Yashihiro Shirai

List of Publications by Year
in descending order

73 papers	3,795 citations	136885 32 h-index	123376 61 g-index
75 all docs	75 docs citations	75 times ranked	4841 citing authors

#	Article	IF	Citations
1	Surface Passivation of Sputtered NiO_{<i>x</i>} Using a SAM Interface Layer to Enhance the Performance of Perovskite Solar Cells. ACS Omega, 2022, 7, 12147-12157.	1.6	38
2	Degradation of Perovskite Photovoltaics Manifested in the Cross-Sectional Potential Profile Studied by Quantitative Kelvin Probe Force Microscopy. ACS Applied Energy Materials, 2022, 5, 4232-4239.	2.5	5
3	Degradation of perovskite solar cells by the doping level decrease of HTL revealed by capacitance spectroscopy. Solar Energy Materials and Solar Cells, 2021, 220, 110854.	3.0	12
4	Rapid degradation behavior of encapsulated perovskite solar cells under light, bias voltage or heat fields. Nanoscale Advances, 2021, 3, 6128-6137.	2.2	15
5	Passivation of Bulk and Interface Defects in Sputtered-NiO_{<i>x</i>}-Based Planar Perovskite Solar Cells: A Facile Interfacial Engineering Strategy with Alkali Metal Halide Salts. ACS Applied Energy Materials, 2021, 4, 4530-4540.	2.5	25
6	Concerted Ion Migration and Diffusionâ€Induced Degradation in Leadâ€Free Ag₃BiI₆ Rudorffite Solar Cells under Ambient Conditions. Solar Rrl, 2021, 5, 2100077.	3.1	28
7	A-site tailoring in the vacancy-ordered double perovskite semiconductor Cs2SnI6 for photovoltaic application. Solar Energy Materials and Solar Cells, 2021, 230, 111180.	3.0	28
8	Improved efficiency and stability of flexible perovskite solar cells by a new spacer cation additive. RSC Advances, 2021, 11, 33637-33645.	1.7	6
9	Chemical and Electronic Investigation of Buried NiO_{1â^'Î´}, PCBM, and PTAA/MAPbI_{3â€"<i>x</i>}Cl_{<i>x</i>} Interfaces Using Hard X-ray Photoelectron Spectroscopy and Transmission Electron Microscopy. ACS Applied Materials & Interfaces, 2021, 13, 50481-50490.	4.0	5
10	Insights into Accelerated Degradation of Perovskite Solar Cells under Continuous Illumination Driven by Thermal Stress and Interfacial Junction. ACS Applied Energy Materials, 2021, 4, 11121-11132.	2.5	29
11	Anharmonic organic cation vibrations in the hybrid lead halide perovskite <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mrow><mml:mi>CH</mml:mi></mml:mrow><mml:mn>3</m Physical Review Materials, 2021, 5, .	0.9	1
12	Pseudohalide Functional Additives in Tin Halide Perovskite for Efficient and Stable Pb-Free Perovskite Solar Cells. ACS Applied Energy Materials, 2021, 4, 12819-12826.	2.5	20
13	Investigating the Growth of CH₃NH₃PbI₃ Thin Films on RFâ€Sputtered NiO<i>_x</i> for Inverted Planar Perovskite Solar Cells: Effect of CH₃NH₃⁺ Halide Additives versus CH₃NH₃⁺ Halide Vapor Annealing. Advanced Materials Interfaces, 2020, 7, 1901748.	1.9	48
14	Attenuating the defect activities with a rubidium additive for efficient and stable Sn-based halide perovskite solar cells. Journal of Materials Chemistry C, 2020, 8, 2307-2313.	2.7	41
15	Photoinduced ion-redistribution in CH₃NH₃PbI₃ perovskite solar cells. Physical Chemistry Chemical Physics, 2020, 22, 25118-25125.	1.3	13
16	Effect of solvent vapour annealing on bismuth triiodide film for photovoltaic applications and its optoelectronic properties. Journal of Materials Chemistry C, 2020, 8, 12173-12180.	2.7	19
17	Coalescence-Driven Verticality in Mesoporous TiO₂ Thin Films with Long-Range Ordering. Journal of the American Chemical Society, 2020, 142, 15815-15822.	6.6	19
18	Residual PbI₂ Beneficial in the Bulk or at the Interface? An Investigation Study in Sputtered NiO<i>_x</i> Hole-Transport-Layer-Based Perovskite Solar Cells. ACS Applied Energy Materials, 2020, 3, 6215-6221.	2.5	24

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19	Ammoniated aqueous precursor ink processed copper iodide as hole transport layer for inverted planar perovskite solar cells. Solar Energy Materials and Solar Cells, 2020, 210, 110486.	3.0	30
20	Effect of different surface treatments of sputtered NiO<i> _X </i> on the photovoltaic parameters of perovskite solar cells: a correlation study. Applied Physics Express, 2020, 13, 025505.	1.1	28
21	Impedance Spectroscopy Revisited. Advanced Energy Materials, 2020, 10, 1903097.	10.2	16
22	Passivation of the Recombination Activities with Rubidium incorporation for Efficient and Stable Sn-HaP Solar Cells. , 2020, , .		1
23	Unraveling the Impacts Induced by Organic and Inorganic Hole Transport Layers in Inverted Halide Perovskite Solar Cells. ACS Applied Materials & Interfaces, 2019, 11, 7055-7065.	4.0	49
24	Effect of Light and Voltage on Electrochemical Impedance Spectroscopy of Perovskite Solar Cells: An Empirical Approach Based on Modified Randles Circuit. Journal of Physical Chemistry C, 2019, 123, 3968-3978.	1.5	48
25	Tailoring the film morphology and interface band offset of caesium bismuth iodide-based Pb-free perovskite solar cells. Journal of Materials Chemistry C, 2019, 7, 8335-8343.	2.7	78
26	Improved performance of planar perovskite devices <i>via</i> inclusion of ammonium acid iodide (AAI) derivatives using a two step inter-diffusion process. Journal of Materials Chemistry C, 2019, 7, 3447-3451.	2.7	8
27	Impedance Spectroscopy with Variable Voltages and Illuminations to Reveal Recombination Routes of Free Carriers in Perovskite Solar Cells. , 2019, , .		1
28	Aqueous Solution Processed Copper Iodide as Hole Transport Material For Planar Inverted Perovskite Solar Cells. , 2019, , .		1
29	Degradation of encapsulated perovskite solar cells driven by deep trap states and interfacial deterioration. Journal of Materials Chemistry C, 2018, 6, 162-170.	2.7	91
30	Exploring the Recombination Mechanism Induced by Carrier Transport Layers in Perovskite Solar Cells. , 2018, , .		2
31	Effect of hydroxyl groups in NiO _x on the open circuit voltage of lead iodide perovskite solar cells. Japanese Journal of Applied Physics, 2018, 57, 08RE06.	0.8	8
32	Tailoring the Open-Circuit Voltage Deficit of Wide-Band-Gap Perovskite Solar Cells Using Alkyl Chain-Substituted Fullerene Derivatives. ACS Applied Materials & Interfaces, 2018, 10, 22074-22082.	4.0	57
33	Photocarrier dynamics in perovskite-based solar cells revealed by intensity-modulated photovoltage spectroscopy. Physical Chemistry Chemical Physics, 2018, 20, 17918-17926.	1.3	16
34	NiO<i>_x</i> Hole Transport Layer for Perovskite Solar Cells with Improved Stability and Reproducibility. ACS Omega, 2017, 2, 2291-2299.	1.6	204
35	Enhancement in efficiency and optoelectronic quality of perovskite thin films annealed in MACl vapor. Sustainable Energy and Fuels, 2017, 1, 755-766.	2.5	77
36	Conformation Manipulation and Motion of a Double Paddle Molecule on an Au(111) Surface. ACS Nano, 2017, 11, 10357-10365.	7.3	55

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37	Direct Observation of Ultrafast Hole Injection from Lead Halide Perovskite by Differential Transient Transmission Spectroscopy. Journal of Physical Chemistry Letters, 2017, 8, 3902-3907.	2.1	32
38	Exploring the effects of interfacial carrier transport layers on device performance and optoelectronic properties of planar perovskite solar cells. Journal of Materials Chemistry C, 2017, 5, 8819-8827.	2.7	106
39	Effect of Carrier Transport in NiO on the Photovoltaic Properties of Lead Iodide Perovskite Solar Cells. Electrochemistry, 2017, 85, 231-235.	0.6	19
40	Hysteresis, Stability, and Ion Migration in Lead Halide Perovskite Photovoltaics. Journal of Physical Chemistry Letters, 2016, 7, 2240-2245.	2.1	81
41	Driving nanocars and nanomachines at interfaces: From concept of nanoarchitectonics to actual use in world wide race and hand operation. Japanese Journal of Applied Physics, 2016, 55, 1102A2.	0.8	40
42	Novel Surface Passivation Technique for Low-Temperature Solution-Processed Perovskite PV Cells. ACS Applied Materials & Interfaces, 2016, 8, 4644-4650.	4.0	83
43	Lead Halide Perovskite Photovoltaic as a Model <i>p</i>â€"<i>i</i>â€"<i>n</i> Diode. Accounts of Chemical Research, 2016, 49, 303-310.	7.6	104
44	Synthesis and optical properties of photovoltaic materials based on the indenofluorines and ambipolar dithienonaphthothiadiazol. , 2015, , .		0
45	Highâ€Quality Mixedâ€Organicâ€Cation Perovskites from a Phaseâ€Pure Nonâ€stoichiometric Intermediate (FAI)_{1â^’}<i>_x</i>â€PbI₂ for Solar Cells. Advanced Materials, 2015, 27, 4918-4923.	11.1	140
46	Synthesis and optical properties of photovoltaic materials based on the ambipolar dithienonaphthothiadiazole unit. Journal of Materials Chemistry A, 2015, 3, 4229-4238.	5.2	14
47	Simple characterization of electronic processes in perovskite photovoltaic cells. Applied Physics Letters, 2015, 106, .	1.5	43
48	Hysteresis-free and highly stable perovskite solar cells produced via a chlorine-mediated interdiffusion method. Journal of Materials Chemistry A, 2015, 3, 12081-12088.	5.2	123
49	One-step fabrication of large-scaled indium tin oxide/poly(3,4-ethylenedioxythiophene):poly(styrenesulfonate)/poly(3-hexylthiophene-2,5-diyl):[6,6]-phenyl-C61-butyric acid methyl ester multi-layered structure. Thin Solid Films, 2014, 554, 46-50.	0.8	2
50	Fabrication of Nanogap Electrodes by Enhancing Lateral Growth of Au Electrodeposition for Electrical Property Measurement of Organic Nanowires. Electrochemistry, 2013, 81, 236-238.	0.6	1
51	Impact of magnetic field on molecular alignment and electrical conductivity in phthalocyanine nanowires. Journal of Materials Chemistry, 2012, 22, 8629.	6.7	18
52	Effect of branched alkyl chains attached at sp3 silicon of donorâ€"acceptor copolymers on their morphology and photovoltaic properties. Journal of Polymer Science Part A, 2012, 50, 4829-4839.	2.5	11
53	Template method for fabricating interdigitate p-n heterojunction for organic solar cell. Nanoscale Research Letters, 2012, 7, 469.	3.1	17
54	Preparation of donorâ€"acceptor type organic dyes bearing various electron-withdrawing groups for dye-sensitized solar cell application. Chemical Communications, 2011, 47, 6159.	2.2	56

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55	Improvement in carrier mobility of poly(3,4â€ethylenedioxythiophene) nanowires synthesized in porous alumina templates. Journal of Polymer Science, Part B: Polymer Physics, 2011, 49, 1762-1768.	2.4	25
56	Phthalocyanine molecular nanowires that were prepared using porous alumina as a template: Development in the sample preparation procedure to evaluate electronic properties. Thin Solid Films, 2009, 518, 692-694.	0.8	6
57	Fullerene/Thiol-Terminated Molecules. Journal of Organic Chemistry, 2009, 74, 7885-7897.	1.7	34
58	Control of molecular packing structure of a derivative of vanadyl-phthalocyanine using pore wall of porous alumina and/or magnetic field. Thin Solid Films, 2008, 516, 2438-2442.	0.8	4
59	Synthesis and Photoisomerization of Fullereneâˆ' and Oligo(phenylene ethynylene)âˆ'Azobenzene Derivatives. ACS Nano, 2008, 2, 97-106.	7.3	48
60	Synthesis of octabutoxyphthalocyanine nanorods using porous alumina as a template and magnetic-field-directed control of the molecular orientation in the nanorods. Journal of Materials Chemistry, 2008, 18, 4347.	6.7	6
61	Growth and electrical properties of N,Nâ€²-bis(n-pentyl)terrylene- 3,4:11,12-tetracarboximide thin films. Applied Physics Letters, 2008, 92, 163301.	1.5	17
62	Investigating the motion of molecular machines on surfaces by STM: The nanocar and beyond. , 2007, , .		12
63	Synthetic Routes toward Carborane-Wheeled Nanocars. Journal of Organic Chemistry, 2007, 72, 9481-9490.	1.7	72
64	Characterization of Self-Assembled Monolayers of Fullerene Derivatives on Gold Surfaces:Â Implications for Device Evaluations. Journal of the American Chemical Society, 2006, 128, 13479-13489.	6.6	90
65	Recent progress on nanovehicles. Chemical Society Reviews, 2006, 35, 1043.	18.7	241
66	Surface-Rolling Molecules. Journal of the American Chemical Society, 2006, 128, 4854-4864.	6.6	200
67	Syntheses of new functionalized azobenzenes for potential molecular electronic devices. Tetrahedron, 2006, 62, 10303-10310.	1.0	72
68	En Route to a Motorized Nanocar. Organic Letters, 2006, 8, 1713-1716.	2.4	191
69	Directional Control in Thermally Driven Single-Molecule Nanocars. Nano Letters, 2005, 5, 2330-2334.	4.5	432
70	Synthesis, Spectroscopic and Nonlinear Optical Properties of Multiple [60]Fullerene-Oligo(p-phenylene ethynylene) Hybrids. Chemistry - A European Journal, 2005, 11, 3643-3658.	1.7	82
71	Facile Synthesis of Multifullerene-OPE Hybrids via in Situ Ethynylation. Organic Letters, 2004, 6, 2129-2132.	2.4	69
72	Substrate dependent morphological and electronic properties of lead halide perovskite solar cells. , 0, , .		0

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73	Efficient Wide Bandgap Mixed Halide Perovskite Solar Cells Tuning with Electron Transport Layers. , 0, , .		0