

Gaurav Kapil

List of Publications by Year in descending order

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99
papers

6,340
citations

94269

37
h-index

66788

78
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102
all docs

102
docs citations

102
times ranked

7273
citing authors

#	ARTICLE	IF	CITATIONS
1	Large synergy effects of doping, a site substitution, and surface passivation in wide bandgap Pb-free ASnI ₂ Br perovskite solar cells on efficiency and stability enhancement. <i>Journal of Power Sources</i> , 2022, 520, 230848.	4.0	13
2	Unravelling the bottleneck of phosphonic acid anchoring groups aiming toward enhancing the stability and efficiency of mesoscopic solar cells. <i>Frontiers of Chemical Science and Engineering</i> , 2022, 16, 1060-1078.	2.3	6
3	Electronic structure and thermal conductance of the MASnI ₃ /Bi ₂ Te ₃ interface: a first-principles study. <i>Scientific Reports</i> , 2022, 12, 217.	1.6	5
4	Exponential optical absorption edge in PbS quantum dot-ligand systems on single crystal rutile-TiO ₂ revealed by photoacoustic and absorbance spectroscopies. <i>Materials Research Express</i> , 2022, 9, 025005.	0.8	1
5	Tin-Free Lead Perovskite Solar Cells Fabricated on Hole Selective Monolayers. <i>ACS Energy Letters</i> , 2022, 7, 966-974.	8.8	111
6	High performance wide bandgap Lead-free perovskite solar cells by monolayer engineering. <i>Chemical Engineering Journal</i> , 2022, 436, 135196.	6.6	33
7	Enhancing the Electronic Properties and Stability of High-Efficiency Tin-Free Lead Mixed Halide Perovskite Solar Cells via Doping Engineering. <i>Journal of Physical Chemistry Letters</i> , 2022, 13, 3130-3137.	2.1	12
8	Relationship between Carrier Density and Precursor Solution Stirring for Lead-Free Tin Halide Perovskite Solar Cells Performance. <i>ACS Applied Energy Materials</i> , 2022, 5, 4002-4007.	2.5	10
9	Influence of charge transport layer on the crystallinity and charge extraction of pure tin-based halide perovskite film. <i>Journal of Energy Chemistry</i> , 2022, 69, 612-615.	7.1	2
10	Top-Contacts Interface Engineering for High-Performance Perovskite Solar Cell With Reducing Lead Leakage. <i>Solar Rrl</i> , 2022, 6, .	3.1	8
11	Resolve deep-rooted challenges of halide perovskite for sustainable energy development and environmental remediation. <i>Nano Energy</i> , 2022, 99, 107401.	8.2	14
12	New strategies to develop High-Efficiency Lead-Free wide bandgap perovskite solar cells. <i>Chemical Engineering Journal</i> , 2022, 448, 137622.	6.6	2
13	Ultra-Halide-Rich Synthesis of Stable Pure Tin-Based Halide Perovskite Quantum Dots: Implications for Photovoltaics. <i>ACS Applied Nano Materials</i> , 2021, 4, 3958-3968.	2.4	9
14	Tin-Free Lead Perovskite Fabricated via Ethylenediamine Interlayer Guides to the Solar Cell Efficiency of 21.74%. <i>Advanced Energy Materials</i> , 2021, 11, 2101069.	10.2	110
15	High-Efficiency Lead-Free Wide Band Gap Perovskite Solar Cells via Guanidinium Bromide Incorporation. <i>ACS Applied Energy Materials</i> , 2021, 4, 5615-5624.	2.5	19
16	Recent advancements and opportunities of decorated graphitic carbon nitride toward solar fuel production and beyond. <i>Sustainable Energy and Fuels</i> , 2021, 5, 4457-4511.	2.5	25
17	Growth of Amorphous Passivation Layer Using Phenethylammonium Iodide for High-Performance Inverted Perovskite Solar Cells. <i>Solar Rrl</i> , 2020, 4, 1900243.	3.1	43
18	Reducing trap density and carrier concentration by a Ge additive for an efficient quasi 2D/3D perovskite solar cell. <i>Journal of Materials Chemistry A</i> , 2020, 8, 2962-2968.	5.2	53

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19	Effect of Precursor Solution Aging on the Thermoelectric Performance of CsSnI ₃ Thin Film. Journal of Electronic Materials, 2020, 49, 2698-2703.	1.0	15
20	Trioctylphosphine Oxide Acts as Alkahest for SnX ₂ /PbX ₂ : A General Synthetic Route to Perovskite ASn _x Pb _{1-x} X ₃ (A = Cs, FA, MA; X =) Tj BTQ 0 0 argBT /Over	1.0	15
21	Interdiffusion Stomatal Movement in Efficient Multiple-Cation-Based Perovskite Solar Cells. ACS Applied Materials & Interfaces, 2020, 12, 35105-35112.	4.0	8
22	Boosting the Efficiency of Low-Cost T-C-O-Less Dye-Sensitized Solar Cells Employing Nanoparticle Spacers and Cobalt Complex Redox Shuttle. ACS Applied Electronic Materials, 2020, 2, 2721-2729.	2.0	4
23	A New Strategy for Increasing the Efficiency of Inverted Perovskite Solar Cells to More than 21%: High-Humidity Induced Self-Passivation of Perovskite Films. Solar Rrl, 2020, 4, 2070094.	3.1	1
24	Passivation Strategy of Reducing Both Electron and Hole Trap States for Achieving High-Efficiency PbS Quantum-Dot Solar Cells with Power Conversion Efficiency over 12%. ACS Energy Letters, 2020, 5, 3224-3236.	8.8	49
25	Surface-Modified Graphene Oxide/Lead Sulfide Hybrid Film-Forming Ink for High-Efficiency Bulk Nano-Heterojunction Colloidal Quantum Dot Solar Cells. Nano-Micro Letters, 2020, 12, 111.	14.4	16
26	Efficient Surface Passivation and Electron Transport Enable Low Temperature-Processed Inverted Perovskite Solar Cells with Efficiency over 20%. ACS Sustainable Chemistry and Engineering, 2020, 8, 8848-8856.	3.2	9
27	Hot-injection and ultrasonic irradiation syntheses of Cs ₂ SnI ₆ quantum dot using Sn long-chain amino-complex. Journal of Nanoparticle Research, 2020, 22, 1.	0.8	5
28	Near-Infrared Emission from Tin-Lead (Sn-Pb) Alloyed Perovskite Quantum Dots by Sodium Doping. Angewandte Chemie, 2020, 132, 8499-8502.	1.6	10
29	Enhanced Device Performance with Passivation of the TiO ₂ Surface Using a Carboxylic Acid Fullerene Monolayer for a SnPb Perovskite Solar Cell with a Normal Planar Structure. ACS Applied Materials & Interfaces, 2020, 12, 17776-17782.	4.0	24
30	Near-Infrared Emission from Tin-Lead (Sn-Pb) Alloyed Perovskite Quantum Dots by Sodium Doping. Angewandte Chemie - International Edition, 2020, 59, 8421-8424.	7.2	38
31	In-Depth Exploration of the Charge Dynamics in Surface-Passivated ZnO Nanowires. Journal of Physical Chemistry C, 2020, 124, 15812-15817.	1.5	6
32	Cesium Acetate-Induced Interfacial Compositional Change and Graded Band Level in MAPbI ₃ Perovskite Solar Cells. ACS Applied Materials & Interfaces, 2020, 12, 33631-33637.	4.0	18
33	Hybrid-Halide Perovskite Thin Film Growth for Thermoelectric Applications. Journal of Electronic Materials, 2020, 49, 2890-2894.	1.0	13
34	Lead-free tin-halide perovskite solar cells with 13% efficiency. Nano Energy, 2020, 74, 104858.	8.2	347
35	V _{OC} Over 1.4 V for Amorphous Tin-Oxide-Based Dopant-Free CsPbI ₂ Br Perovskite Solar Cells. Journal of the American Chemical Society, 2020, 142, 9725-9734.	6.6	162
36	Boosting the Conversion Efficiency Over 20% in MAPbI ₃ Perovskite Planar Solar Cells by Employing a Solution-Processed Aluminum-Doped Nickel Oxide Hole Collector. ACS Applied Materials & Interfaces, 2020, 12, 22958-22970.	4.0	42

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37	A New Strategy for Increasing the Efficiency of Inverted Perovskite Solar Cells to More than 21%: High-Humidity Induced Self-Passivation of Perovskite Films. Solar Rrl, 2020, 4, 2000149.	3.1	17
38	Synthesis of Sb(V) Complexes with Pyridyl Cations and Application for Lead-free Perovskite Solar Cells. Chemistry Letters, 2020, 49, 944-946.	0.7	1
39	Effect of electrolyte for back contact transparent conducting oxide-less dye-sensitized solar cells: iodine versus cobalt. Journal of Photonics for Energy, 2020, 10, .	0.8	0
40	Relationship between Lattice Strain and Efficiency for Sn-Perovskite Solar Cells. ACS Applied Materials & Interfaces, 2019, 11, 31105-31110.	4.0	101
41	Suppression of Charge Carrier Recombination in Lead-Free Tin Halide Perovskite via Lewis Base Post-treatment. Journal of Physical Chemistry Letters, 2019, 10, 5277-5283.	2.1	196
42	Strain Relaxation and Light Management in Tin-Lead Perovskite Solar Cells to Achieve High Efficiencies. ACS Energy Letters, 2019, 4, 1991-1998.	8.8	114
43	Growth of halide perovskites thin films for thermoelectric applications. MRS Advances, 2019, 4, 1719-1725.	0.5	27
44	Delocalized molecule surface electronic modification for enhanced performance and high environmental stability of CsPbI ₂ Br perovskite solar cells. Nano Energy, 2019, 66, 104180.	8.2	40
45	The interparticle distance limit for multiple exciton dissociation in PbS quantum dot solid films. Nanoscale Horizons, 2019, 4, 445-451.	4.1	19
46	Dependence of ITO-Coated Flexible Substrates in the Performance and Bending Durability of Perovskite Solar Cells. Advanced Engineering Materials, 2019, 21, 1900288.	1.6	32
47	Efficient, hysteresis free, inverted planar flexible perovskite solar cells via perovskite engineering and stability in cylindrical encapsulation. Sustainable Energy and Fuels, 2019, 3, 1739-1748.	2.5	27
48	Improving Photovoltaic Performance of ZnO Nanowires Based Colloidal Quantum Dot Solar Cells via SnO ₂ Passivation Strategy. Frontiers in Energy Research, 2019, 7, .	1.2	19
49	The Role of Lanthanum in a Nickel Oxide-Based Inverted Perovskite Solar Cell for Efficiency and Stability Improvement. ChemSusChem, 2019, 12, 518-526.	3.6	49
50	Melamine Hydroiodide Functionalized MAPbI ₃ Perovskite with Enhanced Photovoltaic Performance and Stability in Ambient Atmosphere. Solar Rrl, 2019, 3, 1800275.	3.1	18
51	Preparation of Perovskite Films under Liquid Nitrogen Atmosphere for High Efficiency Perovskite Solar Cells. ACS Sustainable Chemistry and Engineering, 2019, 7, 3956-3961.	3.2	13
52	Gel ₂ Additive for High Optoelectronic Quality CsPbI ₃ Quantum Dots and Their Application in Photovoltaic Devices. Chemistry of Materials, 2019, 31, 798-807.	3.2	112
53	Enhanced Crystallization by Methanol Additive in Antisolvent for Achieving High-Quality MAPbI ₃ Perovskite Films in Humid Atmosphere. ChemSusChem, 2018, 11, 2348-2357.	3.6	70
54	Highly Efficient 17.6% Tin-Lead Mixed Perovskite Solar Cells Realized through Spike Structure. Nano Letters, 2018, 18, 3600-3607.	4.5	114

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55	Understanding charge transfer and recombination by interface engineering for improving the efficiency of PbS quantum dot solar cells. <i>Nanoscale Horizons</i> , 2018, 3, 417-429.	4.1	50
56	Mixed Sn ²⁺ /Ge Perovskite for Enhanced Perovskite Solar Cell Performance in Air. <i>Journal of Physical Chemistry Letters</i> , 2018, 9, 1682-1688.	2.1	206
57	Recombination Suppression in PbS Quantum Dot Heterojunction Solar Cells by Energy-Level Alignment in the Quantum Dot Active Layers. <i>ACS Applied Materials & Interfaces</i> , 2018, 10, 26142-26152.	4.0	24
58	Growth Mechanism of ZnO Thin Films Grown by Spray Pyrolysis Using Diethylzinc Solution. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2018, 215, 1700406.	0.8	2
59	High Electrical Conductivity 2D MXene Serves as Additive of Perovskite for Efficient Solar Cells. <i>Small</i> , 2018, 14, e1802738.	5.2	193
60	Addition Effect of Pyreneammonium Iodide to Methylammonium Lead Halide Perovskite ^{2D/3D} Heterostructured Perovskite with Enhanced Stability. <i>Advanced Functional Materials</i> , 2018, 28, 1804856.	7.8	48
61	Perovskite solar cells with narrow band gap. <i>Current Opinion in Electrochemistry</i> , 2018, 11, 146-150.	2.5	2
62	New Tin(II) Fluoride Derivative as a Precursor for Enhancing the Efficiency of Inverted Planar Tin/Lead Perovskite Solar Cells. <i>Journal of Physical Chemistry C</i> , 2018, 122, 27284-27291.	1.5	26
63	Interfacial Sulfur Functionalization Anchoring SnO ₂ and CH ₃ NH ₃ PbI ₃ for Enhanced Stability and Trap Passivation in Perovskite Solar Cells. <i>ChemSusChem</i> , 2018, 11, 3941-3948.	3.6	58
64	Synthesis, characterizations and photo-physical properties of novel lanthanum(III) complexes. <i>Journal of Taibah University for Science</i> , 2018, 12, 796-808.	1.1	8
65	Magnesium-Doped MAPbI ₃ Perovskite Layers for Enhanced Photovoltaic Performance in Humid Air Atmosphere. <i>ACS Applied Materials & Interfaces</i> , 2018, 10, 24543-24548.	4.0	79
66	All ^{inorganic} CsPbI ₂ GeI ₂ Br Perovskite with Enhanced Phase Stability and Photovoltaic Performance. <i>Angewandte Chemie</i> , 2018, 130, 12927-12931.	1.6	31
67	All ^{inorganic} CsPbI ₂ GeI ₂ Br Perovskite with Enhanced Phase Stability and Photovoltaic Performance. <i>Angewandte Chemie - International Edition</i> , 2018, 57, 12745-12749.	7.2	157
68	Dependence of Acetate-Based Antisolvents for High Humidity Fabrication of CH ₃ NH ₃ PbI ₃ Perovskite Devices in Ambient Atmosphere. <i>ACS Applied Materials & Interfaces</i> , 2018, 10, 16482-16489.	4.0	78
69	Effect of the conduction band offset on interfacial recombination behavior of the planar perovskite solar cells. <i>Nano Energy</i> , 2018, 53, 17-26.	8.2	110
70	Performance Enhancement of Mesoporous TiO ₂ -Based Perovskite Solar Cells by SbI ₃ Interfacial Modification Layer. <i>ACS Applied Materials & Interfaces</i> , 2018, 10, 29630-29637.	4.0	32
71	Lead Selenide Colloidal Quantum Dot Solar Cells Achieving High Open-Circuit Voltage with One-Step Deposition Strategy. <i>Journal of Physical Chemistry Letters</i> , 2018, 9, 3598-3603.	2.1	38
72	Solution ^{Processed} Air ^{Stable} Copper Bismuth Iodide for Photovoltaics. <i>ChemSusChem</i> , 2018, 11, 2930-2935.	3.6	39

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73	Transparent Conductive Oxide Layer and Hole Selective Layer Free Back-Contacted Hybrid Perovskite Solar Cell. <i>Journal of Physical Chemistry C</i> , 2017, 121, 4214-4219.	1.5	12
74	Improvement of Photovoltaic Performance of Colloidal Quantum Dot Solar Cells Using Organic Small Molecule as Hole-Selective Layer. <i>Journal of Physical Chemistry Letters</i> , 2017, 8, 2163-2169.	2.1	35
75	Ligand-dependent exciton dynamics and photovoltaic properties of PbS quantum dot heterojunction solar cells. <i>Physical Chemistry Chemical Physics</i> , 2017, 19, 6358-6367.	1.3	31
76	Transparent Conductive Oxide-Less Dye-Sensitized Solar Cells Consisting of Dye-Cocktail and Cobalt Based Redox Electrolyte. <i>Journal of Nanoscience and Nanotechnology</i> , 2017, 17, 4748-4754.	0.9	7
77	Investigation of Interfacial Charge Transfer in Solution Processed Cs ₂ SnI ₆ Thin Films. <i>Journal of Physical Chemistry C</i> , 2017, 121, 13092-13100.	1.5	66
78	Colloidal Synthesis of Air-Stable Alloyed CsSn _{1-x} Pb _x I ₃ Perovskite Nanocrystals for Use in Solar Cells. <i>Journal of the American Chemical Society</i> , 2017, 139, 16708-16719.	6.6	314
79	Investigation of the minimum driving force for dye regeneration utilizing model squaraine dyes for dye-sensitized solar cells. <i>Journal of Materials Chemistry A</i> , 2017, 5, 22672-22682.	5.2	21
80	Highly Luminescent Phase-Stable CsPbI ₃ Perovskite Quantum Dots Achieving Near 100% Absolute Photoluminescence Quantum Yield. <i>ACS Nano</i> , 2017, 11, 10373-10383.	7.3	748
81	Research following Pb Perovskite Solar Cells. <i>Electrochemistry</i> , 2017, 85, 222-225.	0.6	13
82	Air Stable PbSe Colloidal Quantum Dot Heterojunction Solar Cells: Ligand-Dependent Exciton Dissociation, Recombination, Photovoltaic Property, and Stability. <i>Journal of Physical Chemistry C</i> , 2016, 120, 28509-28518.	1.5	45
83	The effect of CdS on the charge separation and recombination dynamics in PbS/CdS double-layered quantum dot sensitized solar cells. <i>Chemical Physics</i> , 2016, 478, 159-163.	0.9	10
84	Facile Synthesis and Characterization of Sulfur Doped Low Bandgap Bismuth Based Perovskites by Soluble Precursor Route. <i>Chemistry of Materials</i> , 2016, 28, 6436-6440.	3.2	87
85	Low-temperature Growth of Porous and Dense ZnO Films for Perovskite Solar Cells on ITO Substrate. <i>Chemistry Letters</i> , 2016, 45, 176-178.	0.7	3
86	Enhancing the performance of transparent conductive oxide-less back contact dye-sensitized solar cells by facile diffusion of cobalt species through TiO ₂ nanopores. <i>RSC Advances</i> , 2016, 6, 33353-33360.	1.7	9
87	High reduction of interfacial charge recombination in colloidal quantum dot solar cells by metal oxide surface passivation. <i>Nanoscale</i> , 2015, 7, 5446-5456.	2.8	82
88	Simple Metal-Free Dyes Derived from Triphenylamine for DSSC: A Comparative Study of Two Different Anchoring Group. <i>Electrochimica Acta</i> , 2015, 169, 256-263.	2.6	30
89	Optical absorption, charge separation and recombination dynamics in Sn/Pb cocktail perovskite solar cells and their relationships to photovoltaic performances. <i>Journal of Materials Chemistry A</i> , 2015, 3, 9308-9316.	5.2	85
90	Interface structure between titania and perovskite materials observed by quartz crystal microbalance system. <i>Journal of Photonics for Energy</i> , 2015, 5, 057410.	0.8	29

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91	Transparent conductive oxide-less back contact dye-sensitized solar cells using cobalt electrolyte. Progress in Photovoltaics: Research and Applications, 2015, 23, 1100-1109.	4.4	17
92	All-Solid Perovskite Solar Cells with HOCO-R-NH ₃ ⁺ I ⁻ Anchor-Group Inserted between Porous Titania and Perovskite. Journal of Physical Chemistry C, 2014, 118, 16651-16659.	1.5	191
93	Charge transfer and recombination at the metal oxide/CH ₃ NH ₃ PbCl ₂ /spiro-OMeTAD interfaces: uncovering the detailed mechanism behind high efficiency solar cells. Physical Chemistry Chemical Physics, 2014, 16, 19984-19992.	1.3	88
94	CH ₃ NH ₃ Sn _x Pb _(1-x) I ₃ Perovskite Solar Cells Covering up to 1060 nm. Journal of Physical Chemistry Letters, 2014, 5, 1004-1011.	2.1	852
95	Real-Time Photodynamics of Squaraine-Based Dye-Sensitized Solar Cells with Iodide and Cobalt Electrolytes. Journal of Physical Chemistry C, 2013, 117, 11906-11919.	1.5	33
96	Transparent conductive oxide layer-less dye-sensitized solar cells consisting of floating electrode with gradient TiOx blocking layer. Applied Physics Letters, 2009, 94, .	1.5	38
97	All-metal-electrode-type dye sensitized solar cells (transparent conductive oxide-less dye sensitized) Tj ETQq1 1 0.784314 rgBT /Overlaid 2008, 92, .	1.5	69
98	Perovskite solar cells with wide band gap and narrow band gap. , 0, , .		0
99	Lead-free tin halide perovskite solar cells beyond 10 % efficiency. , 0, , .		0