Hajime Shirai

List of Publications by Year
in descending order

99 papers	1,622 citations	257450 24 h-index	345221 36 g-index
101 all docs	101 docs citations	101 times ranked	1502 citing authors

#	Article	IF	Citations
1	Highly efficient crystalline silicon/Zonyl fluorosurfactant-treated organic heterojunction solar cells. Applied Physics Letters, 2012, 100, .	3.3	102
2	Highly Efficient Solutionâ€Processed Poly(3,4â€ethylenedioâ€xythiophene):Poly(styrenesulfonate)/Crystallineâ€"Silicon Heterojunction Solar Cells with Improved Lightâ€Induced Stability. Advanced Energy Materials, 2015, 5, 1500744.	19.5	85
3	Rf microplasma jet at atmospheric pressure: characterization and application to thin film processing. Journal Physics D: Applied Physics, 2004, 37, 1537-1543.	2.8	77
4	Nafion-Modified PEDOT:PSS as a Transparent Hole-Transporting Layer for High-Performance Crystalline-Si/Organic Heterojunction Solar Cells with Improved Light Soaking Stability. ACS Applied Materials & Interfaces, 2016, 8, 31926-31934.	8.0	63
5	Role of Hydrogen Plasma during Growth of Hydrogenated Microcrystalline Silicon: In Situ UV-Visible and Infrared Ellipsometry Study. Japanese Journal of Applied Physics, 1994, 33, 5590-5598.	1.5	56
6	Correlation between the fine structure of spin-coated PEDOT:PSS and the photovoltaic performance of organic/crystalline-silicon heterojunction solar cells. Journal of Applied Physics, 2016, 120, .	2.5	46
7	Bulk heterojunction organic photovoltaic cell fabricated by the electrospray deposition method using mixed organic solvent. Physica Status Solidi - Rapid Research Letters, 2011, 5, 229-231.	2.4	45
8	Optical emission spectroscopy study toward high rate growth of microcrystalline silicon. Thin Solid Films, 2001, 386, 256-260.	1.8	44
9	A novel synthesis and characterization of transparent CdS thin films for CdTe/CdS solar cells. Applied Physics A: Materials Science and Processing, 2020, 126, 1.	2.3	44
10	Optical anisotropy in solvent-modified poly(3,4-ethylenedioxythiophene):poly(styrenesulfonic acid) and its effect on the photovoltaic performance of crystalline silicon/organic heterojunction solar cells. Applied Physics Letters, 2013, 102, .	3.3	43
11	Fast Deposition of Microcrystalline Silicon Using High-Density SiH4Microwave Plasma. Japanese Journal of Applied Physics, 1999, 38, 6629-6635.	1.5	41
12	Thiocyanate Containing Two-Dimensional Cesium Lead Iodide Perovskite, Cs₂PbI₂(SCN)₂: Characterization, Photovoltaic Application, and Degradation Mechanism. ACS Applied Materials & Interfaces, 2018, 10, 42363-42371.	8.0	40
13	The Generation of High-Density Microwave Plasma and Its Application to Large-Area Microcrystalline Silicon Thin Film Formation. Japanese Journal of Applied Physics, 1998, 37, L1078-L1081.	1.5	39
14	Effect of CdS and In3Se4 BSF layers on the photovoltaic performance of PEDOT:PSS/n-Si solar cells: Simulation based on experimental data. Superlattices and Microstructures, 2021, 152, 106853.	3.1	36
15	Growth of Crystal Silicon Films from Chlorinated Silanes by RF Plasma-Enhanced Chemical Vapor Deposition. Japanese Journal of Applied Physics, 2001, 40, L215-L218.	1.5	34
16	A novel CdTe ink-assisted direct synthesis of CdTe thin films for the solution-processed CdTe solar cells. Journal of Materials Science, 2020, 55, 7715-7730.	3.7	32
17	Green-tea modified multiwalled carbon nanotubes for efficient poly(3,4-ethylenedioxythiophene):poly(stylenesulfonate)/n-silicon hybrid solar cell. Applied Physics Letters, 2013, 102, .	3.3	31
18	Nb-doped amorphous titanium oxide compact layer for formamidinium-based high efficiency perovskite solar cells by low-temperature fabrication. Journal of Materials Chemistry A, 2018, 6, 9583-9591.	10.3	30

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19	Synthesis of Si nanocones using rf microplasma at atmospheric pressure. Thin Solid Films, 2007, 515, 4153-4158.	1.8	29
20	Deposition of controllable preferred orientation silicon films on glass by inductively coupled plasma chemical vapor deposition. Journal of Applied Physics, 2008, 103, 043505.	2.5	29
21	Enhanced Crystallinity at Initial Growth Stage of Microcrystalline Silicon on Corning #7059 Glass Using SiH2Cl2. Japanese Journal of Applied Physics, 1999, 38, L554-L557.	1.5	28
22	Physicochemistry of the plasma-electrolyte solution interface. Thin Solid Films, 2008, 516, 6688-6693.	1.8	28
23	Efficient Crystalline Si/Poly(ethylene dioxythiophene):Poly(styrene sulfonate):Graphene Oxide Composite Heterojunction Solar Cells. Applied Physics Express, 2012, 5, 032301.	2.4	28
24	Barium hydroxide hole blocking layer for front- and back-organic/crystalline Si heterojunction solar cells. Journal of Applied Physics, 2017, 122, .	2.5	26
25	Effect of substrate bias on high-rate synthesis of microcrystalline silicon films using a high-density microwave SiH4/H2plasma. Journal Physics D: Applied Physics, 2006, 39, 3844-3848.	2.8	23
26	Microplasma discharge in ethanol solution: Characterization and its application to the synthesis of carbon microstructures. Thin Solid Films, 2008, 516, 4435-4440.	1.8	22
27	Chemical mist deposition of graphene oxide and PEDOT:PSS films for crystalline Si/organic heterojunction solar cells. Physica Status Solidi C: Current Topics in Solid State Physics, 2012, 9, 2134-2137.	0.8	22
28	Crystalline-Si heterojunction with organic thin-layer (HOT) solar cell module using poly(3,4-ethylenedioxythiophene):poly(styrene sulfonate)(PEDOT:PSS). Solar Energy Materials and Solar Cells, 2018, 181, 60-70.	6.2	20
29	Optimization of multilayer anti-reflection coatings for efficient light management of PEDOT:PSS/c-Si heterojunction solar cells. Materials Research Express, 2020, 7, 015502.	1.6	20
30	Growth kinetics of nanocrystalline silicon from SiH2Cl2 by plasma-enhanced chemical vapor deposition. Journal of Non-Crystalline Solids, 2000, 266-269, 131-135.	3.1	19
31	Fast deposition of microcrystalline Si films from SiH2Cl2 using a high-density microwave plasma source for Si thin-film solar cells. Solar Energy Materials and Solar Cells, 2010, 94, 524-530.	6.2	19
32	Low-Temperature Plasma-Enahanced Chemical Vapor Deposition of Crystal Silicon Film from Dichlorosilane. Japanese Journal of Applied Physics, 2001, 40, 44-48.	1.5	18
33	Role of oxygen atoms in the growth of magnetron sputter-deposited ZnO films. Journal of Applied Physics, 2010, 108, .	2.5	18
34	Efficient organic/polycrystalline silicon hybrid solar cells. Nano Energy, 2015, 11, 260-266.	16.0	18
35	Low temperature formation of microcrystalline silicon films using high-density SiH4 microwave plasma. Thin Solid Films, 2001, 386, 261-266.	1.8	16
36	Control of the gas phase and the surface reactions during the high rate synthesis of high quality microcrystalline silicon films: Effects of the source gas supply method and the substrate bias. Journal of Applied Physics, 2007, 101, 114912.	2.5	16

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37	Self-assembled silver nanowires as top electrode for poly(3,4-ethylenedioxythiophene):poly(stylenesulfonate)/n-silicon solar cell. Thin Solid Films, 2014, 558, 306-310.	1.8	16
38	Investigating the chemical mist deposition technique for poly(3,4-ethylenedioxythiophene):poly(styrene sulfonate) on textured crystalline-silicon for organic/crystalline-silicon heterojunction solar cells. Japanese Journal of Applied Physics, 2016, 55, 031601.	1.5	16
39	Solution-processed crystalline silicon double-heterojunction solar cells. Applied Physics Express, 2016, 9, 022301.	2.4	15
40	Optical properties and carrier transport in c-Si/conductive PEDOT:PSS(GO) composite heterojunctions. Physica Status Solidi C: Current Topics in Solid State Physics, 2012, 9, 2075-2078.	0.8	13
41	Relationship between microstructure and photovoltaic performance in microcrystalline silicon film solar cells fabricated by a high-density microwave plasma. Thin Solid Films, 2003, 427, 27-32.	1.8	12
42	Plasmonicâ€enhanced crystalline silicon/organic heterojunction cells by incorporating gold nanoparticles. Physica Status Solidi (A) Applications and Materials Science, 2014, 211, 1179-1183.	1.8	12
43	Role of Isopropyl Alcohol Solvent in the Synthesis of Organicâ€"Inorganic Halide CH(NH₂)₂PbI_{<i>x</i>}Br_{3â€"<i>x</i>} Perovskite Thin Films by a Two-Step Method. Journal of Physical Chemistry C, 2016, 120, 25371-25377.	3.1	12
44	Formation of Self-Assembled Nanocrystalline Silicon Dots by SiCl4/H2 RF Plasma-Enhanced Chemical Vapor Deposition. Japanese Journal of Applied Physics, 2001, 40, L1214-L1216.	1.5	11
45	Chemistry of the chlorine-terminated surface for low-temperature growth of crystal silicon films by RF plasma-enhanced chemical vapor deposition. Solar Energy Materials and Solar Cells, 2002, 74, 421-427.	6.2	11
46	Chemical mist deposition of organic for efficient front- and back-PEDOT:PSS/crystalline Si heterojunction solar cells. Applied Physics Letters, 2019, 114, .	3.3	11
47	Study of effect of SiH4gas heating during growth of hydrogenated microcrystalline silicon on SiO2by plasmaâ€enhanced chemicalâ€vapor deposition. Journal of Applied Physics, 1996, 80, 4976-4983.	2.5	10
48	The control of the high-density microwave plasma for large-area electronics. Thin Solid Films, 1999, 337, 12-17.	1.8	10
49	Synthesis of Novel P-Type Nanocrystalline Si Prepared from SiH2Cl2and SiCl4for Window Layer of Thin Film Si Solar Cell. Japanese Journal of Applied Physics, 2004, 43, 5960-5966.	1.5	10
50	Role of chlorine in the nanocrystalline silicon film formation by rf plasma-enhanced chemical vapor deposition of chlorinated materials. Thin Solid Films, 2004, 457, 90-96.	1.8	9
51	Carbon Microstructures Synthesized Utilizing the RF Microplasma Jet at Atmospheric Pressure. Japanese Journal of Applied Physics, 2005, 44, 4122-4127.	1.5	9
52	Toward the fast deposition of highly crystallized microcrystalline silicon films with low defect density for Si thin-film solar cells. Journal of Non-Crystalline Solids, 2006, 352, 896-900.	3.1	8
53	Efficient crystalline Si/organic hybrid heterojunction solar cells. Physica Status Solidi C: Current Topics in Solid State Physics, 2012, 9, 2101-2106.	0.8	8
54	Effect of substrate bias on mist deposition of conjugated polymer on textured crystallineâ€Si for efficient câ€Si/organic heterojunction solar cells. Physica Status Solidi (A) Applications and Materials Science, 2016, 213, 1922-1925.	1.8	8

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55	Improved performance of poly(3,4-ethylenedioxythiophene):poly(stylene sulfonate)/n-Si hybrid solar cell by incorporating silver nanoparticles. Japanese Journal of Applied Physics, 2014, 53, 110305.	1.5	7
56	Self assembled silver nanowire mesh as top electrode for organicâ€"inorganic hybrid solar cell. Canadian Journal of Physics, 2014, 92, 867-870.	1.1	7
57	Highly crystalline large-grained perovskite films using two additives without an antisolvent for high-efficiency solar cells. Thin Solid Films, 2019, 679, 27-34.	1.8	7
58	Characterization of Microcrystalline Silicon Film Growth on ZnO:Al Using the High-Density Microwave Plasma. Japanese Journal of Applied Physics, 2005, 44, 837-841.	1.5	6
59	Mist chemical vapor deposition of crystalline MoS₂ atomic layer films using sequential mist supply mode and its application in field-effect transistors. Nanotechnology, 2022, 33, 045601.	2.6	6
60	Role of $f SiH_{4}$ Gas Heating in the Growth of Hydrogenated Microcrystalline Silicon. Japanese Journal of Applied Physics, 1996, 35, L676-L679.	1.5	5
61	Rapid recrystallization of amorphous silicon utilizing the plasma jet at atmospheric pressure. Journal of Non-Crystalline Solids, 2006, 352, 989-992.	3.1	5
62	Rapid thermal annealing of sputter-deposited ZnO/ZnO:N/ZnO multilayered structures. Thin Solid Films, 2012, 520, 3729-3735.	1.8	5
63	Fabrication of {CH(NH₂)₂}_{1âˆ'}<i>_x</i>Cs<i>_x</i>PbI₃ Perovskite Thin Films by Two-step Method and Its Application to Thin Film Solar Cells. Chemistry Letters, 2017, 46, 612-615.	1.3	5
64	Solution-Processed Crystalline Silicon Heterojunction Solar Cells. , 2019, , 97-117.		5
65	Solution-processed TiO₂ as a hole blocking layer in PEDOT:PSS/n-Si heterojunction solar cells. EPJ Photovoltaics, 2020, 11, 7.	1.6	5
66	Luminescent silicon nanocrystal dots fabricated by SiCl4/H2 RF plasma-enhanced chemical vapor deposition. Physica E: Low-Dimensional Systems and Nanostructures, 2003, 16, 388-394.	2.7	4
67	Formation of Si:H:Cl Films at Low Temperatures of 90â€"140Â°C by RF Plasma-Enhanced Chemical Vapor Deposition of a SiH2Cl2and H2Mixture. Japanese Journal of Applied Physics, 2003, 42, 1173-1178.	1.5	4
68	Efficient Organic Photovoltaic Cells Using MoO3Hole-Transporting Layers Prepared by Simple Spin-Cast of Its Dispersion Solution in Methanol. Japanese Journal of Applied Physics, 2013, 52, 020202.	1.5	4
69	Optical Anisotropy and Compositional Ratio of Conductive Polymer PEDOT:PSS and Their Effect on Photovoltaic Performance of Crystalline Silicon/Organic Heterojunction Solar Cells. , 2018, , 137-159.		4
70	Synthesis of AlO<i>x</i> thin films by atmospheric-pressure mist chemical vapor deposition for surface passivation and electrical insulator layers. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2020, 38, .	2.1	4
71	AlO_{<i>x</i>} Thin Films Synthesized by Mist Chemical Vapor Deposition, Monitored by a Fast-Scanning Mobility Particle Analyzer, and Applied as a Gate Insulating Layer in the Field-Effect Transistors. ACS Applied Electronic Materials, 2021, 3, 658-667.	4.3	4
72	Electrospray Deposition of Poly(3-hexylthiophene) Films for Crystalline Silicon/Organic Hybrid Junction Solar Cells. Japanese Journal of Applied Physics, 2012, 51, 061602.	1.5	4

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73	Fast Deposition of Highly Crystallized Microcrystalline Si Films Utilizing a High-Density Microwave Plasma Source for Si Thin Film Solar Cells. Materials Research Society Symposia Proceedings, 2006, 910, 3.	0.1	3
74	High rate growth highly crystallized microcrystalline silicon films using SiH4/H2 high-density microwave plasma. Thin Solid Films, 2007, 515, 4098-4104.	1.8	3
75	Depth profile characterization of spin-coated poly(3,4-ethylenedioxythiophene): poly(styrene sulfonic) Tj ETQq1 1 0.784314 rgBT /Overl State Physics, 2011, 8, 3025-3028.	0.8	3
76	Rapid thermal annealing treatment of ZnO: Al films for photovoltaic applications. Journal of Non-Crystalline Solids, 2012, 358, 2501-2503.	3.1	3
77	Large-Area Cold Atmospheric Pressure Discharges Realized by Mesh Covered Tube-Plate Electrodes in Open Air. IEEE Transactions on Plasma Science, 2013, 41, 421-424.	1.3	3
78	Effect of thermally annealed atomic-layer-deposited AlOx/chemical tunnel oxide stack layer at the PEDOT:PSS/n-type Si interface to improve its junction quality. Journal of Applied Physics, 2020, 128, 045305.	2.5	3
79	Direct formation of crystalline silicon films on an amorphous substrate from chlorinated materials by plasma-enhanced chemical vapor deposition. Journal of Non-Crystalline Solids, 2002, 299-302, 118-122.	3.1	2
80	Fast deposition of microcrystalline silicon films with preferred (220) crystallographic texture using the high-density microwave plasma. Solar Energy Materials and Solar Cells, 2002, 74, 505-511.	6.2	2
81	Si thin film solar cells using SiH2Cl2 by rf plasma-enhanced chemical vapor deposition. Journal of Non-Crystalline Solids, 2006, 352, 1967-1971.	3.1	2
82	Si thin-film solar cells using SiH2Cl2 by rf plasma-enhanced chemical vapor deposition. Thin Solid Films, 2006, 511-512, 46-50.	1.8	2
83	Real time monitoring of the crystallization process during the plasma annealing of amorphous silicon. Physica Status Solidi (A) Applications and Materials Science, 2010, 207, 574-577.	1.8	2
84	Improved photovoltaic response by incorporating green tea modified multiwalled carbon nanotubes in organicâ€“inorganic hybrid solar cell. Canadian Journal of Physics, 2014, 92, 849-852.	1.1	2
85	Role of the solvent in large crystal grain growth of inorganic-organic halide FA0.8Cs0.2PbI<i>x</i>Br3â€‰âˆ’â€‰<i>x</i> perovskite thin films monitored by ellipsometry. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2019, 37, .	1.2	2
86	Mist chemical vapor deposition of Al_{1âˆ’<i>x</i>}Ti<i>_x</i>O<i>_y</i> thin films and their application to a high dielectric material. Journal of Applied Physics, 2022, 131, 105301.	2.5	2
87	Mesh Bias Controlled Synthesis of TiO₂ and Al_{0.74}Ti_{0.26}O₃ Thin Films by Mist Chemical Vapor Deposition and Applications as Gate Dielectric Layers for Field-Effect Transistors. ACS Applied Electronic Materials, 2022, 4, 2516-2524.	4.3	2
88	Synthesis of novel p-type nanocrystalline silicon from SiH2Cl2 and SiCl4 by rf plasma-enhanced chemical vapor deposition. Thin Solid Films, 2006, 506-507, 38-44.	1.8	1
89	Rapid Crystallization of Amorphous Silicon Utilizing the Plasma Annealing at Atmospheric Pressure. Materials Research Society Symposia Proceedings, 2007, 989, 4.	0.1	1
90	Surface chemistry of the preferred (111) and (220) crystal oriented microcrystalline Si films by radio-frequency plasma-enhanced chemical vapor deposition. Physica Status Solidi C: Current Topics in Solid State Physics, 2011, 8, 3009-3012.	0.8	1

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91	State-of-the-Art of Solution-Processed Crystalline Silicon/Organic Heterojunction Solar Cells: Challenges and Future. Challenges and Advances in Computational Chemistry and Physics, 2021, , 33-56.	0.6	1
92	Role of chlorine in the nanocrystalline silicon film formation by rf plasma-enhanced chemical vapor deposition of chlorinated materials. Thin Solid Films, 2004, 457, 90-90.	1.8	0
93	Si Thin-Film Solar Cells Fabricated by RF PE-CVD of a Si₃H₈ and H₂ Mixture on ZnO:Al. Transactions of the Materials Research Society of Japan, 2010, 35, 617-620.	0.2	0
94	Solution-Processed Organic/Crystalline-Silicon Heterojunction Solar Cells with Improved Light-Induced Stability. , 2015, , .		0
95	Plasma Technology for Poly-crystaline Silicon Thin Film Transister Manufacturing. Control of the Si-Network Structure by The High-Density Microwave Plasma Utilizing a Spoke Antenna.. Shinku/Journal of the Vacuum Society of Japan, 2001, 44, 572-577.	0.2	0
96	Local Deposition of Carbon Containing SiO_X Synthesized Using Atmospheric Pressure Microplasma Jet. Transactions of the Materials Research Society of Japan, 2010, 35, 187-190.	0.2	0
97	Processing Development and Surface Preparation Review. In-situ Characterization of nc-Si:H Growth Monitored by Spectroscopic Ellipsometry.. Shinku/Journal of the Vacuum Society of Japan, 1996, 39, 609-617.	0.2	0
98	Spectroscopic Ellipsometry. In situ Ellipsometry Study of Initial Stage of Hydrogenated Silicon Film Growth.. Hyomen Kagaku, 1997, 18, 687-694.	0.0	0
99	Fabrication of Organic/inorganic Hybrid CMOS Devices using Solution-processed Graphene Electrodes. IEEJ Transactions on Electronics, Information and Systems, 2015, 135, 156-159.	0.2	0