Ajeet Rohatgi

List of Publications by Year
in descending order

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87	2,039	236612	264894
papers	citations	25 h-index	42 g-index

87	87	87	1950
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Development of a Methodology for Improving Photovoltaic Inverter Reliability. IEEE Transactions on Industrial Electronics, 2008, 55, 2581-2592.	5.2	198
2	Effect of Ag Particle Size in Thick-Film Ag Paste on the Electrical and Physical Properties of Screen Printed Contacts and Silicon Solar Cells. Journal of the Electrochemical Society, 2006, 153, A5.	1.3	116
3	Effect of glass frit chemistry on the physical and electrical properties of thick-film Ag contacts for silicon solar cells. Journal of Electronic Materials, 2006, 35, 2041-2047.	1.0	115
4	Superhydrophobic and Low Light Reflectivity Silicon Surfaces Fabricated by Hierarchical Etching. Langmuir, 2008, 24, 10421-10426.	1.6	104
5	High-Throughput Ion-Implantation for Low-Cost High-Efficiency Silicon Solar Cells. Energy Procedia, 2012, 15, 10-19.	1.8	92
6	Hybridizing ZnO Nanowires with Micropyramid Silicon Wafers as Superhydrophobic Highâ€Efficiency Solar Cells. Advanced Energy Materials, 2012, 2, 47-51.	10.2	89
7	Gettering and hydrogen passivation of edgeâ€defined filmâ€fed grown multicrystalline silicon solar cells by Al diffusion and forming gas anneal. Applied Physics Letters, 1994, 64, 97-99.	1.5	79
8	Large area tunnel oxide passivated rear contact nâ€type Si solar cells with 21.2% efficiency. Progress in Photovoltaics: Research and Applications, 2016, 24, 830-835.	4.4	78
9	Hierarchical robust textured structures for large scale self-cleaning black silicon solar cells. Nano Energy, 2014, 3, 127-133.	8.2	71
10	Understanding the Formation and Temperature Dependence of Thick-Film Ag Contacts on High-Sheet-Resistance Si Emitters for Solar Cells. Journal of the Electrochemical Society, 2005, 152, G742.	1.3	69
11	Chemical etching of boron-rich layer and its impact on high efficiency n-type silicon solar cells. Applied Physics Letters, 2012, 101, 073902.	1.5	44
12	26.7% Efficient 4-Terminal Perovskiteâ€“Silicon Tandem Solar Cell Composed of a High-Performance Semitransparent Perovskite Cell and a Doped Poly-Si/SiOx Passivating Contact Silicon Cell. IEEE Journal of Photovoltaics, 2020, 10, 417-422.	1.5	40
13	Optimization of SiN AR coating for Si solar cells and modules through quantitative assessment of optical and efficiency loss mechanism. Progress in Photovoltaics: Research and Applications, 2011, 19, 983-990.	4.4	38
14	Hydrogen diffusion in silicon from plasma-enhanced chemical vapor deposited silicon nitride film at high temperature. Applied Physics Letters, 2008, 92, .	1.5	37
15	Fabrication and Modeling of High-Efficiency Front Junction N-Type Silicon Solar Cells With Tunnel Oxide Passivating Back Contact. IEEE Journal of Photovoltaics, 2017, 7, 1236-1243.	1.5	36
16	N-Type, Ion-Implanted Silicon Solar Cells and Modules. IEEE Journal of Photovoltaics, 2011, 1, 123-129.	1.5	34
17	High-Efficiency Large-Area Rear Passivated Silicon Solar Cells With Local Al-BSF and Screen-Printed Contacts. IEEE Journal of Photovoltaics, 2011, 1, 16-21.	1.5	33
18	Understanding and Use of IR Belt Furnace for Rapid Thermal Firing of Screen-Printed Contacts to Si Solar Cells. IEEE Electron Device Letters, 2010, 31, 461-463.	2.2	30

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19	20% Efficient Screen-Printed n-Type Solar Cells Using a Spin-On Source and Thermal Oxide/Silicon Nitride Passivation. IEEE Journal of Photovoltaics, 2011, 1, 146-152.	1.5	30
20	High-efficiency (19%) screen-printed textured cells on low-resistivity float-zone silicon with high sheet-resistance emitters. Progress in Photovoltaics: Research and Applications, 2006, 14, 135-144.	4.4	28
21	Fully screen-printed bifacial large area 22.6% N-type Si solar cell with lightly doped ion-implanted boron emitter and tunnel oxide passivated rear contact. Solar Energy Materials and Solar Cells, 2020, 214, 110585.	3.0	28
22	Bulk lifetime and efficiency enhancement due to gettering and hydrogenation of defects during cast multicrystalline silicon solar cell fabrication. Solid-State Electronics, 2008, 52, 612-617.	0.8	27
23	Evaluation of a Silicon 90Sr Betavoltaic Power Source. Scientific Reports, 2016, 6, 38182.	1.6	27
24	Screen printed, large area bifacial N-type back junction silicon solar cells with selective phosphorus front surface field and boron doped poly-Si/SiOx passivated rear emitter. Applied Physics Letters, 2018, 113, .	1.5	27
25	High efficiency inline diffused emitter (ILDE) solar cells on monoâ€crystalline CZ silicon. Progress in Photovoltaics: Research and Applications, 2010, 18, 590-595.	4.4	26
26	Hydrogenation of defects in edge-defined film-fed grown aluminum-enhanced plasma enhanced chemical vapor deposited silicon nitride multicrystalline silicon. Journal of Applied Physics, 2000, 87, 7551-7557.	1.1	23
27	High-efficiency screen-printed silicon ribbon solar cells by effective defect passivation and rapid thermal processing. Applied Physics Letters, 2003, 82, 224-226.	1.5	23
28	Investigation of Modified Screen-Printing Al Pastes for Local Back Surface Field Formation. , 2006, , .		22
29	Modeling the potential of screen printed front junction CZ silicon solar cell with tunnel oxide passivated back contact. Progress in Photovoltaics: Research and Applications, 2017, 25, 49-57.	4.4	22
30	Ion-Implanted Screen-Printed n-Type Solar Cell With Tunnel Oxide Passivated Back Contact. IEEE Journal of Photovoltaics, 2016, 6, 153-158.	1.5	21
31	Tunnel oxide passivated rear contact for large area n-type front junction silicon solar cells providing excellent carrier selectivity. AIMS Materials Science, 2016, 3, 180-189.	0.7	21
32	Bulk resistivity optimization for low-bulk-lifetime silicon solar cells. Progress in Photovoltaics: Research and Applications, 2001, 9, 273-285.	4.4	18
33	High efficiency large area n -type front junction silicon solar cells with boron emitter formed by screen printing technology. Progress in Photovoltaics: Research and Applications, 2015, 23, 119-123.	4.4	18
34	A novel computer based pseudoâ€logarithmic capacitance/conductance DLTS system specifically designed for transient analysis. Review of Scientific Instruments, 1992, 63, 5733-5741.	0.6	17
35	Design Considerations for Large Roof-integrated Photovoltaic Arrays. Progress in Photovoltaics: Research and Applications, 1997, 5, 55-67.	4.4	17
36	Analytical approximation of effective surface recombination velocity of dielectric-passivated p-type silicon. Solid-State Electronics, 2001, 45, 1549-1557.	0.8	17

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37	Improved front side metallization for silicon solar cells by direct printing. , 2011, , .		17
38	Capitalizing on the Glass-Etching Effect of Silver Plating Chemistry to Contact Si Solar Cells With Homogeneous 100â€“110 $Omega/hbox{sq}$ Emitters. IEEE Electron Device Letters, 2011, 32, 779-781.	2.2	16
39	Approaching efficiencies above 25% with both sides-contacted silicon solar cells. , 2015, , .		16
40	P-Type Indium-Doped Passivated Emitter Rear Solar Cells (PERC) on Czochralski Silicon Without Light-Induced Degradation. IEEE Journal of Photovoltaics, 2016, 6, 795-800.	1.5	15
41	On the Ink Jetting of Full Front Ag Gridlines for Cost-Effective Metallization of Si Solar Cells. IEEE Electron Device Letters, 2012, 33, 637-639.	2.2	14
42	Abnormal Dopant Distribution in $hbox{POCl}_{3}$-Diffused $hbox{N}^{+}$ Emitter of Textured Silicon Solar Cells. IEEE Electron Device Letters, 2011, 32, 351-353.	2.2	13
43	High-Efficiency n-Type Si Solar Cells With Novel Inkjet-Printed Boron Emitters. IEEE Electron Device Letters, 2012, 33, 854-856.	2.2	13
44	High efficiency screen-printed n-type silicon solar cell using co-diffusion of APCVD boron emitter and POCl 3 back surface field. Current Applied Physics, 2018, 18, 231-235.	1.1	13
45	Spatial profiles of photon chemical potential in near-field thermophotovoltaic cells. Journal of Applied Physics, 2021, 129, .	1.1	13
46	Sensitivity analysis of two-spectrum separation of surface and bulk components of minority carrier lifetimes. Solid-State Electronics, 2002, 46, 859-866.	0.8	12
47	Study of degradation in bulk lifetime of n-type silicon wafer due to oxidation of boron-rich layer. Current Applied Physics, 2016, 16, 497-500.	1.1	12
48	Fabrication and analysis of high-efficiency String Ribbon Si solar cells. Solid-State Electronics, 2006, 50, 1406-1412.	0.8	11
49	Process development and comparison of various boron emitter technologies for high-efficiency (~21%) n-type silicon solar cells. Progress in Photovoltaics: Research and Applications, 2016, 24, 1109-1115.	4.4	11
50	A Novel Processing Technology for Highâ€Efficiency Silicon Solar Cells. Journal of the Electrochemical Society, 1999, 146, 1141-1146.	1.3	9
51	20.7% efficient ionâ€implanted large area nâ€type front junction silicon solar cells with rear point contacts formed by laser opening and physical vapor deposition. Progress in Photovoltaics: Research and Applications, 2014, 22, 1030-1039.	4.4	9
52	Development of a simple analytical model to quantify the PV module cost premium associated with module efficiency and cell technology. Renewable and Sustainable Energy Reviews, 2014, 37, 380-385.	8.2	9
53	High-efficiency screen-printed belt co-fired solar cells on cast multicrystalline silicon. Applied Physics Letters, 2005, 86, 054103.	1.5	7
54	Carrier selective tunnel oxide passivated contact enabling 21.4% efficient large-area N-type silicon solar cells. , 2016, , .		7

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55	A Novel Approach Toward the Simultaneous Diffusion of Boron and Phosphorus in Silicon. Journal of the Electrochemical Society, 1997, 144, 346-349.	1.3	6
56	High-efficiency screen-printed solar cell on edge-defined film-fed grown ribbon silicon through optimized rapid belt co-firing of contacts and high-sheet-resistance emitter. Applied Physics Letters, 2004, 84, 3409-3411.	1.5	6
57	Development and Understanding of High-Efficiency Screen-Printed Concentrator Silicon Solar Cells. IEEE Journal of Photovoltaics, 2011, 1, 231-235.	1.5	6
58	Reduction in Light Induced Degradation (LID) in B-doped Cz-Si Solar Cells with SiCxNy Antireflection (AR) Coating. Journal of the Electrochemical Society, 2011, 158, H724.	1.3	6
59	Comparison of light-induced degradation and regeneration in P-type monocrystalline full aluminum back surface field and passivated emitter rear cells. Current Applied Physics, 2018, 18, 1600-1604.	1.1	6
60	Design, Optimization, and In-Depth Understanding of Front and Rear Junction Double-Side Passivated Contacts Solar Cells. IEEE Journal of Photovoltaics, 2021, 11, 1141-1148.	1.5	6
61	Understanding of High-Throughput Rapid Thermal Firing of Screen-Printed Contacts to Large-Area Cast Multicrystalline Si Solar Cells. IEEE Transactions on Electron Devices, 2010, 57, 2872-2879.	1.6	5
62	Understanding and Fabrication of 20% Efficient Cells Using Spin-on-Based Simultaneous Diffusion and Dielectric Passivation. IEEE Journal of Photovoltaics, 2012, 2, 22-26.	1.5	5
63	High efficiency screen printed low-medium concentrator silicon solar cells with direct printed 50µm wide fingers. , 2012, , .		5
64	Understanding and Development of Screen-Printed Front Metallization for High-Efficiency Low-to-Medium Concentrator Silicon Solar Cells. IEEE Journal of Photovoltaics, 2013, 3, 944-951.	1.5	5
65	Analysis of cast mono-crystalline ingot characteristics with applications to solar cells. , 2012, , .		4
66	Laser Crystallization and Dopant Activation of a-Si:H Carrier-Selective Layer in TOPCon Si Solar Cells. IEEE Journal of Photovoltaics, 2020, 10, 1283-1289.	1.5	4
67	Sulfurization as a promising surface passivation approach for both n- and p-type Si. , 2020, , .		4
68	Resistivity dependence of minority carrier lifetime and cell performance in p-type dendritic web silicon ribbon. Solid-State Electronics, 2001, 45, 1973-1978.	0.8	3
69	Investigation of the Effect of Resistivity and Thickness on the Performance of Cast Multicrystalline Silicon Solar Cells. , 2006, , .		3
70	Development of high-efficiency large-area screen-printed solar cells on direct kerfless epitaxially grown monocrystalline Si wafer and structure. Progress in Photovoltaics: Research and Applications, 2016, 24, 1133-1141.	4.4	3
71	Screen Printed, Large Area Bifacial N-PERT cells with Tunnel Oxide Passivated Back Contact. , 2017, , .		3
72	Analysis of the negative charges injected into a SiO 2 /SiN x stack using plasma charging technology for fieldâ€effect passivation on a boronâ€doped silicon surface. Progress in Photovoltaics: Research and Applications, 2021, 29, 54-63.	4.4	3

#	Article	IF	Citations
73	Modeling and Understanding of Rear Junction Double-Side Passivated Contact Solar Cells with Selective Area TOPCon on Front. , 2021, , .		3
74	Decade Performance of a Roof-Mounted Photovoltaic Array. , 2006, , .		2
75	Two-dimensional dopant profiling in POCl<inf>3</inf>-diffused n+ emitter of textured silicon solar cells. , 2011, , .		2
76	Simultaneous iron gettering and passivation of p-type monocrystalline silicon using a negatively charged aluminum-doped dielectric. Applied Physics Letters, 2012, 101, 252105.	1.5	2
77	Development and use of a simple numerical model to quantify the impact of key photovoltaics system parameters on the levelized cost of electricity. , 2012, , .		2
78	Effect of carbon containing SiNx antireflection coating on the screen-printed contact and low illumination performance of silicon solar cell. Progress in Photovoltaics: Research and Applications, 2013, 21, 351-358.	4.4	2
79	Optimization of ultraviolet laser doping for crystalline silicon solar cells with a novel segmented selective emitter design. Progress in Photovoltaics: Research and Applications, 2013, 21, 141-147.	4.4	2
80	High-Efficiency Large-Area Screen-Printed Solar Cell on Epitaxial Thin Active Layer With Porous Si Back Reflector Using Standard Industrial Process. IEEE Journal of Photovoltaics, 2015, 5, 123-128.	1.5	2
81	Enhanced Stability of Exposed PECVD Grown Thin n ⁺ Poly-Si/SiO _x Passivating Contacts With Al₂O₃ Capping Layer During High Temperature Firing. IEEE Journal of Photovoltaics, 2021, 11, 268-272.	1.5	2
82	Dopant diffused Si surface passivation by H₂S gas reaction and quinhydrone-methanol treatment. , 2021, , .		2
83	Distributed renewable generation: Interconnection and performance. , 2009, , .		1
84	Investigation of Atomic Layer Deposition Al₂O₃Passivation for Screen-Printed Large-Area Solar Cells. IEEE Journal of Photovoltaics, 2016, 6, 869-874.	1.5	1
85	Laser Crystallization and Dopant Activation for a-Si:H Film in Carrier-Selective Contacts for Silicon Solar cells. , 2019, , .		1
86	High efficiency silicon solar cells. Solar Cells, 1988, 23, 273-274.	0.6	0
87	Study of lifetime degradation in n-type silicon due to oxidation of boron-rich layer. , 2013, , .		0