Aditya Sadhanala

List of Publications by Year in Descending Order

108 papers	18,331 citations	54 h-index	110 g-index
110 ext. papers	20,931 ext. citations	14.8 avg, IF	6.49 L-index

#	Paper	IF	Citations
108	Ligand-engineered bandgap stability in mixed-halide perovskite LEDs. *Nature*, **2021**, 591, 72-77	50.4	172
107	Charge transport physics of a unique class of rigid-rod conjugated polymers with fused-ring conjugated units linked by double carbon-carbon bonds. *Science Advances*, **2021**, 7,	14.3	7
106	Linking Glass-Transition Behavior to Photophysical and Charge Transport Properties of High-Mobility Conjugated Polymers. *Advanced Functional Materials*, **2021**, 31, 2007359	15.6	11
105	Comprehensive defect suppression in perovskite nanocrystals for high-efficiency light-emitting diodes. *Nature Photonics*, **2021**, 15, 148-155	33.9	257
104	Organic□inorganic hybrid and inorganic halide perovskites: structural and chemical engineering, interfaces and optoelectronic properties. *Journal Physics D: Applied Physics*, **2021**, 54, 133002	3	11
103	Rational Design of Donor□Acceptor Based Semiconducting Copolymers with High Dielectric Constants. *Journal of Physical Chemistry C*, **2021**, 125, 6886-6896	3.8	4
102	Role of Morphology and F□ster Resonance Energy Transfer in Ternary Blend Organic Solar Cells. *ACS Applied Energy Materials*, **2020**, 3, 12025-12036	6.1	8
101	Anisotropy of Charge Transport in a Uniaxially Aligned Fused Electron-Deficient Polymer Processed by Solution Shear Coating. *Advanced Materials*, **2020**, 32, e2000063	24	18
100	Proton-transfer-induced 3D/2D hybrid perovskites suppress ion migration and reduce luminance overshoot. *Nature Communications*, **2020**, 11, 3378	17.4	51
99	Understanding the Origin of Ultrasharp Sub-bandgap Luminescence from Zero-Dimensional Inorganic Perovskite Cs4PbBr6. *ACS Applied Energy Materials*, **2020**, 3, 192-199	6.1	21
98	Long-range ballistic propagation of carriers in methylammonium lead iodide perovskite thin films. *Nature Physics*, **2020**, 16, 171-176	16.2	44
97	Optical absorption and photoluminescence spectroscopy **2020**, 49-79		5
96	A solvent-based surface cleaning and passivation technique for suppressing ionic defects in high-mobility perovskite field-effect transistors. *Nature Electronics*, **2020**, 3, 694-703	28.4	43
95	Lanthanide-doped inorganic nanoparticles turn molecular triplet excitons bright. *Nature*, **2020**, 587, 594-599	50.4	57
94	A Novel Mitigation Mechanism for Photo-Induced Trapping in an Anthradithiophene Derivative Using Additives. *Advanced Electronic Materials*, **2020**, 6, 2000250	6.4	2
93	Excitonic Properties of Low-Band-Gap Lead□Tin Halide Perovskites. *ACS Energy Letters*, **2019**, 4, 615-621	20.1	36
92	Triple-Cation-Based Perovskite Photocathodes with AZO Protective Layer for Hydrogen Production Applications. *ACS Applied Materials & Interfaces*, **2019**, 11, 23198-23206	9.5	37

91	Short contacts between chains enhancing luminescence quantum yields and carrier mobilities in conjugated copolymers. *Nature Communications*, **2019**, 10, 2614	17.4	29
90	High-mobility, trap-free charge transport in conjugated polymer diodes. *Nature Communications*, **2019**, 10, 2122	17.4	61
89	Efficient Ruddlesden□Popper Perovskite Light-Emitting Diodes with Randomly Oriented Nanocrystals. *Advanced Functional Materials*, **2019**, 29, 1901225	15.6	70
88	Sequentially Deposited versus Conventional Nonfullerene Organic Solar Cells: Interfacial Trap States, Vertical Stratification, and Exciton Dissociation. *Advanced Energy Materials*, **2019**, 9, 1902145	21.8	22
87	A Highly Emissive Surface Layer in Mixed-Halide Multication Perovskites. *Advanced Materials*, **2019**, 31, e1902374	24	39
86	Slow Carrier Cooling in Hybrid Pb□Sn Halide Perovskites. *ACS Energy Letters*, **2019**, 4, 736-740	20.1	21
85	Charge extraction via graded doping of hole transport layers gives highly luminescent and stable metal halide perovskite devices. *Science Advances*, **2019**, 5, eaav2012	14.3	85
84	Chain Coupling and Luminescence in High-Mobility, Low-Disorder Conjugated Polymers. *ACS Nano*, **2019**, 13, 13716-13727	16.7	3
83	Chemical sintering reduced grain boundary defects for stable planar perovskite solar cells. *Nano Energy*, **2019**, 56, 741-750	17.1	55
82	Lead-Free Perovskite Semiconductors Based on Germanium□Tin Solid Solutions: Structural and Optoelectronic Properties. *Journal of Physical Chemistry C*, **2018**, 122, 5940-5947	3.8	73
81	High-Efficiency Polycrystalline Perovskite Light-Emitting Diodes Based on Mixed Cations. *ACS Nano*, **2018**, 12, 2883-2892	16.7	84
80	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	8.6	80
79	Stable Light-Emitting Diodes Using Phase-Pure Ruddlesden-Popper Layered Perovskites. *Advanced Materials*, **2018**, 30, 1704217	24	210
78	Electroluminescence from Solution-Processed Pinhole-Free Nanometer-Thickness Layers of Conjugated Polymers. *Nano Letters*, **2018**, 18, 5382-5388	11.5	2
77	Performance Improvements in Conjugated Polymer Devices by Removal of Water-Induced Traps. *Advanced Materials*, **2018**, 30, e1801874	24	52
76	Fö□ster Resonance Energy Transfer Drives Higher Efficiency in Ternary Blend Organic Solar Cells. *ACS Applied Energy Materials*, **2018**, 1, 4874-4882	6.1	27
75	Correlation of Disorder and Charge Transport in a Range of Indacenodithiophene-Based Semiconducting Polymers. *Advanced Electronic Materials*, **2018**, 4, 1700410	6.4	16
74	In Situ Atmospheric Deposition of Ultrasmooth Nickel Oxide for Efficient Perovskite Solar Cells. *ACS Applied Materials & Interfaces*, **2018**, 10, 41849-41854	9.5	29

73	Negative Correlation between Intermolecular vs Intramolecular Disorder in Bulk-Heterojunction Organic Solar Cells. *ACS Applied Materials & Interfaces*, **2018**, 10, 44576-44582	9.5	14
72	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	16.4	20
71	Direct Bandgap Behavior in Rashba-Type Metal Halide Perovskites. *Advanced Materials*, **2018**, 30, e1803379	27	16
70	Opal-like Multicolor Appearance of Self-Assembled Photonic Array. *ACS Applied Materials & Interfaces*, **2018**, 10, 20783-20789	9.5	10
69	Fundamental Carrier Lifetime Exceeding 1 μs in Cs2AgBiBr6 Double Perovskite. *Advanced Materials Interfaces*, **2018**, 5, 1800464	4.6	114
68	Enhanced photovoltage for inverted planar heterojunction perovskite solar cells. *Science*, **2018**, 360, 1442-1446	33.3	915
67	Dedoping of Lead Halide Perovskites Incorporating Monovalent Cations. *ACS Nano*, **2018**, 12, 7301-7311	16.7	73
66	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	1.6	12
65	Visualizing excitations at buried heterojunctions in organic semiconductor blends. *Nature Materials*, **2017**, 16, 551-557	27	78
64	Organic Cation Rotation and Immobilization in Pure and Mixed Methylammonium Lead-Halide Perovskites. *Journal of the American Chemical Society*, **2017**, 139, 4068-4074	16.4	87
63	Understanding charge transport in lead iodide perovskite thin-film field-effect transistors. *Science Advances*, **2017**, 3, e1601935	14.3	284
62	Ultra-broadband optical amplification at telecommunication wavelengths achieved by bismuth-activated lead iodide perovskites. *Journal of Materials Chemistry C*, **2017**, 5, 2591-2596	7.1	16
61	Defect-Assisted Photoinduced Halide Segregation in Mixed-Halide Perovskite Thin Films. *ACS Energy Letters*, **2017**, 2, 1416-1424	20.1	307
60	Highly Efficient Light-Emitting Diodes of Colloidal Metal-Halide Perovskite Nanocrystals beyond Quantum Size. *ACS Nano*, **2017**, 11, 6586-6593	16.7	233
59	Partial oxidation of the absorber layer reduces charge carrier recombination in antimony sulfide solar cells. *Physical Chemistry Chemical Physics*, **2017**, 19, 1425-1430	3.6	15
58	Kinetic Control of Perovskite Thin-Film Morphology and Application in Printable Light-Emitting Diodes. *ACS Energy Letters*, **2017**, 2, 81-87	20.1	15
57	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	276
56	Real-Time Observation of Exciton-Phonon Coupling Dynamics in Self-Assembled Hybrid Perovskite Quantum Wells. *ACS Nano*, **2017**, 11, 10834-10843	16.7	120

55	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	4.6	31
54	Monovalent Cation Doping of CH3NH3PbI3 for Efficient Perovskite Solar Cells. *Journal of Visualized Experiments*, **2017**,	1.6	12
53	Synthetic Manipulation of Hybrid Perovskite Systems in Search of New and Enhanced Functionalities. *ChemSusChem*, **2017**, 10, 3722-3739	8.3	10
52	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	13	48
51	High Open-Circuit Voltages in Tin-Rich Low-Bandgap Perovskite-Based Planar Heterojunction Photovoltaics. *Advanced Materials*, **2017**, 29, 1604744	24	166
50	Phenothiazine-Based D-A-π-A Dyes for Highly Efficient Dye-Sensitized Solar Cells: Effect of Internal Acceptor and Non-Conjugated π-Spacer on Device Performance. *ChemPlusChem*, **2017**, 82, 280-286	2.8	5
49	Impact of a Mesoporous Titania-Perovskite Interface on the Performance of Hybrid Organic-Inorganic Perovskite Solar Cells. *Journal of Physical Chemistry Letters*, **2016**, 7, 3264-9	6.4	75
48	Low-Temperature Solution-Grown CsPbBr3 Single Crystals and Their Characterization. *Crystal Growth and Design*, **2016**, 16, 5717-5725	3.5	256
47	Naphthacenodithiophene Based Polymers: New Members of the Acenodithiophene Family Exhibiting High Mobility and Power Conversion Efficiency. *Advanced Functional Materials*, **2016**, 26, 6961-6969	15.6	18
46	What Controls the Rate of Ultrafast Charge Transfer and Charge Separation Efficiency in Organic Photovoltaic Blends. *Journal of the American Chemical Society*, **2016**, 138, 11672-9	16.4	154
45	Remarkable enhancement of charge carrier mobility of conjugated polymer field-effect transistors upon incorporating an ionic additive. *Science Advances*, **2016**, 2, e1600076	14.3	115
44	Coulomb Enhanced Charge Transport in Semicrystalline Polymer Semiconductors. *Advanced Functional Materials*, **2016**, 26, 8011-8022	15.6	20
43	Correlation between Photovoltaic Performance and Interchain Ordering Induced Delocalization of Electronics States in Conjugated Polymer Blends. *ACS Applied Materials & Interfaces*, **2016**, 8, 20243-50	9.5	31
42	Sub-10 fs Time-Resolved Vibronic Optical Microscopy. *Journal of Physical Chemistry Letters*, **2016**, 7, 4854-4859	6.4	39
41	Limits for Recombination in a Low Energy Loss Organic Heterojunction. *ACS Nano*, **2016**, 10, 10736-10744	16.7	64
40	Enhanced Efficiency and Stability of Perovskite Solar Cells Through Nd-Doping of Mesostructured TiO2. *Advanced Energy Materials*, **2016**, 6, 1501868	21.8	130
39	Tunable Near-Infrared Luminescence in Tin Halide Perovskite Devices. *Journal of Physical Chemistry Letters*, **2016**, 7, 2653-8	6.4	81
38	Efficient Visible Quasi-2D Perovskite Light-Emitting Diodes. *Advanced Materials*, **2016**, 28, 7515-20	24	451

37	Impact of Monovalent Cation Halide Additives on the Structural and Optoelectronic Properties of CH3NH3PbI3 Perovskite. *Advanced Energy Materials*, **2016**, 6, 1502472	21.8	171
36	Harvesting the Full Potential of Photons with Organic Solar Cells. *Advanced Materials*, **2016**, 28, 1482-8	24	177
35	Enhancing photoluminescence yields in lead halide perovskites by photon recycling and light out-coupling. *Nature Communications*, **2016**, 7, 13941	17.4	331
34	Air-Stable n-channel Diketopyrrolopyrrole-Diketopyrrolopyrrole Oligomers for High Performance Ambipolar Organic Transistors. *ACS Applied Materials & Interfaces*, **2016**, 8, 25415-27	9.5	32
33	Perovskite Light-Emitting Diodes: Efficient Visible Quasi-2D Perovskite Light-Emitting Diodes (Adv. Mater. 34/2016). *Advanced Materials*, **2016**, 28, 7550-7550	24	8
32	Azaisoindigo conjugated polymers for high performance n-type and ambipolar thin film transistor applications. *Journal of Materials Chemistry C*, **2016**, 4, 9704-9710	7.1	56
31	Charge Generation and Electron-Trapping Dynamics in Hybrid Nanocrystal-Polymer Solar Cells. *Journal of Physical Chemistry C*, **2016**, 120, 19064-19069	3.8	10
30	Size-Dependent Photon Emission from Organometal Halide Perovskite Nanocrystals Embedded in an Organic Matrix. *Journal of Physical Chemistry Letters*, **2015**, 6, 446-50	6.4	137
29	Electroluminescence from Organometallic Lead Halide Perovskite-Conjugated Polymer Diodes. *Advanced Electronic Materials*, **2015**, 1, 1500008	6.4	55
28	Electronic Structure of Low-Temperature Solution-Processed Amorphous Metal Oxide Semiconductors for Thin-Film Transistor Applications. *Advanced Functional Materials*, **2015**, 25, 1873-1885	15.6	144
27	Atmospheric influence upon crystallization and electronic disorder and its impact on the photophysical properties of organic-inorganic perovskite solar cells. *ACS Nano*, **2015**, 9, 2311-20	16.7	152
26	Blue-Green Color Tunable Solution Processable Organolead Chloride-Bromide Mixed Halide Perovskites for Optoelectronic Applications. *Nano Letters*, **2015**, 15, 6095-101	11.5	369
25	Efficient room temperature aqueous Sb2S3 synthesis for inorganic-organic sensitized solar cells with 5.1% efficiencies. *Chemical Communications*, **2015**, 51, 8640-3	5.8	58
24	Device Performance of Small-Molecule Azomethine-Based Bulk Heterojunction Solar Cells. *Chemistry of Materials*, **2015**, 27, 2990-2997	9.6	40
23	Hot-carrier cooling and photoinduced refractive index changes in organic-inorganic lead halide perovskites. *Nature Communications*, **2015**, 6, 8420	17.4	373
22	Nanoscale investigation of organic inorganic halide perovskites. *Journal of Physics: Conference Series*, **2015**, 644, 012024	0.3	1
21	Bright and efficient blue polymer light emitting diodes with reduced operating voltages processed entirely at low-temperature. *Journal of Materials Chemistry C*, **2015**, 3, 9327-9336	7.1	10
20	Size and Energy Level Tuning of Quantum Dot Solids via a Hybrid Ligand Complex. *Journal of Physical Chemistry Letters*, **2015**, 6, 3510-4	6.4	20

19	Enhanced optoelectronic quality of perovskite thin films with hypophosphorous acid for planar heterojunction solar cells. *Nature Communications*, **2015**, 6, 10030	17.4	492
18	Role of PbSe Structural Stabilization in Photovoltaic Cells. *Advanced Functional Materials*, **2015**, 25, 928-935	13.6	16
17	Fabrication of ZnO/Cu2O heterojunctions in atmospheric conditions: Improved interface quality and solar cell performance. *Solar Energy Materials and Solar Cells*, **2015**, 135, 43-48	6.4	83
16	Local Versus Long-Range Diffusion Effects of Photoexcited States on Radiative Recombination in Organic-Inorganic Lead Halide Perovskites. *Advanced Science*, **2015**, 2, 1500136	13.6	47
15	Phosphonic anchoring groups in organic dyes for solid-state solar cells. *Physical Chemistry Chemical Physics*, **2015**, 17, 18780-9	3.6	15
14	Overcoming the electroluminescence efficiency limitations of perovskite light-emitting diodes. *Science*, **2015**, 350, 1222-5	33.3	1963
13	Ultrasmooth organic-inorganic perovskite thin-film formation and crystallization for efficient planar heterojunction solar cells. *Nature Communications*, **2015**, 6, 6142	17.4	695
12	Improved Exciton Dissociation at Semiconducting Polymer:ZnO Donor:Acceptor Interfaces via Nitrogen Doping of ZnO. *Advanced Functional Materials*, **2014**, 24, 3562-3570	15.6	55
11	Lead-free organic–inorganic tin halide perovskites for photovoltaic applications. *Energy and Environmental Science*, **2014**, 7, 3061-3068	35.4	1635
10	Two-dimensional carrier distribution in top-gate polymer field-effect transistors: correlation between width of density of localized states and Urbach energy. *Advanced Materials*, **2014**, 26, 728-33	24	123
9	Approaching disorder-free transport in high-mobility conjugated polymers. *Nature*, **2014**, 515, 384-8	50.4	692
8	Heterojunction modification for highly efficient organic-inorganic perovskite solar cells. *ACS Nano*, **2014**, 8, 12701-9	16.7	546
7	Improved Performance of ZnO/Polymer Hybrid Photovoltaic Devices by Combining Metal Oxide Doping and Interfacial Modification. *Journal of Physical Chemistry C*, **2014**, 118, 18945-18950	3.8	36
6	Bright light-emitting diodes based on organometal halide perovskite. *Nature Nanotechnology*, **2014** , 9, 687-92	28.7	2958
5	Performance and Stability Enhancement of Dye-Sensitized and Perovskite Solar Cells by Al Doping of TiO2. *Advanced Functional Materials*, **2014**, 24, 6046-6055	15.6	294
4	Thieno[3,2-b]thiophene Flanked Isoindigo Polymers for High Performance Ambipolar OFET Applications. *Advanced Functional Materials*, **2014**, 24, n/a-n/a	15.6	31
3	Preparation of Single-Phase Films of CH3NH3Pb(I1-xBrx)3 with Sharp Optical Band Edges. *Journal of Physical Chemistry Letters*, **2014**, 5, 2501-5	6.4	347
2	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	21.8	82

1	Engineering Schottky contacts in open-air fabricated heterojunction solar cells to enable high performance and ohmic charge transport. *ACS Applied Materials & Interfaces*, **2014**, 6, 22192-8	9.5	23