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	Directional Control in Thermally Driven Single-Molecule Nanocars. Nano Letters, 2005, 5, 2330-2334.	4.5	432
2	Recent progress on nanovehicles. Chemical Society Reviews, 2006, 35, 1043.	18.7	241
3	NiO_x Hole Transport Layer for Perovskite Solar Cells with Improved Stability and Reproducibility. ACS Omega, 2017, 2, 2291-2299.	1.6	204
4	Surface-Rolling Molecules. Journal of the American Chemical Society, 2006, 128, 4854-4864.	6.6	200
5	En Route to a Motorized Nanocar. Organic Letters, 2006, 8, 1713-1716.	2.4	191
6	Highâ€Quality Mixedâ€Organicâ€Cation Perovskites from a Phaseâ€Pure Nonâ€stoichiometric Intermediate (FAI)_{1â¯}_xâ€PbI₂ for Solar Cells. Advanced Materials, 2015, 27, 4918-4923.	11.1	140
7	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
8	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
9	Lead Halide Perovskite Photovoltaic as a Model pâ€“iâ€“n Diode. Accounts of Chemical Research, 2016, 49, 303-310.	7.6	104
10	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
11	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
12	Novel Surface Passivation Technique for Low-Temperature Solution-Processed Perovskite PV Cells. ACS Applied Materials & Interfaces, 2016, 8, 4644-4650.	4.0	83
13	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
14	Hysteresis, Stability, and Ion Migration in Lead Halide Perovskite Photovoltaics. Journal of Physical Chemistry Letters, 2016, 7, 2240-2245.	2.1	81
15	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
16	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
17	Syntheses of new functionalized azobenzenes for potential molecular electronic devices. Tetrahedron, 2006, 62, 10303-10310.	1.0	72
18	Synthetic Routes toward Carborane-Wheeled Nanocars. Journal of Organic Chemistry, 2007, 72, 9481-9490.	1.7	72

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19	Facile Synthesis of Multifullerene-OPE Hybrids via in Situ Ethynylation. Organic Letters, 2004, 6, 2129-2132.	2.4	69
20	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
21	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
22	Conformation Manipulation and Motion of a Double Paddle Molecule on an Au(111) Surface. ACS Nano, 2017, 11, 10357-10365.	7.3	55
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	Synthesis and Photoisomerization of Fullereneâˆ’ and Oligo(phenylene ethynylene)âˆ’Azobenzene Derivatives. ACS Nano, 2008, 2, 97-106.	7.3	48
25	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
26	Investigating the Growth of CH₃NH₃PbI₃ Thin Films on RFâ€Sputtered NiO_x 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
27	Simple characterization of electronic processes in perovskite photovoltaic cells. Applied Physics Letters, 2015, 106, .	1.5	43
28	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
29	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
30	Surface Passivation of Sputtered NiO_x Using a SAM Interface Layer to Enhance the Performance of Perovskite Solar Cells. ACS Omega, 2022, 7, 12147-12157.	1.6	38
31	Fullerene/Thiol-Terminated Molecules. Journal of Organic Chemistry, 2009, 74, 7885-7897.	1.7	34
32	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
33	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
34	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
35	Effect of different surface treatments of sputtered NiO _X on the photovoltaic parameters of perovskite solar cells: a correlation study. Applied Physics Express, 2020, 13, 025505.	1.1	28
36	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

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37	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
38	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
39	Passivation of Bulk and Interface Defects in Sputtered-NiO_x-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
40	Residual PbI₂ Beneficial in the Bulk or at the Interface? An Investigation Study in Sputtered NiO_x Hole-Transport-Layer-Based Perovskite Solar Cells. ACS Applied Energy Materials, 2020, 3, 6215-6221.	2.5	24
41	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
42	Effect of Carrier Transport in NiO on the Photovoltaic Properties of Lead Iodide Perovskite Solar Cells. Electrochemistry, 2017, 85, 231-235.	0.6	19
43	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
44	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
45	Impact of magnetic field on molecular alignment and electrical conductivity in phthalocyanine nanowires. Journal of Materials Chemistry, 2012, 22, 8629.	6.7	18
46	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
47	Template method for fabricating interdigitate p-n heterojunction for organic solar cell. Nanoscale Research Letters, 2012, 7, 469.	3.1	17
48	Photocarrier dynamics in perovskite-based solar cells revealed by intensity-modulated photovoltage spectroscopy. Physical Chemistry Chemical Physics, 2018, 20, 17918-17926.	1.3	16
49	Impedance Spectroscopy Revisited. Advanced Energy Materials, 2020, 10, 1903097.	10.2	16
50	Rapid degradation behavior of encapsulated perovskite solar cells under light, bias voltage or heat fields. Nanoscale Advances, 2021, 3, 6128-6137.	2.2	15
51	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
52	Photoinduced ion-redistribution in CH₃NH₃PbI₃ perovskite solar cells. Physical Chemistry Chemical Physics, 2020, 22, 25118-25125.	1.3	13
53	Investigating the motion of molecular machines on surfaces by STM: The nanocar and beyond. , 2007, , .		12
54	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

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55	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
56	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
57	Improved performance of planar perovskite devices via 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
58	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
59	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
60	Improved efficiency and stability of flexible perovskite solar cells by a new spacer cation additive. RSC Advances, 2021, 11, 33637-33645.	1.7	6
61	Chemical and Electronic Investigation of Buried NiO_{1â^Î´}, PCBM, and PTAA/MAPbI_{3â€“x}Cl_x Interfaces Using Hard X-ray Photoelectron Spectroscopy and Transmission Electron Microscopy. ACS Applied Materials & Interfaces, 2021, 13, 50481-50490.	4.0	5
62	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
63	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
64	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.	1.8	2
65	Exploring the Recombination Mechanism Induced by Carrier Transport Layers in Perovskite Solar Cells. , 2018, , .		2
66	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
67	Impedance Spectroscopy with Variable Voltages and Illuminations to Reveal Recombination Routes of Free Carriers in Perovskite Solar Cells. , 2019, , .		1
68	Aqueous Solution Processed Copper Iodide as Hole Transport Material For Planar Inverted Perovskite Solar Cells. , 2019, , .		1
69	Passivation of the Recombination Activities with Rubidium incorporation for Efficient and Stable Sn-HaP Solar Cells. , 2020, , .		1
70	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</mml:mn></mml:msub></mml:math> Physical Review Materials, 2021, 5, .	0.9	1
71	Synthesis and optical properties of photovoltaic materials based on the indenofluorines and ambipolar dithienonaphthothiadiazol. , 2015, , .		0
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