

Pankaj Yadav

List of Publications by Year in descending order

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87
papers

4,263
citations

147801

31
h-index

118850

62
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89
all docs

89
docs citations

89
times ranked

5243
citing authors

#	ARTICLE	IF	CITATIONS
1	Interpretation and evolution of open-circuit voltage, recombination, ideality factor and subgap defect states during reversible light-soaking and irreversible degradation of perovskite solar cells. <i>Energy and Environmental Science</i> , 2018, 11, 151-165.	30.8	586
2	Surface Engineering of TiO ₂ ETL for Highly Efficient and Hysteresis-Free Planar Perovskite Solar Cell (21.4%) with Enhanced Open-Circuit Voltage and Stability. <i>Advanced Energy Materials</i> , 2018, 8, 1800794.	19.5	255
3	Formation of Stable Mixed Guanidinium-Methylammonium Phases with Exceptionally Long Carrier Lifetimes for High-Efficiency Lead Iodide-Based Perovskite Photovoltaics. <i>Journal of the American Chemical Society</i> , 2018, 140, 3345-3351.	13.7	235
4	A review of aspects of additive engineering in perovskite solar cells. <i>Journal of Materials Chemistry A</i> , 2020, 8, 27-54.	10.3	232
5	Controllable Perovskite Crystallization via Antisolvent Technique Using Chloride Additives for Highly Efficient Planar Perovskite Solar Cells. <i>Advanced Energy Materials</i> , 2019, 9, 1803587.	19.5	221
6	Synergistic Crystal and Interface Engineering for Efficient and Stable Perovskite Photovoltaics. <i>Advanced Energy Materials</i> , 2019, 9, 1802646.	19.5	189
7	A graphene/ZnO electron transfer layer together with perovskite passivation enables highly efficient and stable perovskite solar cells. <i>Journal of Materials Chemistry A</i> , 2019, 7, 679-686.	10.3	145
8	The Role of Rubidium in Multiple-Cation-Based High-Efficiency Perovskite Solar Cells. <i>Advanced Materials</i> , 2017, 29, 1701077.	21.0	120
9	Engineering of Perovskite Materials Based on Formamidinium and Cesium Hybridization for High-Efficiency Solar Cells. <i>Chemistry of Materials</i> , 2019, 31, 1620-1627.	6.7	99
10	One-step mechanochemical incorporation of an insoluble cesium additive for high performance planar heterojunction solar cells. <i>Nano Energy</i> , 2018, 49, 523-528.	16.0	95
11	Understanding the effect of chlorobenzene and isopropanol anti-solvent treatments on the recombination and interfacial charge accumulation in efficient planar perovskite solar cells. <i>Journal of Materials Chemistry A</i> , 2018, 6, 14307-14314.	10.3	94
12	Mechanoperovskites for Photovoltaic Applications: Preparation, Characterization, and Device Fabrication. <i>Accounts of Chemical Research</i> , 2019, 52, 3233-3243.	15.6	79
13	Cation influence on carrier dynamics in perovskite solar cells. <i>Nano Energy</i> , 2019, 58, 604-611.	16.0	75
14	Reduction in the Interfacial Trap Density of Mechanochemically Synthesized MAPbI ₃ . <i>ACS Applied Materials & Interfaces</i> , 2017, 9, 28418-28425.	8.0	73
15	Highly efficient and stable inverted perovskite solar cells using down-shifting quantum dots as a light management layer and moisture-assisted film growth. <i>Journal of Materials Chemistry A</i> , 2019, 7, 14753-14760.	10.3	67
16	Elucidation of Charge Recombination and Accumulation Mechanism in Mixed Perovskite Solar Cells. <i>Journal of Physical Chemistry C</i> , 2018, 122, 15149-15154.	3.1	59
17	Influence of the Nature of A Cation on Dynamics of Charge Transfer Processes in Perovskite Solar Cells. <i>Advanced Functional Materials</i> , 2018, 28, 1706073.	14.9	58
18	A chain is as strong as its weakest link – Stability study of MAPbI ₃ under light and temperature. <i>Materials Today</i> , 2019, 29, 10-19.	14.2	58

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19	Suppressing recombination in perovskite solar cells via surface engineering of TiO ₂ ETL. <i>Solar Energy</i> , 2020, 197, 50-57.	6.1	53
20	Impedance Spectroscopy for Metal Halide Perovskite Single Crystals: Recent Advances, Challenges, and Solutions. <i>ACS Energy Letters</i> , 2021, 6, 3275-3286.	17.4	47
21	Reducing ion migration in methylammonium lead tri-bromide single crystal via lead sulfate passivation. <i>Journal of Applied Physics</i> , 2020, 127, .	2.5	46
22	Ambient Stable and Efficient Monolithic Tandem Perovskite/PbS Quantum Dots Solar Cells via Surface Passivation and Light Management Strategies. <i>Advanced Functional Materials</i> , 2021, 31, 2010623.	14.9	44
23	Influence of A-site cations on the open-circuit voltage of efficient perovskite solar cells: a case of rubidium and guanidinium additives. <i>Journal of Materials Chemistry A</i> , 2019, 7, 8218-8225.	10.3	43
24	Unraveling the Impact of Rubidium Incorporation on the Transport-Recombination Mechanisms in Highly Efficient Perovskite Solar Cells by Small-Perturbation Techniques. <i>Journal of Physical Chemistry C</i> , 2017, 121, 24903-24908.	3.1	42
25	Surface Treatment of Perovskite Layer with Guanidinium Iodide Leads to Enhanced Moisture Stability and Improved Efficiency of Perovskite Solar Cells. <i>Advanced Materials Interfaces</i> , 2020, 7, 2000105.	3.7	39
26	High-performance self-powered perovskite photodetector with a rapid photoconductive response. <i>RSC Advances</i> , 2016, 6, 105076-105080.	3.6	37
27	Elucidation of the role of guanidinium incorporation in single-crystalline MAPbI ₃ perovskite on ion migration and activation energy. <i>Physical Chemistry Chemical Physics</i> , 2020, 22, 11467-11473.	2.8	36
28	Recent Progress in Growth of Single-Crystal Perovskites for Photovoltaic Applications. <i>ACS Omega</i> , 2021, 6, 1030-1042.	3.5	35
29	Intrinsic and interfacial kinetics of perovskite solar cells under photo and bias-induced degradation and recovery. <i>Journal of Materials Chemistry C</i> , 2017, 5, 7799-7805.	5.5	34
30	Oxygen Plasma-Induced p-Type Doping Improves Performance and Stability of PbS Quantum Dot Solar Cells. <i>ACS Applied Materials & Interfaces</i> , 2019, 11, 26047-26052.	8.0	33
31	Interpretation of Resistance, Capacitance, Defect Density, and Activation Energy Levels in Single-Crystalline MAPbI ₃ . <i>Journal of Physical Chemistry C</i> , 2020, 124, 3496-3502.	3.1	33
32	Efficient, Hysteresis-Free, and Flexible Inverted Perovskite Solar Cells Using All-Vacuum Processing. <i>Solar Rrl</i> , 2021, 5, .	5.8	33
33	Donor-Acceptor-Type S ₂ N ₂ -Heteroacene-Based Hole-Transporting Materials for Efficient Perovskite Solar Cells. <i>ACS Applied Materials & Interfaces</i> , 2017, 9, 44423-44428.	8.0	31
34	Surface modification of a hole transporting layer for an efficient perovskite solar cell with an enhanced fill factor and stability. <i>Molecular Systems Design and Engineering</i> , 2018, 3, 717-722.	3.4	31
35	Changes in the Electrical Characteristics of Perovskite Solar Cells with Aging Time. <i>Molecules</i> , 2020, 25, 2299.	3.8	31
36	Recombination kinetics in a silicon solar cell at low concentration: electro-analytical characterization of space-charge and quasi-neutral regions. <i>Physical Chemistry Chemical Physics</i> , 2014, 16, 15469-15476.	2.8	30

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37	Electrochemical and electronic properties of flower-like MoS ₂ nanostructures in aqueous and ionic liquid media. RSC Advances, 2015, 5, 57943-57949.	3.6	30
38	Effect of CsCl Additive on the Morphological and Optoelectronic Properties of Formamidinium Lead Iodide Perovskite. Solar Rrl, 2019, 3, 1900294.	5.8	30
39	Ruthenium doped mesoporous titanium dioxide for highly efficient, hysteresis-free and stable perovskite solar cells. Solar Energy, 2019, 186, 156-165.	6.1	30
40	Atomic Layer Deposition of an Effective Interface Layer of TiN for Efficient and Hysteresis-Free Mesoscopic Perovskite Solar Cells. ACS Applied Materials & Interfaces, 2020, 12, 8098-8106.	8.0	30
41	Metal Halide Perovskites for Energy Storage Applications. European Journal of Inorganic Chemistry, 2021, 2021, 1201-1212.	2.0	29
42	3D graphene nanosheets from plastic waste for highly efficient HTM free perovskite solar cells. Nanoscale Advances, 2021, 3, 4726-4738.	4.6	28
43	Is machine learning redefining the perovskite solar cells?. Journal of Energy Chemistry, 2022, 66, 74-90.	12.9	27
44	Charge Accumulation, Recombination, and Their Associated Time Scale in Efficient (GUA) _x (MA) _{1-x} PbI ₃ -Based Perovskite Solar Cells. ACS Omega, 2019, 4, 16840-16846.	3.5	25
45	Interfacial Kinetics of Efficient Perovskite Solar Cells. Crystals, 2017, 7, 252.	2.2	24
46	Effect of bromine doping on the charge transfer, ion migration and stability of the single crystalline MAPb(Br) _x I _{3-x} photodetector. Journal of Materials Chemistry C, 2021, 9, 15189-15200.	5.5	23
47	Investigation of interface limited charge extraction and recombination in polycrystalline silicon solar cell: Using DC and AC characterization techniques. Solar Energy, 2015, 116, 293-302.	6.1	22
48	Correlation of recombination and open circuit voltage in planar heterojunction perovskite solar cells. Journal of Materials Chemistry C, 2019, 7, 1273-1279.	5.5	22
49	Tuning Areal Density and Surface Passivation of ZnO Nanowire Array Enable Efficient PbS QDs Solar Cells with Enhanced Current Density. Advanced Materials Interfaces, 2020, 7, 1901551.	3.7	22
50	Double layer mesoscopic electron contact for efficient perovskite solar cells. Sustainable Energy and Fuels, 2020, 4, 843-851.	4.9	22
51	Perovskite Solar Cells Yielding Reproducible Photovoltage of 1.20 V. Research, 2019, 2019, 8474698.	5.7	22
52	Thiocyanate-Passivated Diaminonaphthalene-Incorporated Dionâ€“Jacobson Perovskite for Highly Efficient and Stable Solar Cells. ACS Applied Materials & Interfaces, 2022, 14, 850-860.	8.0	22
53	Effect of Varying Illumination and Temperature on Steady-State and Dynamic Parameters of Dye-Sensitized Solar Cell Using AC Impedance Modeling. International Journal of Photoenergy, 2013, 2013, 1-10.	2.5	20
54	Colorimetric optical chemosensor of toxic metal ion (Hg ²⁺) and biological activity using green synthesized AgNPs. Green Chemistry Letters and Reviews, 2018, 11, 484-491.	4.7	20

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55	Mesoscopic TiO ₂ /Nb ₂ O ₅ Electron Transfer Layer for Efficient and Stable Perovskite Solar Cells. <i>Advanced Materials Interfaces</i> , 2021, 8, 2100177.	3.7	20
56	Dielectric Relaxation and Polaron Hopping in Cs ₂ AgBiBr ₆ Halide Double Perovskites. <i>Journal of Physical Chemistry C</i> , 2022, 126, 10199-10208.	3.1	20
57	An effective way to analyse the performance limiting parameters of poly-crystalline silicon solar cell fabricated in the production line. <i>Solar Energy</i> , 2015, 122, 1-10.	6.1	19
58	Multilayer evaporation of MA ₂ FAPb ₃ Cl ₃ for the fabrication of efficient and large-scale device perovskite solar cells. <i>Journal Physics D: Applied Physics</i> , 2019, 52, 034005.	2.8	19
59	Blue and red wavelength resolved impedance response of efficient perovskite solar cells. <i>Sustainable Energy and Fuels</i> , 2018, 2, 2407-2411.	4.9	18
60	Luminescence down-shifting enables UV-stable and efficient ZnO nanowire-based PbS quantum dot solar cells with J _{SC} exceeding 33 mA cm ⁻² . <i>Sustainable Energy and Fuels</i> , 2019, 3, 3128-3134.	4.9	18
61	Influence of current collector electrode on the capacitive performance of electrodeposited PANI: insight gained from frequency and time domain analysis. <i>RSC Advances</i> , 2014, 4, 53740-53751.	3.6	17
62	Highly Efficient and Stable 2D Dion Jacobson/3D Perovskite Heterojunction Solar Cells. <i>ACS Applied Materials & Interfaces</i> , 2022, 14, 29744-29753.	8.0	17
63	Current scenario of CNG vehicular pollution and their possible abatement technologies: an overview. <i>Environmental Science and Pollution Research</i> , 2020, 27, 39977-40000.	5.3	16
64	In the Quest of Low-Frequency Impedance Spectra of Efficient Perovskite Solar Cells. <i>Energy Technology</i> , 2021, 9, 2100229.	3.8	16
65	Atomic Layer Engineering of Aluminum-Doped Zinc Oxide Films for Efficient and Stable Perovskite Solar Cells. <i>Advanced Materials Interfaces</i> , 2022, 9, .	3.7	16
66	Perovskite Solar Cells Yielding Reproducible Photovoltage of 1.20 V. <i>Research</i> , 2019, 2019, 1-9.	5.7	15
67	Gold Nanoparticles Functionalized with Fullerene Derivative as an Effective Interface Layer for Improving the Efficiency and Stability of Planar Perovskite Solar Cells. <i>Advanced Materials Interfaces</i> , 2020, 7, 2001144.	3.7	14
68	Role of the spacer cation in the growth and crystal orientation of two-dimensional perovskites. <i>Sustainable Energy and Fuels</i> , 2021, 5, 1255-1279.	4.9	14
69	Two-dimensional halide perovskite single crystals: principles and promises. <i>Emergent Materials</i> , 2021, 4, 865-880.	5.7	14
70	Azahomofullerenes as New n-Type Acceptor Materials for Efficient and Stable Inverted Planar Perovskite Solar Cells. <i>ACS Applied Materials & Interfaces</i> , 2021, 13, 20296-20304.	8.0	13
71	Influence of the A-site cation on hysteresis and ion migration in lead-free perovskite single crystals. <i>Physical Review Materials</i> , 2022, 6, .	2.4	13
72	Plasmon-Induced Photon Manipulation by Ag Nanoparticle-Coupled Graphene Thin-Film: Light Trapping for Photovoltaics. <i>Plasmonics</i> , 2015, 10, 157-164.	3.4	12

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73	Efficient Perovskite Solar Cells Based on CdSe/ZnS Quantum Dots Electron Transporting Layer with Superior UV Stability. <i>Physica Status Solidi - Rapid Research Letters</i> , 2020, 14, 2000062.	2.4	11
74	Plasmon-Enhanced Light Trapping to Improve Efficiency of TiO ₂ Nanorod-Based Dye-Sensitized Solar Cell. <i>Plasmonics</i> , 2013, 8, 1501-1507.	3.4	10
75	Interface Engineering of Mesoscopic Perovskite Solar Cells by Atomic Layer Deposition of Ta ₂ O ₅ . <i>ACS Applied Energy Materials</i> , 2021, 4, 10433-10441.	5.1	9
76	Synergistic ligand exchange and UV curing of PbS quantum dots for effective surface passivation. <i>Nanoscale</i> , 2019, 11, 22832-22840.	5.6	8
77	Influence of the magnitude and direction of electric field on the transport and growth property of deposited polyaniline films. <i>Journal of Solid State Electrochemistry</i> , 2014, 18, 453-463.	2.5	7
78	Investigation on the Facet-Dependent Anisotropy in Halide Perovskite Single Crystals. <i>Journal of Physical Chemistry C</i> , 2022, 126, 8906-8912.	3.1	7
79	Exergy, Energy, and Dynamic Parameter Analysis of Indigenously Developed Low-Concentration Photovoltaic System. <i>International Journal of Photoenergy</i> , 2013, 2013, 1-12.	2.5	6
80	Investigating the Role of Substrate Tin Diffusion on Hematite Based Photoelectrochemical Water Splitting System. <i>Journal of Nanoscience and Nanotechnology</i> , 2018, 18, 1856-1863.	0.9	6
81	Recent Progress of Light Intensity-Modulated Small Perturbation Techniques in Perovskite Solar Cells. <i>Physica Status Solidi - Rapid Research Letters</i> , 2022, 16, .	2.4	6
82	Efficient and Less-Toxic Indium-Doped MAPb ₃ Perovskite Solar Cells Prepared by Metal Alloying Technique. <i>Solar Rrl</i> , 2022, 6, .	5.8	6
83	Identifying dominant recombination mechanisms in spiro-based conventional perovskite solar cells: Roles of interface and bulk recombination. <i>Energy Reports</i> , 2022, 8, 7957-7963.	5.1	5
84	Identification of defects and defect energy distribution in the perovskite layer of MAPb ₃ Cl perovskite solar cell. <i>Materials Research Express</i> , 2019, 6, 105510.	1.6	4
85	A Dopant-Free Hole Transporting Layer for Efficient and Stable Planar Perovskite Solar Cells. <i>Physica Status Solidi - Rapid Research Letters</i> , 2020, 14, 2000147.	2.4	3
86	Band alignment and carrier recombination roles on the open circuit voltage of ETL-passivated perovskite photovoltaics. <i>International Journal of Energy Research</i> , 2022, 46, 6022-6030.	4.5	2
87	Electro-analytical comparison of commercial mono-crystalline silicon and PERC solar cells to maximize performance. <i>Engineering Research Express</i> , 2020, 2, 045018.	1.6	1