

Aditya Sadhanala

List of Publications by Year in descending order

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110
papers

23,678
citations

25423

59
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29333

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all docs

110
docs citations

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times ranked

23590
citing authors

#	ARTICLE	IF	CITATIONS
1	Linking Glass-Transition Behavior to Photophysical and Charge Transport Properties of High-Mobility Conjugated Polymers. <i>Advanced Functional Materials</i> , 2021, 31, 2007359.	7.8	26
2	Comprehensive defect suppression in perovskite nanocrystals for high-efficiency light-emitting diodes. <i>Nature Photonics</i> , 2021, 15, 148-155.	15.6	590
3	Organic-inorganic hybrid and inorganic halide perovskites: structural and chemical engineering, interfaces and optoelectronic properties. <i>Journal Physics D: Applied Physics</i> , 2021, 54, 133002.	1.3	27
4	Rational Design of Donor-Acceptor Based Semiconducting Copolymers with High Dielectric Constants. <i>Journal of Physical Chemistry C</i> , 2021, 125, 6886-6896.	1.5	8
5	Ligand-engineered bandgap stability in mixed-halide perovskite LEDs. <i>Nature</i> , 2021, 591, 72-77.	13.7	471
6	Charge transport physics of a unique class of rigid-rod conjugated polymers with fused-ring conjugated units linked by double carbon-carbon bonds. <i>Science Advances</i> , 2021, 7, .	4.7	28
7	Understanding the Origin of Ultrasharp Sub-bandgap Luminescence from Zero-Dimensional Inorganic Perovskite Cs ₄ PbBr ₆ . <i>ACS Applied Energy Materials</i> , 2020, 3, 192-199.	2.5	36
8	Long-range ballistic propagation of carriers in methylammonium lead iodide perovskite thin films. <i>Nature Physics</i> , 2020, 16, 171-176.	6.5	94
9	Optical absorption and photoluminescence spectroscopy. , 2020, , 49-79.		9
10	A solvent-based surface cleaning and passivation technique for suppressing ionic defects in high-mobility perovskite field-effect transistors. <i>Nature Electronics</i> , 2020, 3, 694-703.	13.1	99
11	Lanthanide-doped inorganic nanoparticles turn molecular triplet excitons bright. <i>Nature</i> , 2020, 587, 594-599.	13.7	135
12	A Novel Mitigation Mechanism for Photo-Induced Trapping in an Anthradithiophene Derivative Using Additives. <i>Advanced Electronic Materials</i> , 2020, 6, 2000250.	2.6	5
13	Role of Morphology and Förster Resonance Energy Transfer in Ternary Blend Organic Solar Cells. <i>ACS Applied Energy Materials</i> , 2020, 3, 12025-12036.	2.5	17
14	Anisotropy of Charge Transport in a Uniaxially Aligned Fused Electron-Deficient Polymer Processed by Solution Shear Coating. <i>Advanced Materials</i> , 2020, 32, e2000063.	11.1	38
15	Proton-transfer-induced 3D/2D hybrid perovskites suppress ion migration and reduce luminance overshoot. <i>Nature Communications</i> , 2020, 11, 3378.	5.8	108
16	Sequentially Deposited versus Conventional Nonfullerene Organic Solar Cells: Interfacial Trap States, Vertical Stratification, and Exciton Dissociation. <i>Advanced Energy Materials</i> , 2019, 9, 1902145.	10.2	36
17	A Highly Emissive Surface Layer in Mixed-Halide Multication Perovskites. <i>Advanced Materials</i> , 2019, 31, e1902374.	11.1	57
18	Excitonic Properties of Low-Band-Gap Lead-Tin Halide Perovskites. <i>ACS Energy Letters</i> , 2019, 4, 615-621.	8.8	51

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19	Triple-Cation-Based Perovskite Photocathodes with AZO Protective Layer for Hydrogen Production Applications. <i>ACS Applied Materials & Interfaces</i> , 2019, 11, 23198-23206.	4.0	46
20	Short contacts between chains enhancing luminescence quantum yields and carrier mobilities in conjugated copolymers. <i>Nature Communications</i> , 2019, 10, 2614.	5.8	60
21	High-mobility, trap-free charge transport in conjugated polymer diodes. <i>Nature Communications</i> , 2019, 10, 2122.	5.8	92
22	Efficient Ruddlesden-Popper Perovskite Light-Emitting Diodes with Randomly Oriented Nanocrystals. <i>Advanced Functional Materials</i> , 2019, 29, 1901225.	7.8	95
23	Slow Carrier Cooling in Hybrid Pb-Sn Halide Perovskites. <i>ACS Energy Letters</i> , 2019, 4, 736-740.	8.8	36
24	Charge extraction via graded doping of hole transport layers gives highly luminescent and stable metal halide perovskite devices. <i>Science Advances</i> , 2019, 5, eaav2012.	4.7	116
25	Chain Coupling and Luminescence in High-Mobility, Low-Disorder Conjugated Polymers. <i>ACS Nano</i> , 2019, 13, 13716-13727.	7.3	7
26	Chemical sintering reduced grain boundary defects for stable planar perovskite solar cells. <i>Nano Energy</i> , 2019, 56, 741-750.	8.2	65
27	Lead-Free Perovskite Semiconductors Based on Germanium-Tin Solid Solutions: Structural and Optoelectronic Properties. <i>Journal of Physical Chemistry C</i> , 2018, 122, 5940-5947.	1.5	104
28	High-Efficiency Polycrystalline Perovskite Light-Emitting Diodes Based on Mixed Cations. <i>ACS Nano</i> , 2018, 12, 2883-2892.	7.3	109
29	Charge Mobility Enhancement for Conjugated DPP-Selenophene Polymer by Simply Replacing One Bulky Branching Alkyl Chain with Linear One at Each DPP Unit. <i>Chemistry of Materials</i> , 2018, 30, 3090-3100.	3.2	107
30	Stable Light-Emitting Diodes Using Phase-Pure Ruddlesden-Popper Layered Perovskites. <i>Advanced Materials</i> , 2018, 30, 1704217.	11.1	258
31	Correlation of Disorder and Charge Transport in a Range of Indacenodithiophene-Based Semiconducting Polymers. <i>Advanced Electronic Materials</i> , 2018, 4, 1700410.	2.6	26
32	In Situ Atmospheric Deposition of Ultrasoother Nickel Oxide for Efficient Perovskite Solar Cells. <i>ACS Applied Materials & Interfaces</i> , 2018, 10, 41849-41854.	4.0	47
33	Negative Correlation between Intermolecular vs Intramolecular Disorder in Bulk-Heterojunction Organic Solar Cells. <i>ACS Applied Materials & Interfaces</i> , 2018, 10, 44576-44582.	4.0	19
34	Exciton-Phonon Interactions Govern Charge-Transfer-State Dynamics in CdSe/CdTe Two-Dimensional Colloidal Heterostructures. <i>Journal of the American Chemical Society</i> , 2018, 140, 14097-14111.	6.6	30
35	Direct Bandgap Behavior in Rashba-Type Metal Halide Perovskites. <i>Advanced Materials</i> , 2018, 30, e1803379.	11.1	23
36	Opal-like Multicolor Appearance of Self-Assembled Photonic Array. <i>ACS Applied Materials & Interfaces</i> , 2018, 10, 20783-20789.	4.0	17

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37	Fundamental Carrier Lifetime Exceeding 1 μ s in Cs ₂ AgBiBr ₆ Double Perovskite. <i>Advanced Materials Interfaces</i> , 2018, 5, 1800464.	1.9	173
38	Enhanced photovoltage for inverted planar heterojunction perovskite solar cells. <i>Science</i> , 2018, 360, 1442-1446.	6.0	1,221
39	Dedoping of Lead Halide Perovskites Incorporating Monovalent Cations. <i>ACS Nano</i> , 2018, 12, 7301-7311.	7.3	101
40	Electroluminescence from Solution-Processed Pinhole-Free Nanometer-Thickness Layers of Conjugated Polymers. <i>Nano Letters</i> , 2018, 18, 5382-5388.	4.5	4
41	Performance Improvements in Conjugated Polymer Devices by Removal of Water-Induced Traps. <i>Advanced Materials</i> , 2018, 30, e1801874.	11.1	69
42	Förster Resonance Energy Transfer Drives Higher Efficiency in Ternary Blend Organic Solar Cells. <i>ACS Applied Energy Materials</i> , 2018, 1, 4874-4882.	2.5	34
43	Zinc tin oxide thin film transistors produced by a high rate reactive sputtering: Effect of tin composition and annealing temperatures. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2017, 214, 1600470.	0.8	16
44	Visualizing excitations at buried heterojunctions in organic semiconductor blends. <i>Nature Materials</i> , 2017, 16, 551-557.	13.3	98
45	Organic Cation Rotation and Immobilization in Pure and Mixed Methylammonium Lead-Halide Perovskites. <i>Journal of the American Chemical Society</i> , 2017, 139, 4068-4074.	6.6	114
46	Understanding charge transport in lead iodide perovskite thin-film field-effect transistors. <i>Science Advances</i> , 2017, 3, e1601935.	4.7	354
47	Ultra-broadband optical amplification at telecommunication wavelengths achieved by bismuth-activated lead iodide perovskites. <i>Journal of Materials Chemistry C</i> , 2017, 5, 2591-2596.	2.7	19
48	Defect-Assisted Photoinduced Halide Segregation in Mixed-Halide Perovskite Thin Films. <i>ACS Energy Letters</i> , 2017, 2, 1416-1424.	8.8	437
49	Highly Efficient Light-Emitting Diodes of Colloidal Metal-Halide Perovskite Nanocrystals beyond Quantum Size. <i>ACS Nano</i> , 2017, 11, 6586-6593.	7.3	310
50	Partial oxidation of the absorber layer reduces charge carrier recombination in antimony sulfide solar cells. <i>Physical Chemistry Chemical Physics</i> , 2017, 19, 1425-1430.	1.3	23
51	Kinetic Control of Perovskite Thin-Film Morphology and Application in Printable Light-Emitting Diodes. <i>ACS Energy Letters</i> , 2017, 2, 81-87.	8.8	16
52	High operational and environmental stability of high-mobility conjugated polymer field-effect transistors through the use of molecular additives. <i>Nature Materials</i> , 2017, 16, 356-362.	13.3	345
53	Real-Time Observation of Exciton-Phonon Coupling Dynamics in Self-Assembled Hybrid Perovskite Quantum Wells. <i>ACS Nano</i> , 2017, 11, 10834-10843.	7.3	181
54	High Quality Hybrid Perovskite Semiconductor Thin Films with Remarkably Enhanced Luminescence and Defect Suppression via Quaternary Alkyl Ammonium Salt Based Treatment. <i>Advanced Materials Interfaces</i> , 2017, 4, 1700562.	1.9	32

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55	Monovalent Cation Doping of CH ₃ NH ₃ PbI ₃ for Efficient Perovskite Solar Cells. Journal of Visualized Experiments, 2017, , .	0.2	20
56	Synthetic Manipulation of Hybrid Perovskite Systems in Search of New and Enhanced Functionalities. ChemSusChem, 2017, 10, 3722-3739.	3.6	11
57	Interfacial disorder in efficient polymer solar cells: the impact of donor molecular structure and solvent additives. Journal of Materials Chemistry A, 2017, 5, 24749-24757.	5.2	63
58	High Open-Circuit Voltages in Tin-Rich Low-Bandgap Perovskite-Based Planar Heterojunction Photovoltaics. Advanced Materials, 2017, 29, 1604744.	11.1	212
59	Phenothiazine-Based "A" Dyes for Highly Efficient Dye-Sensitized Solar Cells: Effect of Internal Acceptor and Non-Conjugated "Spacer" on Device Performance. ChemPlusChem, 2017, 82, 280-286.	1.3	7
60	Efficient Visible Quasi-2D Perovskite Light-Emitting Diodes. Advanced Materials, 2016, 28, 7515-7520.	11.1	554
61	Impact of Monovalent Cation Halide Additives on the Structural and Optoelectronic Properties of CH ₃ NH ₃ PbI ₃ Perovskite. Advanced Energy Materials, 2016, 6, 1502472.	10.2	196
62	Harvesting the Full Potential of Photons with Organic Solar Cells. Advanced Materials, 2016, 28, 1482-1488.	11.1	190
63	Enhancing photoluminescence yields in lead halide perovskites by photon recycling and light out-coupling. Nature Communications, 2016, 7, 13941.	5.8	427
64	Air-Stable n-channel Diketopyrrolopyrrole Diketopyrrolopyrrole Oligomers for High Performance Ambipolar Organic Transistors. ACS Applied Materials & Interfaces, 2016, 8, 25415-25427.	4.0	36
65	Perovskite Light-Emitting Diodes: Efficient Visible Quasi-2D Perovskite Light-Emitting Diodes (Adv. Mater.) Tj ETQq1 1 0,784314	11.1	10
66	Azaisoindigo conjugated polymers for high performance n-type and ambipolar thin film transistor applications. Journal of Materials Chemistry C, 2016, 4, 9704-9710.	2.7	65
67	Charge Generation and Electron-Trapping Dynamics in Hybrid Nanocrystal-Polymer Solar Cells. Journal of Physical Chemistry C, 2016, 120, 19064-19069.	1.5	11
68	Impact of a Mesoporous Titania-Perovskite Interface on the Performance of Hybrid Organic-Inorganic Perovskite Solar Cells. Journal of Physical Chemistry Letters, 2016, 7, 3264-3269.	2.1	85
69	Low-Temperature Solution-Grown CsPbBr ₃ Single Crystals and Their Characterization. Crystal Growth and Design, 2016, 16, 5717-5725.	1.4	329
70	Naphthacenodithiophene Based Polymers—New Members of the Acenodithiophene Family Exhibiting High Mobility and Power Conversion Efficiency. Advanced Functional Materials, 2016, 26, 6961-6969.	7.8	19
71	What Controls the Rate of Ultrafast Charge Transfer and Charge Separation Efficiency in Organic Photovoltaic Blends. Journal of the American Chemical Society, 2016, 138, 11672-11679.	6.6	179
72	Remarkable enhancement of charge carrier mobility of conjugated polymer field-effect transistors upon incorporating an ionic additive. Science Advances, 2016, 2, e1600076.	4.7	139

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73	Coulomb Enhanced Charge Transport in Semicrystalline Polymer Semiconductors. <i>Advanced Functional Materials</i> , 2016, 26, 8011-8022.	7.8	24
74	Correlation between Photovoltaic Performance and Interchain Ordering Induced Delocalization of Electronics States in Conjugated Polymer Blends. <i>ACS Applied Materials & Interfaces</i> , 2016, 8, 20243-20250.	4.0	31
75	Sub-10 fs Time-Resolved Vibronic Optical Microscopy. <i>Journal of Physical Chemistry Letters</i> , 2016, 7, 4854-4859.	2.1	44
76	Limits for Recombination in a Low Energy Loss Organic Heterojunction. <i>ACS Nano</i> , 2016, 10, 10736-10744.	7.3	79
77	Improved Heterojunction Quality in Cu ₂ O-based Solar Cells Through the Optimization of Atmospheric Pressure Spatial Atomic Layer Deposited Zn _{1-x} Mg _x O. <i>Journal of Visualized Experiments</i> , 2016, , .	0.2	3
78	Enhanced Efficiency and Stability of Perovskite Solar Cells Through Nd-Doping of Mesostructured TiO ₂ . <i>Advanced Energy Materials</i> , 2016, 6, 1501868.	10.2	157
79	Tunable Near-Infrared Luminescence in Tin Halide Perovskite Devices. <i>Journal of Physical Chemistry Letters</i> , 2016, 7, 2653-2658.	2.1	122
80	Local Versus Long-Range Diffusion Effects of Photoexcited States on Radiative Recombination in Organic-Inorganic Lead Halide Perovskites. <i>Advanced Science</i> , 2015, 2, 1500136.	5.6	50
81	Phosphonic anchoring groups in organic dyes for solid-state solar cells. <i>Physical Chemistry Chemical Physics</i> , 2015, 17, 18780-18789.	1.3	18
82	Overcoming the electroluminescence efficiency limitations of perovskite light-emitting diodes. <i>Science</i> , 2015, 350, 1222-1225.	6.0	2,440
83	Ultrasoft organic-inorganic perovskite thin-film formation and crystallization for efficient planar heterojunction solar cells. <i>Nature Communications</i> , 2015, 6, 6142.	5.8	784
84	Size-Dependent Photon Emission from Organometal Halide Perovskite Nanocrystals Embedded in an Organic Matrix. <i>Journal of Physical Chemistry Letters</i> , 2015, 6, 446-450.	2.1	160
85	Electroluminescence from Organometallic Lead Halide Perovskite-Conjugated Polymer Diodes. <i>Advanced Electronic Materials</i> , 2015, 1, 1500008.	2.6	62
86	Electronic Structure of Low-Temperature Solution-Processed Amorphous Metal Oxide Semiconductors for Thin-Film Transistor Applications. <i>Advanced Functional Materials</i> , 2015, 25, 1873-1885.	7.8	176
87	Atmospheric Influence upon Crystallization and Electronic Disorder and Its Impact on the Photophysical Properties of Organic-Inorganic Perovskite Solar Cells. <i>ACS Nano</i> , 2015, 9, 2311-2320.	7.3	173
88	Blue-Green Color Tunable Solution Processable Organolead Chloride-Bromide Mixed Halide Perovskites for Optoelectronic Applications. <i>Nano Letters</i> , 2015, 15, 6095-6101.	4.5	461
89	Efficient room temperature aqueous Sb ₂ S ₃ synthesis for inorganic-organic sensitized solar cells with 5.1% efficiencies. <i>Chemical Communications</i> , 2015, 51, 8640-8643.	2.2	78
90	Device Performance of Small-Molecule Azomethine-Based Bulk Heterojunction Solar Cells. <i>Chemistry of Materials</i> , 2015, 27, 2990-2997.	3.2	45

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91	Hot-carrier cooling and photoinduced refractive index changes in organic–inorganic lead halide perovskites. <i>Nature Communications</i> , 2015, 6, 8420.	5.8	491
92	Nanoscale investigation of organic – inorganic halide perovskites. <i>Journal of Physics: Conference Series</i> , 2015, 644, 012024.	0.3	1
93	Bright and efficient blue polymer light emitting diodes with reduced operating voltages processed entirely at low-temperature. <i>Journal of Materials Chemistry C</i> , 2015, 3, 9327-9336.	2.7	11
94	Size and Energy Level Tuning of Quantum Dot Solids via a Hybrid Ligand Complex. <i>Journal of Physical Chemistry Letters</i> , 2015, 6, 3510-3514.	2.1	23
95	Enhanced optoelectronic quality of perovskite thin films with hypophosphorous acid for planar heterojunction solar cells. <i>Nature Communications</i> , 2015, 6, 10030.	5.8	620
96	Role of PbSe Structural Stabilization in Photovoltaic Cells. <i>Advanced Functional Materials</i> , 2015, 25, 928-935.	7.8	21
97	Fabrication of ZnO/Cu ₂ O heterojunctions in atmospheric conditions: Improved interface quality and solar cell performance. <i>Solar Energy Materials and Solar Cells</i> , 2015, 135, 43-48.	3.0	103
98	Engineering Schottky Contacts in Open-Air Fabricated Heterojunction Solar Cells to Enable High Performance and Ohmic Charge Transport. <i>ACS Applied Materials & Interfaces</i> , 2014, 6, 22192-22198.	4.0	25
99	Improved Exciton Dissociation at Semiconducting Polymer:ZnO Donor:Acceptor Interfaces via Nitrogen Doping of ZnO. <i>Advanced Functional Materials</i> , 2014, 24, 3562-3570.	7.8	60
100	Lead-free organic–inorganic tin halide perovskites for photovoltaic applications. <i>Energy and Environmental Science</i> , 2014, 7, 3061-3068.	15.6	2,086
101	Two-dimensional Carrier Distribution in Top-gate Polymer Field-effect Transistors: Correlation between Width of Density of Localized States and Urbach Energy. <i>Advanced Materials</i> , 2014, 26, 728-733.	11.1	149
102	Approaching disorder-free transport in high-mobility conjugated polymers. <i>Nature</i> , 2014, 515, 384-388.	13.7	844
103	Heterojunction Modification for Highly Efficient Organic–Inorganic Perovskite Solar Cells. <i>ACS Nano</i> , 2014, 8, 12701-12709.	7.3	614
104	Improved Performance of ZnO/Polymer Hybrid Photovoltaic Devices by Combining Metal Oxide Doping and Interfacial Modification. <i>Journal of Physical Chemistry C</i> , 2014, 118, 18945-18950.	1.5	36
105	Bright light-emitting diodes based on organometal halide perovskite. <i>Nature Nanotechnology</i> , 2014, 9, 687-692.	15.6	3,627
106	Performance and Stability Enhancement of Dye-sensitized and Perovskite Solar Cells by Al Doping of TiO ₂ . <i>Advanced Functional Materials</i> , 2014, 24, 6046-6055.	7.8	330
107	Thieno[3,2- <i>b</i>]thiophene Flanked Isoindigo Polymers for High Performance Ambipolar OFET Applications. <i>Advanced Functional Materials</i> , 2014, 24, 7109-7115.	7.8	58
108	Preparation of Single-Phase Films of CH ₃ NH ₃ Pb(I _{1-x} Br _x) ₃ with Sharp Optical Band Edges. <i>Journal of Physical Chemistry Letters</i> , 2014, 5, 2501-2505.	2.1	385

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109	Improved Open-Circuit Voltage in ZnO/PbSe Quantum Dot Solar Cells by Understanding and Reducing Losses Arising from the ZnO Conduction Band Tail. <i>Advanced Energy Materials</i> , 2014, 4, 1301544.	10.2	94
110	Stable Light-Emitting Diodes Using Phase-Pure Ruddlesden-Popper Layered Perovskites. , 0, , .		1