

Aditya Sadhanala

List of Publications by Year in descending order

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Version: 2024-02-01

110
papers

23,678
citations

22153

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25787

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all docs

110
docs citations

110
times ranked

20339
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.	14.9	26
2	Comprehensive defect suppression in perovskite nanocrystals for high-efficiency light-emitting diodes. <i>Nature Photonics</i> , 2021, 15, 148-155.	31.4	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.	2.8	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.	3.1	8
5	Ligand-engineered bandgap stability in mixed-halide perovskite LEDs. <i>Nature</i> , 2021, 591, 72-77.	27.8	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, .	10.3	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.	5.1	36
8	Long-range ballistic propagation of carriers in methylammonium lead iodide perovskite thin films. <i>Nature Physics</i> , 2020, 16, 171-176.	16.7	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.	26.0	99
11	Lanthanide-doped inorganic nanoparticles turn molecular triplet excitons bright. <i>Nature</i> , 2020, 587, 594-599.	27.8	135
12	A Novel Mitigation Mechanism for Photo-Induced Trapping in an Anthradithiophene Derivative Using Additives. <i>Advanced Electronic Materials</i> , 2020, 6, 2000250.	5.1	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.	5.1	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.	21.0	38
15	Proton-transfer-induced 3D/2D hybrid perovskites suppress ion migration and reduce luminance overshoot. <i>Nature Communications</i> , 2020, 11, 3378.	12.8	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.	19.5	36
17	A Highly Emissive Surface Layer in Mixed-Halide Multication Perovskites. <i>Advanced Materials</i> , 2019, 31, e1902374.	21.0	57
18	Excitonic Properties of Low-Band-Gap Lead-Tin Halide Perovskites. <i>ACS Energy Letters</i> , 2019, 4, 615-621.	17.4	51

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19	Triple-Cation-Based Perovskite Photocathodes with AZO Protective Layer for Hydrogen Production Applications. ACS Applied Materials & Interfaces, 2019, 11, 23198-23206.	8.0	46
20	Short contacts between chains enhancing luminescence quantum yields and carrier mobilities in conjugated copolymers. Nature Communications, 2019, 10, 2614.	12.8	60
21	High-mobility, trap-free charge transport in conjugated polymer diodes. Nature Communications, 2019, 10, 2122.	12.8	92
22	Efficient Ruddlesden-Popper Perovskite Light-Emitting Diodes with Randomly Oriented Nanocrystals. Advanced Functional Materials, 2019, 29, 1901225.	14.9	95
23	Slow Carrier Cooling in Hybrid Pb-Sn Halide Perovskites. ACS Energy Letters, 2019, 4, 736-740.	17.4	36
24	Charge extraction via graded doping of hole transport layers gives highly luminescent and stable metal halide perovskite devices. Science Advances, 2019, 5, eaav2012.	10.3	116
25	Chain Coupling and Luminescence in High-Mobility, Low-Disorder Conjugated Polymers. ACS Nano, 2019, 13, 13716-13727.	14.6	7
26	Chemical sintering reduced grain boundary defects for stable planar perovskite solar cells. Nano Energy, 2019, 56, 741-750.	16.0	65
27	Lead-Free Perovskite Semiconductors Based on Germanium-Tin Solid Solutions: Structural and Optoelectronic Properties. Journal of Physical Chemistry C, 2018, 122, 5940-5947.	3.1	104
28	High-Efficiency Polycrystalline Perovskite Light-Emitting Diodes Based on Mixed Cations. ACS Nano, 2018, 12, 2883-2892.	14.6	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. Chemistry of Materials, 2018, 30, 3090-3100.	6.7	107
30	Stable Light-Emitting Diodes Using Phase-Pure Ruddlesden-Popper Layered Perovskites. Advanced Materials, 2018, 30, 1704217.	21.0	258
31	Correlation of Disorder and Charge Transport in a Range of Indacenodithiophene-Based Semiconducting Polymers. Advanced Electronic Materials, 2018, 4, 1700410.	5.1	26
32	In Situ Atmospheric Deposition of Ultrasoother Nickel Oxide for Efficient Perovskite Solar Cells. ACS Applied Materials & Interfaces, 2018, 10, 41849-41854.	8.0	47
33	Negative Correlation between Intermolecular vs Intramolecular Disorder in Bulk-Heterojunction Organic Solar Cells. ACS Applied Materials & Interfaces, 2018, 10, 44576-44582.	8.0	19
34	Exciton-Phonon Interactions Govern Charge-Transfer-State Dynamics in CdSe/CdTe Two-Dimensional Colloidal Heterostructures. Journal of the American Chemical Society, 2018, 140, 14097-14111.	13.7	30
35	Direct Bandgap Behavior in Rashba-Type Metal Halide Perovskites. Advanced Materials, 2018, 30, e1803379.	21.0	23
36	Opal-like Multicolor Appearance of Self-Assembled Photonic Array. ACS Applied Materials & Interfaces, 2018, 10, 20783-20789.	8.0	17

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37	Fundamental Carrier Lifetime Exceeding 1 μ s in Cs ₂ AgBiBr ₆ Double Perovskite. Advanced Materials Interfaces, 2018, 5, 1800464.	3.7	173
38	Enhanced photovoltage for inverted planar heterojunction perovskite solar cells. Science, 2018, 360, 1442-1446.	12.6	1,221
39	Dedoping of Lead Halide Perovskites Incorporating Monovalent Cations. ACS Nano, 2018, 12, 7301-7311.	14.6	101
40	Electroluminescence from Solution-Processed Pinhole-Free Nanometer-Thickness Layers of Conjugated Polymers. Nano Letters, 2018, 18, 5382-5388.	9.1	4
41	Performance Improvements in Conjugated Polymer Devices by Removal of Water-Induced Traps. Advanced Materials, 2018, 30, e1801874.	21.0	69
42	First Resonance Energy Transfer Drives Higher Efficiency in Ternary Blend Organic Solar Cells. ACS Applied Energy Materials, 2018, 1, 4874-4882.	5.1	34
43	Zinc tin oxide thin film transistors produced by a high rate reactive sputtering: Effect of tin composition and annealing temperatures. Physica Status Solidi (A) Applications and Materials Science, 2017, 214, 1600470.	1.8	16
44	Visualizing excitations at buried heterojunctions in organic semiconductor blends. Nature Materials, 2017, 16, 551-557.	27.5	98
45	Organic Cation Rotation and Immobilization in Pure and Mixed Methylammonium Lead-Halide Perovskites. Journal of the American Chemical Society, 2017, 139, 4068-4074.	13.7	114
46	Understanding charge transport in lead iodide perovskite thin-film field-effect transistors. Science Advances, 2017, 3, e1601935.	10.3	354
47	Ultra-broadband optical amplification at telecommunication wavelengths achieved by bismuth-activated lead iodide perovskites. Journal of Materials Chemistry C, 2017, 5, 2591-2596.	5.5	19
48	Defect-Assisted Photoinduced Halide Segregation in Mixed-Halide Perovskite Thin Films. ACS Energy Letters, 2017, 2, 1416-1424.	17.4	437
49	Highly Efficient Light-Emitting Diodes of Colloidal Metal-Halide Perovskite Nanocrystals beyond Quantum Size. ACS Nano, 2017, 11, 6586-6593.	14.6	310
50	Partial oxidation of the absorber layer reduces charge carrier recombination in antimony sulfide solar cells. Physical Chemistry Chemical Physics, 2017, 19, 1425-1430.	2.8	23
51	Kinetic Control of Perovskite Thin-Film Morphology and Application in Printable Light-Emitting Diodes. ACS Energy Letters, 2017, 2, 81-87.	17.4	16
52	High operational and environmental stability of high-mobility conjugated polymer field-effect transistors through the use of molecular additives. Nature Materials, 2017, 16, 356-362.	27.5	345
53	Real-Time Observation of Exciton-Phonon Coupling Dynamics in Self-Assembled Hybrid Perovskite Quantum Wells. ACS Nano, 2017, 11, 10834-10843.	14.6	181
54	High Quality Hybrid Perovskite Semiconductor Thin Films with Remarkably Enhanced Luminescence and Defect Suppression via Quaternary Alkyl Ammonium Salt Based Treatment. Advanced Materials Interfaces, 2017, 4, 1700562.	3.7	32

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55	Monovalent Cation Doping of $\text{CH}_3\text{NH}_3\text{PbI}_3$ for Efficient Perovskite Solar Cells. Journal of Visualized Experiments, 2017, , .	0.3	20
56	Synthetic Manipulation of Hybrid Perovskite Systems in Search of New and Enhanced Functionalities. ChemSusChem, 2017, 10, 3722-3739.	6.8	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.	10.3	63
58	High Open-Circuit Voltages in Tin-Rich Low-Bandgap Perovskite-Based Planar Heterojunction Photovoltaics. Advanced Materials, 2017, 29, 1604744.	21.0	212
59	Phenothiazine-Based Dye-Sensitized Solar Cells: Effect of Internal Acceptor and Non-Conjugated Spacer on Device Performance. ChemPlusChem, 2017, 82, 280-286.	2.8	7
60	Efficient Visible Quasi-2D Perovskite Light-Emitting Diodes. Advanced Materials, 2016, 28, 7515-7520.	21.0	554
61	Impact of Monovalent Cation Halide Additives on the Structural and Optoelectronic Properties of $\text{CH}_3\text{NH}_3\text{PbI}_3$ Perovskite. Advanced Energy Materials, 2016, 6, 1502472.	19.5	196
62	Harvesting the Full Potential of Photons with Organic Solar Cells. Advanced Materials, 2016, 28, 1482-1488.	21.0	190
63	Enhancing photoluminescence yields in lead halide perovskites by photon recycling and light out-coupling. Nature Communications, 2016, 7, 13941.	12.8	427
64	Air-Stable <i>n</i> -channel Diketopyrrolopyrrole Diketopyrrolopyrrole Oligomers for High Performance Ambipolar Organic Transistors. ACS Applied Materials & Interfaces, 2016, 8, 25415-25427.	8.0	36
65	Perovskite Light-Emitting Diodes: Efficient Visible Quasi-2D Perovskite Light-Emitting Diodes (Adv. Mater.)	21.0	10784314
66	Azaisoindigo conjugated polymers for high performance n-type and ambipolar thin film transistor applications. Journal of Materials Chemistry C, 2016, 4, 9704-9710.	5.5	65
67	Charge Generation and Electron-Trapping Dynamics in Hybrid Nanocrystal-Polymer Solar Cells. Journal of Physical Chemistry C, 2016, 120, 19064-19069.	3.1	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.	4.6	85
69	Low-Temperature Solution-Grown CsPbBr_3 Single Crystals and Their Characterization. Crystal Growth and Design, 2016, 16, 5717-5725.	3.0	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.	14.9	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.	13.7	179
72	Remarkable enhancement of charge carrier mobility of conjugated polymer field-effect transistors upon incorporating an ionic additive. Science Advances, 2016, 2, e1600076.	10.3	139

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73	Coulomb Enhanced Charge Transport in Semicrystalline Polymer Semiconductors. Advanced Functional Materials, 2016, 26, 8011-8022.	14.9	24
74	Correlation between Photovoltaic Performance and Interchain Ordering Induced Delocalization of Electronics States in Conjugated Polymer Blends. ACS Applied Materials & Interfaces, 2016, 8, 20243-20250.	8.0	31
75	Sub-10 fs Time-Resolved Vibronic Optical Microscopy. Journal of Physical Chemistry Letters, 2016, 7, 4854-4859.	4.6	44
76	Limits for Recombination in a Low Energy Loss Organic Heterojunction. ACS Nano, 2016, 10, 10736-10744.	14.6	79
77	Improved Heterojunction Quality in Cu ₂ O-based Solar Cells Through the Optimization of Atmospheric Pressure Spatial Atomic Layer Deposited $\text{Zn}_{1-x}\text{Mg}_x\text{O}$. Journal of Visualized Experiments, 2016, , .	0.3	3
78	Enhanced Efficiency and Stability of Perovskite Solar Cells Through Nd-Doping of Mesostructured TiO_2 . Advanced Energy Materials, 2016, 6, 1501868.	19.5	157
79	Tunable Near-Infrared Luminescence in Tin Halide Perovskite Devices. Journal of Physical Chemistry Letters, 2016, 7, 2653-2658.	4.6	122
80	Local Versus Long-Range Diffusion Effects of Photoexcited States on Radiative Recombination in Organic-Inorganic Lead Halide Perovskites. Advanced Science, 2015, 2, 1500136.	11.2	50
81	Phosphonic anchoring groups in organic dyes for solid-state solar cells. Physical Chemistry Chemical Physics, 2015, 17, 18780-18789.	2.8	18
82	Overcoming the electroluminescence efficiency limitations of perovskite light-emitting diodes. Science, 2015, 350, 1222-1225.	12.6	2,440
83	Ultrasoft organic-inorganic perovskite thin-film formation and crystallization for efficient planar heterojunction solar cells. Nature Communications, 2015, 6, 6142.	12.8	784
84	Size-Dependent Photon Emission from Organometal Halide Perovskite Nanocrystals Embedded in an Organic Matrix. Journal of Physical Chemistry Letters, 2015, 6, 446-450.	4.6	160
85	Electroluminescence from Organometallic Lead Halide Perovskite-Conjugated Polymer Diodes. Advanced Electronic Materials, 2015, 1, 1500008.	5.1	62
86	Electronic Structure of Low-Temperature Solution-Processed Amorphous Metal Oxide Semiconductors for Thin-Film Transistor Applications. Advanced Functional Materials, 2015, 25, 1873-1885.	14.9	176
87	Atmospheric Influence upon Crystallization and Electronic Disorder and Its Impact on the Photophysical Properties of Organic-Inorganic Perovskite Solar Cells. ACS Nano, 2015, 9, 2311-2320.	14.6	173
88	Blue-Green Color Tunable Solution Processable Organolead Chloride-Bromide Mixed Halide Perovskites for Optoelectronic Applications. Nano Letters, 2015, 15, 6095-6101.	9.1	461
89	Efficient room temperature aqueous Sb_2S_3 synthesis for inorganic-organic sensitized solar cells with 5.1% efficiencies. Chemical Communications, 2015, 51, 8640-8643.	4.1	78
90	Device Performance of Small-Molecule Azomethine-Based Bulk Heterojunction Solar Cells. Chemistry of Materials, 2015, 27, 2990-2997.	6.7	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.	12.8	491
92	Nanoscale investigation of organic – inorganic halide perovskites. <i>Journal of Physics: Conference Series</i> , 2015, 644, 012024.	0.4	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.	5.5	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.	4.6	23
95	Enhanced optoelectronic quality of perovskite thin films with hypophosphorous acid for planar heterojunction solar cells. <i>Nature Communications</i> , 2015, 6, 10030.	12.8	620
96	Role of PbSe Structural Stabilization in Photovoltaic Cells. <i>Advanced Functional Materials</i> , 2015, 25, 928-935.	14.9	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.	6.2	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.	8.0	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.	14.9	60
100	Lead-free organic–inorganic tin halide perovskites for photovoltaic applications. <i>Energy and Environmental Science</i> , 2014, 7, 3061-3068.	30.8	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.	21.0	149
102	Approaching disorder-free transport in high-mobility conjugated polymers. <i>Nature</i> , 2014, 515, 384-388.	27.8	844
103	Heterojunction Modification for Highly Efficient Organic–Inorganic Perovskite Solar Cells. <i>ACS Nano</i> , 2014, 8, 12701-12709.	14.6	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.	3.1	36
105	Bright light-emitting diodes based on organometal halide perovskite. <i>Nature Nanotechnology</i> , 2014, 9, 687-692.	31.5	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.	14.9	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.	14.9	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.	4.6	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. Advanced Energy Materials, 2014, 4, 1301544.	19.5	94
110	Stable Light-Emitting Diodes Using Phase-Pure Ruddlesden-Popper Layered Perovskites. , 0, , .		1