hybrid perovskite solar cells with polythiophene as hole-transporting layer via electrochemical polymerization. **2014**, 4, 33039	51
1796	Role of chloride in the morphological evolution of organo-lead halide perovskite thin films. **2014**, 8, 10640-54	328
1795	Air-stable molecular semiconducting iodosalts for solar cell applications: Cs2SnI6 as a hole conductor. **2014**, 136, 15379-85	427
1794	Conformal organohalide perovskites enable lasing on spherical resonators. **2014**, 8, 10947-52	290
1793	Controlling the surface nanostructure of ZnO and Al-doped ZnO thin films using electrostatic spraying for their application in 12% efficient perovskite solar cells. **2014**, 6, 9127-38	136
1792	Inkjet Printing and Instant Chemical Transformation of a CH3NH3PbI3/Nanocarbon Electrode and Interface for Planar Perovskite Solar Cells. **2014**, 126, 13455-13459	98
1791	A hydrophobic hole transporting oligothiophene for planar perovskite solar cells with improved stability. **2014**, 50, 11196-9	235
1790	A fast deposition-crystallization procedure for highly efficient lead iodide perovskite thin-film solar cells. **2014**, 53, 9898-903	1104
1789	Persistent photovoltage in methylammonium lead iodide perovskite solar cells. **2014**, 2, 081501	79
1788	Chemistry. Perovskites take lead in solar hydrogen race. **2014**, 345, 1566-7	29
1787	Self-Alignment of the Methylammonium Cations in Thin-Film Organometal Perovskites. **2014**, 5, 2863-7	14
1786	Anomalous Alloy Properties in Mixed Halide Perovskites. **2014**, 5, 3625-31	188
1785	Defects in chemically synthesized and thermally processed ZnO nanorods: implications for active layer properties in dye-sensitized solar cells. **2014**, 53, 3961-72	43

1784	A layered hybrid perovskite solar-cell absorber with enhanced moisture stability. **2014**, 53, 11232-5	1217
1783	Selenium as a photoabsorber for inorganic-organic hybrid solar cells. **2014**, 16, 23316-9	24
1782	Femtosecond excitonic relaxation dynamics of perovskite on mesoporous films of Al□□and NiO nanoparticles. **2014**, 53, 9339-42	54
1781	Temperature-dependent excitonic photoluminescence of hybrid organometal halide perovskite films. **2014**, 16, 22476-81	360
1780	Crystallization of methyl ammonium lead halide perovskites: implications for photovoltaic applications. **2014**, 136, 13249-56	345
1779	Quantum Dot-Sensitized Solar Cells. **2014**, 89-136	2
1778	Perovskite solar cell with an efficient TiO□compact film. **2014**, 6, 15959-65	258
1777	Improved Power Conversion Efficiency of Dye-Sensitized Solar Cells by Fluorophore-Assisted Spectrum Down-Conversion. **2014**, 161, H404-H409	5
1776	Fabrication of TiO2 nanocrystals/nanorods composites thin film electrode: Enhanced performance of dye-sensitized solar cells. **2014**, 135, 229-232	5
1775	Fabrication of TiO2 nanotube arrays and their application in flexible dye-sensitized solar cells. **2014**, 4, 45592-45597	13
1774	Sequential Deposition of CH3NH3PbI3 on Planar NiO Film for Efficient Planar Perovskite Solar Cells. **2014**, 1, 547-553	214
1773	Designing triphenylamine derivative dyes for highly effective dye-sensitized solar cells with near-infrared light harvesting up to 1100 nm. **2014**, 4, 48750-48757	18
1772	Understanding the formation and evolution of interdiffusion grown organolead halide perovskite thin films by thermal annealing. **2014**, 2, 18508-18514	238
1771	First-Principles Hybrid Functional Study of the Organic□norganic Perovskites CH3NH3SnBr3 and CH3NH3SnI3. **2014**, 118, 24383-24388	104
1770	Silicon nanocrystal conjugated polymer hybrid solar cells with improved performance. **2014**, 9, 25-31	46
1769	Hierarchically structured nanocrystalline photoanode: Self-assembled bi-functional TiO2 towards enhanced photovoltaic performance. **2014**, 8, 247-254	4
1768	Catalysis. Highly active copper-ceria and copper-ceria-titania catalysts for methanol synthesis from CO□**2014**, 345, 546-50	895
1767	Self-consistent relativistic band structure of the CH3NH3PbI3 perovskite. **2014**, 90,	232

1766	Photovoltaics. Interface engineering of highly efficient perovskite solar cells. **2014**, 345, 542-6	5272
1765	Bright light-emitting diodes based on organometal halide perovskite. **2014**, 9, 687-92	2958
1764	Liquid phase deposition of TiO2 nanolayer affords CH3NH3PbI3/nanocarbon solar cells with high open-circuit voltage. **2014**, 176, 271-86	47
1763	Effective Masses and Electronic and Optical Properties of Nontoxic MASnX3 (X = Cl, Br, and I) Perovskite Structures as Solar Cell Absorber: A Theoretical Study Using HSE06. **2014**, 118, 19655-19660	141
1762	Electrospun lead-doped titanium dioxide nanofibers and the in situ preparation of perovskite-sensitized photoanodes for use in high performance perovskite solar cells. **2014**, 2, 16856-16862	73
1761	Interface stability of a TiO2/3-methoxypropionitrile-based electrolyte: first evidence for solid electrolyte interphase formation and implications. **2014**, 15, 1126-37	24
1760	Perowskit als Lichtabsorptionsmaterial: ein Durchbruch in der Photovoltaik. **2014**, 126, 2854-2867	85
1759	An Above-Room-Temperature Ferroelectric Organo□Metal Halide Perovskite: (3-Pyrrolinium)(CdCl3). **2014**, 126, 11424-11429	42
1758	Efficient and uniform planar-type perovskite solar cells by simple sequential vacuum deposition. **2014**, 26, 6647-52	383
1757	Efficient hole-conductor-free, fully printable mesoscopic perovskite solar cells with a broad light harvester NH2CHNH2PbI3. **2014**, 2, 17115-17121	158
1756	A Layered Hybrid Perovskite Solar-Cell Absorber with Enhanced Moisture Stability. **2014**, 126, 11414-11417	577
1755	High-performance planar heterojunction perovskite solar cells: Preserving long charge carrier diffusion lengths and interfacial engineering. **2014**, 7, 1749-1758	180
1754	Improved understanding of the electronic and energetic landscapes of perovskite solar cells: high local charge carrier mobility, reduced recombination, and extremely shallow traps. **2014**, 136, 13818-25	492
1753	Fast Energy Relaxation by Trap States Decreases Electron Mobility in TiO2 Nanotubes: Time-Domain Ab Initio Analysis. **2014**, 5, 1642-7	24
1752	Effect of isomerism and chain length on electronic structure, photophysics, and sensitizer efficiency in quadrupolar (donor)□acceptor systems for application in dye-sensitized solar cells. **2014**, 6, 5221-7	24
1751	Low-temperature sputtered nickel oxide compact thin film as effective electron blocking layer for mesoscopic NiO/CH3NH3PbI3 perovskite heterojunction solar cells. **2014**, 6, 11851-8	270
1750	The light and shade of perovskite solar cells. **2014**, 13, 838-42	1600
1749	High-Performance Hole-Extraction Layer of Sol□Gel-Processed NiO Nanocrystals for Inverted Planar Perovskite Solar Cells. **2014**, 126, 12779-12783	158

1748	Size-controlled SiO2 nanoparticles as scaffold layers in thin-film perovskite solar cells. **2014**, 2, 16429-16433	67
1747	Control of Recombination Pathways in TiO2 Nanowire Hybrid Solar Cells Using Sn4+ Dopants. **2014**, 118, 16672-16679	22
1746	Termination Dependence of Tetragonal CH3NH3PbI3 Surfaces for Perovskite Solar Cells. **2014**, 5, 2903-9	272
1745	Parameters Affecting I-V Hysteresis of CH3NH3PbI3 Perovskite Solar Cells: Effects of Perovskite Crystal Size and Mesoporous TiO2 Layer. **2014**, 5, 2927-34	885
1744	Band filling with free charge carriers in organometal halide perovskites. **2014**, 8, 737-743	772
1743	Environmentally responsible fabrication of efficient perovskite solar cells from recycled car batteries. **2014**, 7, 3659-3665	79
1742	Extremely Slow Photoconductivity Response of CH3NH3PbI3 Perovskites Suggesting Structural Changes under Working Conditions. **2014**, 5, 2662-9	277
1741	Carbazole-based hole-transport materials for efficient solid-state dye-sensitized solar cells and perovskite solar cells. **2014**, 26, 6629-34	320
1740	Planar heterojunction perovskite/PC71BM solar cells with enhanced open-circuit voltage via a (2/1)-step spin-coating process. **2014**, 2, 15897-15903	288
1739	Star-shaped hole transporting materials with a triazine unit for efficient perovskite solar cells. **2014** , 50, 10971-4	131
1738	The evolution of the dye sensitized solar cells from Grtzel prototype to up-scaled solar applications: A life cycle assessment approach. **2014**, 39, 124-138	105
1737	The photovoltaic performance of dye-sensitized solar cells enhanced by using Dawson-type heteropolyacid and heteropoly blue-TiO2 composite films as photoanode. **2014**, 47, 138-143	16
1736	Improved performance of CdS/CdSe quantum dots sensitized solar cell by incorporation of ZnO nanoparticles/reduced graphene oxide nanocomposite as photoelectrode. **2014**, 271, 195-202	27
1735	Multifunctional perovskite capping layers in hybrid solar cells. **2014**, 2, 14973	55
1734	High efficiency single-junction semitransparent perovskite solar cells. **2014**, 7, 2968-2973	237
1733	Influence of Fluorine Plasma Treatment of TiO2 Films on the Behavior of Dye Solar Cells Employing the Co(II)/(III) Redox Couple. **2014**, 118, 16760-16775	16
1732	Role of Dispersive Interactions in Determining Structural Properties of Organic-Inorganic Halide Perovskites: Insights from First-Principles Calculations. **2014**, 5, 2728-33	168
1731	Enabling silicon for solar-fuel production. **2014**, 114, 8662-719	274

1730	Integrating perovskite solar cells into a flexible fiber. **2014**, 53, 10425-8	219
1729	Effective hole extraction using MoOx-Al contact in perovskite CH3NH3PbI3 solar cells. **2014**, 104, 213906	126
1728	Improved light absorption and charge transport for perovskite solar cells with rough interfaces by sequential deposition. **2014**, 6, 8171-6	160
1727	Rate limiting interfacial hole transfer in Sb2S3 solid-state solar cells. **2014**, 7, 1148-1158	73
1726	A Fast Deposition-Crystallization Procedure for Highly Efficient Lead Iodide Perovskite Thin-Film Solar Cells. **2014**, 126, 10056-10061	630
1725	Boosting the power conversion efficiency of perovskite solar cells using self-organized polymeric hole extraction layers with high work function. **2014**, 26, 6461-6	295
1724	Photocarrier recombination dynamics in perovskite CH3NH3PbI3 for solar cell applications. **2014**, 136, 11610-3	612
1723	Enhanced near-infrared to visible upconversion nanoparticles of Ho□+-Yb□+-F? tri-doped TiO□and its application in dye-sensitized solar cells with 37% improvement in power conversion efficiency. **2014**, 53, 8045-53	64
1722	Enhancing the hole-conductivity of spiro-OMeTAD without oxygen or lithium salts by using spiro(TFSI)□n perovskite and dye-sensitized solar cells. **2014**, 136, 10996-1001	457
1721	List of Most-Cited Publications of Professor Michael Gr□zel. **2014**, 118, 16311-16318	1
1720	Novel ruthenium sensitizers having different numbers of carboxyl groups for dye-sensitized solar cells: effects of the adsorption manner at the TiO□surface on the solar cell performance. **2014**, 53, 9375-84	21
1719	Fabrication of semi-transparent perovskite films with centimeter-scale superior uniformity by the hybrid deposition method. **2014**, 7, 3989-3993	193
1718	Efficient planar-heterojunction perovskite solar cells achieved via interfacial modification of a sol□gel ZnO electron collection layer. **2014**, 2, 17291-17296	236
1717	Lead methylammonium triiodide perovskite-based solar cells: an interfacial charge-transfer investigation. **2014**, 7, 3088-94	47
1716	Hole-Conductor-Free, Metal-Electrode-Free TiO2/CH3NH3PbI3 Heterojunction Solar Cells Based on a Low-Temperature Carbon Electrode. **2014**, 5, 3241-6	227
1715	Materials processing routes to trap-free halide perovskites. **2014**, 14, 6281-6	567
1714	14.8% perovskite solar cells employing carbazole derivatives as hole transporting materials. **2014**, 50, 14161-3	141
1713	First-Principles Study of Lead Iodide Perovskite Tetragonal and Orthorhombic Phases for Photovoltaics. **2014**, 118, 19565-19571	196

1712	Photoanode Based on (001)-Oriented Anatase Nanoplatelets for Organic–Inorganic Lead Iodide Perovskite Solar Cell. **2014**, 26, 4675-4678	38
1711	Low band gap S,N-heteroacene-based oligothiophenes as hole-transporting and light absorbing materials for efficient perovskite-based solar cells. **2014**, 7, 2981	119
1710	Poly(vinylidene fluoride)–implanted cobalt–platinum alloy counter electrodes for dye-sensitized solar cells. **2014**, 147, 209-215	10
1709	Engineering of electron-selective contact for perovskite solar cells with efficiency exceeding 15%. **2014**, 8, 10161-7	209
1708	Real-space observation of unbalanced charge distribution inside a perovskite-sensitized solar cell. **2014**, 5, 5001	262
1707	Growth of CH3NH3PbI3 cuboids with controlled size for high-efficiency perovskite solar cells. **2014**, 9, 927-32	1442
1706	Influence of Defects and Synthesis Conditions on the Photovoltaic Performance of Perovskite Semiconductor CsSnI3. **2014**, 26, 6068-6072	194
1705	Ultra-Low Thermal Conductivity in Organic-Inorganic Hybrid Perovskite CH3NH3PbI3. **2014**, 5, 2488-92	337
1704	Functional tuning of phenothiazine-based dyes by a benzimidazole auxiliary chromophore: an account of optical and photovoltaic studies. **2014**, 4, 53588-53601	33
1703	(Gold core)/(titania shell) nanostructures for plasmon-enhanced photon harvesting and generation of reactive oxygen species. **2014**, 7, 3431-3438	161
1702	Photoinduced Giant Dielectric Constant in Lead Halide Perovskite Solar Cells. **2014**, 5, 2390-4	551
1701	Hysteresis and transient behavior in current–voltage measurements of hybrid-perovskite absorber solar cells. **2014**, 7, 3690-3698	1006
1700	Elusive Presence of Chloride in Mixed Halide Perovskite Solar Cells. **2014**, 5, 3532-8	160
1699	Investigating the role of graphene in the photovoltaic performance improvement of dye-sensitized solar cell. **2014**, 190, 111-118	8
1698	Universal low-temperature MWCNT-COOH-based counter electrode and a new thiolate/disulfide electrolyte system for dye-sensitized solar cells. **2014**, 6, 8744-53	21
1697	Femtosecond time-resolved transient absorption spectroscopy of CH3NH3PbI3 perovskite films: evidence for passivation effect of PbI2. **2014**, 136, 12205-8	417
1696	Recent Research Developments of Perovskite Solar Cells. **2014**, 32, 957-963	31
1695	Organic–Inorganic Halide Perovskites: Perspectives for Silicon-Based Tandem Solar Cells. **2014**, 4, 1545-1551	100

1694	Correlated electron-hole plasma in organometal perovskites. **2014**, 5, 5049	437
1693	Facile fabrication of highly porous photoanode at low temperature for all-plastic dye-sensitized solar cells with quasi-solid state electrolyte. **2014**, 271, 8-15	9
1692	Charge Transport and Recombination in TiO2 Brookite-Based Photoelectrodes. **2014**, 118, 23459-23467	33
1691	Strong covalency-induced recombination centers in perovskite solar cell material CH3NH3PbI3. **2014**, 136, 14570-5	374
1690	Rationalization of dye uptake on titania slides for dye-sensitized solar cells by a combined chemometric and structural approach. **2014**, 7, 3039-52	18
1689	Radiative Recombination and Photoconversion of Methylammonium Lead Iodide Perovskite by First Principles: Properties of an Inorganic Semiconductor within a Hybrid Body. **2014**, 118, 24843-24853	69
1688	Modeling, simulation and design of dye sensitized solar cells. **2014**, 4, 2830-2844	22
1687	Water photolysis at 12.3% efficiency via perovskite photovoltaics and Earth-abundant catalysts. **2014**, 345, 1593-6	1920
1686	Charge transfer and recombination at the metal oxide/CH3NH3PbClI2/spiro-OMeTAD interfaces: uncovering the detailed mechanism behind high efficiency solar cells. **2014**, 16, 19984-92	78
1685	Carbon nanotube/polymer composites as a highly stable hole collection layer in perovskite solar cells. **2014**, 14, 5561-8	944
1684	Computed and Experimental Absorption Spectra of the Perovskite CH3NH3PbI3. **2014**, 5, 3061-5	80
1683	Inkjet printing and instant chemical transformation of a CH3NH3PbI3/nanocarbon electrode and interface for planar perovskite solar cells. **2014**, 53, 13239-43	300
1682	Structure engineering of hole-conductor free perovskite-based solar cells with low-temperature-processed commercial carbon paste as cathode. **2014**, 6, 16140-6	214
1681	Infrared-driven unimolecular reaction of CH□HOO Criegee intermediates to OH radical products. **2014**, 345, 1596-8	102
1680	Photo-Ionic Cells: Two Solutions to Store Solar Energy and Generate Electricity on Demand. **2014**, 118, 16872-16883	13
1679	Electrochemical Design of Nanostructured ZnO Charge Carrier Layers for Efficient Solid-State Perovskite-Sensitized Solar Cells. **2014**, 4, 1400932	105
1678	Efficient organic-inorganic hybrid perovskite solar cells processed in air. **2014**, 16, 24691-6	56
1677	Monitoring the Phase Formation of Coevaporated Lead Halide Perovskite Thin Films by in Situ X-ray Diffraction. **2014**, 5, 3308-12	81

1676	Gas-assisted preparation of lead iodide perovskite films consisting of a monolayer of single crystalline grains for high efficiency planar solar cells. **2014**, 10, 10-18	461
1675	Perovskite solar cells involving poly(tetraphenylbenzidine)s: investigation of hole carrier mobility, doping effects and photovoltaic properties. **2014**, 4, 43550-43559	25
1674	Plasmonic light harvesting of dye sensitized solar cells by Au-nanoparticle loaded TiO2 nanofibers. **2014**, 2, 975-984	81
1673	AgTFSI as p-type dopant for efficient and stable solid-state dye-sensitized and perovskite solar cells. **2014**, 7, 3252-6	97
1672	An above-room-temperature ferroelectric organo-metal halide perovskite: (3-pyrrolinium)(CdCl)1 **2014**, 53, 11242-7	139
1671	The Role of Chlorine in the Formation Process of CH3NH3PbI3-xClx Perovskite. **2014**, 24, n/a-n/a	173
1670	High-performance hole-extraction layer of sol-gel-processed NiO nanocrystals for inverted planar perovskite solar cells. **2014**, 53, 12571-5	121
1669	Zn2SnO4-Based Photoelectrodes for Organolead Halide Perovskite Solar Cells. **2014**, 118, 22991-22994	76
1668	Perovskite photovoltaics: a high-efficiency newcomer to the solar cell family. **2014**, 6, 12287-97	104
1667	Mesoporous non-siliceous inorganic organic hybrids: a promising platform for designing multifunctional materials. **2014**, 38, 1905-1922	41
1666	Direct Observation of Ferroelectric Domains in Solution-Processed CH3NH3PbI3 Perovskite Thin Films. **2014**, 5, 3335-9	367
1665	Elucidating Transport-Recombination Mechanisms in Perovskite Solar Cells by Small-Perturbation Techniques. **2014**, 118, 22913-22922	155
1664	Maximum Theoretical Efficiency Limit of Photovoltaic Devices: Effect of Band Structure on Excited State Entropy. **2014**, 5, 3354-9	15
1663	Lead-free halide perovskite solar cells with high photocurrents realized through vacancy modulation. **2014**, 26, 7122-7	737
1662	Incorporation of Cl into sequentially deposited lead halide perovskite films for highly efficient mesoporous solar cells. **2014**, 6, 13854-60	70
1661	New layer-by-layer Nb2O5 iO2 film as an effective underlayer in dye-sensitised solar cells. **2014**, 4, 10310-10316	16
1660	Recent advances in multifunctional nanocarbons used in dye-sensitized solar cells. **2014**, 7, 1281	79
1659	Three dimensional indium-tin-oxide nanorod array for charge collection in dye-sensitized solar cells. **2014**, 6, 17713-22	14

1658	Enhanced performance of dye-sensitized solar cells based on an electrodeposited-poly(3,4-ethylenedioxythiophene)/platinum composite counter electrode. **2014**, 197, 204-209	1
1657	Structure-performance correlations of organic dyes with an electron-deficient diphenylquinoxaline moiety for dye-sensitized solar cells. **2014**, 20, 10052-64	30
1656	Highly efficient fullerene/perovskite planar heterojunction solar cells via cathode modification with an amino-functionalized polymer interlayer. **2014**, 2, 19598-19603	174
1655	Efficient star-shaped hole transporting materials with diphenylethenyl side arms for an efficient perovskite solar cell. **2014**, 2, 19136-19140	107
1654	The emergence of perovskite solar cells. **2014**, 8, 506-514	4538
1653	First-principles study of Carbz-PAHTDDT dye sensitizer and two Carbz-derived dyes for dye sensitized solar cells. **2014**, 20, 2177	15
1652	Efficient planar heterojunction perovskite solar cells employing graphene oxide as hole conductor. **2014**, 6, 10505-10	315
1651	Efficient planar heterojunction mixed-halide perovskite solar cells deposited via spray-deposition. **2014**, 7, 2944-2950	568
1650	An 80.11% FF record achieved for perovskite solar cells by using the NH4Cl additive. **2014**, 6, 9935-8	342
1649	A hole-conductor-free, fully printable mesoscopic perovskite solar cell with high stability. **2014**, 345, 295-8	2374
1648	Effect of electrolyte bleaching on the stability and performance of dye solar cells. **2014**, 16, 6092-100	46
1647	Retarding the crystallization of PbI2 for highly reproducible planar-structured perovskite solar cells via sequential deposition. **2014**, 7, 2934-2938	728
1646	A dopant-free hole-transporting material for efficient and stable perovskite solar cells. **2014**, 7, 2963-2967	593
1645	A hybrid lead iodide perovskite and lead sulfide QD heterojunction solar cell to obtain a panchromatic response. **2014**, 2, 11586-11590	64
1644	One-dimensional titanium dioxide nanomaterials: nanowires, nanorods, and nanobelts. **2014**, 114, 9346-84	504
1643	Metal phosphonate hybrid materials: from densely layered to hierarchically nanoporous structures. **2014**, 1, 360-383	117
1642	Hole-conductor-free perovskite organic lead iodide heterojunction thin-film solar cells: High efficiency and junction property. **2014**, 104, 063901	401
1641	Production of core□hell type conducting FTO/TiO2 photoanode for dye sensitized solar cells. **2014**, 210, 22-29	6

1640	Enhanced photovoltaic properties of modified redox electrolyte in dye-sensitized solar cells using tributyl phosphate as additive. **2014**, 262, 140-146	15
1639	Fabrication of high performance multi-walled carbon nanotubes/polypyrrole counter electrode for dye-sensitized solar cells. **2014**, 67, 460-467	63
1638	Ultrafast Hole/Electron Transfer Dynamics in a CdSe Quantum Dot Sensitized by Pyrogallol Red: A Super-Sensitization System. **2014**, 118, 16358-16365	34
1637	Formamidinium-Containing Metal-Halide: An Alternative Material for Near-IR Absorption Perovskite Solar Cells. **2014**, 118, 16458-16462	554
1636	Interfacial Engineering of P3HT/ZnO Hybrid Solar Cells Using Phthalocyanines: A Joint Theoretical and Experimental Investigation. **2014**, 4, 1301694	38
1635	Low temperature fabrication of high performance p-n junction on the Ti foil for use in large-area flexible dye-sensitized solar cells. **2014**, 117, 1-8	12
1634	Well-Organized Mesoporous TiO2 Photoelectrodes by Block Copolymer-Induced Sol□Gel Assembly for Inorganic□Organic Hybrid Perovskite Solar Cells. **2014**, 118, 16688-16693	45
1633	Lessons learned: from dye-sensitized solar cells to all-solid-state hybrid devices. **2014**, 26, 4013-30	133
1632	Solvent engineering for high-performance inorganic-organic hybrid perovskite solar cells. **2014**, 13, 897-903	4981
1631	Highly conjugated electron rich thiophene antennas on phenothiazine and phenoxazine-based sensitizers for dye sensitized solar cells. **2014**, 195, 208-216	29
1630	Graphene in photovoltaic applications: organic photovoltaic cells (OPVs) and dye-sensitized solar cells (DSSCs). **2014**, 2, 12136	89
1629	Formation and photovoltaic performance of few-layered graphene-decorated TiO2 nanocrystals used in dye-sensitized solar cells. **2014**, 6, 6755-62	27
1628	Organolead halide perovskite: A rising player in high-efficiency solar cells. **2014**, 35, 983-988	22
1627	Colloidal nanocrystals with inorganic halide, pseudohalide, and halometallate ligands. **2014**, 8, 7359-69	178
1626	Panchromatic donor-acceptor-donor conjugated oligomers for dye-sensitized solar cell applications. **2014**, 6, 8715-22	51
1625	Influence of number of benzodioxan-stilbazole-based ancillary ligands on dye packing, photovoltage and photocurrent in dye-sensitized solar cells. **2014**, 6, 11617-24	46
1624	Direct deposition strategy for highly ordered inorganic organic perovskite thin films and their optoelectronic applications. **2014**, 4, 1313	29
1623	Graphene quantum dots optimization of dye-sensitized solar cells. **2014**, 137, 634-638	80

1622	Lead-iodide nanowire perovskite with methylviologen showing interfacial charge-transfer absorption: a DFT analysis. **2014**, 16, 17955-9	20
1621	Structural and electronic properties of organo-halide lead perovskites: a combined IR-spectroscopy and ab initio molecular dynamics investigation. **2014**, 16, 16137-44	195
1620	One-step, solution-processed formamidinium lead trihalide (FAPbI(3-x)Cl(x)) for mesoscopic perovskite-polymer solar cells. **2014**, 16, 19206-11	113
1619	Controllable self-induced passivation of hybrid lead iodide perovskites toward high performance solar cells. **2014**, 14, 4158-63	1143
1618	Organo-metal halide perovskite-based solar cells with CuSCN as the inorganic hole selective contact. **2014**, 2, 12754-12760	157
1617	Boosting the photocurrent density of p-type solar cells based on organometal halide perovskite-sensitized mesoporous NiO photocathodes. **2014**, 6, 12609-17	45
1616	Relativistic quasiparticle self-consistent electronic structure of hybrid halide perovskite photovoltaic absorbers. **2014**, 89,	514
1615	Lead halide perovskites and other metal halide complexes as inorganic capping ligands for colloidal nanocrystals. **2014**, 136, 6550-3	215
1614	Metal-organic frameworks at interfaces in dye-sensitized solar cells. **2014**, 7, 2469-72	50
1613	Carbazole based hole transporting materials for solid state dye sensitizer solar cells: role of the methoxy groups. **2014**, 63, 1387-1393	16
1612	Organo-metal perovskite based solar cells: sensitized versus planar architecture. **2014**, 4, 29012-29021	51
1611	Solid-state principles applied to organic–inorganic perovskites: new tricks for an old dog. **2014**, 5, 4712-4715	610
1610	Frequency-Modulated Gigahertz Complex Conductivity of TiO2 Nanoparticles: Interplay of Free and Shallowly Trapped Electrons. **2014**, 118, 22561-22572	34
1609	High-Performance Flexible Broadband Photodetector Based on Organolead Halide Perovskite. **2014**, 24, 7373-7380	652
1608	Thermal evaporation and characterization of Sb2Se3 thin film for substrate Sb2Se3/CdS solar cells. **2014**, 6, 10687-95	235
1607	Mohammad K. Nazeeruddin. **2014**, 126, 9570-9570	
1606	Organohalide lead perovskite based photodetectors with much enhanced performance. **2014**, 50, 13695-7	176
1605	Light-penetration and light-scattering effects in dye-sensitised solar cells. **2014**, 38, 6161-6167	12

1604	Rutile TiO2 nanowire-based perovskite solar cells. **2014**, 50, 14720-3	112
1603	Star-shaped triphenylamine-based molecular glass for solid state dye sensitized solar cell application. **2014**, 195, 328-334	4
1602	Mesoporous perovskite solar cells: material composition, charge-carrier dynamics, and device characteristics. **2014**, 176, 301-12	103
1601	19.2% Efficient InP Heterojunction Solar Cell with Electron-Selective TiO Contact. **2014**, 1, 1245-1250	93
1600	Hole blocking PbI2/CH3NH3PbI3 interface. **2014**, 08, 763-766	39
1599	Branched triphenylamine-based oligomers for organic electronics. **2014**, 56, 104-134	29
1598	Improved High-Efficiency Perovskite Planar Heterojunction Solar Cells via Incorporation of a Polyelectrolyte Interlayer. **2014**, 26, 5190-5193	163
1597	Two-step thermal annealing improves the morphology of spin-coated films for highly efficient perovskite hybrid photovoltaics. **2014**, 6, 10281-8	104
1596	Impact of work function of back contact of perovskite solar cells without hole transport material analyzed by device simulation. **2014**, 14, 1428-1433	80
1595	A thin pristine non-triarylamine hole-transporting material layer for efficient CH3NH3PbI3 perovskite solar cells. **2014**, 4, 32918	35
1594	Morphology-photovoltaic property correlation in perovskite solar cells: One-step versus two-step deposition of CH3NH3PbI3. **2014**, 2, 081510	337
1593	Electronic and Optoelectronic Materials and Device Innovations. **2014**, 1-37	
1592	Controlled synthesis of CuInS2/reduced graphene oxide nanocomposites for efficient dye-sensitized solar cells. **2014**, 272, 639-646	35
1591	Numerical simulation: Toward the design of high-efficiency planar perovskite solar cells. **2014**, 104, 253508	154
1590	Photo-induced charge recombination kinetics in MAPbI(3-x)Cl(x) perovskite-like solar cells using low band-gap polymers as hole conductors. **2014**, 50, 14566-9	30
1589	Enhanced charge transport and photovoltaic performance induced by incorporating rare-earth phosphor into organic-inorganic hybrid solar cells. **2014**, 16, 24499-508	5
1588	Boron and sulfur co-doped TiO2 nanofilm as effective photoanode for high efficiency CdS quantum-dot-sensitized solar cells. **2014**, 272, 508-512	18
1587	Efficient planar perovskite solar cells based on 1.8 eV band gap CH3NH3PbI2Br nanosheets via thermal decomposition. **2014**, 136, 12241-4	203

1586	Surfactant enhanced surface coverage of CH3NH3PbI3□Clx perovskite for highly efficient mesoscopic solar cells. **2014**, 272, 351-355	44
1585	Enhanced Crystallinity in Organic□Inorganic Lead Halide Perovskites on Mesoporous TiO2 via Disorder□Order Phase Transition. **2014**, 26, 4466-4471	110
1584	Application of 3A molecular sieve layer in dye-sensitized solar cells. **2014**, 105, 083907	3
1583	Preparation of high performance perovskite-sensitized nanoporous titanium dioxide photoanodes by in situ method for use in perovskite solar cells. **2014**, 2, 16531-16537	59
1582	Unraveling the nanoscale morphologies of mesoporous perovskite solar cells and their correlation to device performance. **2014**, 14, 2735-40	49
1581	Efficiency enhancement of perovskite solar cells through fast electron extraction: the role of graphene quantum dots. **2014**, 136, 3760-3	590
1580	Multifunctional organized mesoporous tin oxide films templated by graft copolymers for dye-sensitized solar cells. **2014**, 7, 2037-47	16
1579	New small molecules with thiazolothiazole and benzothiadiazole acceptors for solution-processed organic solar cells. **2014**, 38, 1559	21
1578	A Route Towards Sustainability Through Engineered Polymeric Interfaces. **2014**, 1, 1400117	33
1577	Monoanchoring (D-D-□A) and Dianchoring (D-D-(□A)2) Organic Dyes Featuring Triarylamine Donors Composed of Fluorene and Carbazole. **2014**, 3, 886-898	8
1576	Superior Catalytic Activity of Sub-5 □n-Thick Pt/SiC Films as Counter Electrodes for Dye-Sensitized Solar Cells. **2014**, 6, 1584-1588	49
1575	Influence of Thermal Processing Protocol upon the Crystallization and Photovoltaic Performance of Organic□Inorganic Lead Trihalide Perovskites. **2014**, 118, 17171-17177	214
1574	Materials and structures for stretchable energy storage and conversion devices. **2014**, 26, 3592-617	318
1573	Dye-sensitized solar cells based on TiO2 hollow spheres/TiO2 nanotube array composite films. **2014**, 309, 85-89	37
1572	Effects of nanoparticle additives on the properties of agarose polymer electrolytes. **2014**, 248, 988-993	20
1571	ZnO-Based Nanostructuring Strategy Using an Optimized Solution Process in CuInS2 Superstrate Photovoltaics. **2014**, 118, 7788-7800	34
1570	Slow Dynamic Processes in Lead Halide Perovskite Solar Cells. Characteristic Times and Hysteresis. **2014**, 5, 2357-63	556
1569	Fabrication of planar heterojunction perovskite solar cells. **2014**,	1

1568	Vapour-based processing of hole-conductor-free CH3NH3PbI3 perovskite/C60 fullerene planar solar cells. **2014**, 4, 28964-28967	113
1567	Montmorillonite as bifunctional buffer layer material for hybrid perovskite solar cells with protection from corrosion and retarding recombination. **2014**, 2, 13587-13592	231
1566	Monitoring structural dynamics of in situ spray-deposited zinc oxide films for application in dye-sensitized solar cells. **2014**, 7, 2140-5	26
1565	Novel hole transporting materials based on triptycene core for high efficiency mesoscopic perovskite solar cells. **2014**, 5, 2702-2709	160
1564	A highly efficient mesoscopic solar cell based on CH□NH□PbI(3-x)Cl(x) fabricated via sequential solution deposition. **2014**, 50, 12458-61	79
1563	HIGH-EFFICIENT SOLID-STATE PEROVSKITE SOLAR CELL WITHOUT LITHIUM SALT IN THE HOLE TRANSPORT MATERIAL. **2014**, 09, 1440001	32
1562	Self-assembly of broadband white-light emitters. **2014**, 136, 1718-21	503
1561	Mixed-organic-cation perovskite photovoltaics for enhanced solar-light harvesting. **2014**, 53, 3151-7	960
1560	Metal-Oxide-Free Methylammonium Lead Iodide Perovskite-Based Solar Cells: the Influence of Organic Charge Transport Layers. **2014**, 4, 1400345	148
1559	High-efficiency perovskite solar cells based on the black polymorph of HC(NH2)2 PbI3. **2014**, 26, 4991-8	732
1558	Comparison of TiO□and ZnO solar cells sensitized with an indoline dye: time-resolved laser spectroscopy studies of partial charge separation processes. **2014**, 30, 2505-12	37
1557	Thermally induced structural evolution and performance of mesoporous block copolymer-directed alumina perovskite solar cells. **2014**, 8, 4730-9	241
1556	Integrated Photo-supercapacitor Based on Bi-polar TiO2 Nanotube Arrays with Selective One-Side Plasma-Assisted Hydrogenation. **2014**, 24, 1840-1846	140
1555	Effects of Surface Blocking Layer of Sb2S3 on Nanocrystalline TiO2 for CH3NH3PbI3 Perovskite Solar Cells. **2014**, 118, 16995-17000	456
1554	Versatile Approach to Formation of Light-Harvesting Complexes on Nanostructured Metal Oxide Surfaces via □On-Surface□Assembly. **2014**, 26, 3651-3659	3
1553	Thermally Activated Exciton Dissociation and Recombination Control the Carrier Dynamics in Organometal Halide Perovskite. **2014**, 5, 2189-94	399
1552	Organolead halide perovskites: a family of promising semiconductor materials for solar cells. **2014**, 59, 2092-2101	15
1551	Multi-functionality of macroporous TiO2 spheres in dye-sensitized and hybrid heterojunction solar cells. **2014**, 30, 3010-8	35

1550	Laminated carbon nanotube networks for metal electrode-free efficient perovskite solar cells. **2014**, 8, 6797-804	371
1549	Benefits of very thin PCBM and LiF layers for solution-processed p-i-n perovskite solar cells. **2014**, 7, 2642-2646	570
1548	Highly compact TiO2layer for efficient hole-blocking in perovskite solar cells. **2014**, 7, 052301	181
1547	Modulation on charge recombination and light harvesting toward high-performance benzothiadiazole-based sensitizers in dye-sensitized solar cells: A theoretical investigation. **2014**, 267, 300-308	63
1546	CH3NH3SnxPb(1-x)I3 Perovskite Solar Cells Covering up to 1060 nm. **2014**, 5, 1004-11	734
1545	Organometallic Halide Perovskites: Sharp Optical Absorption Edge and Its Relation to Photovoltaic Performance. **2014**, 5, 1035-9	1699
1544	Enhanced photovoltaic performance of perovskite $CH_3NH_3PbI_3$ solar cells with freestanding TiO_2 nanotube array films. **2014**, 50, 6368-71	142
1543	Perovskite solar cells with 12.8% efficiency by using conjugated quinolizino acridine based hole transporting material. **2014**, 136, 8516-9	228
1542	Anomalous Hysteresis in Perovskite Solar Cells. **2014**, 5, 1511-5	1951
1541	Hole-Conductor-Free Mesoscopic TiO2/CH3NH3PbI3 Heterojunction Solar Cells Based on Anatase Nanosheets and Carbon Counter Electrodes. **2014**, 5, 2160-4	211
1540	An all-solid-state perovskite-sensitized solar cell based on the dual function polyaniline as the sensitizer and p-type hole-transporting material. **2014**, 267, 1-8	113
1539	Variation in optoelectronic properties of azo dye-sensitized TiO2 semiconductor interfaces with different adsorption anchors: carboxylate, sulfonate, hydroxyl and pyridyl groups. **2014**, 6, 7535-46	82
1538	Quantum dot-sensitized solar cells based on directly adsorbed zinc copper indium sulfide colloids. **2014**, 16, 9115-22	18
1537	Electrodeposition of antimony selenide thin films and application in semiconductor sensitized solar cells. **2014**, 6, 2836-41	96
1536	In situ intercalation dynamics in inorganic-organic layered perovskite thin films. **2014**, 6, 10238-47	84
1535	Electronic properties of meso-superstructured and planar organometal halide perovskite films: charge trapping, photodoping, and carrier mobility. **2014**, 8, 7147-55	328
1534	Enhancement in the efficiency of an organic–inorganic hybrid solar cell with a doped P3HT hole-transporting layer on a void-free perovskite active layer. **2014**, 2, 13827-13830	150
1533	How to Draw Energy Level Diagrams in Excitonic Solar Cells. **2014**, 5, 2283-8	45

1532	A novel nonenzymatic fructose sensor based on electrospun LaMnO3 fibers. **2014**, 727, 21-26	25
1531	Unusual defect physics underlies perovskite solar cells□exceptional performance. **2014**, 67, 13-15	19
1530	Applications of Oxide Coatings in Photovoltaic Devices. **2014**, 4, 162-202	39
1529	Inhomogeneous Deactivation with UV Excitation in Submicron Grains of Lead Iodide Perovskite-based Solar Cell as Revealed by Femtosecond Transient Absorption Microscopy. **2014**, 43, 1656-1658	14
1528	Fabrication and Characterization of TiO2/CH3NH3PbI3-based Photovoltaic Devices. **2014**, 43, 916-918	34
1527	Fabrication of Lead Halide Perovskite Film by Controlling Reactivity at Room Temperature in Mixed Solvents. **2014**, 43, 1722-1724	15
1526	Evaluation of Reaction Property of Anodized Carbon Electrode by Electrochemical Impedance Spectroscopy. **2014**, 65, 447-452	2
1525	From sand to power: an examination of the solar energy value chain in the Caribbean. **2014**, 8, 1	1
1524	A Molecular Ferroelectric Thin Film of Imidazolium Perchlorate That Shows Superior Electromechanical Coupling. **2014**, 126, 5164-5168	13
1523	Ein Klassiker im neuen Gewand: Perowskit-Solarzellen. **2014**, 126, 647-649	19
1522	Methoxydiphenylamin-substituiertes Carbazol-Zwillingsderivat: ein effizienter organischer Lochleiter f□ Perowskit-Solarzellen. **2015**, 127, 11571-11575	34
1521	Two-step deposition method for high-efficiency perovskite solar cells. **2015**, 40, 654-659	38
1520	Methylammonium lead triiodide perovskite solar cells: A new paradigm in photovoltaics. **2015**, 40, 641-645	34
1519	Photovoltaic devices employing vacuum-deposited perovskite layers. **2015**, 40, 660-666	44
1518	Vapor-assisted solution process for perovskite materials and solar cells. **2015**, 40, 667-673	32
1517	Water-splitting using photoelectrodes of titania and titania-perovskite halite composite films. **2015**, 1776, 7-12	1
1516	Interface and Nanostructural Engineering of Low-cost, Efficient and Stable Perovskite Solar Cells. **2015**, 1771, 171-179	0
1515	The Effect of Titanium Oxide Substrate on the Film Morphology and Photoluminescence Properties of Organometal Halide Perovskites. **2015**, 1771, 181-185	

1514	Low temperature transferring of anodized TiO_2 nanotube-array onto a flexible substrate for dye-sensitized solar cells. **2015**, 5, 2754	6
1513	High Crystalline Quality Perovskite Thin Films Prepared by a Novel Hybrid Evaporation/CVD Technique. **2015**, 1771, 187-192	2
1512	High-efficiency tandem perovskite solar cells. **2015**, 40, 681-686	102
1511	Hole-transport material-free perovskite-based solar cells. **2015**, 40, 674-680	34
1510	Steps toward efficient inorganic□rganic hybrid perovskite solar cells. **2015**, 40, 648-653	28
1509	. **2015**,	
1508	Charge-Carrier Dynamics and Mobilities in Formamidinium Lead Mixed-Halide Perovskites. **2015**, 27, 7938-44	276
1507	Theory of Hydrogen Migration in Organic□norganic Halide Perovskites. **2015**, 127, 12614-12618	7
1506	Multifunctional Inverse Opal-Like TiO Electron Transport Layer for Efficient Hybrid Perovskite Solar Cells. **2015**, 2, 1500105	54
1505	Control of Emission Color of High Quantum Yield CHNHPbBr Perovskite Quantum Dots by Precipitation Temperature. **2015**, 2, 1500194	455
1504	Computational Assessment of the Performance of Lead Halide Perovskite Solar Cells Using Inorganic Layers as Hole Transport Materials. **2015**, 339-342	
1503	Rapid and robust spatiotemporal dynamics of the first-order phase transition in crystals of the organic-inorganic perovskite (C12H25NH3)2PbI4. **2015**, 5, 16634	25
1502	Effects of Niobium Addition into TiO2 Layers on CH3NH3PbI3-based Photovoltaic Devices. **2015**, 44, 1033-1035	20
1501	Methylammonium fragmentation in amines as source of localized trap levels and the healing role of Cl in hybrid lead-iodide perovskites. **2015**, 92,	53
1500	Silver Iodide Formation in Methyl Ammonium Lead Iodide Perovskite Solar Cells with Silver Top Electrodes. **2015**, 2, 1500195	500
1499	Design, Automation, and Test for Low-Power and Reliable Flexible Electronics. **2015**, 9, 99-210	5
1498	Perspectives of Nanostructured Metal Oxides and Their Heterostructures in Photoelectrochemical Water Splitting for Solar Hydrogen Production. **2015**, 457-495	
1497	Insight into Evolution, Processing and Performance of Multi-length-scale Structures in Planar Heterojunction Perovskite Solar Cells. **2015**, 5, 13657	32

1496	Direct Conversion of CH3NH3PbI3 from Electrodeposited PbO for Highly Efficient Planar Perovskite Solar Cells. **2015**, 5, 15889	72
1495	Electrodeposited Ultrathin TiO2 Blocking Layers for Efficient Perovskite Solar Cells. **2015**, 5, 16098	80
1494	Fabrication of efficient planar perovskite solar cells using a one-step chemical vapor deposition method. **2015**, 5, 14083	165
1493	Organometal Halide Perovskites for Photovoltaic Applications. **2015**, 535-566	7
1492	Direct Observation of Long Electron-Hole Diffusion Distance in CH3NH3PbI3 Perovskite Thin Film. **2015**, 5, 14485	156
1491	Biologically Templated Nanostructure Assemblies. **2015**, 1-19	
1490	Substrate-preheating Effects on PbI2Spin Coating for Perovskite Solar Cells via Sequential Deposition. **2015**, 44, 849-851	20
1489	Boosting of the Performance of Perovskite Solar Cells through Systematic Introduction of Reduced Graphene Oxide in TiO2Layers. **2015**, 44, 1410-1412	29
1488	An Effective TiO2 Blocking Layer for Perovskite Solar Cells with Enhanced Performance. **2015**, 44, 624-626	33
1487	Efficient and Environmentally Stable Perovskite Solar Cells Based on ZnO Electron Collection Layer. **2015**, 44, 610-612	65
1486	Determination of Chloride Content in Planar CH3NH3PbI3□Clx Solar Cells by Chemical Analysis. **2015**, 44, 1089-1091	29
1485	Stable Perovskite Solar Cells Based on WO3 Nanocrystals as Hole Transport Layer. **2015**, 44, 1140-1141	30
1484	Photocurrent Enhancement of Formamidinium Lead Trihalide Mesoscopic Perovskite Solar Cells with Large Size TiO2 Nanoparticles. **2015**, 44, 1619-1621	8
1483	Temperature Effects on the Photovoltaic Performance of Planar Structure Perovskite Solar Cells. **2015**, 44, 1557-1559	67
1482	Perovskite Photovoltaics: Rare Functions of Organo Lead Halide in Solar Cells and Optoelectronic Devices. **2015**, 44, 720-729	194
1481	Conversion efficiency improvement of inverted CH3NH3PbI3 perovskite solar cells with room temperature sputtered ZnO by adding the C60 interlayer. **2015**, 107, 253301	34
1480	Synthesis, structural and optical properties of perovskite type CH3NH3PbI3 nanorods. **2015**,	1
1479	Microstructures and properties of CH3NH3PbI3□Clx hybrid solar cells. **2015**,	8

1478	Effects of Different Solvents on the Planar Hetero-junction Perovskite Solar Cells. **2015**, 22, 05002	6
1477	Electronic structure and optical properties of Cs2AX2?X4 (A=Ge,Sn,Pb; X?,X=Cl,Br,I). **2015**, 5, 127224	17
1476	Self-regulation of charged defect compensation and formation energy pinning in semiconductors. **2015**, 5, 16977	33
1475	Intrinsic slow charge response in the perovskite solar cells: Electron and ion transport. **2015**, 107, 163901	33
1474	Structural phase transition causing anomalous photoluminescence behavior in perovskite (C6H11NH3)2[PbI4]. **2015**, 143, 224201	35
1473	Dye-sensitised and Perovskite Solar Cells as Indoor Energy Harvestors. **2015**, 28, 415-417	21
1472	Computational Assessment of the Performance of Lead Halide Perovskite Solar Cells Using Inorganic Layers as Hole Transport Materials. **2015**, 339-342	1
1471	Antiperovskite Chalco-Halides Ba3(FeS4)Cl, Ba3(FeS4)Br, and Ba3(FeSe4)Br with Spin Super-Super Exchange. **2015**, 5, 15910	9
1470	Stable and Efficient Perovskite Solar Cells Based on Titania Nanotube Arrays. **2015**, 11, 5533-9	69
1469	Improving the Extraction of Photogenerated Electrons with SnO2 Nanocolloids for Efficient Planar Perovskite Solar Cells. **2015**, 25, 7200-7207	163
1468	Efficient Perovskite Hybrid Solar Cells via Ionomer Interfacial Engineering. **2015**, 25, 6875-6884	48
1467	Efficient CH3 NH3 PbI3 Perovskite Solar Cells Employing Nanostructured p-Type NiO Electrode Formed by a Pulsed Laser Deposition. **2015**, 27, 4013-9	414
1466	High-Quality Mixed-Organic-Cation Perovskites from a Phase-Pure Non-stoichiometric Intermediate (FAI)1- x -PbI2 for Solar Cells. **2015**, 27, 4918-23	132
1465	Planar Heterojunction Perovskite Solar Cells Incorporating Metal-Organic Framework Nanocrystals. **2015**, 27, 7229-35	105
1464	Square-Centimeter Solution-Processed Planar CH3NH3PbI3 Perovskite Solar Cells with Efficiency Exceeding 15. **2015**, 27, 6363-70	272
1463	Polymer/Perovskite Amplifying Waveguides for Active Hybrid Silicon Photonics. **2015**, 27, 6157-62	67
1462	Beyond Efficiency: the Challenge of Stability in Mesoscopic Perovskite Solar Cells. **2015**, 5, 1501066	335
1461	A Smooth CH3NH3PbI3 Film via a New Approach for Forming the PbI2 Nanostructure Together with Strategically High CH3NH3I Concentration for High Efficient Planar-Heterojunction Solar Cells. **2015**, 5, 1501354	193

1442	Theory of hydrogen migration in organic-inorganic halide perovskites. **2015**, 54, 12437-41	112
1441	The Role of Oxygen in the Degradation of Methylammonium Lead Trihalide Perovskite Photoactive Layers. **2015**, 54, 8208-12	606
1440	Methylamine-Gas-Induced Defect-Healing Behavior of CH3NH3PbI3 Thin Films for Perovskite Solar Cells. **2015**, 54, 9705-9	326
1439	A Methoxydiphenylamine-Substituted Carbazole Twin Derivative: An Efficient Hole-Transporting Material for Perovskite Solar Cells. **2015**, 54, 11409-13	207
1438	Life Cycle Assessment of Titania Perovskite Solar Cell Technology for Sustainable Design and Manufacturing. **2015**, 8, 3882-91	50
1437	Flash-Assisted Processing of Highly Conductive Zinc Oxide Electrodes from Water. **2015**, 25, 7263-7271	22
1436	Charge Accumulation and Hysteresis in Perovskite-Based Solar Cells: An Electro-Optical Analysis. **2015**, 5, 1500829	196
1435	The Significance of Ion Conduction in a Hybrid Organic□Inorganic Lead-Iodide-Based Perovskite Photosensitizer. **2015**, 127, 8016-8021	122
1434	A Photoelectrochemical Solar Cell Consisting of a Cadmium Sulfide Photoanode and a Ruthenium□2,2?-Bipyridine Redox Shuttle in a Non-aqueous Electrolyte. **2015**, 127, 7988-7992	3
1433	Facile Synthesis of a Furan-Arylamine Hole-Transporting Material for High-Efficiency, Mesoscopic Perovskite Solar Cells. **2015**, 21, 15113-7	45
1432	Photoluminescence and electroluminescence imaging of perovskite solar cells. **2015**, 23, 1697-1705	57
1431	A promising unisource thermal evaporation for in situ fabrication of organolead halide perovskite CH3NH3PbI3 thin film. **2015**, 23, 1901-1907	27
1430	Solution-Processed Cu2O and CuO as Hole Transport Materials for Efficient Perovskite Solar Cells. **2015**, 11, 5528-32	352
1429	Recent Advances of Cobalt(II/III) Redox Couples for Dye-Sensitized Solar Cell Applications. **2015**, 15, 760-88	45
1428	The Role of Oxygen in the Degradation of Methylammonium Lead Trihalide Perovskite Photoactive Layers. **2015**, 127, 8326-8330	106
1427	Efficiency Records in Mesoscopic Dye-Sensitized Solar Cells. **2015**, 15, 803-28	36
1426	Understanding the Impact of Bromide on the Photovoltaic Performance of CH3 NH3 PbI3 Solar Cells. **2015**, 27, 7221-8	70
1425	Monolithic Perovskite-CIGS Tandem Solar Cells via In Situ Band Gap Engineering. **2015**, 5, 1500799	181

1424	Pseudohalide-Induced Moisture Tolerance in Perovskite CH3NH3Pb(SCN)2I Thin Films. **2015**, 127, 7727-7730	83
1423	Methylamine-Gas-Induced Defect-Healing Behavior of CH3NH3PbI3 Thin Films for Perovskite Solar Cells. **2015**, 127, 9841-9845	35
1422	Controllable Growth of Perovskite Films by Room-Temperature Air Exposure for Efficient Planar Heterojunction Photovoltaic Cells. **2015**, 127, 15075-15078	2
1421	A Photoelectrochemical Solar Cell Consisting of a Cadmium Sulfide Photoanode and a Ruthenium-2,2′-Bipyridine Redox Shuttle in a Non-aqueous Electrolyte. **2015**, 54, 7877-81	10
1420	One-Dimensional Self-Standing TiO Nanotube Array Layers Designed for Perovskite Solar Cell Applications. **2015**, 16, 2836-2841	26
1419	Hierarchically Structured Hole Transport Layers of Spiro-OMeTAD and Multiwalled Carbon Nanotubes for Perovskite Solar Cells. **2015**, 8, 2358-62	54
1418	Control and Study of the Stoichiometry in Evaporated Perovskite Solar Cells. **2015**, 8, 3847-52	49
1417	Controlled growth of PbI2 nanoplates for rapid preparation of CH3NH3PbI3 in planar perovskite solar cells. **2015**, 212, 2708-2717	55
1416	Efficient Hole Transporting Materials with Two or Four N,N-Di(4-methoxyphenyl)aminophenyl Arms on an Ethene Unit for Perovskite Solar Cells. **2015**, 21, 15919-23	33
1415	Unraveling the Reasons for Efficiency Loss in Perovskite Solar Cells. **2015**, 25, 3925-3933	114
1414	High-Performance Planar Solar Cells Based On CH3NH3PbI3-xClx Perovskites with Determined Chlorine Mole Fraction. **2015**, 25, 4867-4873	89
1413	Perovskite Microdisk Microlasers Self-Assembled from Solution. **2015**, 27, 3405-10	297
1412	Bismuth Based Hybrid Perovskites A3Bi2 I9 (A: Methylammonium or Cesium) for Solar Cell Application. **2015**, 27, 6806-13	807
1411	16.1% Efficient Hysteresis-Free Mesostructured Perovskite Solar Cells Based on Synergistically Improved ZnO Nanorod Arrays. **2015**, 5, 1500568	194
1410	Development of Active Organic and Polymeric Materials for Batteries and Solar Cells: Introduction to Essential Characterization Techniques. **2015**, 5, 1500858	13
1409	Formamidinium and Cesium Hybridization for Photo- and Moisture-Stable Perovskite Solar Cell. **2015**, 5, 1501310	1085
1408	Mechanically Recoverable and Highly Efficient Perovskite Solar Cells: Investigation of Intrinsic Flexibility of Organic□horganic Perovskite. **2015**, 5, 1501406	106
1407	Passive Solar Heating, Cooling, and Daylighting. **2015**, 1187-1260	

1406	Current-voltage characteristics of manganite-titanite perovskite junctions. **2015**, 6, 1467-84	14
1405	Fabrication and Characterization of a Perovskite-Type Solar Cell with a Substrate Size of 70 mm. **2015**, 5, 646-655	18
1404	Bifunctional Alkyl Chain Barriers for Efficient Perovskite Solar Cells. **2015**,	
1403	Fabrication of CH□NH□PbI□/PVP Composite Fibers via Electrospinning and Deposition. **2015**, 8, 5467-5478	19
1402	Material Exchange Property of Organo Lead Halide Perovskite with Hole-Transporting Materials. **2015**, 2, 1043-1053	16
1401	Transient Response of Organo-Metal-Halide Solar Cells Analyzed by Time-Resolved Current-Voltage Measurements. **2015**, 2, 1101-1115	13
1400	Stability Issues on Perovskite Solar Cells. **2015**, 2, 1139-1151	158
1399	Graphene-Based Materials for Photoanodes in Dye-Sensitized Solar Cells. **2015**, 3,	35
1398	Inorganic□Organic Perovskite Solar Cells. **2015**,	4
1397	Crystal Structures of CH3NH3PbI3 and Related Perovskite Compounds Used for Solar Cells. **2015**,	51
1396	Hybrid Organic-Inorganic Perovskites Open a New Era for Low-Cost, High Efficiency Solar Cells. **2015**, 2015, 1-10	14
1395	A Review of Electrospun Conductive Polyaniline Based Nanofiber Composites and Blends: Processing Features, Applications, and Future Directions. **2015**, 2015, 1-19	46
1394	Structural, Morphological, and Electron Transport Studies of Annealing Dependent In2O3 Dye-Sensitized Solar Cell. **2015**, 2015, 403848	15
1393	Perovskite Solar Cells: Potentials, Challenges, and Opportunities. **2015**, 2015, 1-13	47
1392	Development and Prospect of Nanoarchitectured Solar Cells. **2015**, 2015, 1-11	4
1391	. **2015**,	12
1390	The electronic structure of metal oxide/organo metal halide perovskite junctions in perovskite based solar cells. **2015**, 5, 8704	81
1389	Characterization of an abnormal photoluminescence behavior upon crystal-phase transition of perovskite CH3NH3PbI3. **2015**, 17, 16405-11	181

1388	Perovskite Quantum Dots Modeled Using ab Initio and Replica Exchange Molecular Dynamics. **2015**, 119, 13965-13971	25
1387	Vapor Phase Synthesis of Organometal Halide Perovskite Nanowires for Tunable Room-Temperature Nanolasers. **2015**, 15, 4571-7	361
1386	White-light-controlled resistive switching chearacteristics of TiO 2 /Cu 2 O composite nanorods array. **2015**, 457, 28-31	15
1385	PV glazing technologies. **2015**, 49, 306-322	114
1384	Novel planar heterostructure perovskite solar cells with CdS nanorods array as electron transport layer. **2015**, 140, 396-404	57
1383	Perovskite solar cell based on network nanoporous layer consisted of TiO2 nanowires and its interface optimization. **2015**, 290, 144-152	41
1382	Low-temperature solution-processed tin oxide as an alternative electron transporting layer for efficient perovskite solar cells. **2015**, 137, 6730-3	833
1381	Surface Treatment of the Compact TiO2 Layer for Efficient Planar Heterojunction Perovskite Solar Cells. **2015**, 44, 674-676	89
1380	High-Performance Flexible Perovskite Solar Cells by Using a Combination of Ultrasonic Spray-Coating and Low Thermal Budget Photonic Curing. **2015**, 2, 680-686	227
1379	SOLAR CELLS. High-performance photovoltaic perovskite layers fabricated through intramolecular exchange. **2015**, 348, 1234-7	4908
1378	Controllable Sequential Deposition of Planar CH□NH□PbI□Perovskite Films via Adjustable Volume Expansion. **2015**, 15, 3959-63	217
1377	Optical modelling data for room temperature optical properties of organic-inorganic lead halide perovskites. **2015**, 3, 201-8	12
1376	Enhanced Carrier Lifetimes of Pure Iodide Hybrid Perovskite via Vapor-Equilibrated Re-Growth (VERG). **2015**, 6, 2503-8	37
1375	Photoinduced Reversible Structural Transformations in Free-Standing CH3NH3PbI3 Perovskite Films. **2015**, 6, 2332-8	172
1374	Band Gap Tuning of CH□NH□Pb(Br(1-x)Clx)□Hybrid Perovskite for Blue Electroluminescence. **2015**, 7, 13119-24	278
1373	A computational view of the change in the geometric and electronic properties of perovskites caused by the partial substitution of Pb by Sn. **2015**, 17, 17679-87	37
1372	Annealing-induced chemical and structural changes in tri-iodide and mixed-halide organometal perovskite layers. **2015**, 3, 14195-14201	21
1371	Energy harvesting and storage devices fused into various patterns. **2015**, 3, 14977-14984	21

1370	Pinhole-free hole transport layers significantly improve the stability of MAPbI3-based perovskite solar cells under operating conditions. **2015**, 3, 15451-15456	101
1369	Study on hole-transport-material-free planar TiO2/CH3NH3PbI3 heterojunction solar cells: the simplest configuration of a working perovskite solar cell. **2015**, 3, 14902-14909	39
1368	Performance enhancement of perovskite solar cells with Mg-doped TiO2 compact film as the hole-blocking layer. **2015**, 106, 121104	146
1367	Critical parameters in TiO2/ZrO2/Carbon-based mesoscopic perovskite solar cell. **2015**, 293, 533-538	93
1366	The efficiency limit of CH3NH3PbI3 perovskite solar cells. **2015**, 106, 221104	374
1365	Growth of large CH3NH3PbX3 (X=I, Br) single crystals in solution. **2015**, 422, 75-79	46
1364	Halide-Dependent Electronic Structure of Organolead Perovskite Materials. **2015**, 27, 4405-4412	251
1363	A facile spray-assisted fabrication of homogenous flat CH3NH3PbI3 films for high performance mesostructure perovskite solar cells. **2015**, 157, 38-41	27
1362	Self-template-directed synthesis of porous perovskite nanowires at room temperature for high-performance visible-light photodetectors. **2015**, 54, 5693-6	176
1361	Organometallics and Related Molecules for Energy Conversion. **2015**,	3
1360	Substantial improvement of perovskite solar cells stability by pinhole-free hole transport layer with doping engineering. **2015**, 5, 9863	101
1359	Elucidating the reaction pathways in the synthesis of organolead trihalide perovskite for high-performance solar cells. **2015**, 5, 10557	45
1358	Earth-abundant Cu2SnSe3 thin film counter electrode for high-efficiency quantum dot-sensitized solar cells. **2015**, 292, 7-14	36
1357	Improving efficiency of planar hybrid CH 3 NH 3 PbI 3□x Cl x perovskite solar cells by isopropanol solvent treatment. **2015**, 24, 205-211	38
1356	Photonic-Plasmonic Devices Created by Templated Self-Assembly. **2015**, 6, 2112-3	1
1355	Origin of the Thermal Instability in CH3NH3PbI3 Thin Films Deposited on ZnO. **2015**, 27, 4229-4236	448
1354	Degradation mechanisms of dye-sensitized solar cells: Light, bias and temperature effects. **2015**,	2
1353	Free-standing flexible carbon electrode for highly efficient hole-conductor-free perovskite solar cells. **2015**, 93, 861-868	158

1352	Tunable Optical Properties and Charge Separation in CH3NH3Sn(x)Pb(1-x)I3/TiO2-Based Planar Perovskites Cells. **2015**, 137, 8227-36	109
1351	C60 as an Efficient n-Type Compact Layer in Perovskite Solar Cells. **2015**, 6, 2399-405	271
1350	Smooth perovskite thin films and efficient perovskite solar cells prepared by the hybrid deposition method. **2015**, 3, 14631-14641	108
1349	Simple Preparation of Fluorine-Doped TiO2 Photoanode for High Performance Dye Sensitized Solar Cells. **2015**, 173, 834-838	18
1348	Modification and Potential Applications of Organic□Inorganic Non-Siliceous Hybrid Materials. **2015**, 75-118	
1347	Templated microstructural growth of perovskite thin films via colloidal monolayer lithography. **2015**, 8, 2041-2047	94
1346	Temperature-assisted controlling morphology and charge transport property for highly efficient perovskite solar cells. **2015**, 15, 540-548	73
1345	Ruthenium-Based Photosensitizers for Dye-Sensitized Solar Cells. **2015**, 91-114	5
1344	Deposition of porous titanium oxide thin films as anode material for dye sensitized solar cells. **2015** , 114, 213-220	25
1343	Ferroelectric Polarization of CH3NH3PbI3: A Detailed Study Based on Density Functional Theory and Symmetry Mode Analysis. **2015**, 6, 2223-31	151
1342	Rational design of triazatruxene-based hole conductors for perovskite solar cells. **2015**, 5, 53426-53432	57
1341	2D Homologous Perovskites as Light-Absorbing Materials for Solar Cell Applications. **2015**, 137, 7843-50	1464
1340	Investigation of TiO 2 nanotubes/nanoparticles stacking sequences to improve power conversion efficiency of dye-sensitized solar cells. **2015**, 173, 665-671	15
1339	An up-scalable approach to CH3NH3PbI3 compact films for high-performance perovskite solar cells. **2015**, 15, 670-678	67
1338	Enhanced Performance of Perovskite CH3NH3PbI3 Solar Cell by Using CH3NH3I as Additive in Sequential Deposition. **2015**, 7, 12937-42	73
1337	Inverted planar NH2CH=NH2PbI3 perovskite solar cells with 13.56% efficiency via low temperature processing. **2015**, 17, 19745-50	65
1336	Wearable double-twisted fibrous perovskite solar cell. **2015**, 27, 3831-5	153
1335	Effects of Oxide Contact Layer on the Preparation and Properties of CH3NH3PbI3 for Perovskite Solar Cell Application. **2015**, 119, 14919-14928	74

1334	Mesoporous SnO2 single crystals as an effective electron collector for perovskite solar cells. **2015**, 17, 18265-8	74
1333	Spectroscopic ellipsometry studies of CH3NH3PbX3 thin films and their growth evolution. **2015**,	3
1332	Zero-dipole molecular organic cations in mixed organic-inorganic halide perovskites: possible chemical solution for the reported anomalous hysteresis in the current-voltage curve measurements. **2015**, 26, 442001	33
1331	Fast Crystallization and Improved Stability of Perovskite Solar Cells with Zn2SnO4 Electron Transporting Layer: Interface Matters. **2015**, 7, 28404-11	94
1330	Organic-Inorganic Hybrid Ternary Bulk Heterojunction of Nanostructured Perovskite-Low Bandgap Polymer-PCBM for Improved Efficiency of Organic Solar Cells. **2015**, 7, 28459-65	9
1329	Comparison between thin-film solar cells and copper indium gallium diselenide in Southeast Asia. **2015**, 9, 1079-1086	3
1328	Chemical Pathways Connecting Lead(II) Iodide and Perovskite via Polymeric Plumbate(II) Fiber. **2015**, 137, 15907-14	180
1327	DMSO-based PbI2 precursor with PbCl2 additive for highly efficient perovskite solar cells fabricated at low temperature. **2015**, 5, 104606-104611	23
1326	Mechanism of Charge Transfer and Recombination Dynamics in Organo Metal Halide Perovskites and Organic Electrodes, PCBM, and Spiro-OMeTAD: Role of Dark Carriers. **2015**, 137, 16043-8	85
1325	The electronic structure of sulvanite structured semiconductors Cu3MCh4 (M = V, Nb, Ta; Ch = S, Se, Te): prospects for optoelectronic applications. **2015**, 3, 12236-12244	33
1324	Perovskites: Solar cells & engineering applications materials and device developments. **2015**, 122, 678-699	90
1323	Annealing effects on high-performance CH3NH3PbI3 perovskite solar cells prepared by solution-process. **2015**, 122, 1047-1051	50
1322	Microstructures of Organometal Trihalide Perovskites for Solar Cells: Their Evolution from Solutions and Characterization. **2015**, 6, 4827-39	283
1321	Impact of Capacitive Effect and Ion Migration on the Hysteretic Behavior of Perovskite Solar Cells. **2015**, 6, 4693-700	285
1320	TiO2 quantum dots as superb compact block layers for high-performance CH3NH3PbI3 perovskite solar cells with an efficiency of 16.97. **2015**, 7, 20539-46	76
1319	Thickness of the hole transport layer in perovskite solar cells: performance versus reproducibility. **2015**, 5, 99356-99360	61
1318	Low cost spin coating fabrication of efficient Perovskite thin film layers. **2015**,	
1317	Effects of nanostructure on clean energy: big solutions gained from small features. **2015**, 60, 2083-2090	29

1316	Perovskite and a-Si:H/c-Si tandem solar cell. **2015**,		0
1315	Numerical analysis of nano-scale solar cells with surface states. **2015**,		
1314	. **2015**,		2
1313	Mechanically stacked and monolithically integrated perovskite/silicon tandems and the challenges for high efficiency. **2015**,		1
1312	Numerical analysis of hybrid perovskite solar cells using inorganic hole conducting material. **2015**,		2
1311	Low temperature two-step solution process for perovskite solar cells with planar structure. **2015**,		
1310	Spatially resolved characterization of solution processed perovskite solar cells using the LBIC technique. **2015**,		3
1309	Two-step sequential substrate vibration-assisted spray coating (SVASC) as a path to high performance perovskite solar cells. **2015**,		
1308	Thermodynamic regulation of CH3NH3PbI3 crystal growth and its effect on photovoltaic performance of perovskite solar cells. **2015**, 3, 19901-19906		78
1307	. **2015**,		2
1306	High efficient perovskite solar cells by employing zinc-phthalocyanine as hole transporting layer. **2015**,		2
1305	Perovskite solar cells: a comparison at ultrasonic spray and vacuum thermal deposition methods. **2015**,		
1304	Spray PEDOT:PSS coated perovskite with a transparent conducting electrode for low cost scalable photovoltaic devices. **2015**, 19, 482-487		9
1303	Efficient planar heterojunction solar cell employing CH3NH3PbI2+xCl1−xmixed halide perovskite utilizing modified sequential deposition. **2015**, 54, 092301		3
1302	Electronic and optical properties of mixed Sn–Pb organohalide perovskites: a first principles investigation. **2015**, 3, 9208-9215		156
1301	Chalcogenide perovskites for photovoltaics. **2015**, 15, 581-5		160
1300	Phenoxazine-Based Small Molecule Material for Efficient Perovskite Solar Cells and Bulk Heterojunction Organic Solar Cells. **2015**, 5, 1401720		97
1299	Compositional engineering of perovskite materials for high-performance solar cells. *Nature*, **2015**, 517, 476-80	50.4	4611

1298	Flexible Perovskite Photovoltaic Modules and Solar Cells Based on Atomic Layer Deposited Compact Layers and UV-Irradiated TiO2 Scaffolds on Plastic Substrates. **2015**, 5, 1401808	216
1297	Toward large scale roll-to-roll production of fully printed perovskite solar cells. **2015**, 27, 1241-7	684
1296	HPbI3: A New Precursor Compound for Highly Efficient Solution-Processed Perovskite Solar Cells. **2015**, 25, 1120-1126	263
1295	Addressing dynamic photovoltaic processes at electrode:active layer and donor:acceptor interfaces in organic solar cells under device-operating conditions. **2015**, 58, 239-247	5
1294	New generation solar cells: concepts, trends and perspectives. **2015**, 51, 3957-72	134
1293	Impact of Anionic Br Substitution on Open Circuit Voltage in Lead Free Perovskite (CsSnI3-xBrx) Solar Cells. **2015**, 119, 1763-1767	263
1292	Advancements in all-solid-state hybrid solar cells based on organometal halide perovskites. **2015**, 2, 378-405	102
1291	Classification of solar cells according to mechanisms of charge separation and charge collection. **2015**, 17, 4007-14	78
1290	Study of upscaling possibilities for antimony sulfide solid state sensitized solar cells. **2015**, 278, 404-410	9
1289	Development of lead iodide perovskite solar cells using three-dimensional titanium dioxide nanowire architectures. **2015**, 9, 564-72	113
1288	Understanding the rate-dependent J V hysteresis, slow time component, and aging in CH3NH3PbI3 perovskite solar cells: the role of a compensated electric field. **2015**, 8, 995-1004	998
1287	Vacuum-assisted thermal annealing of CH3NH3PbI3 for highly stable and efficient perovskite solar cells. **2015**, 9, 639-46	282
1286	Structure and function relationships in alkylammonium lead(II) iodide solar cells. **2015**, 3, 9201-9207	52
1285	Electronic Structures and Photoconversion Mechanism in Perovskite/Fullerene Heterojunctions. **2015**, 25, 1213-1218	81
1284	Phase transitions and dielectric properties of a hexagonal ABX3 perovskite-type organic-inorganic hybrid compound: [C3H4NS][CdBr3]. **2015**, 44, 10614-20	57
1283	Low noise, IR-blind organohalide perovskite photodiodes for visible light detection and imaging. **2015**, 27, 2060-4	233
1282	Lead-Halide Perovskite Solar Cells by CH3NH3I Dripping on PbI2-CH3NH3I-DMSO Precursor Layer for Planar and Porous Structures Using CuSCN Hole-Transporting Material. **2015**, 6, 881-6	73
1281	Development of Lab-to-Fab Production Equipment Across Several Length Scales for Printed Energy Technologies, Including Solar Cells. **2015**, 3, 293-304	59

1280	Organic–Inorganic Hybrid Lead Iodide Perovskite Featuring Zero Dipole Moment Guanidinium Cations: A Theoretical Analysis. **2015**, 119, 4694-4701	108
1279	Superior Photovoltaic Properties of Lead Halide Perovskites: Insights from First-Principles Theory. **2015**, 119, 5253-5264	186
1278	Nanocarbons for mesoscopic perovskite solar cells. **2015**, 3, 9020-9031	88
1277	Organometal Halide Perovskites: Bulk Low-Dimension Materials and Nanoparticles. **2015**, 32, 709-720	111
1276	Ultrathin Atomic Layer Deposited TiO2for Surface Passivation of Hydrothermally Grown 1D TiO2Nanorod Arrays for Efficient Solid-State Perovskite Solar Cells. **2015**, 27, 1541-1551	157
1275	Phosphonium Halides as Both Processing Additives and Interfacial Modifiers for High Performance Planar-Heterojunction Perovskite Solar Cells. **2015**, 11, 3344-50	78
1274	Dip-coating of poly(3,4-ethylenedioxythiophene):poly(styrenesulfonate) anodes for efficient polymer solar cells. **2015**, 578, 161-166	15
1273	Recent progress and perspective in solution-processed Interfacial materials for efficient and stable polymer and organometal perovskite solar cells. **2015**, 8, 1160-1189	637
1272	Loading of mesoporous titania films by CH3NH3PbI3 perovskite, single step vs. sequential deposition. **2015**, 51, 4603-6	61
1271	Chemical and Electronic Structure Characterization of Lead Halide Perovskites and Stability Behavior under Different Exposures—A Photoelectron Spectroscopy Investigation. **2015**, 27, 1720-1731	305
1270	Anomalously large interface charge in polarity-switchable photovoltaic devices: an indication of mobile ions in organic–inorganic halide perovskites. **2015**, 8, 1256-1260	186
1269	Shape evolution and single particle luminescence of organometal halide perovskite nanocrystals. **2015**, 9, 2948-59	219
1268	Copper/cuprous sulfide electrode: preparation and performance. **2015**, 58, 1039-1043	4
1267	Tuning perovskite morphology by polymer additive for high efficiency solar cell. **2015**, 7, 4955-61	254
1266	Photophysics of Organic–Inorganic Hybrid Lead Iodide Perovskite Single Crystals. **2015**, 25, 2378-2385	277
1265	A facile, solvent vapor-fumigation-induced, self-repair recrystallization of CH3NH3PbI3 films for high-performance perovskite solar cells. **2015**, 7, 5427-34	54
1264	Interfaces in perovskite solar cells. **2015**, 11, 2472-86	293
1263	Highly efficient perovskite solar cells with tunable structural color. **2015**, 15, 1698-702	240

1262	Influence of Air Annealing on High Efficiency Planar Structure Perovskite Solar Cells. **2015**, 27, 1597-1603	212
1261	Transforming Hybrid Organic Inorganic Perovskites by Rapid Halide Exchange. **2015**, 27, 2181-2188	158
1260	Functional tuning of organic dyes containing 2,7-carbazole and other electron-rich segments in the conjugation pathway. **2015**, 5, 17953-17966	18
1259	Enhanced photovoltaic performance of CH3NH3PbI3 perovskite solar cells through interfacial engineering using self-assembling monolayer. **2015**, 137, 2674-9	514
1258	Recent progress in enhancing solar-to-hydrogen efficiency. **2015**, 280, 649-666	88
1257	Organic□inorganic halide perovskite based solar cells □revolutionary progress in photovoltaics. **2015**, 2, 315-335	55
1256	M13 Virus-Enabled Synthesis of Titanium Dioxide Nanowires for Tunable Mesoporous Semiconducting Networks. **2015**, 27, 1531-1540	35
1255	Formation of thin films of organic-inorganic perovskites for high-efficiency solar cells. **2015**, 54, 3240-8	214
1254	Resonance Raman and excitation energy dependent charge transfer mechanism in halide-substituted hybrid perovskite solar cells. **2015**, 9, 2088-101	124
1253	Control of organic□inorganic halide perovskites in solid-state solar cells: a perspective. **2015**, 60, 405-418	37
1252	Unravelling the Effects of Cl Addition in Single Step CH3NH3PbI3 Perovskite Solar Cells. **2015**, 27, 2309-2314	81
1251	Efficient Perovskite Hybrid Solar Cells Through a Homogeneous High-Quality Organolead Iodide Layer. **2015**, 11, 3369-76	40
1250	Perovskite Solar Cells: Beyond Methylammonium Lead Iodide. **2015**, 6, 898-907	234
1249	Pathways for solar photovoltaics. **2015**, 8, 1200-1219	293
1248	Visible/Near-Infrared-Light-Induced H2 Production over g-C3N4 Co-sensitized by Organic Dye and Zinc Phthalocyanine Derivative. **2015**, 5, 504-510	171
1247	Low-Temperature Processed and Carbon-Based ZnO/CH3NH3PbI3/C Planar Heterojunction Perovskite Solar Cells. **2015**, 119, 4600-4605	132
1246	Exclusion of metal oxide by an RF sputtered Ti layer in flexible perovskite solar cells: energetic interface between a Ti layer and an organic charge transporting layer. **2015**, 44, 6439-48	27
1245	Effect of molecular-level insulation on the performance of a dye-sensitized solar cell: fluorescence studies in solid state. **2015**, 25, 59-68	5

1244	Ferroelectric Domain Wall Induced Band Gap Reduction and Charge Separation in Organometal Halide Perovskites. **2015**, 6, 693-9	258
1243	Near Infrared to Visible Electroluminescent Diodes Based on Organometallic Halide Perovskites: Structural and Optical Investigation. **2015**, 2, 349-354	119
1242	Methylammonium Lead Bromide Perovskite-Based Solar Cells by Vapor-Assisted Deposition. **2015**, 119, 3545-3549	195
1241	Investigation of CH3NH3PbI3 degradation rates and mechanisms in controlled humidity environments using in situ techniques. **2015**, 9, 1955-63	954
1240	Electrolytes in dye-sensitized solar cells. **2015**, 115, 2136-73	744
1239	The effect of external electric field on the performance of perovskite solar cells. **2015**, 18, 107-112	30
1238	Identifying the Optimum Morphology in High-Performance Perovskite Solar Cells. **2015**, 5, 1401775	57
1237	Solar cells. High-efficiency solution-processed perovskite solar cells with millimeter-scale grains. **2015**, 347, 522-5	2602
1236	Solar cells. Low trap-state density and long carrier diffusion in organolead trihalide perovskite single crystals. **2015**, 347, 519-22	3307
1235	Ultrasmooth organic-inorganic perovskite thin-film formation and crystallization for efficient planar heterojunction solar cells. **2015**, 6, 6142	695
1234	Growth, patterning and alignment of organolead iodide perovskite nanowires for optoelectronic devices. **2015**, 7, 4163-70	149
1233	Trap states in lead iodide perovskites. **2015**, 137, 2089-96	672
1232	Atomic layer deposition of undoped TiO2 exhibiting p-type conductivity. **2015**, 7, 5134-40	25
1231	Perovskite/polymer monolithic hybrid tandem solar cells utilizing a low-temperature, full solution process. **2015**, 2, 203-211	127
1230	Air-Stable and Solution-Processable Perovskite Photodetectors for Solar-Blind UV and Visible Light. **2015**, 6, 535-9	249
1229	Low-Temperature and Solution-Processed Amorphous WO(x) as Electron-Selective Layer for Perovskite Solar Cells. **2015**, 6, 755-9	195
1228	Co-adsorbents: a key component in efficient and robust dye-sensitized solar cells. **2015**, 8, 588-99	42
1227	A facile and low-cost fabrication of TiO2 compact layer for efficient perovskite solar cells. **2015**, 15, 574-579	29

1226	Atmospheric effects on the photovoltaic performance of hybrid perovskite solar cells. **2015**, 137, 6-14	101
1225	Investigation on regeneration kinetics at perovskite/oxide interface with scanning electrochemical microscopy. **2015**, 3, 9216-9222	17
1224	A power pack based on organometallic perovskite solar cell and supercapacitor. **2015**, 9, 1782-7	167
1223	Inverted planar heterojunction perovskite solar cells employing polymer as the electron conductor. **2015**, 7, 3994-9	87
1222	Efficient CH3NH3PbI3 Perovskite Solar Cells Based on Graphdiyne (GD)-Modified P3HT Hole-Transporting Material. **2015**, 5, 1401943	241
1221	High-performance graphene-based hole conductor-free perovskite solar cells: Schottky junction enhanced hole extraction and electron blocking. **2015**, 11, 2269-74	206
1220	Nickel sulfide counter electrodes enhanced by hydrosulphuric acid hydrothermal treatments for use in Pt-free dye-sensitized solar cells. **2015**, 155, 103-109	30
1219	Fabrication of metal-oxide-free CH3NH3PbI3 perovskite solar cells processed at low temperature. **2015**, 3, 3271-3275	147
1218	Efficiency enhancement by defect engineering in perovskite photovoltaic cells prepared using evaporated PbI2/CH3NH3I multilayers. **2015**, 3, 9223-9231	63
1217	Control of charge transport in the perovskite CH3 NH3 PbI3 thin film. **2015**, 16, 842-7	35
1216	Perovskite thin-film solar cell: excitation in photovoltaic science. **2015**, 58, 221-238	54
1215	Highly Flexible Aqueous Photovoltaic Elastomer Gels Derived from Sulfonated Block Ionomers. **2015**, 5, 1401941	19
1214	Uniform, stable, and efficient planar-heterojunction perovskite solar cells by facile low-pressure chemical vapor deposition under fully open-air conditions. **2015**, 7, 2708-14	155
1213	Raman Spectroscopy of Organic-Inorganic Halide Perovskites. **2015**, 6, 401-6	182
1212	The growth of TiO2 nanotubes from sputter-deposited Ti film on transparent conducting glass for photovoltaic applications. **2015**, 118, 17-25	20
1211	Upconversion enhancement of lanthanide-doped NaYF4 for quantum dot-sensitized solar cells. **2015**, 155, 357-363	30
1210	A molecular nematic liquid crystalline material for high-performance organic photovoltaics. **2015**, 6, 6013	455
1209	Making silicon solar cells in a green, low-hazardous, and inexpensive way. **2015**, 5, 9425-9431	6

1208	Additive to regulate the perovskite crystal film growth in planar heterojunction solar cells. **2015**, 106, 033901	116
1207	High performance organic-inorganic perovskite-optocoupler based on low-voltage and fast response perovskite compound photodetector. **2015**, 5, 7902	91
1206	Fluorene-based sensitizers with a phenothiazine donor: effect of mode of donor tethering on the performance of dye-sensitized solar cells. **2015**, 7, 2249-62	72
1205	Improvement of the humidity stability of organic□inorganic perovskite solar cells using ultrathin Al2O3 layers prepared by atomic layer deposition. **2015**, 3, 5360-5367	275
1204	High-gain and low-driving-voltage photodetectors based on organolead triiodide perovskites. **2015**, 27, 1912-8	491
1203	Electronic Structure of CH3NH3PbX3 Perovskites: Dependence on the Halide Moiety. **2015**, 119, 1818-1825	105
1202	Spontaneous Defect Annihilation in CH3NH3PbI3 Thin Films at Room Temperature Revealed by Time-Resolved Photoluminescence Spectroscopy. **2015**, 6, 482-6	72
1201	Facile preparation of organometallic perovskite films and high-efficiency solar cells using solid-state chemistry. **2015**, 8, 263-270	30
1200	Pressure-assisted CH3NH3PbI3 morphology reconstruction to improve the high performance of perovskite solar cells. **2015**, 3, 5289-5293	66
1199	Improving the Long-Term Stability of Perovskite Solar Cells with a Porous Al2O3 Buffer Layer. **2015**, 6, 432-7	301
1198	Flexible organo-metal halide perovskite solar cells on a Ti metal substrate. **2015**, 3, 4129-4133	77
1197	Theoretical limits of photovoltaics efficiency and possible improvements by intuitive approaches learned from photosynthesis and quantum coherence. **2015**, 43, 1073-1089	112
1196	Photoelectronic Responses in Solution-Processed Perovskite CH$_{bf 3}$ NH$_{bf 3}$PbI $_{bf 3}$ Solar Cells Studied by Photoluminescence and Photoabsorption Spectroscopy. **2015**, 5, 401-405	151
1195	Transformation of the excited state and photovoltaic efficiency of CH3NH3PbI3 perovskite upon controlled exposure to humidified air. **2015**, 137, 1530-8	972
1194	Fabrication of Planar Heterojunction Perovskite Solar Cells by Controlled Low-Pressure Vapor Annealing. **2015**, 6, 493-9	103
1193	Fast and low temperature growth of electron transport layers for efficient perovskite solar cells. **2015**, 3, 4909-4915	89
1192	Fully indium-free flexible Ag nanowires/ZnO:F composite transparent conductive electrodes with high haze. **2015**, 3, 5375-5384	112
1191	Comparative study of vapor- and solution-crystallized perovskite for planar heterojunction solar cells. **2015**, 7, 3382-8	54

1190	Efficient hybrid mesoscopic solar cells with morphology-controlled CH3NH3PbI3-xClx derived from two-step spin coating method. **2015**, 7, 2242-8	85
1189	Growth control of compact CH3NH3PbI3 thin films via enhanced solid-state precursor reaction for efficient planar perovskite solar cells. **2015**, 3, 9249-9256	118
1188	Size-Dependent Photon Emission from Organometal Halide Perovskite Nanocrystals Embedded in an Organic Matrix. **2015**, 6, 446-50	137
1187	Energy Level Offsets at Lead Halide Perovskite/Organic Hybrid Interfaces and Their Impacts on Charge Separation. **2015**, 2, 1400528	108
1186	Preparation of metal halide perovskite solar cells through a liquid droplet assisted method. **2015**, 3, 9257-9263	45
1185	Ultra-thin high efficiency semitransparent perovskite solar cells. **2015**, 13, 249-257	255
1184	New insights into organic-inorganic hybrid perovskite CH□NH□PbI□ nanoparticles. An experimental and theoretical study of doping in Pb□+ sites with Sn□+, Sr□+, Cd□+ and Ca□+. **2015**, 7, 6216-29	176
1183	First-principles calculations of phonons and Raman spectra in monoclinic CsSnCl3. **2015**, 91,	9
1182	Structural and electronic properties of organo-halide hybrid perovskites from ab initio molecular dynamics. **2015**, 17, 9394-409	116
1181	Morphology control of the perovskite films for efficient solar cells. **2015**, 44, 10582-93	136
1180	Dynamic interface charge governing the current-voltage hysteresis in perovskite solar cells. **2015**, 17, 9613-8	81
1179	Formation of organic□inorganic mixed halide perovskite films by thermal evaporation of PbCl2 and CH3NH3I compounds. **2015**, 5, 26175-26180	44
1178	Spatially separated charge densities of electrons and holes in organic-inorganic halide perovskites. **2015**, 117, 074901	12
1177	Giant photoluminescence blinking of perovskite nanocrystals reveals single-trap control of luminescence. **2015**, 15, 1603-8	159
1176	Novel Small Molecular Materials Based on Phenoxazine Core Unit for Efficient Bulk Heterojunction Organic Solar Cells and Perovskite Solar Cells. **2015**, 27, 1808-1814	91
1175	Role of morphology and crystallinity of nanorod and planar electron transport layers on the performance and long term durability of perovskite solar cells. **2015**, 283, 61-67	96
1174	Electroluminescence from Organometallic Lead Halide Perovskite-Conjugated Polymer Diodes. **2015**, 1, 1500008	55
1173	A theoretical perspective on charge transfer in photocatalysis. The example of Ir-based systems. **2015**, 304-305, 133-145	40

1172	Influence of the number of phenylethynyl units present in porphyrin sensitizer on its light harvesting and cell performance. **2015**, 41, 8713-8724	3
1171	Atmospheric influence upon crystallization and electronic disorder and its impact on the photophysical properties of organic-inorganic perovskite solar cells. **2015**, 9, 2311-20	152
1170	Spontaneous polarization behaviors in hybrid halide perovskite film. **2015**, 102, 51-54	14
1169	Improving the TiO2 electron transport layer in perovskite solar cells using acetylacetonate-based additives. **2015**, 3, 9108-9115	94
1168	Efficiencies of perovskite hybrid solar cells influenced by film thickness and morphology of CH3NH3PbI3□Clx layer. **2015**, 21, 19-26	49
1167	Roles of Fullerene-Based Interlayers in Enhancing the Performance of Organometal Perovskite Thin-Film Solar Cells. **2015**, 5, 1402321	255
1166	Interfacial control toward efficient and low-voltage perovskite light-emitting diodes. **2015**, 27, 2311-6	559
1165	Efficient light-emitting diodes based on nanocrystalline perovskite in a dielectric polymer matrix. **2015**, 15, 2640-4	565
1164	Perovskite solar cells: film formation and properties. **2015**, 3, 9032-9050	327
1163	Screening donor groups of organic dyes for dye-sensitized solar cells. **2015**, 5, 22892-22898	36
1162	Room temperature optical properties of organic□inorganic lead halide perovskites. **2015**, 137, 253-257	82
1161	Mesoporous SnO2 nanoparticle films as electron-transporting material in perovskite solar cells. **2015**, 5, 28424-28429	124
1160	Navigating Organo-Lead Halide Perovskite Phase Space via Nucleation Kinetics toward a Deeper Understanding of Perovskite Phase Transformations and Structure-Property Relationships. **2015**, 11, 3088-96	47
1159	Room-temperature crystallization of hybrid-perovskite thin films via solvent□solvent extraction for high-performance solar cells. **2015**, 3, 8178-8184	336
1158	Hot-Electron Injection in a Sandwiched TiOx□Au□TiOx Structure for High-Performance Planar Perovskite Solar Cells. **2015**, 5, 1500038	100
1157	Triple cathode buffer layers composed of PCBM, C60, and LiF for high-performance planar perovskite solar cells. **2015**, 7, 6230-7	114
1156	Many-body interactions in photo-excited lead iodide perovskite. **2015**, 3, 9285-9290	112
1155	Bifunctional alkyl chain barriers for efficient perovskite solar cells. **2015**, 51, 7047-50	119

1154	15.76% efficiency perovskite solar cells prepared under high relative humidity: importance of PbI2 morphology in two-step deposition of CH3NH3PbI3. **2015**, 3, 8808-8815	267
1153	Enhanced performance in hybrid perovskite solar cell by modification with spinel lithium titanate. **2015**, 3, 8882-8889	19
1152	Enhancing the photocurrent of perovskite solar cells via modification of the TiO2/CH3NH3PbI3 heterojunction interface with amino acid. **2015**, 3, 9133-9136	85
1151	Magnetic field effects in hybrid perovskite devices. **2015**, 11, 427-434	176
1150	Technische Chemie 2014. **2015**, 63, 354-363	
1149	Preparation of brookite titania quasi nanocubes and their application in dye-sensitized solar cells. **2015**, 3, 7453-7462	40
1148	Degradation observations of encapsulated planar CH3NH3PbI3 perovskite solar cells at high temperatures and humidity. **2015**, 3, 8139-8147	739
1147	Universal Efficiency Improvement in Organic Solar Cells Based on a Poly(3-hexylthiophene) Donor and an Indene-C60 Bisadduct Acceptor with Additional Donor Nanowires. **2015**, 16, 1217-22	4
1146	Indolocarbazole based small molecules: an efficient hole transporting material for perovskite solar cells. **2015**, 5, 55321-55327	37
1145	AgAl alloy electrode for efficient perovskite solar cells. **2015**, 5, 56037-56044	19
1144	17.6% stabilized efficiency in low-temperature processed planar perovskite solar cells. **2015**, 8, 2365-2370	281
1143	A low temperature gradual annealing scheme for achieving high performance perovskite solar cells with no hysteresis. **2015**, 3, 14424-14430	32
1142	Identifying the optimum thickness of electron transport layers for highly efficient perovskite planar solar cells. **2015**, 3, 16445-16452	70
1141	Plasmon-enhanced light energy conversion using gold nanostructured oxide semiconductor photoelectrodes. **2015**, 87, 547-555	2
1140	Bulk intermixing-type perovskite CH□NH□PbI□/TiO□nanorod hybrid solar cells. **2015**, 7, 14532-7	15
1139	Quasi Core/Shell Lead Sulfide/Graphene Quantum Dots for Bulk Heterojunction Solar Cells. **2015**, 119, 18886-18895	45
1138	Fabrication of Enhanced Electron Transport Layer by Laser Scanning Technology for Dye-sensitized Solar Cells. **2015**, 176, 1036-1043	3
1137	Hystersis mechanism in perovskite photovoltaic devices and its potential application for multi-bit memory devices. **2015**, 26, 208-212	24

1136	Thickness effects of ZnO thin film on the performance of tri-iodide perovskite absorber based photovoltaics. **2015**, 120, 117-122	35
1135	Investigation of ultra-thin titania films as hole-blocking contacts for organic photovoltaics. **2015**, 3, 17332-17343	8
1134	Light stability tests of methylammonium and formamidinium Pb-halide perovskites for solar cell applications. **2015**, 54, 08KF08	47
1133	Surface Charge Trapping in Organolead Halide Perovskites Explored by Single-Particle Photoluminescence Imaging. **2015**, 6, 3195-3201	95
1132	Mechanical properties of organic□inorganic halide perovskites, CH3NH3PbX3 (X = I, Br and Cl), by nanoindentation. **2015**, 3, 18450-18455	139
1131	Optimizing Composition and Morphology for Large-Grain Perovskite Solar Cells via Chemical Control. **2015**, 27, 5570-5576	78
1130	Charge carrier mobility in hybrid halide perovskites. **2015**, 5, 12746	219
1129	Molecular dynamics simulations of organohalide perovskite precursors: solvent effects in the formation of perovskite solar cells. **2015**, 17, 22770-7	23
1128	Plasmon-induced spatial electron transfer between single Au nanorods and ALD-coated TiO2: dependence on TiO2 thickness. **2015**, 51, 14373-6	16
1127	Air-processed, efficient CH3NH3PbI3□Clx perovskite solar cells with organic polymer PTB7 as a hole-transport layer. **2015**, 5, 66981-66987	28
1126	An Inexpensive Co-Intercalated Layered Double Hydroxide Composite with Electron Donor-Acceptor Character for Photoelectrochemical Water Splitting. **2015**, 5, 12170	14
1125	Efficient and low-temperature processed perovskite solar cells based on a cross-linkable hybrid interlayer. **2015**, 3, 18483-18491	50
1124	Hierarchically assembled nanostructures and their photovoltaic properties. **2015**, 40, 885-889	9
1123	Uncovering the Veil of the Degradation in Perovskite CH3NH3PbI3 upon Humidity Exposure: A First-Principles Study. **2015**, 6, 3289-3295	147
1122	Controllable Grain Morphology of Perovskite Absorber Film by Molecular Self-Assembly toward Efficient Solar Cell Exceeding 17%. **2015**, 137, 10399-405	314
1121	Formation of high-quality perovskite thin film for planar heterojunction solar cells. **2015**, 5, 69502-69508	15
1120	Three-step approach for computing band offsets and its application to inorganic ABX3 halide perovskites. **2015**, 92,	21
1119	Efficient planar perovskite solar cells with large fill factor and excellent stability. **2015**, 297, 53-58	51

1118	Non-wetting surface-driven high-aspect-ratio crystalline grain growth for efficient hybrid perovskite solar cells. **2015**, 6, 7747	1096
1117	Effect of surface composition on electronic properties of methylammonium lead iodide perovskite. **2015**, 1, 213-220	42
1116	High efficiency stable inverted perovskite solar cells without current hysteresis. **2015**, 8, 2725-2733	479
1115	Color tunable halide perovskite CH3NH3PbBr3□l emission via annealing. **2015**, 26, 260-264	13
1114	Solvent-assisted growth of organic□norganic hybrid perovskites with enhanced photovoltaic performances. **2015**, 143, 360-368	14
1113	Exploring Thermochromic Behavior of Hydrated Hybrid Perovskites in Solar Cells. **2015**, 6, 3180-3184	76
1112	Efficient Light Harvester Layer Prepared by Solid/Mist Interface Reaction for Perovskite Solar Cells. **2015**, 7, 16907-12	22
1111	Elucidating the role of disorder and free-carrier recombination kinetics in CH3NH3PbI3 perovskite films. **2015**, 6, 7903	112
1110	Interface engineering for high-performance perovskite hybrid solar cells. **2015**, 3, 19205-19217	127
1109	Additive regulated crystallization and film formation of CH3NH3PbI3□Brx for highly efficient planar-heterojunction solar cells. **2015**, 3, 18514-18520	44
1108	A tubular perovskite solar cell: improvement of charge separation at the perovskite/HTM interface. **2015**, 51, 14076-9	15
1107	Energetics and dynamics in organic-inorganic halide perovskite photovoltaics and light emitters. **2015**, 26, 342001	61
1106	Study on structure, thermal stabilization and light absorption of lead-bromide perovskite light harvesters. **2015**, 26, 8726-8731	7
1105	Ultrasound assisted bulk synthesis of CH3NH3PbI3 perovskite at room temperature. **2015**, 159, 87-89	22
1104	Crystallization Dynamics of Organolead Halide Perovskite by Real-Time X-ray Diffraction. **2015**, 15, 5630-4	70
1103	PbI2-Based Dipping-Controlled Material Conversion for Compact Layer Free Perovskite Solar Cells. **2015**, 7, 18156-62	60
1102	Role of temperature in the recombination reaction on dye-sensitized solar cells. **2015**, 17, 22699-710	26
1101	Photovoltaic performance and the energy landscape of CH3NH3PbI3. **2015**, 17, 22604-15	29

1100	Organometal Trihalide Perovskite Single Crystals: A Next Wave of Materials for 25% Efficiency Photovoltaics and Applications Beyond?. **2015**, 6, 3218-3227	179
1099	Ultrafast photoinduced dynamics of the organolead trihalide perovskite CH3NH3PbI3 on mesoporous TiO2 scaffolds in the 320-920 nm range. **2015**, 17, 19238-46	46
1098	Formamidinium tin-based perovskite with low Eg for photovoltaic applications. **2015**, 3, 14996-15000	338
1097	Large formamidinium lead trihalide perovskite solar cells using chemical vapor deposition with high reproducibility and tunable chlorine concentrations. **2015**, 3, 16097-16103	139
1096	Polyelectrolyte based hole-transporting materials for high performance solution processed planar perovskite solar cells. **2015**, 3, 15024-15029	83
1095	Hole-transport-material-free perovskite solar cells based on nanoporous gold back electrode. **2015**, 5, 58543-58548	18
1094	Hierarchical macro- and mesoporous assembly of metal oxide nanoparticles derived from metal-organic complex. **2015**, 217, 6-11	2
1093	Recent advances in flexible perovskite solar cells. **2015**, 51, 14696-707	71
1092	Theoretical Study of Light Trapping in Nanostructured Thin Film Solar Cells Using Wavelength-Scale Silver Particles. **2015**, 7, 14926-32	26
1091	A mesoporous nickel counter electrode for printable and reusable perovskite solar cells. **2015**, 7, 13363-8	51
1090	Effects of organic inorganic hybrid perovskite materials on the electronic properties and morphology of poly(3,4-ethylenedioxythiophene):poly(styrenesulfonate) and the photovoltaic performance of planar perovskite solar cells. **2015**, 3, 15897-15904	71
1089	Perovskite solar cell using a two-dimensional titania nanosheet thin film as the compact layer. **2015**, 7, 15117-22	17
1088	Perovskite Solar Cells with Near 100% Internal Quantum Efficiency Based on Large Single Crystalline Grains and Vertical Bulk Heterojunctions. **2015**, 137, 9210-3	210
1087	Improved stability of perovskite solar cells in ambient air by controlling the mesoporous layer. **2015**, 3, 16860-16866	75
1086	Characteristics of SnO2 nanofiber/TiO2 nanoparticle composite for dye-sensitized solar cells. **2015**, 5, 067134	32
1085	Transparent conducting oxide free backside illuminated perovskite solar cells. **2015**, 107, 013901	8
1084	Metal oxide semiconducting interfacial layers for photovoltaic and photocatalytic applications. **2015**, 4, 1	54
1083	Reversible Halide Exchange Reaction of Organometal Trihalide Perovskite Colloidal Nanocrystals for Full-Range Band Gap Tuning. **2015**, 15, 5191-9	359

1082	Efficient perovskite solar cells fabricated using an aqueous lead nitrate precursor. **2015**, 51, 13294-7	59
1081	A large grain size perovskite thin film with a dense structure for planar heterojunction solar cells via spray deposition under ambient conditions. **2015**, 5, 60562-60569	107
1080	Ionic transport in hybrid lead iodide perovskite solar cells. **2015**, 6, 7497	1649
1079	CH3NH3PbI3 and CH3NH3PbI3−xClx in Planar or Mesoporous Perovskite Solar Cells: Comprehensive Insight into the Dependence of Performance on Architecture. **2015**, 119, 15868-15873	59
1078	High-Efficiency Polycrystalline Thin Film Tandem Solar Cells. **2015**, 6, 2676-81	147
1077	Heterogeneous Charge Carrier Dynamics in Organic-Inorganic Hybrid Materials: Nanoscale Lateral and Depth-Dependent Variation of Recombination Rates in Methylammonium Lead Halide Perovskite Thin Films. **2015**, 15, 4799-807	119
1076	Abnormal crystal growth in CH3NH3PbI3−xClx using a multi-cycle solution coating process. **2015**, 8, 2464-2470	224
1075	Efficient fiber-shaped perovskite photovoltaics using silver nanowires as top electrode. **2015**, 3, 19310-19313	59
1074	High efficiency perovskite solar cells using a PCBM/ZnO double electron transport layer and a short air-aging step. **2015**, 26, 30-35	73
1073	Thin-Film Preparation and Characterization of Cs3Sb2I9: A Lead-Free Layered Perovskite Semiconductor. **2015**, 27, 5622-5632	489
1072	Infrared Spectroscopic Study of Vibrational Modes in Methylammonium Lead Halide Perovskites. **2015**, 6, 2913-8	231
1071	Controlling CH3NH3PbI(3-x)Cl(x) Film Morphology with Two-Step Annealing Method for Efficient Hybrid Perovskite Solar Cells. **2015**, 7, 16330-7	76
1070	Enhancing Stability of Perovskite Solar Cells to Moisture by the Facile Hydrophobic Passivation. **2015**, 7, 17330-6	249
1069	Hole transporting material-free and annealing-free thermal evaporated planar perovskite solar cells with an ultra-thin CH3NH3PbI3−xClX layer. **2015**, 26, 104-108	14
1068	Colloidal CuInS2 Quantum Dots as Inorganic Hole-Transporting Material in Perovskite Solar Cells. **2015**, 7, 17482-8	99
1067	Lead iodide perovskite light-emitting field-effect transistor. **2015**, 6, 7383	551
1066	Absorption Enhancement in Organic-Inorganic Halide Perovskite Films with Embedded Plasmonic Gold Nanoparticles. **2015**, 119, 18635-18640	89
1065	Growth and Anion Exchange Conversion of CH3NH3PbX3 Nanorod Arrays for Light-Emitting Diodes. **2015**, 15, 5519-24	296

1064 Excitons in ultrathin organic-inorganic perovskite crystals. **2015**, 92, 206

1063 Semitransparent Fully Air Processed Perovskite Solar Cells. **2015**, 7, 17776-81 65

1062 Hydrothermal synthesis of organometal halide perovskites for Li-ion batteries. **2015**, 51, 13787-90 92

1061 CH3NH3PbI(3-x)Cl(x) films with coverage approaching 100% and with highly oriented crystal domains for reproducible and efficient planar heterojunction perovskite solar cells. **2015**, 17, 22015-22 54

1060 Observable Hysteresis at Low Temperature in Hysteresis Free Organic–Inorganic Lead Halide Perovskite Solar Cells. **2015**, 6, 3190-3194 92

1059 Vertical TiO2 Nanorods as a Medium for Stable and High-Efficiency Perovskite Solar Modules. **2015**, 9, 8420-9 158

1058 Morphological control of organic–inorganic perovskite layers by hot isostatic pressing for efficient planar solar cells. **2015**, 3, 17780-17787 27

1057 ADA-type S,N-heteropentacene-based hole transport materials for dopant-free perovskite solar cells. **2015**, 3, 17738-17746 94

1056 Structural, optical, and electronic studies of wide-bandgap lead halide perovskites. **2015**, 3, 8839-8843 129

1055 Highly porous Zinc Stannate (Zn2SnO4) nanofibers scaffold photoelectrodes for efficient methyl ammonium halide perovskite solar cells. **2015**, 5, 11424 87

1054 Ultimate efficiency limit of single-junction perovskite and dual-junction perovskite/silicon two-terminal devices. **2015**, 54, 08KD04 36

1053 Study of planar heterojunction perovskite photovoltaic cells using compact titanium oxide by chemical bath deposition. **2015**, 54, 08KF02 5

1052 Quantum-dot-in-perovskite solids. *Nature*, **2015**, 523, 324-8 50.4 382

1051 Absorbance Studies of Perovskite CH3NH3PbI(3-x)Clx as Light Harvester in Solar Cell. **2015**, 1112, 282-285

1050 Perovskites for photovoltaics: a combined review of organic–inorganic halide perovskites and ferroelectric oxide perovskites. **2015**, 3, 18809-18828 186

1049 Exciton Binding Energy and the Nature of Emissive States in Organometal Halide Perovskites. **2015**, 6, 2969-75 171

1048 A multifunctional C + epoxy/Ag-paint cathode enables efficient and stable operation of perovskite solar cells in watery environments. **2015**, 3, 16430-16434 70

1047 Robust, metallic Pd17Se15 and Pd7Se4 phases from a single source precursor and their use as counter electrodes in dye sensitized solar cells. **2015**, 3, 17144-17153 31

1046	Towards design of metal oxide free perovskite solar cell paradigm: Materials processing and enhanced device performance. **2015**, 281, 599-605	6
1045	Under the spotlight: The organic–inorganic hybrid halide perovskite for optoelectronic applications. **2015**, 10, 355-396	700
1044	Methylammonium Rotational Dynamics in Lead Halide Perovskite by Classical Molecular Dynamics: The Role of Temperature. **2015**, 119, 17421-17428	200
1043	The optoelectronic role of chlorine in CH3NH3PbI3(Cl)-based perovskite solar cells. **2015**, 6, 7269	354
1042	Direct measurement of the exciton binding energy and effective masses for charge carriers in organic–inorganic tri-halide perovskites. **2015**, 11, 582-587	1282
1041	Ab Initio Molecular Dynamics Simulations of Methylammonium Lead Iodide Perovskite Degradation by Water. **2015**, 27, 4885-4892	323
1040	Effects of anodic aluminum oxide membrane on performance of nanostructured solar cells. **2015**, 2, 055001	2
1039	Recent progress in efficient hybrid lead halide perovskite solar cells. **2015**, 16, 036004	72
1038	Perovskite photovoltaics: Signs of stability. **2015**, 10, 574-5	64
1037	Direct insight into crystallization and stability of hybrid perovskite CH3NH3PbI3via solvothermal synthesis. **2015**, 3, 15854-15857	20
1036	Transparent conductive oxide-free perovskite solar cells with PEDOT:PSS as transparent electrode. **2015**, 7, 15314-20	169
1035	Highly Reproducible Perovskite Solar Cells with Average Efficiency of 18.3% and Best Efficiency of 19.7% Fabricated via Lewis Base Adduct of Lead(II) Iodide. **2015**, 137, 8696-9	1751
1034	Facile route to freestanding CH3NH3PbI3 crystals using inverse solubility. **2015**, 5, 11654	93
1033	Vacuum-free laminated top electrode with conductive tapes for scalable manufacturing of efficient perovskite solar cells. **2015**, 16, 47-53	30
1032	Facile Synthesis and High Performance of a New Carbazole-Based Hole-Transporting Material for Hybrid Perovskite Solar Cells. **2015**, 2, 849-855	91
1031	Lead Iodide Thin Film Crystallization Control for High-Performance and Stable Solution-Processed Perovskite Solar Cells. **2015**, 7, 14614-9	65
1030	Effect of Spectral Irradiance Variations on the Performance of Highly Efficient Environment-Friendly Solar Cells. **2015**, 5, 1150-1157	11
1029	Spatial and temporal imaging of long-range charge transport in perovskite thin films by ultrafast microscopy. **2015**, 6, 7471	225

1028	A two-layer structured PbI2 thin film for efficient planar perovskite solar cells. **2015**, 7, 12092-5	34
1027	Enhanced efficiency of planar-heterojunction perovskite solar cells through a thermal gradient annealing process. **2015**, 5, 58041-58045	10
1026	Iodide-reduced graphene oxide with dopant-free spiro-OMeTAD for ambient stable and high-efficiency perovskite solar cells. **2015**, 3, 15996-16004	120
1025	Efficient, durable and flexible perovskite photovoltaic devices with Ag-embedded ITO as the top electrode on a metal substrate. **2015**, 3, 14592-14597	57
1024	Photovoltaic behaviour of lead methylammonium triiodide perovskite solar cells down to 80 K. **2015**, 3, 11762-11767	118
1023	Precipitation of CH3NH3PbCl3 in CH3NH3PbI3 and Its Impact on Modulated Charge Separation. **2015**, 119, 9926-9933	41
1022	Spiro-thiophene derivatives as hole-transport materials for perovskite solar cells. **2015**, 3, 12139-12144	87
1021	A simple in situ tubular chemical vapor deposition processing of large-scale efficient perovskite solar cells and the research on their novel roll-over phenomenon in JV curves. **2015**, 3, 12443-12451	57
1020	A hybrid physical□chemical deposition process at ultra-low temperatures for high-performance perovskite solar cells. **2015**, 3, 12436-12442	45
1019	Stable and efficient hole transporting materials with a dimethylfluorenylamino moiety for perovskite solar cells. **2015**, 51, 9305-8	60
1018	Improved hole interfacial layer for planar perovskite solar cells with efficiency exceeding 15%. **2015**, 7, 9645-51	108
1017	Hybrid Perovskite Films by a New Variant of Pulsed Excimer Laser Deposition: A Room-Temperature Dry Process. **2015**, 119, 9177-9185	55
1016	Unipolar self-doping behavior in perovskite CH3NH3PbBr3. **2015**, 106, 103902	145
1015	Modular design of SPIRO-OMeTAD analogues as hole transport materials in solar cells. **2015**, 51, 8935-8	51
1014	Planar CH3NH3PbI3 Perovskite Solar Cells with Constant 17.2% Average Power Conversion Efficiency Irrespective of the Scan Rate. **2015**, 27, 3424-30	401
1013	A dopant-free organic hole transport material for efficient planar heterojunction perovskite solar cells. **2015**, 3, 11940-11947	182
1012	High-performance perovskite photoanode enabled by Ni passivation and catalysis. **2015**, 15, 3452-7	93
1011	Modeling Mesoporous Nanoparticulated TiO2 Films through Nanopolyhedra Random Packing. **2015**, 119, 10716-10726	3

1010	Efficient perovskite/fullerene planar heterojunction solar cells with enhanced charge extraction and suppressed charge recombination. **2015**, 7, 9771-8	93
1009	An Insight into Atmospheric Plasma Jet Modified ZnO Quantum Dots Thin Film for Flexible Perovskite Solar Cell: Optoelectronic Transient and Charge Trapping Studies. **2015**, 119, 10379-10390	62
1008	First principles study on the electronic and optical properties of B-site ordered double perovskite Sr2MMoO6 (M=Mg, Ca, and Zn). **2015**, 213-214, 19-23	13
1007	Mechanism of charge recombination in meso-structured organic-inorganic hybrid perovskite solar cells: A macroscopic perspective. **2015**, 117, 155504	15
1006	Efficient and stable planar heterojunction perovskite solar cells with an MoO3/PEDOT:PSS hole transporting layer. **2015**, 7, 9427-32	182
1005	Direct monitoring of ultrafast electron and hole dynamics in perovskite solar cells. **2015**, 17, 14674-84	124
1004	TiO2 nanofibers resembling 'yellow bristle grass' in morphology by a soft chemical transformation. **2015**, 44, 9637-45	12
1003	Thiols as interfacial modifiers to enhance the performance and stability of perovskite solar cells. **2015**, 7, 9443-7	159
1002	Revealing the role of organic cations in hybrid halide perovskite CH3NH3PbI3. **2015**, 6, 7026	489
1001	Enhanced photocurrent generation of bio-inspired graphene/ZnO composite films. **2015**, 3, 12016-12022	34
1000	High-Performance Fully Printable Perovskite Solar Cells via Blade-Coating Technique under the Ambient Condition. **2015**, 5, 1500328	257
999	Bias-dependent effects in planar perovskite solar cells based on CH3NH3PbI(3-x)Clx films. **2015**, 453, 9-14	11
998	Solar cells. Impact of microstructure on local carrier lifetime in perovskite solar cells. **2015**, 348, 683-6	1533
997	A dye-sensitized solar cell having polyaniline species in each component with 3.1%-efficiency. **2015**, 284, 178-185	20
996	Solution growth of single crystal methylammonium lead halide perovskite nanostructures for optoelectronic and photovoltaic applications. **2015**, 137, 5810-8	323
995	A simple spiro-type hole transporting material for efficient perovskite solar cells. **2015**, 8, 1986-1991	184
994	Insight into Perovskite Solar Cells Based on SnO2 Compact Electron-Selective Layer. **2015**, 119, 10212-10217	179
993	Ferroelectric Polarization in CH3NH3PbI3 Perovskite. **2015**, 6, 1729-35	165

992	Direct observation of an inhomogeneous chlorine distribution in CH3NH3PbI3−xClx layers: surface depletion and interface enrichment. **2015**, 8, 1609-1615	92
991	Origin of High Electronic Quality in Structurally Disordered CH3NH3PbI3 and the Passivation Effect of Cl and O at Grain Boundaries. **2015**, 1, 1500044	150
990	Perovskite photovoltaics: life-cycle assessment of energy and environmental impacts. **2015**, 8, 1953-1968	355
989	Laser-Scribing Patterning for the Production of Organometallic Halide Perovskite Solar Modules. **2015**, 5, 1087-1092	87
988	Improved photovoltaic performance of dye-sensitized solar cells by carbon-ion implantation of tri-layer titania film electrodes. **2015**, 34, 34-39	7
987	Non-aggregated Zn(ii)octa(2,6-diphenylphenoxy) phthalocyanine as a hole transporting material for efficient perovskite solar cells. **2015**, 44, 10847-51	76
986	Nonvolatile chlorinated additives adversely influence CH3NH3PbI3 based planar solar cells. **2015**, 3, 9137-9140	32
985	High-performance and high-durability perovskite photovoltaic devices prepared using ethylammonium iodide as an additive. **2015**, 3, 9271-9277	75
984	Ferroelectric solar cells based on inorganic–organic hybrid perovskites. **2015**, 3, 7699-7705	95
983	On the Role of Interfaces in Planar-Structured HC(NH2)2 PbI3 Perovskite Solar Cells. **2015**, 8, 2414-9	56
982	Magneto-optical studies on spin-dependent charge recombination and dissociation in perovskite solar cells. **2015**, 27, 2899-906	89
981	Nucleation and Crystal Growth of Organic-Inorganic Lead Halide Perovskites under Different Relative Humidity. **2015**, 7, 9110-7	113
980	Conical islands of TiO2 nanotube arrays in the photoelectrode of dye-sensitized solar cells. **2015**, 10, 63	11
979	Niobium Doping Effects on TiO2 Mesoscopic Electron Transport Layer-Based Perovskite Solar Cells. **2015**, 8, 2392-8	123
978	Recent Progress on Hole-Transporting Materials for Emerging Organometal Halide Perovskite Solar Cells. **2015**, 5, 1500213	376
977	Capacitive Dark Currents, Hysteresis, and Electrode Polarization in Lead Halide Perovskite Solar Cells. **2015**, 6, 1645-52	371
976	Thin Films of Dendritic Anatase Titania Nanowires Enable Effective Hole-Blocking and Efficient Light-Harvesting for High-Performance Mesoscopic Perovskite Solar Cells. **2015**, 25, 3264-3272	88
975	Two-dimensional inorganic-organic perovskite hexagonal nanosheets: growth and mechanism. **2015**,	

974	Sprayed P25 scaffolds for high-efficiency mesoscopic perovskite solar cells. **2015**, 51, 10306-9	13
973	Synthesis and characterizations of large surface tungsten oxide nanoparticles as a novel counter electrode for dye-sensitized solar cell. **2015**, 75, 487-494	21
972	One-step, low-temperature deposited perovskite solar cell utilizing small molecule additive. **2015**, 5, 057405	41
971	A dopant free linear acene derivative as a hole transport material for perovskite pigmented solar cells. **2015**, 8, 1816-1823	179
970	A step closer to the binary: the (1)(][Bi6I20](2-) anion. **2015**, 44, 10069-77	36
969	Nanocolumnar 1-dimensional TiO2 photoanodes deposited by PVD-OAD for perovskite solar cell fabrication. **2015**, 3, 13291-13298	24
968	Investigation on Interfacial Charge Transfer Process in CdSe x Te 1-x Alloyed Quantum Dot Sensitized Solar Cells. **2015**, 173, 156-163	32
967	Ferroelectric polarization driven optical absorption and charge carrier transport in CH3NH3PbI3/TiO2-based photovoltaic cells. **2015**, 291, 58-65	8
966	Impact of Processing Temperature and Composition on the Formation of Methylammonium Lead Iodide Perovskites. **2015**, 27, 4612-4619	184
965	High Efficiency and Robust Performance of Organo Lead Perovskite Solar Cells with Large Grain Absorbers Prepared in Ambient Air Conditions. **2015**, 44, 321-323	28
964	Planar perovskite solar cells with 15.75% power conversion efficiency by cathode and anode interfacial modification. **2015**, 3, 13533-13539	111
963	Chemical decoration of CH3NH3PbI3 perovskites with graphene oxides for photodetector applications. **2015**, 51, 9659-61	95
962	Research progress of perovskite materials in photocatalysis- and photovoltaics-related energy conversion and environmental treatment. **2015**, 44, 5371-408	580
961	Facile preparation of smooth perovskite films for efficient meso/planar hybrid structured perovskite solar cells. **2015**, 51, 10038-41	46
960	A highly efficient flexible dye-sensitized solar cell based on nickel sulfide/platinum/titanium counter electrode. **2015**, 10, 1	682
959	Improved photoelectrical performance of graphene supported highly crystallized anatase TiO2. **2015**, 120, 595-600	1
958	Origin of the high open circuit voltage in planar heterojunction perovskite solar cells: Role of the reduced bimolecular recombination. **2015**, 117, 095502	63
957	Pseudohalide-induced moisture tolerance in perovskite CH3 NH3 Pb(SCN)2 I thin films. **2015**, 54, 7617-20	233

956	Efficient Semitransparent Perovskite Solar Cells with Graphene Electrodes. **2015**, 27, 3632-8	387
955	Carbon nanomaterials for photovoltaic process. **2015**, 15, 490-522	41
954	Controlled thickness and morphology for highly efficient inverted planar heterojunction perovskite solar cells. **2015**, 7, 10699-707	20
953	Perovskite solar cells prepared by flash evaporation. **2015**, 51, 7376-8	81
952	A versatile binder-free TiO2 paste for dye-sensitized solar cells. **2015**, 5, 29513-29523	6
951	Self-Powered Electronics by Integration of Flexible Solid-State Graphene-Based Supercapacitors with High Performance Perovskite Hybrid Solar Cells. **2015**, 25, 2420-2427	115
950	A 2-terminal perovskite/silicon multijunction solar cell enabled by a silicon tunnel junction. **2015**, 106, 121105	371
949	Exciton versus free carrier photogeneration in organometal trihalide perovskites probed by broadband ultrafast polarization memory dynamics. **2015**, 114, 116601	103
948	Resolving Weak Light of Sub-picowatt per Square Centimeter by Hybrid Perovskite Photodetectors Enabled by Noise Reduction. **2015**, 27, 2804-10	381
947	Unraveling the Effect of PbI2 Concentration on Charge Recombination Kinetics in Perovskite Solar Cells. **2015**, 2, 589-594	86
946	Optoelectronic Studies of Methylammonium Lead Iodide Perovskite Solar Cells with Mesoporous TiO□Separation of Electronic and Chemical Charge Storage, Understanding Two Recombination Lifetimes, and the Evolution of Band Offsets during J-V Hysteresis. **2015**, 137, 5087-99	227
945	A Closer Look into Two-Step Perovskite Conversion with X-ray Scattering. **2015**, 6, 1265-9	83
944	Best Practices in Perovskite Solar Cell Efficiency Measurements. Avoiding the Error of Making Bad Cells Look Good. **2015**, 6, 852-7	245
943	Study on the correlations between the structure and photoelectric properties of CH3NH3PbI3 perovskite light-harvesting material. **2015**, 285, 349-353	25
942	Stabilization of the Trigonal High-Temperature Phase of Formamidinium Lead Iodide. **2015**, 6, 1249-53	389
941	A fluorescent quenching performance enhancing principle for carbon nanodot-sensitized aqueous solar cells. **2015**, 13, 124-130	29
940	Efficient hole-blocking layer-free planar halide perovskite thin-film solar cells. **2015**, 6, 6700	314
939	Inverted perovskite solar cells with inserted cross-linked electron-blocking interlayers for performance enhancement. **2015**, 3, 9291-9297	37

938	High-performance hole-transporting layer-free conventional perovskite/fullerene heterojunction thin-film solar cells. **2015**, 3, 9128-9132	48
937	Self-Template-Directed Synthesis of Porous Perovskite Nanowires at Room Temperature for High-Performance Visible-Light Photodetectors. **2015**, 127, 5785-5788	42
936	Crown-ether functionalized fullerene as a solution-processable cathode buffer layer for high performance perovskite and polymer solar cells. **2015**, 3, 9278-9284	59
935	Highly efficient, flexible, indium-free perovskite solar cells employing metallic substrates. **2015**, 3, 9141-9145	119
934	Optical absorption, charge separation and recombination dynamics in Sn/Pb cocktail perovskite solar cells and their relationships to photovoltaic performances. **2015**, 3, 9308-9316	74
933	Hole selective NiO contact for efficient perovskite solar cells with carbon electrode. **2015**, 15, 2402-8	357
932	Completely transparent conducting oxide-free and flexible dye-sensitized solar cells fabricated on plastic substrates. **2015**, 9, 3760-71	86
931	Improved hole-transporting property via HAT-CN for perovskite solar cells without lithium salts. **2015**, 7, 6406-11	31
930	Charge selective contacts, mobile ions and anomalous hysteresis in organic–inorganic perovskite solar cells. **2015**, 2, 315-322	338
929	The effect of carbon black in carbon counter electrode for CH3NH3PbI3/TiO2 heterojunction solar cells. **2015**, 5, 30192-30196	34
928	High intrinsic carrier mobility and photon absorption in the perovskite CH3NH3PbI3. **2015**, 17, 11516-20	128
927	CH3NH3PbI3 from non-iodide lead salts for perovskite solar cells via the formation of PbI2. **2015**, 17, 10369-72	20
926	Improved environmental stability of organic lead trihalide perovskite-based photoactive-layers in the presence of mesoporous TiO2. **2015**, 3, 7219-7223	99
925	High-Performance Planar Perovskite Optoelectronic Devices: A Morphological and Interfacial Control by Polar Solvent Treatment. **2015**, 27, 3492-500	187
924	A low cost azomethine-based hole transporting material for perovskite photovoltaics. **2015**, 3, 12159-12162	214
923	Perovskite-fullerene hybrid materials suppress hysteresis in planar diodes. **2015**, 6, 7081	815
922	Atomic-Scale Derivatives of Solid-State Materials. **2015**, 27, 3549-3559	10
921	Effect of morphology of ZnO nanowire arrays on photovoltaic and electron transport properties of DSSC. **2015**, 81, 012046	4

920	A scalable electrodeposition route to the low-cost, versatile and controllable fabrication of perovskite solar cells. **2015**, 15, 216-226	160
919	Study of chemical reactivity in relation to experimental parameters of efficiency in coumarin derivatives for dye sensitized solar cells using DFT. **2015**, 17, 14122-9	39
918	An "all-in-one" mesh-typed integrated energy unit for both photoelectric conversion and energy storage in uniform electrochemical system. **2015**, 13, 670-678	47
917	Fundamental physics behind high-efficiency organo-metal halide perovskite solar cells. **2015**, 3, 15372-15385	99
916	Interface structure between titania and perovskite materials observed by quartz crystal microbalance system. **2015**, 5, 057410	21
915	Outdoor Performance and Stability under Elevated Temperatures and Long-Term Light Soaking of Triple-Layer Mesoporous Perovskite Photovoltaics. **2015**, 3, 551-555	300
914	Recent Progress of Innovative Perovskite Hybrid Solar Cells. **2015**, 55, 966-977	30
913	Nanophotonic front electrodes for perovskite solar cells. **2015**, 106, 173101	45
912	CuSCN-Based Inverted Planar Perovskite Solar Cell with an Average PCE of 15.6%. **2015**, 15, 3723-8	434
911	Highly efficient and stable planar heterojunction perovskite solar cells via a low temperature solution process. **2015**, 3, 12133-12138	81
910	Metal-halide perovskites for photovoltaic and light-emitting devices. **2015**, 10, 391-402	2083
909	Structural alternation of tandem dye-sensitized solar cells based on mesh-type of counter electrode. **2015**, 179, 206-210	4
908	Hysteresis-free and highly stable perovskite solar cells produced via a chlorine-mediated interdiffusion method. **2015**, 3, 12081-12088	112
907	Hybrid germanium iodide perovskite semiconductors: active lone pairs, structural distortions, direct and indirect energy gaps, and strong nonlinear optical properties. **2015**, 137, 6804-19	528
906	Emerging Thin-Film Photovoltaic Technologies. **2015**, 87, 376-389	11
905	The mechanism of slow hot-hole cooling in lead-iodide perovskite: first-principles calculation on carrier lifetime from electron-phonon interaction. **2015**, 15, 3103-8	121
904	Interfacial Charge Transfer Anisotropy in Polycrystalline Lead Iodide Perovskite Films. **2015**, 6, 1396-402	112
903	Thermally-activated recombination in one component of (CH3NH3)PbI3/TiO2 observed by photocurrent spectroscopy. **2015**, 51, 7309-12	3

902	Alternating precursor layer deposition for highly stable perovskite films towards efficient solar cells using vacuum deposition. **2015**, 3, 9401-9405	121
901	Hysteresis-less inverted CH3NH3PbI3 planar perovskite hybrid solar cells with 18.1% power conversion efficiency. **2015**, 8, 1602-1608	973
900	Controlled Oriented Attachment of Bipyramidal-Shaped Anatase TiO and Their Enhanced Performance in Dye-Sensitized Solar Cells. **2015**, 80, 805-809	7
899	Solid-State Physics Perspective on Hybrid Perovskite Semiconductors. **2015**, 119, 10161-10177	175
898	Front Matter. **2015**, I-XXVIII	
897	Radically grown obelisk-like ZnO arrays for perovskite solar cell fibers and fabrics through a mild solution process. **2015**, 3, 9406-9410	62
896	The expanding world of hybrid perovskites: materials properties and emerging applications. **2015**, 5, 7-26	105
895	Exact analytical analysis of current density□oltage curves of dye-sensitized solar cells. **2015**, 115, 390-395	11
894	Investigation of perovskite-sensitized nanoporous titanium dioxide photoanodes with different thicknesses in perovskite solar cells. **2015**, 286, 118-123	68
893	Hybrid halide perovskite solar cell precursors: colloidal chemistry and coordination engineering behind device processing for high efficiency. **2015**, 137, 4460-8	481
892	Light Harvesting and Charge Recombination in CH3NH3PbI3 Perovskite Solar Cells Studied by Hole Transport Layer Thickness Variation. **2015**, 9, 4200-9	167
891	Interfacial Electron Transfer Barrier at Compact TiO2 /CH3 NH3 PbI3 Heterojunction. **2015**, 11, 3606-13	168
890	Understanding the low-loss mechanism of general organic□norganic perovskites from first-principles calculation. **2015**, 627, 13-19	10
889	A facile solvothermal growth of single crystal mixed halide perovskite CH3NH3Pb(Br(1-x)Cl(x))3. **2015**, 51, 7820-3	114
888	Performance enhancement of perovskite-sensitized mesoscopic solar cells using Nb-doped TiO2 compact layer. **2015**, 8, 1997-2003	88
887	Modified deposition process of electron transport layer for efficient inverted planar perovskite solar cells. **2015**, 51, 8986-9	24
886	Efficient Solution-Processed Bulk Heterojunction Perovskite Hybrid Solar Cells. **2015**, 5, 1402024	90
885	Low-temperature SnO2-based electron selective contact for efficient and stable perovskite solar cells. **2015**, 3, 10837-10844	272

884	Interface band structure engineering by ferroelectric polarization in perovskite solar cells. **2015**, 13, 582-591	93
883	Supercharging Silicon Solar Cell Performance by Means of Multijunction Concept. **2015**, 5, 968-976	64
882	Multifunctional MgO Layer in Perovskite Solar Cells. **2015**, 16, 1727-32	60
881	A combined single crystal neutron/X-ray diffraction and solid-state nuclear magnetic resonance study of the hybrid perovskites CH3NH3PbX3 (X = I, Br and Cl). **2015**, 3, 9298-9307	216
880	Perovskite-Based Solar Cells With Nickel-Oxidized Nickel Oxide Hole Transfer Layer. **2015**, 62, 1590-1595	23
879	Hierarchical iβ and iα porous heterojunction in planar perovskite solar cells. **2015**, 3, 10526-10535	13
878	Effects of Molecular Configuration on Charge Diffusion Kinetics within Hole-Transporting Materials for Perovskites Solar Cells. **2015**, 119, 8584-8590	34
877	Lead halide perovskite nanowire lasers with low lasing thresholds and high quality factors. **2015**, 14, 636-42	1984
876	Hysteretic Behavior upon Light Soaking in Perovskite Solar Cells Prepared via Modified Vapor-Assisted Solution Process. **2015**, 7, 9066-71	73
875	Boosting the efficiency of quantum dot sensitized solar cells up to 7.11% through simultaneous engineering of photocathode and photoanode. **2015**, 13, 609-619	71
874	Photonic design of embedded dielectric scatterers for dye sensitized solar cells. **2015**, 5, 33098-33104	9
873	50 nm sized spherical TiO2 nanocrystals for highly efficient mesoscopic perovskite solar cells. **2015**, 7, 8898-906	62
872	Green light-emitting diode from bromine based organic-inorganic halide perovskite. **2015**, 58, 186-191	54
871	Transition from the Tetragonal to Cubic Phase of Organohalide Perovskite: The Role of Chlorine in Crystal Formation of CH3NH3PbI3 on TiO2 Substrates. **2015**, 6, 4379-84	79
870	Kinetics of Ion Transport in Perovskite Active Layers and Its Implications for Active Layer Stability. **2015**, 137, 13130-7	308
869	The analysis of different PV power systems for the determination of optimal PV panels and system installation□A case study in Kahramanmaras, Turkey. **2015**, 52, 1015-1024	29
868	Atomically thin two-dimensional organic-inorganic hybrid perovskites. **2015**, 349, 1518-21	959
867	Metal electrode-free perovskite solar cells with transfer-laminated conducting polymer electrode. **2015**, 23, A83-91	47

866	Visualizing Carrier Diffusion in Individual Single-Crystal Organolead Halide Perovskite Nanowires and Nanoplates. **2015**, 137, 12458-61	159
865	Degradation by Exposure of Coevaporated CH3NH3PbI3 Thin Films. **2015**, 119, 23996-24002	95
864	First-principles study of trimethylamine adsorption on anatase TiO2 nanorod surfaces. **2015**, 134, 1	7
863	ZnO cathode buffer layers for inverted polymer solar cells. **2015**, 8, 3442-3476	222
862	Morphology-controlled CH3NH3PbI3 films by hexane-assisted one-step solution deposition for hybrid perovskite mesoscopic solar cells with high reproductivity. **2015**, 3, 22839-22845	45
861	Bath temperature and deposition potential dependences of CuSCN nanorod arrays prepared by electrochemical deposition. **2015**, 50, 7866-7874	9
860	Minimizing energy losses in perovskite solar cells using plasma-treated transparent conducting layers. **2015**, 593, 10-16	16
859	An electron beam evaporated TiO2 layer for high efficiency planar perovskite solar cells on flexible polyethylene terephthalate substrates. **2015**, 3, 22824-22829	105
858	Fast-growing procedure for perovskite films in planar heterojunction perovskite solar cells. **2015**, 26, 1518-1521	16
857	Performance enhancement of planar heterojunction perovskite solar cells by n-doping of the electron transporting layer. **2015**, 51, 17413-6	65
856	High efficiency flexible perovskite solar cells using superior low temperature TiO2. **2015**, 8, 3208-3214	457
855	Active terahertz device based on optically controlled organometal halide perovskite. **2015**, 107, 093301	32
854	Working Mechanism for Flexible Perovskite Solar Cells with Simplified Architecture. **2015**, 15, 6514-20	82
853	Intracellular imaging: Resolution power. **2015**, 14, 966	
852	Room-temperature, solution-processable organic electron extraction layer for high-performance planar heterojunction perovskite solar cells. **2015**, 7, 17343-9	62
851	Cubic structure of the mixed halide perovskite CH3NH3PbI3⊠Clx via thermal annealing. **2015**, 5, 85480-85485	17
850	Managing Carrier Lifetime and Doping Property of Lead Halide Perovskite by Postannealing Processes for Highly Efficient Perovskite Solar Cells. **2015**, 119, 22812-22819	100
849	The role of printing techniques for large-area dye sensitized solar cells. **2015**, 30, 104003	65

848	Refractive index and extinction coefficient of CH_3NH_3PbI_3 studied by spectroscopic ellipsometry. **2015**, 5, 29	106
847	Superior Optical Properties of Perovskite Nanocrystals as Single Photon Emitters. **2015**, 9, 12410-6	234
846	TiO2 nanoparticle-based electron transport layer with improved wettability for efficient planar-heterojunction perovskite solar cell. **2015**, 24, 717-721	13
845	A repeated interdiffusion method for efficient planar formamidinium perovskite solar cells. **2015**, 24, 707-711	17
844	A novel phenoxazine-based hole transport material for efficient perovskite solar cell. **2015**, 24, 698-706	20
843	Characterization of Perovskite Obtained from Two-Step Deposition on Mesoporous Titania. **2015**, 7, 25770-6	55
842	Interface and Composition Analysis on Perovskite Solar Cells. **2015**, 7, 26176-83	99
841	Mesoporous scaffolds based on TiO2 nanorods and nanoparticles for efficient hybrid perovskite solar cells. **2015**, 3, 24315-24321	22
840	Electrochemical grafting of TiO2-based photo-anodes and its effect in dye-sensitized solar cells. **2015**, 758, 85-92	12
839	Efficient Luminescence from Perovskite Quantum Dot Solids. **2015**, 7, 25007-13	401
838	A general fabrication procedure for efficient and stable planar perovskite solar cells: Morphological and interfacial control by in-situ-generated layered perovskite. **2015**, 18, 165-175	73
837	Retrograde solubility of formamidinium and methylammonium lead halide perovskites enabling rapid single crystal growth. **2015**, 51, 17658-61	266
836	Theoretical limit of power conversion efficiency for organic and hybrid halide perovskite photovoltaics. **2015**, 54, 08KF04	12
835	Flexible and Semitransparent Organolead Triiodide Perovskite Network Photodetector Arrays with High Stability. **2015**, 15, 7963-9	237
834	Effects of annealing temperature of tin oxide electron selective layers on the performance of perovskite solar cells. **2015**, 3, 24163-24168	154
833	Engineering of hole-selective contact for low temperature-processed carbon counter electrode-based perovskite solar cells. **2015**, 3, 24272-24280	68
832	Hysteresis-free multi-walled carbon nanotube-based perovskite solar cells with a high fill factor. **2015**, 3, 24226-24231	180
831	Efficient fully-vacuum-processed perovskite solar cells using copper phthalocyanine as hole selective layers. **2015**, 3, 23888-23894	136

830	Perovskite Crystals for Tunable White Light Emission. **2015**, 27, 8066-8075	327
829	Improving the efficiency of perovskite solar cells through optimization of the CH3NH3PbI3 film growth in solution process method. **2015**, 359, 560-566	36
828	Goldschmidt's Rules and Strontium Replacement in Lead Halogen Perovskite Solar Cells: Theory and Preliminary Experiments on CH3NH3SrI3. **2015**, 119, 25673-25683	169
827	Functional p-Type, Polymerized Organic Electrode Interlayer in CH□NH□PbI□Perovskite/Fullerene Planar Heterojunction Hybrid Solar Cells. **2015**, 7, 24973-81	30
826	High-performance perovskite solar cells fabricated by vapor deposition with optimized PbI2 precursor films. **2015**, 5, 95847-95853	15
825	Encapsulation for improving the lifetime of flexible perovskite solar cells. **2015**, 18, 118-125	186
824	Spectrum-Dependent Spiro-OMeTAD Oxidization Mechanism in Perovskite Solar Cells. **2015**, 7, 24791-8	127
823	Pushing efficiency limits for semitransparent perovskite solar cells. **2015**, 3, 24071-24081	85
822	Improvement of CH□NH□PbI□Formation for Efficient and Better Reproducible Mesoscopic Perovskite Solar Cells. **2015**, 7, 24726-32	42
821	Exploration of charge transfer and absorption spectra of porphyrin□polyoxometalate hybrids to search for high performance sensitizers. **2015**, 5, 93659-93665	4
820	(CH3NH3)2Pb(SCN)2I2: a more stable structural motif for hybrid halide photovoltaics?. **2015**, 6, 4594-8	100
819	Two different mechanisms of CH3NH3PbI3 film formation in one-step deposition and its effect on photovoltaic properties of OPV-type perovskite solar cells. **2015**, 3, 23964-23972	68
818	Efficient and stable large-area perovskite solar cells with inorganic charge extraction layers. **2015**, 350, 944-8	1732
817	Chlorine doping reduces electron-hole recombination in lead iodide perovskites: time-domain ab initio analysis. **2015**, 6, 4463-9	96
816	A new method for improving the performance of dye sensitized solar cell using macro-porous silicon as photoanode. **2015**, 22, 1617-1626	10
815	First-Principles Study of Ion Diffusion in Perovskite Solar Cell Sensitizers. **2015**, 137, 10048-51	456
814	Fabrication and Properties of High-Efficiency Perovskite/PCBM Organic Solar Cells. **2015**, 10, 1020	51
813	Low surface recombination velocity in solution-grown CH3NH3PbBr3 perovskite single crystal. **2015**, 6, 7961	329

812	Hole-conductor-free planar perovskite solar cells with 16.0% efficiency. **2015**, 3, 18389-18394	73
811	Theoretical and experimental study of earth-abundant solar cell materials. **2015**,	
810	Subphthalocyanine as hole transporting material for perovskite solar cells. **2015**, 5, 69813-69818	40
809	The impact of precursor water content on solution-processed organometal halide perovskite films and solar cells. **2015**, 3, 19123-19128	51
808	Interfacial electronic structure at the CH3NH3PbI3/MoOx interface. **2015**, 106, 193903	139
807	The influence of different mask aperture on the open-circuit voltage measurement of perovskite solar cells. **2015**, 7, 043104	12
806	Dependence of device performance on the thickness of compact TiO2 layer in perovskite/TiO2 planar heterojunction solar cells. **2015**, 7, 043105	26
805	Reliable solution processed planar perovskite hybrid solar cells with large-area uniformity by chloroform soaking and spin rinsing induced surface precipitation. **2015**, 5, 087125	12
804	Hydrolysis preparation of the compact TiO2layer using metastable TiCl4isopropanol/water solution for inorganic□rganic hybrid heterojunction perovskite solar cells. **2015**, 36, 074003	13
803	Dynamic Optical Properties of CH□NH□PbI□Single Crystals As Revealed by One- and Two-Photon Excited Photoluminescence Measurements. **2015**, 137, 10456-9	270
802	Stable semi-transparent CH3NH3PbI3 planar sandwich solar cells. **2015**, 8, 2922-2927	94
801	Large-scale aligned crystalline CH3NH3PbI3 perovskite array films. **2015**, 3, 18847-18851	18
800	Ab initio design of CsSn(XxY 1□)3 (X and Y = Cl, Br, and I) perovskites for photovoltaics. **2015**, 5, 077158	8
799	Organic Solar Cells. **2015**, 75-100	
798	GW Band Structures and Carrier Effective Masses of CH3NH3PbI3 and Hypothetical Perovskites of the Type APbI3: A = NH4, PH4, AsH4, and SbH4. **2015**, 119, 25209-25219	113
797	The Significance of Ion Conduction in a Hybrid Organic-Inorganic Lead-Iodide-Based Perovskite Photosensitizer. **2015**, 54, 7905-10	372
796	Theoretical insights into multibandgap hybrid perovskites for photovoltaic applications. **2015**,	
795	Tailoring solar energy spectrum for efficient organic/inorganic hybrid solar cells by up-conversion luminescence nanophosphors. **2015**, 182, 416-423	9

794	Interfacial engineering of self-assembled monolayer modified semi-roll-to-roll planar heterojunction perovskite solar cells on flexible substrates. **2015**, 3, 24254-24260	115
793	Copper iodide as inorganic hole conductor for perovskite solar cells with different thickness of mesoporous layer and hole transport layer. **2015**, 357, 2234-2240	46
792	A modified sequential method used to prepare high quality perovskite on ZnO nanorods. **2015**, 639, 283-288	24
791	Microstructural and electrical properties of CuAlO2 ceramic prepared by a novel solvent-free ester elimination process. **2015**, 653, 219-227	13
790	Effect of Anatase Synthesis on the Performance of Dye-Sensitized Solar Cells. **2015**, 10, 991	12
789	Characterization of low-frequency excess noise in perovskite-based photovoltaic cells. **2015**,	
788	Simple Triphenylamine-Based Hole-Transporting Materials for Perovskite Solar Cells. **2015**, 182, 733-741	51
787	In-situ fabrication of dual porous titanium dioxide films as anode for carbon cathode based perovskite solar cell. **2015**, 24, 736-743	21
786	Effect of temperature on the efficiency of organometallic perovskite solar cells. **2015**, 24, 729-735	42
785	Antisolvent diffusion-induced growth, equilibrium behaviours in aqueous solution and optical properties of CH3NH3PbI3 single crystals for photovoltaic applications. **2015**, 5, 85344-85349	27
784	High efficiency methylammonium lead triiodide perovskite solar cells: the relevance of non-stoichiometric precursors. **2015**, 8, 3550-3556	335
783	Intrinsic Thermal Instability of Methylammonium Lead Trihalide Perovskite. **2015**, 5, 1500477	1386
782	Trap-limited charge recombination in intrinsic perovskite film and meso-superstructured perovskite solar cells and the passivation effect of the hole-transport material on trap states. **2015**, 17, 29501-6	32
781	Lead-free germanium iodide perovskite materials for photovoltaic applications. **2015**, 3, 23829-23832	569
780	Reduced Graphene Oxide/Mesoporous TiO2 Nanocomposite Based Perovskite Solar Cells. **2015**, 7, 23521-6	153
779	Chlorine Incorporation for Enhanced Performance of Planar Perovskite Solar Cell Based on Lead Acetate Precursor. **2015**, 7, 23110-6	102
778	Wafer-scale growth of large arrays of perovskite microplate crystals for functional electronics and optoelectronics. **2015**, 1, e1500613	226
777	Determination of Thermal Expansion Coefficients and Locating the Temperature-Induced Phase Transition in Methylammonium Lead Perovskites Using X-ray Diffraction. **2015**, 54, 10678-85	164

776	Multiscale morphology design of hybrid halide perovskites through a polymeric template. **2015**, 7, 18956-63	67
775	Highly luminescent perovskite□luminum oxide composites. **2015**, 3, 11286-11289	54
774	The role of photonics in energy. **2015**, 5, 050997	11
773	The simulation of physical mechanism for HTM-free perovskite organic lead iodide planar heterojunction solar cells. **2015**, 17, 105904	20
772	Visible-light activation of TiO2 photocatalysts: Advances in theory and experiments. **2015**, 25, 1-29	679
771	Doping of TiO2 for sensitized solar cells. **2015**, 44, 8326-49	268
770	Efficiently photo-charging lithium-ion battery by perovskite solar cell. **2015**, 6, 8103	208
769	A new route for visible/near-infrared-light-driven H2 production over titania: Co-sensitization of surface charge transfer complex and zinc phthalocyanine. **2015**, 298, 30-37	27
768	Solvent engineering of spin-coating solutions for planar-structured high-efficiency perovskite solar cells. **2015**, 36, 1183-1190	37
767	Flexible high power-per-weight perovskite solar cells with chromium oxide-metal contacts for improved stability in air. **2015**, 14, 1032-9	652
766	Perovskite photovoltaics: Hovering solar cells. **2015**, 14, 964-6	15
765	Epitaxial 1D electron transport layers for high-performance perovskite solar cells. **2015**, 7, 15284-90	44
764	Stability of Organic Cations in Solution-Processed CH3NH3PbI3 Perovskites: Formation of Modified Surface Layers. **2015**, 119, 21329-21335	70
763	Copper oxide as inorganic hole transport material for lead halide perovskite based solar cells. **2015**, 120, 370-380	157
762	Antagonism between Spin-Orbit Coupling and Steric Effects Causes Anomalous Band Gap Evolution in the Perovskite Photovoltaic Materials CH3NH3Sn1-xPbxI3. **2015**, 6, 3503-9	160
761	Highly Efficient Flexible Perovskite Solar Cells with Antireflection and Self-Cleaning Nanostructures. **2015**, 9, 10287-95	274
760	Pressure-Induced Phase Transformation, Reversible Amorphization, and Anomalous Visible Light Response in Organolead Bromide Perovskite. **2015**, 137, 11144-9	226
759	Efficient charge-transport in hybrid lead iodide perovskite solar cells. **2015**, 44, 16914-22	17

758	Low-cost solution-processed copper iodide as an alternative to PEDOT:PSS hole transport layer for efficient and stable inverted planar heterojunction perovskite solar cells. **2015**, 3, 19353-19359	191
757	Technical and economic assessment of perovskite solar cells for large scale manufacturing. **2015**, 7, 043120	32
756	Tracking the formation of methylammonium lead triiodide perovskite. **2015**, 107, 061904	67
755	Improved charge transport and injection in a meso-superstructured solar cell by a tractable pre-spin-coating process. **2015**, 17, 24092-7	12
754	Anodized aluminumsilicon alloy counter electrode substrates for next generation solar cell applications. **2015**, 356, 317-324	9
753	Highly narrowband perovskite single-crystal photodetectors enabled by surface-charge recombination. **2015**, 9, 679-686	944
752	Low-Temperature High-Mobility Amorphous IZO for Silicon Heterojunction Solar Cells. **2015**, 5, 1340-1347	85
751	Consecutive Morphology Controlling Operations for Highly Reproducible Mesostructured Perovskite Solar Cells. **2015**, 7, 20707-13	39
750	Reduced surface defects of organometallic perovskite by thermal annealing for highly efficient perovskite solar cells. **2015**, 5, 75622-75629	58
749	Smooth CH3NH3PbI3 from controlled solidgas reaction for photovoltaic applications. **2015**, 5, 73760-73766	16
748	Highly stable and efficient solid-state solar cells based on methylammonium lead bromide (CH3NH3PbBr3) perovskite quantum dots. **2015**, 7, e208-e208	105
747	Effect of solvents on the growth of TiO2 nanorods and their perovskite solar cells. **2015**, 3, 19476-19482	59
746	Efficient Perovskite Hybrid Solar Cells via Controllable Crystallization Film Morphology. **2015**, 5, 1402-1407	4
745	Highly efficient perovskite solar cells based on mechanically durable molybdenum cathode. **2015**, 17, 131-139	35
744	Cupric bromide hybrid perovskite heterojunction solar cells. **2015**, 209, 247-250	75
743	Perovskite solar cells: Crystal crosslinking. **2015**, 7, 684-5	22
742	Improved performance and stability of perovskite solar cells by crystal crosslinking with alkylphosphonic acid ammonium chlorides. **2015**, 7, 703-11	898
741	Revealing the role of Pb(2+) in the stability of organic-inorganic hybrid perovskite CH3NH3Pb1-xCdxI3: an experimental and theoretical study. **2015**, 17, 23886-96	33

740	Influence of the Synthetic Procedures on the Structural and Optical Properties of Mixed-Halide (Br, I) Perovskite Films. **2015**, 119, 21304-21313	65
739	Ionic Charge Transfer Complex Induced Visible Light Harvesting and Photocharge Generation in Perovskite. **2015**, 7, 20280-4	17
738	Efficient, symmetric oligomer hole transporting materials with different cores for high performance perovskite solar cells. **2015**, 51, 15506-9	23
737	Influence of halide precursor type and its composition on the electronic properties of vacuum deposited perovskite films. **2015**, 17, 24342-8	35
736	High-performance inverted planar perovskite solar cells without a hole transport layer via a solution process under ambient conditions. **2015**, 3, 19294-19298	30
735	A simple approach for the fabrication of perovskite solar cells in air. **2015**, 297, 504-510	55
734	Solvent-Mediated Crystallization of CH3NH3SnI3 Films for Heterojunction Depleted Perovskite Solar Cells. **2015**, 137, 11445-52	455
733	Effect of Cs+ and K+ incorporation on the charge carrier lifetime, device performance and stability in perovskite solar cells. **2021**, 236, 111512	0
732	Metal-Halide Perovskite-based edge emitting lasers.	2
731	Efficient and Stable Carbon-Based CsPbIBr2 Perovskite Solar Cells by 4-Aminomethyltetrahydropyran Acetate Modification. 2101463	1
730	Optimizing the Aspect Ratio of Nanopatterned Mesoporous TiO Thin-Film Layer to Improve Energy Conversion Efficiency of Perovskite Solar Cells. **2021**, 22,	3
729	Insights into the Adsorption of Water and Oxygen on the Cubic CsPbBr3 Surfaces: A First-Principle Study.	
728	Roll-to-roll manufacturing toward lab-to-fab-translation of perovskite solar cells. **2021**, 9, 110901	4
727	Formamidinium post-dripping on methylammonium lead iodide to achieve stable and efficient perovskite solar cells.	0
726	High-efficiency perovskite photovoltaic modules achieved via cesium doping. **2021**, 431, 133713	3
725	Unraveling the Role of Chloride in Vertical Growth of Low-Dimensional Ruddlesden-Popper Perovskites for Efficient Perovskite Solar Cells. **2021**,	0
724	Hole transporting materials in inorganic CsPbI3Br solar cells: Fundamentals, criteria and opportunities. **2021**,	3
723	The hybrid halide perovskite: Synthesis strategies, fabrications, and modern applications. **2021**,	2

722	The evolution and future of metal halide perovskite-based optoelectronic devices. **2021**, 4, 3814-3834	6
721	Recent Advances and Perspectives of Photostability for Halide Perovskite Solar Cells. 2101822	5
720	Field-Effect Control in Hole Transport Layer Composed of Li:NiO/NiO for Highly Efficient Inverted Planar Perovskite Solar Cells. 2101562	1
719	Solution-processed bulk heterojunction broadband photodetectors based on perovskites incorporated with PbSe quantum dots. **2021**, 106410	0
718	Intercalating-Organic-Cation-Induced Stability Bowing in Quasi-2D Metal-Halide Perovskites. 70-77	5
717	Efficient and stable perovskite solar cells doped by cesium acetate. **2021**, 230, 979-985	0
716	Dephosphinylative [4 + 2] Benzannulation of Phosphinyl Ynamines: Application to the Modular Synthesis of Polycyclic Aromatic Amines. **2021**,	1
715	Film Fabrication of Perovskites and their Derivatives for Photovoltaic Applications via Chemical Vapor Deposition.	1
714	Universal Dynamic Liquid Interface for Healing Perovskite Solar Cells.	
713	Recent Development of Optoelectronic Application Based on Metal Halide Perovskite Nanocrystals.. **2021**, 9, 822106	1
712	Stretchable Photodetectors Based on Electrospun Polymer/Perovskite Composite Nanofibers.	3
711	The impact of annealing process on the grain morphology and performance of mesoporous n-i-p carbon-based perovskite solar cells. **2022**, 12, 015007	1
710	Effects of Preheating Treatments on the Performance of Perovskite Solar Cells. **2022**, 2160, 012036	
709	Novel Compositional Engineering for ~26% Efficient CZTS-Perovskite Tandem Solar Cell. **2022**, 253, 168568	4
708	The Effect of Energy Level of Transport Layer on the Performance of Ambient Air Prepared Perovskite Solar Cell: A SCAPS-1D Simulation Study. **2022**, 12, 68	2
707	Size-tunable MoS2 nanosheets for controlling crystal morphology and residual stress in sequential-deposited perovskite solar cells over 22.5% efficiency.	3
706	Self-Driving Perovskite Dember Photodetectors. 2101821	2
705	Developments on Perovskite Solar Cells (PSCs): A Critical Review. **2022**, 12, 672	2

704	Mesoporous Trap of Molecular Sieves via Water-Selective Capture for Stable Perovskite Quantum Dots.	
703	Ab-initio study of lead-free double Perovskites Cs2AgZBr6 (Z = Bi, Sb) for Solar cells and other renewable energy applications. **2022**, 306, 122781	2
702	Unravelling the effect of defect density, grain boundary and gradient doping in an efficient lead-free formamidinium perovskite solar cell. **2022**, 124, 111952	2
701	Perovskite/P3HT graded heterojunction by an additive-assisted method for high-efficiency perovskite solar cells with carbon electrodes. **2022**, 635, 128072	1
700	One-body style photo-supercapacitors based on Ni(OH)2/TiO2 heterojunction array: High specific capacitance and ultra-fast charge/discharge response. **2022**, 521, 230920	3
699	Dicyanamide-perovskites at the edge of dense hybrid organic□inorganic materials. **2022**, 455, 214337	2
698	DFT study on the crystal structure, optoelectronic, and thermoelectric properties of lead-free inorganic A2PdBr6 (A = K, Rb, and Cs) perovskites. **2022**, 30, 103061	0
697	Praseodymium-doped triple-cation perovskite layer for enhanced photovoltaic performance. **2022**, 307, 122826	1
696	Recent progress in perovskite solar cells: challenges from efficiency to stability. **2022**, 23, 100686	6
695	Cs2AgBiBr6-based heterojunction photodetector for weak-light imaging application. **2022**, 29, 101705	1
694	Chlorine-terminated MXene quantum dots for improving crystallinity and moisture stability in high-performance perovskite solar cells. **2022**, 432, 134382	6
693	A short review on progress in perovskite solar cells. **2022**, 149, 111700	6
692	Review of current progress in hole-transporting materials for perovskite solar cells. **2022**, 68, 330-386	7
691	A novel and facile synthesis strategy for highly stable cesium lead halide nanowires.. **2021**, 11, 28716-28722	2
690	Facile Surface Homojunction Reconstruction in Halide Perovskite Solar Cells.	
689	Improving Device Performance of MaPbI 3 Photovoltaic Cells by Manipulating the Crystal Orientation of Tetragonal Perovskites.	
688	Superatom-Based Ferroelectrics. **2021**, 257-275	
687	The effect of mechanically milled lead iodide powder on perovskite film morphology. **2022**, 128,	0

686	Stable Lead-Free Blue-Emitting Cs 3 Cu 2 Br 5 Single Crystal with Self-Trap Exciton Emission for Optoelectronics. 2100289	3
685	Effects of Defect on Work Function and Energy Alignment of PbI2: Implications for Solar Cell Applications. **2022**, 34, 1020-1029	0
684	Solution-processed light-induced multilevel non-volatile wearable memory device based on CsPbBr perovskite.. **2022**,	2
683	Progress and Challenges of SnO 2 Electron Transport Layer for Perovskite Solar Cells: A Critical Review. 2100983	4
682	Numerical Simulation of Lead-Free Sn-Based Perovskite Solar Cell by Using SCAPS-1D. **2021**, 12, 92	2
681	Self-charging supercapacitors for smart electronic devices: a concise review on the recent trends and future sustainability. **2022**, 57, 4399-4440	3
680	Suppressing Residual Lead Iodide and Defects in Sequential-Deposited Perovskite Solar Cell via Bidentate Potassium Dichloroacetate Ligand.. **2022**,	3
679	Recent Advances in Organic and Organic–Inorganic Hybrid Materials for Piezoelectric Mechanical Energy Harvesting. 2109492	12
678	Light Emission Enhancement of (CHN)PbMnBr Metal-Halide Powders by the Dielectric Confinement Effect of a Nanosized Water Layer.. **2022**,	2
677	First principles study of electronic, optical, and thermoelectric properties of K2Pd (Cl/Br)6 for solar cells and renewable energy. **2022**, 97, 035803	1
676	Ab initio study of structural and optical properties of the halide perovskite KBX3 compound. 1	0
675	Effect of Iodine Octahedral Rotations on Dipole Ordering in Organic–Inorganic Hybrid Perovskite CH3NH3PbI3. **2022**, 126, 779-785	0
674	Vacuum Quenching for Large-Area Perovskite Film Deposition.. **2022**,	4
673	1,8-Octanediamine Dihydroiodide-Mediated Grain Boundary and Interface Passivation in Two-Step-Processed Perovskite Solar Cells. 2100960	2
672	Crystal-array-assisted growth of perovskite absorption layer for efficient and stable solar cell.	16
671	An Acetylene-Linked 9,9?-Bicarbazole-Based Hole-Transporting Material for Efficient Perovskite Solar Cells.	1
670	Semitransparent organic solar cells: from molecular design to structure–performance relationships. **2021**, 10, 13-43	3
669	Oxide free materials for perovskite solar cells. **2022**, 287-306	1

668	A high-efficiency and stable perovskite solar cell fabricated in ambient air using a polyaniline passivation layer.. **2022**, 12, 697	1
667	Dithiol surface treatment towards improved charge transfer dynamic and reduced lead leakage in lead halide perovskite solar cells.	5
666	A review on two-dimensional (2D) perovskite material-based solar cells to enhance the power conversion efficiency. **2021**,	3
665	Fully Scalable and Stable CsPbIBr Solar Cells Realized by an All-Spray-Coating Process.. **2022**,	4
664	Enhancement of perovskite solar cell performance by external down-conversion of Eu-complex film.	0
663	Interface Engineering of Pb‐Sn Low-Bandgap Perovskite Solar Cells for Improved Efficiency and Stability. 2100945	0
662	Deeper Insight into the Role of Organic Ammonium Cations in Reducing Surface Defects of the Perovskite Film.. **2022**,	3
661	Deeper Insight into the Role of Organic Ammonium Cations in Reducing Surface Defects of the Perovskite Film.	0
660	Patterning All-Inorganic Halide Perovskite with Adjustable Phase for High-Resolution Color Filter and Photodetector Arrays. 2111409	6
659	Defect tolerance in CsPbI3: reconstruction of the potential energy landscape and band degeneracy in spin‐orbit coupling. **2022**, 10, 3018-3024	3
658	Organometal halide perovskite photovoltaics. **2022**, 273-317	0
657	Several Triazine-Based Small Molecules Assisted in the Preparation of High-Performance and Stable Perovskite Solar Cells by Trap Passivation and Heterojunction Engineering.. **2022**, 14, 6625-6637	7
656	Epitaxial Electrodeposition of Hole Transport CuSCN Nanorods on Au(111) at the Wafer Scale and Lift-off to Produce Flexible and Transparent Foils. **2022**, 34, 970-978	1
655	Orientation Control of 2D Perovskite in 2D/3D Heterostructure by Templated Growth on 3D Perovskite. **2022**, 4, 378-384	2
654	Rare earth‐based compounds for solar cells. **2022**, 365-393	0
653	Characteristics, properties, synthesis and advanced applications of 2D graphdiyne versus graphene.	2
652	The electronic stability of tin-halide perovskite charged regions.	0
651	Achieving a Carbon Neutral Future through Advanced Functional Materials and Technologies. **2022**, 95, 73-103	3

650	FAPbBr3 perovskite solar cells with VOC values over 1.5 V by controlled crystal growth using tetramethylenesulfoxide. **2022**, 10, 672-681	2
649	Surface Passivation Using Two Dimensional Perovskites Towards Efficient and Stable Perovskite Solar Cells. **2021**, e2105635	35
648	DFT study of X-site ion substitution doping of Cs 2 PtX 6 on its´structural and electronic properties.	2
647	Antisolvents Treatment of Cs0.15FA0.85PbI3 Boosting Efficiency for Perovskite Solar Cells. **2022**, 12, 322-326	
646	Compositional engineering of metal-xanthate precursors toward (Bi1−xSbx)2S3 (0 ≤ x ≤ 0.05) films with enhanced room temperature thermoelectric performance. **2022**, 10, 1718-1726	2
645	Understanding the role of spacer cation in 2D layered halide perovskites to achieve stable perovskite solar cells.	1
644	Monolithic Perovskite-silicon Tandem Solar cells: from the Lab to Fab?. **2022**, e2106540	6
643	2D Perovsktie Substrate-Assisted CsPbI Film Growth for High-Efficiency Solar Cells.. **2022**,	2
642	Fano Resonance and Incoherent Interlayer Excitons in Molecular van der Waals Heterostructures.. **2022**,	0
641	Revisiting the nontemplate approach for the synthesis of highly green emissive hybrid perovskite nanocrystals: platelets or spheres?. **2022**,	
640	DFT study of electronic structure and mobility of pristine and fluorinated methylammonium lead halide perovskites (CH 3 NH 3 PbX 3 , X = I, Br, Cl).	0
639	Multifunctional Compound-Regulated SnO 2 for High-Efficiency and Stable Perovskite Solar Cells under Ambient Air. **2022**, 9,	1
638	Comprehensive study and performance analysis of an eco-friendly double perovskite Cs2AgBiBr6 on Si tandem solar cell. **2022**, 39, 756	0
637	Highly efficient wideband solar energy conversion employing singlet-triplet transitions.	0
636	Electrical Conductivity and Dielectric Relaxation in Ag1−LixNbO3. **2022**, 12, 158	2
635	A GGA´+´vdW study on electronic properties and optoelectronic functionality of Cd-doped tetragonal CH3NH3PbI3 for photovoltaics. **2022**, 556, 111461	0
634	Nano-silver incorporated amine functionalized graphene oxide titania nanotube composite: a promising DSSC photoanode. **2022**, 131, 104205	1
633	Halide Ions Distribution and Charge Dynamics in Mixed Halide Perovskites.	2

632	Ambient processing of methylammonium lead iodide perovskite solar cells via magnetic field-assisted electrodeposition of the precursor film. **2022**, 233, 204-212	0
631	Review on efficiency improvement effort of perovskite solar cell. **2022**, 233, 421-434	4
630	Dual Modification Engineering via Lanthanide-Based Halide Quantum Dots and Black Phosphorus Enabled Efficient Perovskite Solar Cells with High Open-Voltage of 1.235 V. 2112647	6
629	Synthesis of Stable Lead-Free Cs Sb (Br I) (0 x 1) Perovskite Nanoplatelets and Their Application in CO Photocatalytic Reduction.. **2022**, e2106001	4
628	Grain-Boundaries-Engineering via Laser Manufactured La-Doped BaSnO3 Nanocrystals with Tailored Surface States Enabling Perovskite Solar Cells with Efficiency of 23.74%. 2112388	7
627	High Responsivity Circular Polarized Light Detectors based on Quasi Two-Dimensional Chiral Perovskite Films.. **2022**,	11
626	Molecular Doping of a Hole-Transporting Material for Efficient and Stable Perovskite Solar Cells.	2
625	Exploring the stability and physical properties of double perovskite Cs2SnI6 by doping the Cl/Br atom: A DFT study. **2022**, 1209, 113609	0
624	Ab-initio method to investigate organic halide based double perovskites (CH3NH3)2AgMBr6 (M = Sb, Bi) for opto-electronic applications. **2022**, 17, 649-657	1
623	Bright future in optoelectronics, photovoltaics and thermoelectric using the double perovskites oxides BaSrMgBO6 (B=Te, W). **2022**, 30, e00649	0
622	How do gold nanoparticles boost the performance of perovskite solar cells?. **2022**, 94, 106934	3
621	Cr2O3 interlayer at TiO2/perovskite interface propelling the efficiency improvement of perovskite solar cells. **2022**, 29, 101761	0
620	Surface dipole affords high-performance carbon-based CsPbI2Br perovskite solar cells. **2022**, 433, 134611	5
619	Two-dimensional perovskites: Impacts of species, components, and properties of organic spacers on solar cells. **2022**, 43, 101394	8
618	Surface reconstruction strategy improves the all-inorganic CsPbIBr2 based perovskite solar cells and photodetectors performance. **2022**, 94, 106960	8
617	Orientation dependence of polarization-modulated photovoltaic effect of relaxor-based Pb(In1/2Nb1/2)O3-Pb(Mg1/3Nb2/3)O3-PbTiO3 single crystals. **2022**, 902, 163777	0
616	Flexible alternating current electroluminescent devices integrated with high voltage triboelectric nanogenerators.. **2022**,	2
615	Comparison on Critical Performance Characteristics of Perovskite-Based Flexible Solar Cells. **2022**, 47-64	

614	Inhibiting Ion Migration by Guanidinium Cation Doping for Efficient Perovskite Solar Cells with Enhanced Operational Stability.	0
613	Improving Hole Transport and Extraction by Interface Engineering in Perovskite Solar Cells. 2101002	0
612	Dopant-free, hole-transporting polymers containing benzotriazole acceptor unit for perovskite solar cells. **2022**, 110170	1
611	Advances in MEMS and Microfluidics-Based Energy Harvesting Technologies. 2101347	2
610	Indoline-Based Donor-Acceptor Visible-Light Responsive Organic Dyes for Dye-Sensitized Solar Cells: Co-sensitization with Squaraine Dye for Panchromatic IPCE Response.	0
609	Synthesis and Characterizations of CH3NH3PbI3 : ZnS Microrods for Optoelectronic Applications. **2022**, 2022, 1-14	2
608	Review of Two-Step Method for Lead Halide Perovskite Solar Cells.	7
607	Interfacial Electronic Properties and Photocatalytic CO2 Reduction of a Z-Scheme SnS/(CH3NH3)2AgBiI6 Double Perovskite Heterostructure.	2
606	Controlled growth of perovskite microplates arrays for functional optoelectronics. **2022**, 37, 27-27	0
605	A Survey of Hybrid Energy Devices Based on Supercapacitors. **2022**,	1
604	Modulation of Planarity on Carbazole Derivatives-Based Hole Transport Materials for Perovskite Solar Cells: A Theoretical and Experimental Research. **2022**, 51, 1778	0
603	Synergetic effect of organic metal compound modified SnO2 in high performance perovskite solar cells. **2022**, 234, 170-178	0
602	Solvent-engineering-processed CsPbIBr2 inorganic perovskite solar cells with efficiency of ~11%. **2022**, 238, 111640	3
601	Tuning the optoelectronic and thermoelectric characteristics of narrow bandgap Rb2AlInX6(X= Cl, Br, I) double perovskites: A DFT study. **2022**, 143, 106551	3
600	Temperature-Controlled Slot-Die Coating for Efficient and Stable Perovskite Solar Cells.	
599	Solution-Processed Fe2-Xmgxo3 Ternary Oxides for Interface Passivation in Efficient Perovskite Solar Cells.	
598	Direct atomic-scale imaging of a screw dislocation core structure in inorganic halide perovskites.. **2022**,	
597	??????????????????. **2022**,	

596	Surface Treatment of the Perovskite Via Self-Assembled Dipole Layer Enabling All-Round Enhanced Performance for Perovskite Solar Cells.	
595	Columnar liquid crystals as stability enhancing hole transport layers for Ruddlesden–Popper perovskite optoelectronics.	
594	Boron materials for energy applications. **2022**, 203-289	1
593	Growth, structural, optical and electronic transport properties of tetragonal CHNHSnBr perovskite single crystals.. **2022**,	
592	Enhanced Efficiency and Stability of Perovskite Solar Cells Based on Carbon-Counter-Electrode Via Anti-Solvent Treatment.	
591	Sustainable development of perovskite solar cells: keeping a balance between toxicity and efficiency.	2
590	Active Terahertz Modulator Based on Plasma-Induced Transparency in Mapbi3-Metal Hybrid Metamaterial.	
589	Recent Advances in Hybrid Organic–Inorganic Perovskite Solar Cells with Different Halides and Their Combinations. **2022**, 21-29	
588	A review of graphene derivative enhancers for perovskite solar cells.	0
587	Performance Analysis of Transition Metals Embedded Tin Halide Perovskite Solar Cell. **2022**, 1-9	
586	A Review of Three-Dimensional Tin Halide Perovskites as Solar Cell Materials. 25,	2
585	Advanced Neutron and Synchrotron Characterization Techniques for Nanocomposite Perovskite Materials Toward Solar Cells Applications. **2022**, 613-661	
584	Methyl Ammonium Lead Bromide Perovskite Films and Their Applications to Optoelectronic Devices. **2022**, 3-19	
583	Nanostructure Semiconductor Materials for Device Applications. **2022**, 57-86	
582	Selection of the ultimate perovskite solar cell materials and fabrication processes towards its industrialization: A review.	2
581	Intermediate phase engineering of halide perovskites for photovoltaics. **2022**, 6, 315-339	12
580	CsPbBr3/Cs2SiF6:Mn4+/2ZnS/Al Rivet Nanostructured Perovskites with Dual-Wavelength Emission for Flexible White Electroluminescence. **2022**, 5, 3743-3755	0
579	Rethinking the A cation in halide perovskites.. **2022**, 375, eabj1186	29

578	Unravelling Structure and Formation Mechanisms of Ruddlesden-Popper-Phase-like Nanodomains in Inorganic Lead Halide Perovskites.. **2022**, 2117-2123	1
577	Ultraviolet Photocatalytic Degradation of Perovskite Solar Cells: Progress, Challenges, and Strategies. 2100218	2
576	A Review of Recent Developments in Preparation Methods for Large-Area Perovskite Solar Cells. **2022**, 12, 252	6
575	Low-Temperature Microwave Processed TiO2 as an Electron Transport Layer for Enhanced Performance and Atmospheric Stability in Planar Perovskite Solar Cells. **2022**, 5, 2679-2696	3
574	Controlling the Formation Process of Methylammonium-Free Halide Perovskite Films for a Homogeneous Incorporation of Alkali Metal Cations Beneficial to Solar Cell Performance. **2022**, 12, 2103618	7
573	Understanding the PEDOT:PSS, PTAA and P3CT-X Hole-Transport-Layer-Based Inverted Perovskite Solar Cells.. **2022**, 14,	2
572	Current advances in perovskite oxides supported on graphene-based materials as interfacial layers of perovskite solar cells. 1-20	1
571	Application of metal halide perovskite photodetectors. **2022**, 43, 020203	1
570	Polarization-Enhanced Photovoltaic Effects in a High-Temperature Molecular Ferroelectric [C6N2H18][SbI5]-Based Solar Device. **2022**, 5, 2738-2746	0
569	Black Phosphorus Quantum Dot-Engineered Tin Oxide Electron Transport Layer for Highly Stable Perovskite Solar Cells with Negligible Hysteresis.. **2022**,	2
568	Optical Characterization and Prediction with Neural Network Modeling of Various Stoichiometries of Perovskite Materials Using a Hyperregression Method.. **2022**, 12,	
567	Controllable Introduction of Surface Defects on CHNHPbI Perovskite.. **2022**, 12,	
566	Recent Developments in Upscalable Printing Techniques for Perovskite Solar Cells.. **2022**, e2200308	4
565	Strain Engineering: A Pathway for Tunable Functionalities of Perovskite Metal Oxide Films.. **2022**, 12,	1
564	Neutral-Colored Semitransparent Perovskite Solar Cells with Aperture Ratios Controlled via Laser Patterning. **2022**, 5, 3660-3667	1
563	Reaction Mechanism of Photocatalytic Hydrogen Production at Water/Tin Halide Perovskite Interfaces. **2022**, 7, 1308-1315	5
562	Spatiotemporally Correlated Imaging of Interfacial Defects and Photocurrents in High Efficiency Triple-Cation Mixed-Halide Perovskites.. **2022**, e2200523	2
561	Nanostructured multilayer hyperbolic metamaterials for high efficiency and selective solar absorption.. **2022**, 30, 11504-11513	2

560	The effect of argon plasma treatment on surface engineering in an inverted perovskite solar cell. **2022**, 134, 1	0
559	Pattern-Selective Molecular Epitaxial Growth of Single-Crystalline Perovskite Arrays toward Ultrasensitive and Ultrafast Photodetector.. **2022**,	1
558	Incorporating Polyvinyl Pyrrolidone in Green Anti-solvent Isopropanol: A Facile Approach to Obtain High Efficient and Stable Perovskite Solar Cells. **2022**, 139196	0
557	Adenosine Triphosphate Disodium Modified Hole Transport Layer for Efficient Inverted Perovskite Solar Cells.	0
556	Accelerating Photogenerated Hole Tunneling through Passivation Layers Reducing Interplanar Spacing for Efficient and Stable Perovskite Solar Cells.. **2022**,	
555	Fully Roll-to-Roll Processed Efficient Perovskite Solar Cells via Precise Control on the Morphology of PbI:CsI Layer.. **2022**, 14, 79	3
554	Methylammonium thiocyanate seeds assisted heterogeneous nucleation for achieving high-performance perovskite solar cells. **2022**, 153206	1
553	Anion Modification and Theoretical Understanding for Improving Annealing-Free Electrochemistry Deposition of Perovskites under an Ambient Atmosphere. **2022**, 126, 4785-4791	
552	Synthesis and Application of a Star-Shaped, Conjugated Oligomer Containing a Spiro(Fluorene-9,9'-Xanthene) Core for Copper(I) Thiocyanate Based Perovskite Solar Cells. 1-13	
551	Theoretical modelling of high-efficiency perovskite solar cells and reduction of internal heat generation using hot-electron extraction. **2022**, 54, 1	
550	Stable one dimensional (1D)/three dimensional (3D) perovskite solar cell with an efficiency exceeding 23%.	0
549	The Role of Thermal Fluctuations and Vibrational Entropy: A Theoretical Insight into the □to-□ Transition of FAPbI.. **2022**, 3089-3095	0
548	Efficient and stable TiO2 nanorod array structured perovskite solar cells in air: Co-passivation and synergistic mechanism. **2022**,	1
547	Boosting the efficiency of inverted perovskite solar cells via ethanolamine doped PEDOT:PSS as hole transport layer.	1
546	Multifunctional Additive of Potassium Cinnamate Improve Crystallization and Passivate Defect for Perovskite Solar Cell with Efficiency Exceeding 22%. 2200125	0
545	Three Millennia of Nanocrystals.. **2022**,	8
544	Low-temperature processed nickel oxide hole-transporting layer for perovskite solar cell. 1	
543	Multifunctional Ion-Lock Interface Layer Achieved by Solid□Solid Contact Approach for Stabilizing Perovskite Solar Cells. 2200473	4

542	Progress in Nanostructured Perovskite Photovoltaics. **2022**, 317-344	
541	Amphiphilic Polymer Ligand-Assisted Synthesis of Highly Luminescent and Stable Perovskite Nanocrystals for Sweat Fluorescent Sensing.. **2022**,	4
540	Broadband plasmonic absorption enhancement of perovskite solar cells with embedded Au@SiO2@graphene core□shell nanoparticles. **2022**, 37, 055002	1
539	The preparation of CH3NH3SnI3/SnO2/Pd/Au gas sensor material for detecting CO and the function of each component. **2022**, 33, 7463-7476	0
538	Optimizing Perovskite Solar Cell Architecture in Multistep Routes Including Electrodeposition.	3
537	Insights from scalable fabrication to operational stability and industrial opportunities for perovskite solar cells and modules. **2022**, 100827	3
536	Protective Coating Interfaces for Perovskite Solar Cell Materials: A First-Principles Study.. **2022**,	1
535	Prediction of structural, electronic, mechanical, thermal, and thermoelectric properties in PbMO3 (M = Sb, Bi) perovskite compounds: a DFT study. **2022**, 137, 1	0
534	Formation of Metal Cation/Oxidized Pyridine Complexes-Based Bifunctional Interfacial Layer for Fabrication of Highly Efficient and Reproducible Perovskite Solar Cells.	0
533	A universal ionic liquid solvent for non-halide lead sources in perovskite solar cells. **2022**,	0
532	Plasmonic Local Heating Induced Strain Modulation for Enhanced Efficiency and Stability of Perovskite Solar Cells. 2200186	1
531	Recent Progress in Understanding the Structural, Optoelectronic, and Photophysical Properties of Lead Based Dion□acobson Perovskites as Well as Their Application in Solar Cells. 891-917	0
530	Improved water repellency and environmental stability of perovskite solar cells by encapsulating with paraffin wax. **2022**, 282, 125954	0
529	A novel solvent for multistep solution-processed planar CsPbBr 3 perovskite solar cells using In 2 S 3 as electron transport layer.	1
528	Progress on the stability and encapsulation techniques of perovskite solar cells. **2022**, 106515	3
527	Halide Perovskite Crystallization Processes and Methods in Nanocrystals, Single Crystals and Thin Films.. **2022**, e2200720	7
526	Exploring a high-carrier-mobility black phosphorus/MoSe2 heterostructure for high-efficiency thin film solar cells. **2022**, 236, 576-585	0
525	Encapsulation of commercial and emerging solar cells with focus on perovskite solar cells. **2022**, 237, 264-283	5

524	Ag+/Bi3+ doping induced band structure and optoelectronic properties changes in CsPbBr3 crystals. **2022**, 586, 126604	2
523	A terahertz wave all-optical modulator based on quartz-based MAPbI3 thin film. **2022**, 127, 112235	1
522	Electronic and optical properties of the lead free halide double perovskites Cs2AgBiX6(X. **2022**, 140, 109395	0
521	Chemical welding of polymer networks. **2022**, 24, 100803	0
520	Recent progress of perovskite devices fabricated using thermal evaporation method: Perspective and outlook. **2022**, 14, 100232	4
519	Loosening effect of perovskite intermolecular exchanger with strong steric hindrance for highly sensitive photodetector. **2022**, 591, 153207	0
518	Solution-processed Fe2-xMgxO3 ternary oxides for interface passivation in efficient perovskite solar cells. **2022**, 441, 136118	1
517	Probabilistic deep learning approach for targeted hybrid organic-inorganic perovskites. **2021**, 5,	0
516	Investigating the Sequential Deposition Route for Mixed Cation Mixed Halide Wide Bandgap Perovskite Absorber Layer. **2021**, 14, 8401	1
515	Room-Temperature Spray Deposition of Large-Area SnO Electron Transport Layer for High Performance, Stable FAPbI -Based Perovskite Solar Cells.. **2022**, 6, e2101127	3
514	Ferroelectric Photovoltaic Materials and Devices. **2022**, 32, 2109625	2
513	Methylammonium Lead Tri-Iodide Perovskite Solar Cells with Varying Equimolar Concentrations of Perovskite Precursors. **2021**, 11, 11689	1
512	3-Ammonium Propionic Acid: A Cation Tailoring Crystal Structure of Hybrid Perovskite for Improving Photovoltaic Performance. **2021**, 4, 14662-14670	0
511	Investigation of Threshold Carrier Densities in the Optically Pumped Amplified Spontaneous Emission of Formamidinium Lead Bromide Perovskite Using Different Excitation Wavelengths. **2022**, 9, 4	1
510	A quick peek at solar cells and a closer insight at perovskite solar cells. **2021**, 30, 53-63	
509	Effect of treatment condition on perovskite film for perovskite solar cell application. **2021**, 81-86	
508	Role of A-Site Molecular Ions in the Polar Functionality of Metal Organic Framework Perovskites. **2021**, 33, 9666-9676	0
507	Assessing Optical Properties of CH3NH3PbBr3 Single Crystals across the Structural Phase Transitions by Spectroscopic Ellipsometry. **2022**, 126, 797-805	0

506	Lead-Free Perovskite Solar Cells with Over 10% Efficiency and Size 1 cm2 Enabled by Solvent□Crystallization Regulation in a Two-Step Deposition Method. **2022**, 7, 425-431	9
505	Critical Role of Organoamines in the Irreversible Degradation of a Metal Halide Perovskite Precursor Colloid: Mechanism and Inhibiting Strategy. **2022**, 7, 481-489	4
504	Degradation of Perovskite Thin Films and Solar Cells with Candle Soot C/Ag Electrode Exposed in a Control Ambient.. **2021**, 11,	0
503	Foam-like 3D Graphene as a Charge Transport Modifier in Zinc Oxide Electron Transport Material in Perovskite Solar Cells. **2021**, 1, 523-536	0
502	Water-Dispersing Perovskite Probes for the Rapid Imaging of Glioma Cells. **2022**, 10, 2101835	0
501	Moisture Stability of Perovskite Solar Cells Processed in Supercritical Carbon Dioxide.. **2021**, 26,	1
500	A Review on the Development of Metal Grids for the Upscaling of Perovskite Solar Cells and Modules. 2100865	2
499	CsPd0.875Cr0.125I3 Promising Candidate for Thermoelectric Applications. **2021**, 66, 1063	0
498	Manipulating the film morphology evolution toward green solvent-processed perovskite solar cells. **2021**, 1, 537-544	3
497	Halide Mixing Inhibits Exciton Transport in Two-dimensional Perovskites Despite Phase Purity.. **2022**, 7, 358-365	2
496	Direct drop-casting synthesis of all-inorganic lead and lead-free halide perovskite microcrystals for high-performance photodetectors. **2022**, 15, 3621-3627	2
495	Cerium-based lead-free chalcogenide perovskites for photovoltaics. **2021**, 104,	
494	Thermodynamic Analyses on Nanoarchitectonics of Perovskite from Lead Iodide: Arrhenius Activation Energy. **2022**, 32, 1259-1265	2
493	Research progress on preparation methods and photoelectric properties of perovskite solar cell. **2021**,	
492	Transparent graphene electrodes based hybrid perovskites photodetectors with broad spectral response from UV-visible to near-infrared. **2021**, 33,	1
491	Application of bromide-iodide lead perovskite thin film as a copper-free back contact layer for CdTe solar cells. **2021**, 230, 832-842	0
490	Recent Progress of Critical Interface Engineering for Highly Efficient and Stable Perovskite Solar Cells. **2022**, 12, 2102730	17
489	CHAPTER 10. Deposition Techniques for Perovskite Solar Cells. 341-366	1

488	Dicyclopentadithienothiophene (DCDTT)-based Organic Semiconductor Assisted Grain Boundary Passivation for Highly Efficient and Stable Perovskite Solar Cells.	1
487	Can Perovskites be Efficient Photocatalysts in Organic Transformations?.	0
486	Solvent-assisted preparation of low-temperature SnO2 electron transport layers for efficient and stable perovskite solar cells made in ambient conditions.	0
485	Investigation of Anomalous Photon Management in Organic Nano Particles-coating Photovoltaic Solar Cells. 1	
484	Influence of Parameters on Photodynamic Therapy of Au@TiO-HMME Core-Shell Nanostructures.. **2022**, 12,	2
483	Computational analysis of bandgap tuning, admittance and impedance spectroscopy measurements in lead-free MASnI 3 perovskite solar cell device.	0
482	Triarylamine/Bithiophene Copolymer with Enhanced Quinoidal Character as Hole-Transporting Material for Perovskite Solar Cells.. **2022**,	5
481	Solvent Effects on the Structural and Optical Properties of MAPbI3 Perovskite Thin Film for Photovoltaic Active Layer. **2022**, 12, 549	0
480	The adsorption postures of water on CH3NH3PbI3 surfaces: a first-principles insight. **2022**, 2247, 012003	
479	Electron transport at TiO2/perovskite interfaces by considering the defect effects: a first-principles insight. **2022**, 2247, 012027	
478	Kinetics and energetics´of metal halide perovskite conversion reactions at the nanoscale. **2022**, 3,	1
477	Triarylamine/Bithiophene Copolymer with Enhanced Quinoidal Character as Hole-Transporting Material for Perovskite Solar Cells.	
476	Stable perovskite solar cells with 23.12% efficiency and area over 1 cm2 by an all-in-one strategy. 1	5
475	Novel Photocatalysts for Environmental and Energy Applications. **2022**, 12, 458	1
474	Silicon Dioxide Nanoparticles Increase the Incidence Depth of Short-Wavelength Light in Active Layer for High-Performance Perovskite Solar Cells.	0
473	Study on Properties of CdxSn(1⊠)S/CH3NH3PbI3 Co-Sensitized Solar Cells Prepared Under Ambient Air Atmosphere. 1	
472	Additive engineering on spiro-OMeTAD hole transport material for CsPbI3 all-inorganic perovskite solar cells with improved performance and stability. **2022**, 911, 164972	
471	CHAPTER 9. Hybrid Solar Cells. 298-340	

470	Data_Sheet_1.docx. **2019**,	
469	Data_Sheet_1.PDF. **2020**,	
468	Universal Dynamic Liquid Interface for Healing Perovskite Solar Cells.. **2022**, e2202301	12
467	Modeling and Balancing the Solvent Evaporation of Thermal Annealing Process for Metal Halide Perovskites and Solar Cells.. **2022**, e2200161	0
466	Enhanced Hole Mobility and Decreased Ion Migration Originated from Interface Engineering for High Quality PSCs with Average FF beyond 80.. **2022**, e2200260	2
465	Rational Design on Chemical Regulation of Interfacial Microstress Engineering by Matching Young's Modulus in a CsPbBr Perovskite Film with Mechanical Compatibility toward Enhanced Photoelectric Conversion Efficiency.. **2022**,	0
464	Surface Fluoride Management for Enhanced Stability and Efficiency of Halide Perovskite Solar Cells via Thermal Evaporation Method.	1
463	Consolidating a PbX framework via multifunctional passivation with fluorinated zwitterions for efficient and stable perovskite solar cells.	2
462	Performance Research Of Perovskite Solar Cell with Light Conversion Electron Transport Layer Utilizing Prism Scattered Lights.	
461	Role of metal and anions in organo-metal halide perovskites CHNHMX (M: Cu, Zn, Ga, Ge, Sn, Pb; X: Cl, Br, I) on structural and optoelectronic properties for photovoltaic applications.. **2022**, 12, 13281-13294	2
460	Guanidium-Assisted Crystallization Engineering for Highly Efficient CsPbI3 Solar Cells.	0
459	Inhibition of buried cavities and defects in metal halide perovskite photodetectors via a two-step spin-coating method.	2
458	Elimination of Interfacial Lattice Mismatch and Detrimental Reaction by Self-Assembled Layer Dual-Passivation for Efficient and Stable Inverted Perovskite Solar Cells. **2022**, 12, 2103674	15
457	Optical simulation of CsPbI3/TOPCon tandem solar cells with advanced light management.	
456	Effect of vertical strain and in-plane biaxial strain on type-II MoSi2N4/Cs3Bi2I9 van der Waals heterostructure. **2022**, 131, 163102	1
455	Rational selection of the polymeric structure for interface engineering of perovskite solar cells. **2022**,	15
454	Precursor Engineering for Solution Method-Grown Spectroscopy-Grade CsPbBr3 Crystals with High Energy Resolution. **2022**, 34, 3993-4000	1
453	Multifunctional Polymer Capping Frameworks Enable High-Efficiency and Stable All-Inorganic Perovskite Solar Cells.	0

452	Structural and Optical Properties of Two-Step Dip-Coated CH3NH3PbI3 Films Based on Underlying Dip-Coated PbI2 Films. 1	
451	Perovskite Quantum Dot–ZnO Nanowire Composites for Ultraviolet–Visible Photodetectors.	1
450	Effect of Stability of Two-Dimensional (2D) Aminoethyl Methacrylate Perovskite Using Lead-Based Materials for Ammonia Gas Sensor Application.. **2022**, 14,	0
449	One-dimensional perovskite-based li-Ion battery anodes with high capacity and cycling stability. **2022**,	0
448	Organic–Inorganic Hybrid Electron Transport Layer for Rigid or Flexible Perovskite Solar Cells under Ambient Conditions.	
447	Crucial Contribution of Polarity for the Bulk Photovoltaic Effect in a Series of Noncentrosymmetric Two-Dimensional Organic–Inorganic Hybrid Perovskites.	1
446	CuGaO2 Nanosheets and CuCrO2 Nanoparticles Mixed with Spiro-OMeTAD as the Hole-Transport Layer in Perovskite Solar Cells.	0
445	Ethylcellulose-Encapsulated Inorganic Lead Halide Perovskite Nanoparticles for Printing and Optoelectronic Applications. 2100250	0
444	Basic understanding of perovskite solar cells and passivation mechanism. **2022**, 12, 055307	1
443	Compatibility of Al-doped ZnO ETL with various HTL and Absorber in Perovskite Solar Cells.	0
442	Optoelectronic Properties of Mixed Iodide-Bromide Perovskites from First-Principles Computational Modeling and Experiment.. **2022**, 4184-4192	2
441	Polymer-Regulated SnO 2 Composites Electron Transport Layer for High-Efficiency n-i-p Perovskite Solar Cells.	2
440	Inhibition of Amine–Water Proton Exchange Stabilizes Perovskite Ink for Scalable Solar Cell Fabrication.	1
439	Perovskite solar cells by vapor deposition based and assisted methods. **2022**, 9, 021305	9
438	Thin films deposition of fully inorganic metal halide perovskites: A review. **2022**, 147, 106721	1
437	Recent development in MOFs for perovskite-based solar cells. **2022**, 507-534	
436	Investigation of structural, magneto-electronic, elastic, mechanical and thermoelectric properties of novel lead-free halide double perovskite Cs2AgFeCl6: First-principles calcuations. **2022**, 110795	3
435	Fabrication of perovskite solar cells by reaction between spin-coated precursor films and CH 3 NH 3 I vapor. **2017**, 14, 1600192	

434	Facile surface homojunction reconstruction in halide perovskite solar cells. **2022**, 165442	0
433	Simultaneous Optimization of Charge Transport Properties in a Triple-Cation Perovskite Layer and Triple-Cation Perovskite/Spiro-OMeTAD Interface by Dual Passivation.	0
432	Understanding of the Band Gap Transition in Cs3Sb2Cl9−xBrx: Anion Site Preference-Induced Structural Distortion.	1
431	Tuning of the electronic bandgap of lead-free double perovskites K2AgBiX6 (X´=´Cl, Br) for solar cells applications and their thermoelectric characteristics. **2022**, 239, 234-241	0
430	A Perspective on Perovskite Solar Cells: Emergence, Progress, and Commercialization.. **2022**, 10, 802890	3
429	Sulfonyl passivation through synergistic hydrogen bonding and coordination interactions for efficient and stable perovskite solar cells.	2
428	Indirect to direct band gap transition through order to disorder transformation of Cs2AgBiBr6via creating antisite defects for optoelectronic and photovoltaic applications. **2022**, 12, 15461-15469	1
427	Carbon Nanomaterials-Polymer Composites in Perovskite Solar Cells: Preparation, Properties and Applications.	2
426	Recent Progress in the Stability of Red-Emissive Perovskite Nanocrystals for Light-Emitting Diodes. 1233-1254	4
425	Enhanced Solar Efficiency via Incorporation of Plasmonic Gold Nanostructures in a Titanium Oxide/Eosin Y Dye-Sensitized Solar Cell. **2022**, 12, 1715	
424	A facile healing of two-step deposited MAPbI3 perovskite on TiO2 nanorod through dynamic methylamine treatment. **2022**, 103744	
423	X-ray diffraction of photovoltaic perovskites: Principles and applications. **2022**, 9, 021310	4
422	Machine learning enabled development of unexplored perovskite solar cells with high efficiency. **2022**, 99, 107394	4
421	Temperature-controlled slot-die coating for efficient and stable perovskite solar cells. **2022**, 539, 231621	1
420	Photocatalytic hydrogen evolution over cyanine-sensitized Ag/TiO2. **2022**, 12, 15992-16002	1
419	Surface Treatment of the Perovskite Via Self-Assembled Dipole Layer Enabling Enhanced Efficiency and Stability for Perovskite Solar Cells.	
418	Surface Morphological Effects on the Performance of Perovskite Solar Cells. **2022**, 59-89	
417	Experimental and theoretical investigations on fullerene (C60) induced compact CH3NH3PbI3 perovskite thin films.	0

416	Effects of Various Additives to CH 3 NH 3 PbI 3 Perovskite Solar Cells. **2022**, 257-316	
415	2,3-Diphenylthieno[3,4-b]pyrazines as Hole-Transporting Materials for Stable, High-Performance Perovskite Solar Cells. 2118-2127	4
414	Modeling Radiation Damage in Materials Relevant for Exploration and Settlement on the Moon.	
413	Self-assembled TiO2 hole-blocking layers for efficient perovskite solar cells. **2022**, 29, 1280-1285	0
412	Improving device performance of MAPbI3 photovoltaic cells by manipulating the crystal orientation of tetragonal perovskites.	1
411	Enhancement of the electron transportation in the perovskite solar cells via optimizing the photoelectric properties of electron transport layer with nitrogen-doped graphene quantum dots.	0
410	Band bending at HTL-perovskite interfaces in n-i-p and in p-i-n architecture.	1
409	Aqueous Precursor Driven Cs2AgInCl6 Double Perovskite Nanocrystals Used as a Fluorescent Keypad Lock.	0
408	Scalable Screen-Printed TiO2 Compact Layers for Fully Printable Carbon-Based Perovskite Solar Cells. **2022**, 2, 293-304	
407	Formamidinium Halide Perovskite and Carbon Nitride Thin Films Enhance Photoreactivity under Visible Light Excitation.	
406	Ultrastable 0D Organic Zinc Halides with Highly Efficient Blue Light Emissions. 2200386	1
405	Ionic Liquid-Assisted Crystallization and Defect Passivation for Efficient Perovskite Solar Cells with Enhanced Open-Circuit Voltage.	0
404	A-site cation effect on optical phonon modes and thermal stability in lead-based perovskite bromide single crystals using Raman spectroscopy.	1
403	Tuning of the bandgap of Rb2ScAgX6 (X = Cl, Br, I) double perovskites through halide ion replacement for solar cell applications. **2022**, 148, 106819	0
402	Ab-initio Investigation of Structural, Optoelectronic, and Magnetic Properties of SmAlO3. **2022**, 02, 123-131	
401	Triphenylamine substituted copper and zinc phthalocyanines as alternative hole-transporting materials for solution-processed perovskite solar cells. **2022**, 51, 9385-9396	0
400	Controlling the device functionality by solvent engineering, solar cell versus light emitting diode.	1
399	Processing of Lead Halide Perovskite Thin Films Studied with In-Situ Real-Time X-ray Scattering. **2022**, 14, 26315-26326	1

398	Synthesis, Properties, and Applications of Metal Halide Perovskite-Based Nanomaterials. **2022**, 225-273	
397	Benzimidazole Based Hole-Transporting Materials for High-performance Inverted Perovskite Solar Cells. 2201933	2
396	Structural, Thermal and Functional Properties of a Hybrid Dicyanamide-Perovskite Solid Solution. **2022**, 12, 860	
395	Manipulation of Crystallization Kinetics for Perovskite Photovoltaics Prepared Using Two-Step Method. **2022**, 12, 815	
394	Metal Halide Perovskites for Coherent Light Emission. **2022**, 527-553	
393	Detailed investigation of sinusoidal vibration on triboelectric energy harvester. 1-14	2
392	A Heat-Liquefiable Solid Precursor for Ambient Growth of Perovskites with High Tunability, Performance and Stability. 2200384	0
391	Configuration of Methylammonium Lead Iodide Perovskite Solar Cell and its Effect on the Device's Performance: A Review. 2200042	1
390	Lead-free organic inorganic halide perovskite solar cell with over 30% efficiency. **2022**, 18, 395-409	1
389	Key Factors Affecting the Stability of CsPbI 3 Perovskite Quantum Dot Solar Cells: A Comprehensive Review. 2203430	2
388	The Potential Effect of Annealing Mesostructured Titanium Dioxide Electrode in a Closed Box Furnace on the Concentration of Lead (II) Iodide Solution Required for Optimal Performance of Mesoscopic Perovskite Solar Cells. **2022**, 12, 833	
387	All-inorganic CsPbX 3 Perovskite Solar Cells. **2022**, 1-42	
386	Large-area Perovskite Optoelectronic Devices and the Fabrication Techniques. **2022**, 433-477	1
385	Aromatic Amino Acid-Mediated Perovskite Nanocrystals: Fluorescence Tuning and Morphological Evolution.	0
384	Surface interface structural studies of CH3NH3PbI3 thin films using synchrotron source X-ray diffraction for solar cell application. **2022**,	
383	Tailoring electric dipole of hole-transporting material p-dopants for perovskite solar cells. **2022**,	2
382	Robust Interfacial Modifier for Efficient Perovskite Solar Cells: Reconstruction of Energy Alignment at Buried Interface by Self-Diffusion of Dopants. 2204725	4
381	Impact of HTM on lead-free perovskite solar cell with high efficiency. **2022**, 54,	0

380	Investigation of transport properties of perovskite single crystals by pulse and DC bias transient current technique.	
379	2D Material and Perovskite Heterostructure for Optoelectronic Applications. **2022**, 12, 2100	4
378	Band Edge Engineering of 2D Perovskite Structures through Spacer Cation Engineering for Solar Cell Applications. **2022**, 126, 9937-9947	0
377	Enhanced efficiency and stability of perovskite solar cells based on carbon-counter-electrode via anti-solvent treatment. **2022**, 165874	0
376	Highly Efficient A-Site Cation Exchange in Perovskite Quantum Dot for Solar Cells.	1
375	In-situ peptization of WO3 in alkaline SnO2 colloid for stable perovskite solar cells with record fill-factor approaching the shockley□queisser limit. **2022**, 100, 107468	5
374	Supramolecular bridging strategy enables high performance and stable organic□inorganic halide perovskite solar cells. **2022**, 446, 137431	0
373	Exploring smartphone-based environmental sensors through applying perovskite quantum dots. **2022**, 448, 137583	
372	Recent Progress in Mixed A-Site Cation Halide Perovskite Thin-Films and Nanocrystals for Solar Cells and Light-Emitting Diodes. **2022**, 10, 2200423	7
371	The evolution of triphenylamine hole transport materials for efficient perovskite solar cells. **2022**, 51, 5974-6064	2
370	Vertically-aligned quasi-2D cesium lead halide perovskite solar cells.	0
369	Precise design and preparation of two 3D organic□inorganic perovskite ferroelectrics (1,5-diazabicyclo[3.2.2]nonane)RbX3 (X = Br, I).	2
368	Polyhydroxy Compound Modifying Sno2 for High-Performance and Stable Perovskite Solar Cells.	
367	Performance Improvement of Planar Perovskite Solar Cells Using Lauric Acid as Interfacial Modifier.	0
366	Azobenzene-Based Solar Thermal Fuels: A Review. **2022**, 14,	2
365	Bifunctional Passivation through Fluoride Treatment for Highly Efficient and Stable Perovskite Solar Cells. 2200945	6
364	Organic Hole Transport Layers for Efficient, Stable and Scalable Inverted Perovskite Solar Cells. 2203794	13
363	Numerical simulation of polymethyl-methacrylate supercritical fluid foaming process: Bubble growth dynamics.	

362	Developments in Perovskite materials based Solar Cells: In Pursuit of Hysteresis Effect, Stability issues and Lead-Free based perovskite materials. **2022**, 12,	
361	Effect of electrical parameters on lead-based perovskite solar cell for high-efficiency performance. **2022**, 54,	0
360	Future Research Directions in Perovskite Solar Cells: Exquisite Photon Management and Thermodynamic Phase Stability. 2204807	1
359	Active Functional Groups and Adjacent Dual-Interaction Strategies Enable Perovskite Solar Cells to Prosper: Including Unique Morphology and Enhanced Optoelectronic Performance.	0
358	Patterning Technologies for Metal Halide Perovskites: A Review. 2200419	2
357	Simulation study of significant optical absorption enhancement for □-i-p□structured perovskite solar cells with optimized periodic nano texture. **2022**, 414171	0
356	Inclusion of infrared dielectric screening in the GW method from polaron energies to charge mobilities. **2022**, 8,	
355	Energy band tuning induced by g-C3N4 interface engineering for efficient and stable perovskite solar cells. **2022**, 32, 103899	0
354	Recent progress of rare earth conversion material in perovskite solar cells: A mini review. **2022**, 143, 109731	0
353	Structural phase transition, optical and electrical properties of the hybrid material [(C2H5)4N]2ZnI4. **2022**, 314, 123357	
352	Recent defect passivation drifts and role of additive engineering in perovskite photovoltaics. **2022**, 101, 107579	6
351	Progress and challenges of halide perovskite-based solar cell- a brief review. **2022**, 150, 106953	1
350	Mechanochemistry-driven engineering of 0D/3D heterostructure for designing highly luminescent CsP□bB□r perovskites. **2022**, 13,	1
349	Combinatorial Synthesis and Screening of Mixed Halide Perovskite Megalibraries.	0
348	Chalcogenide perovskites for photovoltaic applications: a review. **2022**, 24,	1
347	Recent Criterion on Stability Enhancement of Perovskite Solar Cells. **2022**, 10, 1408	0
346	High Moisture Stability for Enhanced Quality PSCs Induced by Front and Back Layer Synergistic Passivation of Perovskite.	0
345	Slot-die coating of a formamidinium-cesium mixed-cation perovskite for roll-to-roll fabrication of perovskite solar cells under ambient laboratory conditions. **2022**, 246, 111884	1

344	Surface treatment of the perovskite via self-assembled dipole layer enabling enhanced efficiency and stability for perovskite solar cells. **2022**, 602, 154365	0
343	Recent advancement in efficient metal oxide-based flexible perovskite solar cells: a short review.	1
342	Ammonia for post-healing of formamidinium-based Perovskite films. **2022**, 13,	1
341	??????????????????????. **2022**,	
340	Optically and Mechanically Engineered Anti-Reflective Film for Highly Efficient Rigid and Flexible Perovskite Solar Cells. 2201520	1
339	On the Morphology of Nanostructured TiO2 for Energy Applications: The Shape of the Ubiquitous Nanomaterial. **2022**, 12, 2608	2
338	First-principles study of magnetic properties of the transition metal ion-doped methylamonium lead bromide.	
337	Ion-Implantation in Titania-Based Plasmonic Photo-anodes: A Review. **2022**, 9, 2200085	0
336	TiO2/SnO2 electron transport double layers with ultrathin SnO2 for efficient planar perovskite solar cells.	1
335	Perovskite Solar Cells: A Review of the Recent Advances. **2022**, 12, 1089	4
334	Ferroelasticity Mediated Energy Conversion in Strained Perovskite Films. 2200415	1
333	Stability and efficiency issues, solutions and advancements in perovskite solar cells: A review. **2022**,	5
332	Enhanced efficiency and stability of Dion□acobson quasi-two-dimensional perovskite solar cells by additive. **2022**, 55, 414002	
331	Role of graphene-oxide and reduced-graphene-oxide on the performance of lead-free double perovskite solar cell. **2022**,	0
330	Semiconductor to metallic transition in double halide perovskites Cs2AgBiCl6 through induced pressure: A DFT simulation for optoelectronic and photovoltaic applications. **2022**, 8, e10032	
329	Short-Chain Acid Additives to Control PbI2 Crystallization in Hybrid Perovskite Films. **2022**, 10, 114	1
328	Fill Factor Losses and Deviations from the Superposition Principle in Lead-Halide Perovskite Solar Cells.	4
327	Unraveling the Effect of Halogen Ion Substitution on the Noise of Perovskite Single-Crystal Photodetectors. **2022**, 13, 7831-7837	0

326	Synthesis, photophysical properties and DFT studies of pyrrolo[1,2- a]quinoxaline hosted novel hole transporting molecules for perovskite solar cell (PSC).	
325	Comprehensive Screening of Halogen-Containing Oxide Double Perovskites A2BXO6 (X = Cl, Br, and I) for Photovoltaic Applications. **2022**, 13, 7306-7313	
324	Phase-Pure □-CsPbI3 for Efficient Inorganic Perovskite Solar Cells. 2911-2918	4
323	Regulation of Quantum Wells Width Distribution in 2D Perovskite Films for Photovoltaic Application. 2205289	3
322	Tryptaminium Iodide as an Additive of Isopropanol Green Antisolvent for Efficient and Stable Perovskite Solar Cells. **2022**, 5, 9520-9529	1
321	Application of Ionic Liquids and Derived Materials to High-Efficiency and Stable Perovskite Solar Cells. 1684-1715	4
320	A High-Performance Self-Powered Photodetector Based on MAPbBr 3 Single Crystal Thin Film/MoS 2 Vertical Van Der Waals Heterostructure. 2200912	0
319	Moisture-triggered fast crystallization enables efficient and stable perovskite solar cells. **2022**, 13,	3
318	Multifunctional tyrosine modified SnO2 to improve the performance of perovskite solar cells. **2022**, 121, 073501	3
317	Exciton Transfer Dynamics and Annihilation in Rubidium□esium-Alloyed, Quasi-Two-Dimensional Perovskite. **2022**, 9, 578	
316	Liquid crystal semiconductor C6TBTAPH2 for hole transport materials in pervoskite solar cells: Fabrication, characterization, and simulation. **2022**, 132, 112820	
315	Multi-functional L-histidine self-assembled monolayers on SnO2 electron transport layer to boost photovoltaic performance of perovskite solar cells. **2022**, 428, 140930	1
314	Dion-Jacobson phase lead-free halide (PDA)MX4 (M=Sn/Ge; X=I/Br/Cl) perovskites: A first-principles theory. **2022**, 315, 123449	0
313	Enhancement of UV-light harvesting in perovskite solar cells by internal down-conversion with Eu-complex hole transport layer. **2022**, 8, 214-222	0
312	Investigating PCE of PSCs with N-based groups doped TiO2 ETLs prepared by sol-gel and sputtering technologies. **2022**, 327, 133055	
311	3-Chloroperoxybenzoic acid doping spiroOMeTAD for improving the performance of perovskite solar cells. **2022**, 450, 138313	4
310	Fabrication and Modification Strategies of Metal Halide Perovskite Absorbers. **2023**, 11, 61-77	
309	Template-confined growth of copper halides micro-wire arrays for highly polarization-sensitive deep-ultraviolet photodetectors with a polarization sensitivity of 4.45. **2023**, 451, 138531	2

308	Review of nanomaterials impact on improving the performance of dye-sensitized and perovskite solar cells. **2022**, 54,	0
307	Effect of an ultra-thin 2D transport layer on eco-friendly Perovskite/CIGS tandem solar cell: A numerical study. **2022**, 170, 207398	1
306	Effect of Fullerene Derivatives on the Lifetime Characteristics and the Stability of Inverted Perovskite Solar Cells. **2022**, 63, 1484-1488	0
305	First-principles study on optoelectronic properties of lead-free inorganic iodide double perovskite Cs2AgSb1-xGaxI6. **2022**, 356, 114936	1
304	Elaboration, electrical and X-ray characterization of potassium-chloride passivated MAPbI3. **2022**, 1042, 167398	0
303	Analysis of structural stability and optoelectronic properties of new direct band gap halide double perovskites Cs2XRhCl6. **2022**, 355, 114928	0
302	Ultra-stable self-crystallized CsPbBr3 perovskite quantum dots glass for high power remote LED encapsulated. **2022**, 269, 169940	0
301	Sharp luminescence system in titanium dioxide with zero-phonon transition at 1.573 eV. **2022**, 252, 119352	0
300	Solvent engineering for two-dimensional perovskite of guanidium lead iodide. **2022**, 291, 117175	0
299	Modified post-annealing process with N, N-dimethylformamide vapor to control the growth of hybrid perovskite microstructure. **2022**, 16, 100330	0
298	A full range of defect passivation strategy targeting efficient and stable planar perovskite solar cells. **2023**, 451, 138800	4
297	Hole transport free carbon-based high thermal stability CsPbI1.2Br1.8 solar cells with an amorphous InGaZnO4 electron transport layer. **2022**, 24, 18896-18904	0
296	Investigation of solution-based synthesis of non-toxic perovskite materials using Mg, Ca, Mn, Fe, Cu, and Zn as the B-site cation for photovoltaic applications.	0
295	Novel mixed H+/e⁻/O2⁻ conducting cathode material PrBa0.9K0.1Fe1.9Zn0.1O5+δ for proton-conducting solid oxide fuel cells. **2022**, 10, 17425-17433	0
294	Reversible thermochromism, temperature-dependent conductivity and high stability for a laminated bismuth(iii)–silver(i) hybrid double perovskite. **2022**, 10, 12574-12581	0
293	A comparative study of the mechanical stability, electronic, optical and photocatalytic properties of CsPbX3 (X = Cl, Br, I) by DFT calculations for optoelectronic applications. **2022**, 12, 23704-23717	0
292	Surface stability of ionic-liquid-passivated mixed-cation perovskite probed with in situ photoelectron spectroscopy. **2022**, 10, 18206-18217	1
291	Impact of localized surface plasmon resonance on efficiency of zinc oxide nanowire-based organic–inorganic perovskite solar cells fabricated under ambient conditions. **2022**, 12, 25163-25171	2

290	Broadband-tunable spectral response of perovskite-on-paper photodetectors using halide mixing. **2022**, 14, 14057-14063	0
289	Metal oxide charge transporting layers for stable high-performance perovskite solar cells.	0
288	Recent advances of crosslinkable organic semiconductors in achieving solution-processed and stable optoelectronic devices. **2022**, 10, 18542-18576	0
287	Strain Regulating Mechanical Stability and Photoelectric Properties of Ch3nh3pbi3 Containing the Asymmetric Ch3nh3 Cations.	0
286	CsPbBr3 perovskite quantum dots as a visible light photocatalyst for cyclisation of diamines and amino alcohols: an efficient approach to synthesize imidazolidines, fused-imidazolidines and oxazolidines. **2022**, 12, 5891-5898	1
285	Two-dimensional SnS2 nanosheets as electron transport and interfacial layers enable efficient perovskite solar cells. **2022**, 10, 12392-12401	1
284	Emerging Metal-Halide Perovskite Materials for Enhanced Solar Cells and Light-Emitting Applications. **2022**, 45-85	0
283	Modified Post-Annealing Process with N, N-Dimethylformamide Vapor to Control the Growth of Hybrid Perovskite Microstructure.	0
282	Cu katkŝññ MAPbI3 Perovskit °nce Filmlerin Yapŝal Özellikleri ve Elektriksel Özdirençlerine Etkisi. **2022**, 14, 544-551	0
281	Roles of Inorganic Oxide Based HTMs towards Highly Efficient and Long-Term Stable PSCs: A Review. **2022**, 12, 3003	3
280	Surface-Plasmonic-Coupled Photodetector Based on MAPbI3 Perovskites with Au Nanoparticles: Significantly Enhanced Photoluminescence and Photodetectivity. **2022**, 4, 4560-4568	1
279	Polyethylene Glycol Dodecyl Ether as Interfacial Modifier for Improving Efficiency of Perovskite Solar Cells. 2200761	0
278	Antisolvent Treatment on Wet Solution-Processed CuSCN Hole Transport Layer Enables Efficient and Stable Perovskite Solar Cells. 2201191	1
277	Impact of Polymeric Hole-Selective Layers on Chemical Inductance in Inverted Perovskite Solar Cells. 2200624	0
276	Molecular Engineering of Enamine-Based Hole-Transporting Materials for High-Performing Perovskite Solar Cells: Influence of the Central Heteroatom. 2200590	0
275	Enhancement of the photovoltaic performance of perovskite solar cells via sono-synthesis of Al-doped TiO 2 as the electron transport layer.	1
274	Stabilization of Perovskite Solar Cells: Recent Developments and Future Perspectives. 2204380	7
273	Ionic Liquids for Efficient and Stable Perovskite Solar Cells. 2201292	1

272	What are Methylammonium and Solvent Fates upon Halide Perovskite Thin-Film Preparation and Thermal Aging?. 2201436	1
271	How to Make 20% Efficient Perovskite Solar Cells in Ambient Air and Encapsulate Them for 500 h of Operational Stability. **2022**, 34, 8112-8118	0
270	Temperature-Dependent Carrier Extraction and the Effects of Excitons on Emission and Photovoltaic Performance in Cs0.05FA0.79MA0.16Pb(I0.83Br0.17)3 Solar Cells. **2022**, 14, 44358-44366	0
269	A Polyanionic Strategy to Modify the Perovskite Grain Boundary for a Larger Switching Ratio in Flexible Woven Resistive Random-Access Memories. **2022**, 14, 44652-44664	0
268	Enabling full-scale grain boundary mitigation in polycrystalline perovskite solids. **2022**, 8,	2
267	Molecular Regulation of Perylenediimide and Fluorene-Based Cathode Interfacial Materials for Efficient Inverted Perovskite Solar Cells. **2022**, 9, 2200923	1
266	Modulating preferred crystal orientation for efficient and stable perovskite solar cells□from progress to perspectives.	0
265	Two Quasi-interfacial p-n Junctions Observed by a Dual-Irradiation System in Perovskite Solar Cells.	0
264	Advances and challenges in understanding the microscopic structure□property□performance relationship in perovskite solar cells. **2022**, 7, 794-807	12
263	Recent Progress on Defect Passivation of All-Inorganic Halide Perovskite Solar Cells. **2022**, 9, 2200636	1
262	Hole-Transporting Vanadium-Containing Oxide (V2O5□) Interlayers Enhance Stability of □FAPbI3-Based Perovskite Solar Cells (~23%). **2022**, 14, 42007-42017	0
261	Full-Area Passivating Hole Contact in Silicon Solar Cells Enabled by a TiOx/Metal Bilayer.	0
260	Predictive analysis of multiple future scientific impacts by embedding a heterogeneous network. **2022**, 17, e0274253	0
259	Recent advances of interface engineering in inverted perovskite solar cells. **2022**, 31, 107307	0
258	Highly Stable Amine-Free CsPbBr3 Perovskite Nanocrystals for Perovskite-Based Display Applications. **2022**, 5, 13561-13572	3
257	Two 3D Rubidium Halide Organic-Inorganic Hybrid Perovskite Ferroelectrics Templated by Quasi-Spherical Organic Amine 1,4-Diazabicyclo[3.2.2]nonane.	1
256	Methylammonium Chloride Additive in Lead Iodide Optimizing the Crystallization Process for Efficient Perovskite Solar Cells. **2022**, 2022, 1-8	0
255	Scalable Two-Step Production of High-Efficiency Perovskite Solar Cells and Modules.	1

254	Asymmetrically substituted 10H,10'H-9,9'-spirobi[acridine] derivatives as hole-transporting materials for perovskite solar cells.	0
253	[PPh3H]2[SbCl5]: A Zero-Dimensional Hybrid Metal Halide with a Supramolecular Framework and Stable Dual-Band Emission.	1
252	Coupling Enhancement of a Flexible BiFeO3 Film-Based Nanogenerator for Simultaneously Scavenging Light and Vibration Energies. **2022**, 14,	0
251	NH4Ac boosts the efficiency of carbon-based all-inorganic perovskite solar cells fabricated in the full ambient air to 15.43%. **2022**, 155175	1
250	Asymmetrically substituted 10H,10'H-9,9'-spirobi[acridine] derivatives as hole-transporting materials for perovskite solar cells.	0
249	ZrCl4 for energy level alignment at the perovskite/TiO2 interface. **2022**, 433, 141214	0
248	Probing the photodegradation of MAPI perovskite with concentrated sunlight. **2022**, 133, 113012	0
247	Strain regulating mechanical stability and photoelectric properties of CH3NH3PbI3 containing the asymmetric CH3NH3 cations. **2022**, 33, 104527	0
246	Impact of loss mechanisms on performances of perovskite solar cells. **2022**, 647, 414363	0
245	FIRST-PRINCIPLES CALCULATIONS OF THE STRUCTURAL, ELECTRONIC AND ELASTIC PROPERTIES OF SrGeO3 AND SrZrO3 CUBIC PEROVSKITES.. **2021**, 6, 7-18	0
244	Organic□Inorganic Hybrid Devices□Perovskite-Based Devices. **2022**, 283-307	0
243	Polarity and moisture induced trans-grain-boundaries 2D/3D coupling structure for flexible perovskite solar cells with high mechanical reliability and efficiency.	4
242	Combining two-photon photoemission and transient absorption spectroscopy to resolve hot carrier cooling in 2D perovskite single crystals: the effect of surface layer.	0
241	Recent Progress of Crystal Orientation Engineering in Halide Perovskite Photovoltaics.	0
240	Tailoring the thermal conductivity of two-dimensional metal halide perovskites.	0
239	Performance limitations imposed by the TCO heterojunction in high efficiency perovskite solar cells.	0
238	Effects of Ammonium and Alkali Metal Additives on Anisotropic Photoconductivities and Solar Cell Efficiencies of Two-Dimensional Lead Halide Perovskites. **2022**, 126, 17894-17903	0
237	Degradation Analysis of Triple-Cation Perovskite Solar Cells by Electrochemical Impedance Spectroscopy. **2022**, 5, 12545-12552	0

236	Inactive impurity stabilizes the highly efficient perovskite photovoltaics. **2022**, 6, 2248-2250	0
235	Perovskite-based Photovoltaics for Artificial Indoor Light Harvesting: A Critical Review.	0
234	Photo-Enhanced Resistive Switching Effect in High-Performance MAPbI 3 Memristors. 2201513	0
233	What Can Glow Discharge Optical Emission Spectroscopy (GD-OES) Technique Tell Us about Perovskite Solar Cells?. 2200633	0
232	Tuning paradigm of external stimuli driven electronic, optical and magnetic properties in hybrid perovskites and metal organic complexes. **2022**,	0
231	Fullerene-Based Inverted Perovskite Solar Cell: A Key to Achieve Promising, Stable, and Efficient Photovoltaics. 2201438	5
230	Hydrogen Plasma on Graphene Oxide to Produce Gradients of Oxygen-Containing Functional Groups for Self-Powered Devices.	0
229	Passivating Defects of Perovskite Solar Cells with Functional Donor-Acceptor–Donor Type Hole Transporting Materials. 2208317	1
228	High-Performance Inverted Perovskite Solar Cells Enhanced via Partial Replacement of Dimethyl Sulfoxide with N -Methyl-2-Pyrrolidinone. 2200816	0
227	Novel broad spectral response perovskite solar cells: A review of the current status and advanced strategies for breaking the theoretical limit efficiency. **2022**,	0
226	Prediction of structural, electronic, and lattice dynamical properties of ABO3 [A = K, Rb, Cs; B = Sn, Sb] perovskite compounds. **2022**, 414355	2
225	Preparation of Perovskite Solar Cells in the Air: Degradation Mechanism and Prospects on Large-area Fabrication.	1
224	Role of molybdenum doping in reducing leakage current density of BiFeO3 based thin film devices. **2022**, 598, 159-168	0
223	Ethylammonium Bromide- and Potassium-Added CH3NH3PbI3 Perovskite Solar Cells. **2022**, 9, 791	1
222	LiF-Modified SnO2 Electron Transport Layer Improves the Performance of Carbon-Based All-Inorganic CsPbIBr2 Perovskite Solar Cells. **2022**, 36, 13179-13186	0
221	Multifunctional Ionic Fullerene Additive for Synergistic Boundary and Defect Healing of Tin Perovskite to Achieve High-Efficiency Solar Cells. **2022**, 14, 46603-46614	0
220	Exciton Photoluminescence of Strongly Quantum-Confined Formamidinium Lead Bromide (FAPbBr3) Quantum Dots. **2022**, 126, 18366-18373	1
219	Molecular Rotor–Rotor Heat Diffusion at the Origin of the Enhanced Thermal Conductivity of Hybrid Perovskites at High Temperatures.	0

218	Insight on the lattice dynamics, thermodynamic and thermoelectric properties of CdYF3 perovskite: A DFT study. **2022**, 113928	1
217	Efficient tin (II) fluoride-free formamidinium tin triiodide perovskite solar cells via composition and additive engineering.	0
216	Molecular Electronic Study of Spiro-[cyclopenta[1,2-b:5,4-b?]dithiophene-4,9?-fluorene] Derivatives: Route to Decent Hole-Transporting Materials. **2022**, 126, 18238-18250	0
215	Crystalline Phase Segregation of Quantum-Dots-Passivated CH3NH3PbI3 Film via Argon Plasma Treatment. **2022**, 12, 1556	0
214	A Thiourea Competitive Crystallization Strategy for FA-Based Perovskite Solar Cells. 2208885	1
213	Metal Halide Perovskite/Electrode Contacts in Charge-Transporting-Layer-Free Devices. 2203683	0
212	Computational screening of Cs based vacancy-ordered double perovskites for solar cell and photocatalysis applications.	0
211	Optimization of tin based perovskite solar cell employing CuSbS2 as HTL: A numerical simulation approach. **2022**, 134, 113060	0
210	Nonlinear absorption, refraction and optical limiting properties of CsPbBr3 perovskite quantum dot organic glass. **2022**, 134, 113090	0
209	Stable and highly efficient all-inorganic CsPbBr3 perovskite solar cells by interface engineering with NiO NCs modification. **2022**, 435, 141392	0
208	□FAPbI3 phase stabilization using aprotic trimethylsulfonium cation for efficient perovskite solar cells. **2022**, 551, 232207	0
207	Anti-solvent treatment time approach to high efficiency perovskite solar cells with temperature of coating environmental. **2023**, 250, 112054	1
206	Polyhydroxy compound modifying SnO2 for high-performance and stable perovskite solar cells. **2023**, 656, 130318	1
205	Carbon nanofibers fabricated via electrospinning to guide crystalline orientation for stable perovskite solar cells with efficiency over 24%. **2023**, 453, 139961	1
204	INVESTIGATION OF METHYLAMMONIUM LEAD BROMIDE HYBRID PEROVSKITE BASED PHOTOACTIVE MATERIAL FOR THE PHOTOVOLTAIC APPLICATIONS. **2021**, 16, 205-215	0
203	Data-Driven Generation of Mixed X-Anion Perovskites Properties.	0
202	Exploring the structural, electronic, optical, and thermoelectric properties of potassium-based double perovskites K2AgXI6 (X´=´Sb, Bi) compounds: A DFT study. **2023**, 287, 116122	0
201	A modified two-step sequential spin-coating method for perovskite solar cells using CsI containing organic salts in mixed ethanol/methanol solvent. **2023**, 250, 112107	1

200	Brightening thiocyanate-anion layered perovskite through internal stress modulated nano phase segregation.	0
199	Computational Probing of Tin-Based Lead-Free Perovskite Solar Cells: Effects of Absorber Parameters and Various Electron Transport Layer Materials on Device Performance. **2022**, 15, 7859	1
198	Stable ⊞FAPbI3 via porous PbI2 for efficient perovskite solar cells. **2022**, 157, 194704	0
197	Conversion of the non-luminous lead-free inorganic halide perovskite variant CsNiCl3 nanocrystals into photoluminescent materials by Cu+ and In3+ doping. **2022**, 10, 111110	1
196	Molecular engineering of contact interfaces for high-performance perovskite solar cells.	5
195	Effect of Various Electron and Hole Transport Layers on the Performance of CsPbI3-Based Perovskite Solar Cells: A Numerical Investigation in DFT, SCAPS-1D, and wxAMPS Frameworks.	10
194	Scanning X-Ray Excited Optical Luminescence of Heterogeneity in Halide Perovskite Alloys.	0
193	Molecularly Functionalized SnO2 Films by Carboxylic Acids for High-Performance Perovskite Solar Cells.	0
192	Control of perovskite film crystallization and growth direction to target homogeneous monolithic structures. **2022**, 13,	0
191	Defect engineering of metal halide perovskite optoelectronic devices. **2022**, 100438	0
190	Ultrafast laser spectroscopy uncovers mechanisms of light energy conversion in photosynthesis and sustainable energy materials. **2022**, 3, 041303	1
189	Highly efficient and stable hole-transport-layer-free inverted perovskite solar cells achieved 22% efficiency through p-type molecular synergistic doping. **2022**, 104, 107988	2
188	Structural Phase Transitions and Thermal Degradation Process of MAPbCl3 Single Crystals Studied by Raman and Brillouin Scattering. **2022**, 15, 8151	1
187	Low-temperature in situ deposited CuI-based hole-transporter for perovskite solar cells efficiency enhancement.	0
186	Angle-Resolved Polarimetry of Hybrid Perovskite Emission for Photonic Technologies.	1
185	A spectroscopic overview of the differences between the absorbing states and the emitting states in semiconductor perovskite nanocrystals.	1
184	First-principles study of structural, electronic, elastic and optical properties of alkali lead iodides MPbI3 (M = Li, Na, K). **2023**, 24, 1-21	0
183	Energy Level Modulation of TiO2 Using Amino Trimethylene Phosphonic Acid for Efficient Perovskite Solar Cells with Average VOC of 1.19 V.	0

182	Amorphous antimony sulfide nanoparticles construct multi-contact electron transport layers for efficient carbon-based all-inorganic CsPbI2Br perovskite solar cells. **2023**, 455, 140871	0
181	Review on promising roles of alkali metals toward highly efficient perovskite light-emitting diodes.	0
180	Perovskite solar cells: Thermal and chemical stability improvement, and economic analysis. **2023**, 27, 101284	0
179	Experimentally informed structure optimization of amorphous TiO2 films grown by atomic layer deposition.	0
178	The Role of B-site Doping in All-inorganic CsPbIxBr3−x Absorbers on the Performance and Stability of Perovskite Photovoltaics.	0
177	Vitamin needed: Lanthanides in optoelectronic applications of metal halide perovskites. **2023**, 152, 100710	1
176	Investigating the structure and optical characteristics of two new organic-inorganic hybrid crystals. **2023**, 272, 170301	0
175	Lead-free Dion–Jacobson halide perovskites CsMX2Y2 (M = Sb, Bi and X, Y = Cl, Br, I) used for optoelectronic applications via first principle calculations. **2023**, 174, 111157	0
174	A DFT insight into structural, mechanical, elasto-acoustic, and anisotropic properties of AePdH3 (Ae = Ca, Sr, Ba) perovskites under pressure. **2023**, 34, e00774	0
173	Water dopant control of structural stability and charge recombination of perovskite solar cells: A first-principles study. **2023**, 612, 155794	0
172	Cutting-edge stability in perovskite solar cells through quantum dot-covered P3HT nanofibers. **2023**, 62, 162-176	0
171	Transparent Liquid Crystal Hole-Transporting Material for Stable Perovskite Solar Cells. 2200920	0
170	Surface Regulation through Dipolar Molecule Boosting the Efficiency of Mixed 2D/3D Perovskite Solar Cell to 24%. 2209921	1
169	Study of ambipolar properties of organic-inorganic CH3NH3PbI3 perovskite for vertical field effect transistor.	0
168	Reconfiguration toward Self-Assembled Monolayer Passivation for High-Performance Perovskite Solar Cells. 2202799	0
167	Synthesis of Nitrogen-Doped Carbon Quantum Dots from Walnut Shell Waste as Electron Transport Layer Additive for Perovskite Solar Cells. 76, 49-60	0
166	Atomic Layer Deposition for Electrochemical Energy: from Design to Industrialization. **2022**, 5,	0
165	Phase-Controlled Strategy for High-Quality Single-Source Vapor-Deposited Cs2AgBiBr6 Thin Films. **2022**, 5, 15058-15068	0

164	Influence of the composition of glass substrates on CH3NH3PbI3 films properties deposited by Spin-Coating. **2022**,	0
163	Bulk Heterostructure BA2PbI4/MAPbI3 Perovskites for Suppressed Ion Migration To Achieve Sensitive X-ray Detection Performance. **2022**, 14, 54867-54875	0
162	Evaluation of bioaccumulation of nanoplastics, carbon nanotubes, fullerenes, and graphene family materials. **2022**, 107650	0
161	Single-Crystalline Layered Metal-Halide Perovskite Microwires with Intercalated Molecules for Ultraviolet Photodetectors. 2201465	0
160	Nexuses Between the Chemical Design and Performance of Small Molecule Dopant-Free Hole Transporting Materials in Perovskite Solar Cells. 2205926	2
159	Efficient Planar Perovskite Solar Cells with ZnO Electron Transport Layer. **2022**, 12, 1981	0
158	Defect Passivation by Pyridine-Carbazole Molecules for Efficient and Stable Perovskite Solar Cells. **2022**, 5, 15819-15827	0
157	First-principles structural, elastic and optoelectronics study of sodium niobate and tantalate perovskites. **2022**, 12,	1
156	Perovskite solar cells based on spiro-OMeTAD stabilized with an alkylthiol additive.	2
155	Fifth international conference on materials and environmental science. **2022**,	0
154	Engineering Water Stable Perovskite and Plasmonic-Perovskite Nanocomposites: A Step toward Unleashing the True Potential of Perovskite Catalysis. 2202029	0
153	Engineering Stable Lead-free Tin Halide Perovskite Solar Cells: Lessons from Materials Chemistry. 2206684	0
152	Vacancy-Ordered Double Perovskites Cs2BI6 (B = Pt, Pd, Te, Sn): An Emerging Class of Thermoelectric Materials. **2022**, 13, 11655-11662	0
151	Thin Film Solution Processable Perovskite Solar Cell.	0
150	Structural, elastic, mechanical, and thermodynamic characteristic of NaReO3 and KReO3 perovskite oxides from first principles study. **2022**, 137,	1
149	Recent progress in perovskite solar cells: material science.	1
148	Optimization of Inverted All-Inorganic CsPbI3 and CsPbI2Br Perovskite Solar Cells by SCAPS-1D Simulation. **2022**, 2, 559-571	0
147	Solar Solutions for the Future.	0

146	Optoelectronic Resistive Memory Based on Lead-Free Cs 2 AgBiBr 6 Double Perovskite for Artificial Self-Storage Visual Sensors. 2200657	1
145	Halide Perovskite: A Promising Candidate for Next-Generation X-Ray Detectors. 2205536	1
144	Situation and Perspectives on Tin-Based Perovskite Solar Cells. **2022**, 14, 16603	0
143	Key role of residual lead iodide in two-step processed perovskite layer for high performance perovskite solar cells. **2023**, 122, 013901	1
142	Biomolecules incorporated in halide perovskite nanocrystals: synthesis, optical properties, and applications.	0
141	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
140	Uncovering Aging Chemistry of Perovskite Precursor Solutions and Anti-aging Mechanism of Additives.	0
139	High-performance FAPbI3 perovskite solar cells with an optimized interface energy band alignment by a Zn(O,S) electron transport layer. **2023**, 34,	0
138	CsPbBr3/CsCaAl2O4:Nd,Er Nanoriveted Structure Perovskites with Long Afterglow Dual-Wavelength Emission for Flexible Photoelectric Devices.	0
137	Highly efficient perovskite solar cells with light management of surface antireflection.	0
136	Orientation-controlled mesoporous PbI2 scaffold for 22.7% perovskite solar cells.	0
135	Upscaling of Carbon-Based Perovskite Solar Module. **2023**, 13, 313	0
134	Efficient Thin-Film Perovskite Solar Cells from a Two-Step Sintering of Nanocrystals.	0
133	Strong Antibonding I (p)Cu (d) States Lead to Intrinsically Low Thermal Conductivity in CuBiI4. **2023**, 145, 1349-1358	0
132	Uncovering Aging Chemistry of Perovskite Precursor Solutions and Anti-aging Mechanism of Additives.	0
131	Enhanced Blue Emission in Rb2HfCl6 Double Perovskite via Bi3+ Doping and Cs+ Alloying.	0
130	Seeding Agents in Metal Halide Perovskite Solar Cells: From Material to Mechanism.	0
129	Insight on the choice of sensitizers/dyes for dye sensitized solar cells: A review. **2023**, 111087	0

128	Electronic effect of substituents on the charge-transfer dynamics at the CsPbBr3 perovskite□small molecule interface.	0
127	In situ crosslinking-assisted perovskite grain growth for mechanically robust flexible perovskite solar cells with 23.4% efficiency. **2023**,	0
126	Synthesis and Applications of Halide Perovskite Nanocrystals in Optoelectronics. **2023**, 11, 39	0
125	Enhanced optical and electronic properties of chlorobenzene-assisted perovskite CH3NH3PbI3□Clx film incorporated in p-i-n solar cells. **2023**, 34,	0
124	Omnidirectional Diffusion of Organic Amine Salts Assisted by Ordered Arrays in Porous Lead Iodide for Two-Step Deposited Large-Area Perovskite Solar Cells.	0
123	Deciphering the role of antisolvent on the structural and optical properties of CH3NH3PbI3 film and its impacts on the performance and stability of n-i-p perovskite solar cells. **2023**, 136, 113421	0
122	COMPARATIVE ANALYSIS OF FOURTH GENERATION SOLAR CELL WITH COMBINATION OF ORGANIC AND INORGANIC MATERIALS. **2022**,	0
121	Khao s□ t□nh chat cua tinh the perovskite (C6H5C2H4NH3)2PbCl4 che tao bang ph□□g ph□ bay h□si□ b□ h□a. **2022**, 303-308	0
120	Accelerated formation of iodine vacancies in CH 3 NH 3 PbI 3 perovskites: The impact of oxygen and charges.	0
119	Development of metal oxide heterostructures for hydrogen production. **2023**, 501-533	0
118	Suppressing hydrogen bonds and controlling surface dipole: effective passivation for hydrophobic perovskite photoabsorber layers in solar cells.	0
117	Recent progress of W18O49 nanowires for energy conversion and storage.	0
116	Understanding the structural and optical characteristics in Sr2xLa2-2xLi2xTe2-2xO6 perovskites. **2023**,	0
115	An Ultrasensitive Sandwiched Heterostructure Planar Photodetector with Gradient Quasi-2D Perovskite. 2201028	0
114	Halide-based perovskites in photonics: From photocatalysts to highly efficient optoelectronic devices. **2023**, 547-600	0
113	Synthesis techniques of metal halide perovskites. **2023**, 91-151	0
112	Tb3+ and Bi3+ Co-Doping of Lead-Free Cs2NaInCl6 Double Perovskite Nanocrystals for Tailoring Optical Properties. **2023**, 13, 549	0
111	Challenges in the development of metal-halide perovskite single crystal solar cells.	0

110	Slot-die coating fabrication of perovskite solar cells toward commercialization. **2023**, 942, 169104	0
109	High-efficiency perovskite photovoltaic system performance by molecular dynamics method: Optimizing electron transport thicknesses, hole transport, and anti-reflector layers of the sustainable energy materials. **2023**, 150, 120-126	0
108	Computational Study of Double Absorber layer Perovskite Solar Cell Devices. **2022**,	0
107	Effects of Cesium/Formamidinium Co-Addition to Perovskite Solar Cells.	0
106	Crystal structures for flexible photovoltaic application. **2023**, 493-525	0
105	Alkylammonium bis(trifluoromethylsulfonyl)imide as a dopant in the hole-transporting layer for efficient and stable perovskite solar cells.	0
104	Halide perovskites and high-pressure technologies: a fruitful encounter.	0
103	Zn2+ ion doping for structural modulation of lead-free Sn-based perovskite solar cells.	0
102	A comprehensive study of the optimization and comparison of cesium halide perovskite solar cells using ZnO and Cu2FeSnS4 as charge transport layers.	0
101	Tuning Octahedral Tilting by Doping to Prevent Detrimental Phase Transition and Extend Carrier Lifetime in Organometallic Perovskites. **2023**, 145, 5393-5399	1
100	A multiscale ion diffusion framework sheds light on the diffusion–stability–hysteresis nexus in metal halide perovskites. **2023**, 22, 329-337	0
99	Benzyl Alcohol Photo-oxidation Based on Molecular Electronic Transitions in Metal Halide Perovskites. **2023**, 10, 772-779	0
98	Polymer-Assisted Heterogeneous Lead Iodide in a Two-Step Process: Fabrication of Efficient and Stable Perovskite Solar Cells.	0
97	Impact of a non-magnetic Sr2+ ion doping on the magnetic and optical properties of Gd2-xSrxNiMnO6 (x´=´0,0.3,0.5) double perovskite. **2023**, 571, 170549	0
96	Device Structures of Perovskite Solar Cells: A Critical Review.	0
95	High efficient perovskite solar cells enhancement via photosystem I proteins. **2023**, 137, 113566	0
94	Transition metal dichalcogenides solar cells and integration with perovskites. **2023**, 108, 108249	0
93	Recent developments of lead-free halide-perovskite nanocrystals: Synthesis strategies, stability, challenges, and potential in optoelectronic applications. **2023**, 34, 101079	0

92	Enhanced efficiency and stability of perovskite solar cells achieved by incorporating potassium cation-18-crown ether-6 complexes. **2023**, 116, 106766	0
91	Synchrotron based transient x-ray absorption spectroscopy for emerging solid-state energy materials. **2023**, 4, 021303	0
90	Long-chain alkylammonium organic□inorganic hybrid perovskite for high performance rechargeable aluminon-ion battery. **2023**, 110, 108273	0
89	Multi-functional lead-free Ba2XSbO6 (X´=´Al, Ga) double perovskites with direct bandgaps for photocatalytic and thermoelectric applications: A first principles study. **2023**, 35, 105617	0
88	Photomultiplication-type perovskite photodetectors base on air-processed perovskite films. **2023**, 118, 106800	0
87	Exploration of new chiral hybrid semiconducting palladium halide complexes: [(R)/(S)-2-Methylpiperazinediium]PdCl4. **2023**, 164, 112251	0
86	Application of 5G Communication Technology Based on Intelligent Sensor Network in Coal Mining. **2023**, 2023, 1-11	0
85	The role of hydrophobic molecules in the optoelectronical attributes of triple-cation perovskite solar cells. **2023**, 295, 117323	0
84	Photothermal process and its stimulate healing performance for catalyst-free OCB/epoxy vitrimer composite. **2023**, 252, 112204	0
83	Perylene Monoimide Phosphorus Salt Interfacial Modified Crystallization for Highly Efficient and Stable Perovskite Solar Cells. **2023**, 15, 5556-5565	0
82	Advances in Encapsulations for Perovskite Solar Cells: From Materials to Applications. **2023**, 7,	0
81	Photovoltaic Devices Using Sublimed Methylammonium Lead Iodide Perovskites: Long-Term Reproducible Processing. **2023**, 7,	0
80	Formamidinium Lead Iodide Perovskite Thin Films Formed by Two-Step Sequential Method: Solvent□Morphology Relationship. **2023**, 16, 1049	0
79	Probing the Genuine Carrier Dynamics of Semiconducting Perovskites under Sunlight. **2023**, 3, 441-448	0
78	Fabrication of Ag nanoparticle assisted TiO2 Nanowire Photoanode at Low Temperature for Flexible DSSC Applications. **2022**,	0
77	Instability of solution-processed perovskite films: origin and mitigation strategies. **2023**, 2, 012102	0
76	Construction of CsPbBr3-CdS solid solution for visible light photocatalytic CO2 reduction. **2023**, 34,	0
75	Biomass-Derived Materials for Interface Engineering in Organic/Perovskite Photovoltaic and Light-Emitting Devices. **2023**, 8,	0

74	Overview on Different Types of Solar Cells: An Update. **2023**, 13, 2051	0
73	Bifunctional Cellulose Interlayer Enabled Efficient Perovskite Solar Cells with Simultaneously Enhanced Efficiency and Stability. **2023**, 10,	0
72	Scanning Electrochemical Microscope Studies of Charge Transfer Kinetics at the Interface of the Perovskite/Hole Transport Layer. **2023**, 2023, 1-12	0
71	Manipulating Crystallographic Orientation via Cross-Linkable Ligand for Efficient and Stable Perovskite Solar Cells. 2207189	0
70	Aprotic Solvent Effect in Preparation of Organo Lead Iodide Perovskite Nanowires by Two-Step Spin-Coating Procedure. **2023**, 12, 026004	0
69	Treasure trove for efficient hydrogen evolution through water splitting using diverse perovskite photocatalysts. **2023**, 29, 101387	0
68	An investigation of liquid-junction perovskite solar energy storage cell.	0
67	Dual Optimization of Bulk and Interface via the Synergistic Effect of Ligand Anchoring and Hole Transport Dopant Enables 23.28% Efficiency Inverted Perovskite Solar Cells. **2023**, 17, 3776-3785	0
66	Slow Spontaneous Efficiency Enhancement of Single-Crystal Perovskite Solar Cells Due to Trapped Solvent. **2023**, 6, 2257-2264	0
65	Unveiling the Intrinsic Structure and Intragrain Defects of Organic□horganic Hybrid Perovskites by Ultralow Dose Transmission Electron Microscopy. 2211207	0
64	Theoretical investigation for dye-sensitized solar cells: effect of donor variation on the optoelectronic properties and charge transfer parameters. **2023**, 49, 1731-1754	0
63	The effects of cation and halide anion on the stability, electronic and optical properties of double perovskite Cs2NaMX6 (M´=´In, Tl, Sb, bi; X ´=´Cl, Br, I). **2023**, 220, 112058	0
62	Mixed Organic Halide Perovskite Energy Harvester for Solar Cells. **2023**, 2426, 012044	0
61	Orientation Engineering via 2D Seeding for Stable 24.83% Efficiency Perovskite Solar Cells. **2023**, 13,	0
60	Reversible Luminescent Switching Induced by Heat/Water Treatment in a Zero-Dimensional Hybrid Antimony(III) Chloride. **2023**, 28, 1978	0
59	Reinforcing the efficiency and stability of perovskite solar cells using a cesium sulfate additive. **2023**, 34,	0
58	Orientation control of two-dimensional perovskite (CH3(CH2)3NH3)2(CH3NH3) n□PbnI3n+1 (n = 2) thin films by thermal annealing. **2023**, 62, SK1007	0
57	Cubic or Not Cubic? Combined Experimental and Computational Investigation of the Short-Range Order of Tin Halide Perovskites. **2023**, 14, 2178-2186	0

56	Zirconia Spacer: Preparation by Low Temperature Spray-coating and Application in Triple-layer Perovskite Solar Cells. **2023**, 38, 213	0
55	Optoelectronic Study of Polymer Electrolyte Incorporated Perovskite Sensitized Solar Cell. **2023**, 407,	0
54	Bioinspired heterogeneous and hierarchical porous structure of oxo-graphene assembly for spontaneous energy harvesting from air. **2023**, 461, 142097	0
53	Recycling Useful Materials of Perovskite Solar Cells toward Sustainable Development. 2300014	0
52	Benzodithiophene derivative 2D spacer as a defect passivation material in metal halide perovskite solar cells.	0
51	Multifunctional anthraquinone-sulfonic potassium salts passivate the buried interface for efficient and stable planar perovskite solar cells. **2023**, 25, 8403-8411	0
50	Nanoscale Thermal Strain Engineering-Driven Ferroelastic Domain Evolution in CH3NH3PbI3 Perovskites. **2023**, 15, 12502-12510	0
49	Numerical Analysis of High-Efficiency CH3NH3PbI3 Perovskite Solar Cell with PEDOT:PSS Hole Transport Material Using SCAPS 1D Simulator.	0
48	Intrinsic Formamidinium Tin Iodide Nanocrystals by Suppressing the Sn(IV) Impurities. **2023**, 23, 1914-1923	0
47	Fluorescence. **2023**, 245-329	0
46	Eu3+-Bi3+ co-doping Double Perovskites for Single-Component White Light Emitting Diodes.	0
45	Terpyridine-zinc(ii) coordination nanosheets as modulators of perovskite crystallization to enhance solar cell efficiency. **2023**, 11, 7077-7084	0
44	Multifunctional Green Solvent for Efficient Perovskite Solar Cells.	0
43	Light-Emitting Device Based on Amplified Spontaneous Emission. 2200908	0
42	[illegible]H3NH3PbI3[illegible]Clx [illegible]118-127	0
41	In Situ and Operando Characterizations of Metal Halide Perovskite and Solar Cells: Insights from Lab-Sized Devices to Upscaling Processes. **2023**, 123, 3160-3236	0
40	Investigation of the Cobalt-Additive Role in Improving the Performance of Formamidium Lead Triiodide Based Solar Cells.	0
39	Theoretical Selection of 2D Perovskite for Constructing Efficient Heterojunction Solar Cells. **2023**, 5, 970-978	0

38	Interactions of Pyridine-Based Organic Cations as Structure-Determining Factors in Perovskite-Related Compounds A x Pb(II) y Br z.	0
37	Quantum-Dot-Doped Lead Halide Perovskites for Ionizing Radiation Detection. **2023**, 1, 715-723	0
36	Two-Dimensional Cs 2 AgIn x Bi 1- x Cl 6 Alloyed Double Perovskite Nanoplatelets for Solution-Processed Light-Emitting Diodes.	0
35	Theoretical Analysis of All-Inorganic Wide Bandgap Perovskite/Sn-Based Narrow Bandgap Perovskite Tandem Solar Cells. 2300081	0
34	Foldable Hole-Transporting Materials for Merging Electronic States between Defective and Perfect Perovskite Sites. 2300720	0
33	Rethinking the Role of Excess/Residual Lead Iodide in Perovskite Solar Cells. 2215171	0
32	Crystal Growth Regulation of FAPbI 3 Perovskite Films for High-Efficiency Solar Cells with Long-Term Stability. 2214834	0
31	Fabrication of inverted planar perovskite solar cells using the iodine/ethanol solution method for copper iodide as a hole transport layer. **2023**, 62, SK1016	0
30	Carrier Dynamics Determines the Optimization Strategies of Perovskite LEDs and PVs. **2023**, 6,	0
29	A first-principles study of electronic, optical and thermoelectric properties of TlXF3 (X: Zn, Sr) perovskite crystal structure. **2023**, 98, 055907	0
28	Characterization of Large-Energy-Bandgap Methylammonium Lead Tribromide (MAPbBr3) Perovskite Solar Cells. **2023**, 13, 1152	0
27	The Properties of the CH3NH3PbI3/TiO2 Composite Layer Prepared from PbO-TiO2 Mesoporous Layer under Air Ambience. **2023**, 13, 669	0
26	Strong Electron Phonon Coupling Induced Self-Trapped Excitons in Double Halide Perovskites.	0
25	A Facile Aqueous Solution Route for the Growth of Chalcogenide Perovskite BaZrS3 Films. **2023**, 10, 366	0
24	Machine Learning for Halide Perovskite Materials ABX3 (B = Pb, X = I, Br, Cl) Assessment of Structural Properties and Band Gap Engineering for Solar Energy. **2023**, 16, 2657	0
23	Dye-sensitized solar cell performance improvement by dye-solvent polarity and redox mediator potential alignment. **2023**, 441, 114732	0
22	Recent advancements in materials for colored and semi-transparent perovskite solar cell applications.	0
21	Crystal structure of bis[octakis(dimethyl sulfoxide-O)ytterbium(III)] pentabromidoplumbate(II) tribromide dimethyl sulfoxide monosolvate: a ytterbium-doped lead halide perovskite precursor. **2023**, 79, 402-405	0

20	Phase Control of Organometal Halide Perovskites for Development of Highly Efficient Solar Cells.	0
19	Tuning the photovoltaic performance of perovskite solar cells by simple incorporation of ZnO QDs into the mesoporous titania layer. **2023**, 58, 6267-6280	0
18	Synergistic effect of Ga(NO3)3 & TiCl4 post-treatment on photovoltaic performance of dye-sensitized solar cells. **2023**, 129,	0
17	In situ growth of perovskite single-crystal thin films with low trap density. **2023**, 4, 101363	0
16	Mapping the pathways of photo-induced ion migration in organic-inorganic hybrid halide perovskites. **2023**, 14,	0
15	Insights into the replacement of FA by Cs in FAPbI3−xClx thin film fabricated in atmospheric conditions: Inspection of solar cell and photocatalytic performances. **2023**, 953, 169930	0
14	Organic ligands/dyes as photon-downshifting materials for clean energy. **2023**, 265-280	0
13	Two-Step Vapor-Solid Reaction for the Growth of High-Quality CsFA-Based Lead Halide Perovskite Thin Films.	0
12	Investigation of Structural with Electronic Properties of Methylammonium Lead Iodide Perovskite Using Density Functional Theory. **2022**, 107-113	0
11	Addressing electrocatalytic activity of metal-substituted lanthanum manganite for the hydrogen evolution reaction. **2023**, 102881	0
10	Comparative performance analysis of Cs2TiX6 (X=Br-, Cl-, I-) lead-free perovskite solar cells incorporating single, double and triple layer halides by SCAPS -1D. **2023**, 106016	0
9	Impact of Organic Dye-Photosensitizer on TiO2 Nanocrystalline Surface for High Performance Organic Electronic Devices: A Computational Insight. **2023**, 114772	0
8	Theoretical study of Li-ion migration in perovskite-type AVO3 (A = Ca, La, Ce, and La0.75Ca0.25) with DFT+U methods. **2023**, 106029	0
7	Self-healing perovskite solar cells based on copolymer-templated TiO2 electron transport layer. **2023**, 13,	0
6	All-Perovskite Tandem Solar Cells: From Certified 25% and Beyond. **2023**, 16, 3519	0
5	Two-dimensional layered materials for efficient photodetection. **2023**, 265-280	0
4	Multifunctional Metal-organic Frameworks Capsules Modulate Reactivity of Lead Iodide toward Efficient Perovskite Solar Cells with Ultraviolet Resistance.	0
3	Additives and interface engineering facilitate the fabrication of high-efficiency perovskite solar cells in ambient air-processed. **2023**, 34,	0

2	High-Efficiency Low-Lead Perovskite Photovoltaics Approaching 20% Enabled by a Vacuum-Drying Strategy.	0
1	Recent progress on efficient perovskite/organic tandem solar cells. **2023**,	0