Jk Rath

List of Publications by Year
in descending order

73 papers	1,358 citations	279701 23 h-index	377752 34 g-index
74 all docs	74 docs citations	74 times ranked	933 citing authors

#	Article	IF	Citations
1	Low temperature polycrystalline silicon: a review on deposition, physical properties and solar cell applications. Solar Energy Materials and Solar Cells, 2003, 76, 431-487.	3.0	173
2	Hot-Wire CVD Poly-Silicon Films for Thin Film Devices. Materials Research Society Symposia Proceedings, 1998, 507, 879.	0.1	66
3	Fabrication of thin film silicon solar cells on plastic substrate by very high frequency PECVD. Solar Energy Materials and Solar Cells, 2010, 94, 1534-1541.	3.0	66
4	Novel profiled thin-film polycrystalline silicon solar cells on stainless steel substrates. IEEE Transactions on Electron Devices, 1999, 46, 2069-2071.	1.6	42
5	Growth mechanism of microcrystalline silicon at high pressure conditions. Journal of Non-Crystalline Solids, 2004, 338-340, 56-60.	1.5	40
6	The influence of different catalyzers in hot-wire CVD for the deposition of polycrystalline silicon thin films. Thin Solid Films, 2001, 395, 194-197.	0.8	39
7	New challenges in thin film transistor (TFT) research. Journal of Non-Crystalline Solids, 2002, 299-302, 1304-1310.	1.5	39
8	Influence on cell performance of bulk defect density in microcrystalline silicon grown by VHF PECVD. Journal of Non-Crystalline Solids, 2006, 352, 1868-1871.	1.5	39
9	Transparent conducting oxide layers for thin film silicon solar cells. Thin Solid Films, 2010, 518, e129-e135.	0.8	37
10	The influence of the filament temperature on the structure of hot-wire deposited silicon. Thin Solid Films, 2003, 430, 46-49.	0.8	33
11	Using hot wire and initiated chemical vapor deposition for gas barrier thin film encapsulation. Thin Solid Films, 2015, 575, 67-71.	0.8	32
12	Growth mechanism of nanocrystalline silicon at the phase transition and its application in thin film solar cells. Journal of Crystal Growth, 2009, 311, 760-764.	0.7	31
13	Initiated chemical vapour deposition (iCVD) of thermally stable poly-glycidyl methacrylate. Surface and Coatings Technology, 2007, 201, 9422-9425.	2.2	30
14	Thin-film transistors deposited by hot-wire chemical vapor deposition. Thin Solid Films, 2003, 430, 220-225.	0.8	29
15	Silicon nitride at high deposition rate by Hot Wire Chemical Vapor Deposition as passivating and antireflection layer on multicrystalline silicon solar cells. Thin Solid Films, 2006, 501, 51-54.	0.8	28
16	Hot-wire silicon nitride for thin-film transistors. Thin Solid Films, 2001, 395, 339-342.	0.8	27
17	Optimization of nâ€"iâ€"p protocrystalline SiGe:H thin film solar cells for application in thin film multijunction solar cells. Journal of Non-Crystalline Solids, 2006, 352, 1941-1944.	1.5	27
18	Controlling the quality of nanocrystalline silicon made by hot-wire chemical vapor deposition by using a reverse H2 profiling technique. Journal of Non-Crystalline Solids, 2008, 354, 2087-2091.	1.5	26

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19	Improving the performance of amorphous and crystalline silicon heterojunction solar cells by monitoring surface passivation. Journal of Non-Crystalline Solids, 2012, 358, 2245-2248.	1.5	26
20	Low-temperature deposition of polycrystalline silicon thin films by hot-wire CVD. Solar Energy Materials and Solar Cells, 1997, 48, 269-277.	3.0	25
21	Beneficial effects of sputtered ZnO:Al protection layer on SnO2:F for high-deposition rate hot-wire CVD pâ€“iâ€“n solar cells. Thin Solid Films, 2006, 501, 47-50.	0.8	25
22	Nanostructured thin films for multibandgap silicon triple junction solar cells. Solar Energy Materials and Solar Cells, 2009, 93, 1129-1133.	3.0	25
23	Thin film silicon nâ€“iâ€“p solar cells deposited by VHF PECVD at 100Â°C substrate temperature. Solar Energy Materials and Solar Cells, 2009, 93, 680-683.	3.0	24
24	Hydrogenated amorphous and polycrystalline silicon TFTs by hot-wire CVD. Journal of Non-Crystalline Solids, 1998, 227-230, 1202-1206.	1.5	23
25	Highly stable hydrogenated amorphous silicon germanium solar cells. IEEE Transactions on Electron Devices, 2002, 49, 949-952.	1.6	21
26	High-density silicon nitride deposited at low substrate temperature with high deposition rate using hot wire chemical vapour deposition. Surface and Coatings Technology, 2007, 201, 9285-9288.	2.2	21
27	Incorporation of amorphous and microcrystalline silicon in nâ€“iâ€“p solar cells. Thin Solid Films, 2003, 430, 216-219.	0.8	19
28	Nanostructured thin films for multiband-gap silicon triple junction solar cells. Thin Solid Films, 2008, 516, 6818-6823.	0.8	19
29	Deposition of HWCVD poly-Si films at a high growth rate. Thin Solid Films, 2003, 430, 67-72.	0.8	18
30	All hot wire chemical vapor deposition low substrate temperature transparent thin film moisture barrier. Thin Solid Films, 2013, 532, 84-88.	0.8	18
31	Polymer layers by initiated chemical vapor deposition for thin film gas barrier encapsulation. Thin Solid Films, 2011, 519, 4479-4482.	0.8	17
32	Improved stability of intrinsic nanocrystalline Si thin films deposited by hot-wire chemical vapour deposition technique. Thin Solid Films, 2007, 515, 8040-8044.	0.8	16
33	Thin film silicon modules on plastic superstrates. Journal of Non-Crystalline Solids, 2008, 354, 2381-2385.	1.5	16
34	Hot-wire chemical vapor-deposited microcrystalline silicon in single and tandem nâ€“iâ€“p solar cells. Journal of Non-Crystalline Solids, 2006, 352, 1933-1936.	1.5	15
35	A combined experimental and computer simulation study of HWCVD nip microcrystalline silicon solar cells. Thin Solid Films, 2006, 501, 291-294.	0.8	15
36	Sensitivity of the dark spectral response of thin film silicon based tandem solar cells on the defective regions in the intrinsic layers. Journal of Non-Crystalline Solids, 2006, 352, 1876-1879.	1.5	13

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37	Poly-silicon films with low impurity concentration made by hot wire chemical vapour deposition. Solar Energy Materials and Solar Cells, 2001, 65, 541-547.	3.0	12
38	Improvement of Î¼c-Si:H nâ€“iâ€“p cell efficiency with an i-layer made by hot-wire CVD by reverse H2-profiling. Thin Solid Films, 2008, 516, 755-757.	0.8	12
39	Low temperature (<100ÂÂ°C) fabrication of thin film silicon solar cells by HWCVD. Thin Solid Films, 2008, 516, 751-754.	0.8	11
40	Gas phase considerations for the growth of device quality nanocrystalline silicon at high rate. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2009, 159-160, 38-43.	1.7	11
41	Improvement of the efficiency of triple junction nâ€“iâ€“p solar cells with hot-wire CVD proto- and microcrystalline silicon absorber layers. Thin Solid Films, 2008, 516, 736-739.	0.8	10
42	Ultrafast deposition of silicon nitride and semiconductor silicon thin films by hot wire chemical vapor deposition. Thin Solid Films, 2009, 517, 3039-3042.	0.8	10
43	Transistors with a Profiled Active Layer Made by Hot-Wire Cvd. Materials Research Society Symposia Proceedings, 1998, 507, 31.	0.1	9
44	Effect of oxide treatment at the microcrystalline tunnel junction of a-Si:H/a-Si:H tandem cells. Journal of Non-Crystalline Solids, 2000, 266-269, 1129-1133.	1.5	9
45	Low Temperature Poly-Si Layers Deposited by Hot Wire CVD Yielding a Mobility of 4.0 cm²V^{âˆ’1}s^{âˆ’1} in Top Gate Thin Film Transistors. Materials Research Society Symposia Proceedings, 2000, 609, 3131.	0.1	8
46	Thin Film a-Si/poly-Si Multibandgap Tandem Solar Cells With Both Absorber Layers Deposited by Hot Wire Cvd. Materials Research Society Symposia Proceedings, 2001, 664, 1561.	0.1	8
47	a-Si:H/poly-Si tandem cells deposited by hot-wire CVD. Journal of Non-Crystalline Solids, 2002, 299-302, 1194-1197.	1.5	8
48	Heat transfer model of an iCVD reactor. Thin Solid Films, 2009, 517, 3555-3558.	0.8	8
49	Modeling a-Si:H pâ€“iâ€“n solar cells with the defect pool model. Journal of Non-Crystalline Solids, 2004, 338-340, 686-689.	1.5	7
50	Influence of Pressure and Plasma Potential on High Growth Rate Microcrystalline Silicon Grown by Vhf Pecvd. Materials Research Society Symposia Proceedings, 2005, 862, 1031.	0.1	7
51	Thin film micro- and polycrystalline silicon nip cells on stainless steel made by hot-wire chemical vapour deposition. Thin Solid Films, 2006, 501, 276-279.	0.8	7
52	Thin film silicon devices deposited at 100Â°C: A study on the structural order of the photoactive layer. Journal of Non-Crystalline Solids, 2008, 354, 2652-2656.	1.5	7
53	Investigation of scaling-up issues in hot-wire CVD of polycrystalline silicon. Thin Solid Films, 2003, 427, 41-45.	0.8	6
54	On the development of single and multijunction solar cells with hot-wire CVD deposited active layers. Journal of Non-Crystalline Solids, 2008, 354, 2445-2450.	1.5	6

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55	Development of micromorph tandem solar cells on foil deposited by VHF-PECVD. Surface and Coatings Technology, 2007, 201, 9330-9333.	2.2	5
56	A novel structured plastic substrate for light confinement in thin film silicon solar cells by a geometric optical effect. Journal of Non-Crystalline Solids, 2012, 358, 2308-2312.	1.5	5
57	Hot Wire CVD for thin film triple junction cells and for ultrafast deposition of the SiN passivation layer on polycrystalline Si solar cells. Thin Solid Films, 2008, 516, 496-499.	0.8	4
58	Optoelectronic properties of hot-wire silicon layers deposited at 100Â°C. Journal of Non-Crystalline Solids, 2008, 354, 2248-2252.	1.5	3
59	Flexible a-Si/μc-Si tandem thin film silicon solar cells on plastic substrates with i-layers made with hot-wire CVD using the Helianthos cell transfer process. Conference Record of the IEEE Photovoltaic Specialists Conference, 2008, , .	0.0	3
60	Size control of gas phase grown silicon nanoparticles by varying the plasma OFF time in silane pulsed plasma. Materials Research Society Symposia Proceedings, 2015, 1803, 1.	0.1	3
61	Microscopic studies of polycrystalline nanoparticle growth in free space. Journal of Crystal Growth, 2017, 467, 137-144.	0.7	3
62	Optical modelling of photonic and geometrical structures used for light management in thin-film solar cells. Materials Today: Proceedings, 2021, 39, 1974-1977.	0.9	3
63	Synthesis of nanocrystalline silicon thin films using the increase of the deposition pressure in the hot-wire chemical vapour deposition technique. South African Journal of Science, 2010, 105, .	0.3	2
64	Moisture barrier enhancement by spontaneous formation of silicon oxide interlayers in hot wire chemical vapor deposition of silicon nitride on poly(glycidyl methacrylate). Canadian Journal of Physics, 2014, 92, 593-596.	0.4	2
65	Micro-/Poly-Crystalline Silicon Materials For Thin Film Photovoltaic Devices: Application In Solar Cells. , 2002, , 183-196.		2
66	Microcrystalline-crystalline silicon heterojunction solar cells using highly conductive thin p-type microcrystalline silicon window layers. , 1996, , .		1
67	Development of amorphous silicon based p-i-n solar cell in a superstrate structure with p-microcrystalline silicon as window layer. , 1996, , .		1
68	Designing amorphous silicon based solar cell structure on plastic. , 2009, , .		1
69	Scattering, Diffraction, and Geometric Light Trapping in Thin Film Amorphous Silicon Solar Cells on Plastic Substrates. Materials Research Society Symposia Proceedings, 2012, 1426, 155-160.	0.1	1
70	Very Thin Micromorph Tandem Solar Cells Deposited at Low Substrate Temperature. Materials Research Society Symposia Proceedings, 2012, 1426, 45-49.	0.1	1
71	A calibration method for accurate prediction of amorphous to nanocrystalline transition from line intensities of optical emission spectrum. Journal of Non-Crystalline Solids, 2012, 358, 1995-1999.	1.5	1
72	Gas phase considerations for the deposition of thin film silicon solar cells by VHF-PECVD at low substrate temperatures. Conference Record of the IEEE Photovoltaic Specialists Conference, 2008, , .	0.0	0

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73	Optical Transmission in a Silicon Nitride/Polymer Multilayer Permeation Barrier made by Hot-Wire CVD: Model and Experiment. , 2012, , .		0