Sushil Kumar

List of Publications by Year
in descending order

85 papers	1,830 citations	218677 26 h-index	315739 38 g-index
85 all docs	85 docs citations	85 times ranked	1265 citing authors

#	Article	IF	Citations
1	Numerical Simulation for Optimization of Ultra-thin n-type AZO and TiO2 Based Textured p-type c-Si Heterojunction Solar Cells. Silicon, 2022, 14, 4291-4299.	3.3	5
2	Numerical simulation of novel designed perovskite/silicon heterojunction solar cell. Optical Materials, 2022, 123, 111847.	3.6	19
3	Extraction and Analysis of Recovered Silver and Silicon from Laboratory Grade Waste Solar Cells. Silicon, 2022, 14, 9635-9642.	3.3	8
4	Boron Induced Crystallization of Silicon on Glass: an Alternate Way to Crystallize Amorphous Silicon Films for Solar Cells. Silicon, 2022, 14, 10459-10466.	3.3	0
5	Effect of Power on Crystallinity and Opto-Electronic Properties of Silicon Thin Films Grown Using VHF PECVD Process. Silicon, 2021, 13, 3927-3940.	3.3	5
6	The rise of carbon materials for field emission. Journal of Materials Chemistry C, 2021, 9, 2620-2659.	5.5	28
7	Anomalous characteristics of nanostructured hydrogenated carbon thin films. Materials Chemistry and Physics, 2021, 262, 124316.	4.0	3
8	Effect of argon plasma treatment on electronic properties of doped hydrogenated Silicon thin films for photovoltaic applications. , 2021, , .		0
9	Structural composition and thermal stability of extracted EVA from silicon solar modules waste. Solar Energy, 2020, 211, 74-81.	6.1	27
10	Advanced Materials for Strategic and Societal Applications. , 2020, , 811-879.		1
11	Employing constant photocurrent method for the study of defects in silicon thin films. Journal of Theoretical and Applied Physics, 2019, 13, 107-113.	1.4	2
12	Study of Infra-red Spectroscopy on Bonding Environment and Structural Properties of Nanocrystalline Silicon Thin Films Grown by VHF-PECVD Process. Silicon, 2019, 11, 1925-1937.	3.3	5
13	Investigation on sub nano-crystalline silicon thin films grown using pulsed PECVD process. Materials Science in Semiconductor Processing, 2018, 80, 167-173.	4.0	3
14	Effect of Pressure on Bonding Environment and Carrier Transport of a-Si:H Thin Films Deposited Using 27.12 MHz Assisted PECVD Process. Silicon, 2018, 10, 91-97.	3.3	7
15	Simulating the Role of TCO Materials, their Surface Texturing and Band Gap of Amorphous Silicon Layers on the Efficiency of Amorphous Silicon Thin Film Solar Cells. Silicon, 2017, 9, 59-68.	3.3	12
16	Anomalous electron transport in metal/carbon multijunction devices by engineering of the carbon thickness and selecting metal layer. Journal of Applied Physics, 2017, 121, .	2.5	2
17	Plasma Impedance Analysis: A Novel Approach for Investigating a Phase Transition from a-Si:H to nc-Si:H. Plasma Chemistry and Plasma Processing, 2017, 37, 189-205.	2.4	6
18	Investigation of powder dynamics in silane-argon discharge using impedance analyser. Physics of Plasmas, 2016, 23, .	1.9	5

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19	Nanocrystalline silicon thin films and grating structures for solar cells. , 2016, , .		5
20	Morphology and micro-structural studies of distinct silicon thin films deposited using very high frequency plasma enhanced chemical vapor deposition process. Thin Solid Films, 2016, 619, 273-280.	1.8	12
21	Effect of power on growth of nanocrystalline silicon films deposited by VHF PECVD technique for solar cell applications. AIP Conference Proceedings, 2016, , .	0.4	5
22	Optimization of a-Si:H absorber layer grown under a low pressure regime by plasma-enhanced chemical vapor deposition: Revisiting the significance of the p/i interface for solar cells. Materials Science in Semiconductor Processing, 2016, 43, 41-46.	4.0	11
23	Spectroscopic identification of ultranano-crystalline phases within amorphous/nano-crystalline silicon. Advanced Materials Letters, 2016, 8, 163-169.	0.6	1
24	Mixed phase silicon thin films grown at high rate using 60 MHz assisted VHF-PECVD technique. Materials Science in Semiconductor Processing, 2015, 40, 11-19.	4.0	14
25	Highly conductive boron doped micro/nanocrystalline silicon thin films deposited by VHF-PECVD for solar cell applications. Journal of Alloys and Compounds, 2015, 643, 94-99.	5.5	24
26	Structurally Driven Enhancement of Resonant Tunneling and Nanomechanical Properties in Diamond-like Carbon Superlattices. ACS Applied Materials & Interfaces, 2015, 7, 20726-20735.	8.0	10
27	Influence of consumed power on structural and nano-mechanical properties of nano-structured diamond-like carbon thin films. Applied Surface Science, 2014, 300, 141-148.	6.1	21
28	Numerical simulations for high efficiency HIT solar cells using microcrystalline silicon as emitter and back surface field (BSF) layers. Solar Energy, 2014, 110, 691-703.	6.1	35
29	Electrical transport in metalâ€"carbon hybrid multijunction devices. Diamond and Related Materials, 2014, 48, 82-87.	3.9	4
30	Kinetics of Recovery of Light Induced Defects on Thermal Annealing Towards Stability of Microcrystalline Silicon Films. Advanced Science Letters, 2014, 20, 1499-1503.	0.2	5
31	Improved surface properties of Î²-SiAlON by diamond-like carbon coatings. Diamond and Related Materials, 2013, 36, 44-50.	3.9	11
32	Influence of argon dilution on the growth of amorphous to ultra nanocrystalline silicon films using VHF PECVD process. Journal of Alloys and Compounds, 2013, 577, 710-716.	5.5	13
33	Role of base pressure on the structural and nano-mechanical properties of metal/diamond-like carbon bilayers. Applied Surface Science, 2013, 274, 282-287.	6.1	17
34	Effect of silane flow rate on structural, electrical and optical properties of silicon thin films grown by VHF PECVD technique. Materials Chemistry and Physics, 2013, 141, 89-94.	4.0	6
35	Optimization of band gap, thickness and carrier concentrations for the development of efficient microcrystalline silicon solar cells: A theoretical approach. Solar Energy, 2013, 97, 176-185.	6.1	25
36	Strange hardness characteristic of hydrogenated diamond-like carbon thin film by plasma enhanced chemical vapor deposition process. Applied Physics Letters, 2013, 102, .	3.3	32

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37	Simulation approach for optimization of device structure and thickness of HIT solar cells to achieve â^¼27% efficiency. Solar Energy, 2013, 88, 31-41.	6.1	81
38	Structural and nano-mechanical properties of nanostructured diamond-like carbon thin films. Metals and Materials International, 2013, 19, 405-410.	3.4	2
39	Influence of Silver Incorporation on the Structural and Electrical Properties of Diamond-Like Carbon Thin Films. ACS Applied Materials & Interfaces, 2013, 5, 2725-2732.	8.0	43
40	Photoconductivity and characterization of nitrogen incorporated hydrogenated amorphous carbon thin films. Journal of Applied Physics, 2012, 112, .	2.5	31
41	Plasma deposition of thin film multilayers for surface engineering. , 2012, , .		1
42	Investigation of radio frequency plasma for the growth of diamond like carbon films. Physics of Plasmas, 2012, 19, 033515.	1.9	22
43	Structural and Electronic Characterization of Nanocrystalline Diamondlike Carbon Thin Films. ACS Applied Materials & Interfaces, 2012, 4, 5309-5316.	8.0	45
44	Cost Effective Deposition System for Nitrogen Incorporated Diamondâ€like Carbon Coatings. Plasma Processes and Polymers, 2012, 9, 890-903.	3.0	6
45	Superhard behaviour, low residual stress, and unique structure in diamond-like carbon films by simple bilayer approach. Journal of Applied Physics, 2012, 112, .	2.5	46
46	Studies of pure and nitrogen-incorporated hydrogenated amorphous carbon thin films and their possible application for amorphous silicon solar cells. Journal of Applied Physics, 2012, 111, .	2.5	36
47	Effect of metallic interfacial layers on the properties of diamond-like carbon thin films. Metals and Materials International, 2012, 18, 231-236.	3.4	1
48	Growth of Mixed-Phase Amorphous and Ultra Nanocrystalline Silicon Thin Films in the Low Pressure Regime by a VHF PECVD Process. Silicon, 2012, 4, 127-135.	3.3	21
49	Nanoindentation testing on copper/diamond-like carbon bi-layer films. Current Applied Physics, 2012, 12, 247-253.	2.4	24
50	Role of ex-situ oxygen plasma treatments on the mechanical and optical properties of diamond-like carbon thin films. Materials Chemistry and Physics, 2012, 134, 7-12.	4.0	20
51	Investigation of properties of Cu containing DLC films produced by PECVD process. Journal of Physics and Chemistry of Solids, 2012, 73, 308-316.	4.0	66
52	Oxygen modified diamond-like carbon as window layer for amorphous silicon solar cells. Solar Energy, 2012, 86, 220-230.	6.1	27
53	Band gap optimization of pâ€“iâ€“n layers of a-Si:H by computer aided simulation for development of efficient solar cell. Solar Energy, 2012, 86, 1470-1476.	6.1	40
54	Effect of Hydrogen Content and Bonding Environment on Mechanical Properties of Hydrogenated Silicon Films Deposited by High-Frequency PECVD Process. ISRN Nanomaterials, 2012, 2012, 1-9.	0.7	7

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55	Nanostructured Titanium/Diamond-Like Carbon Multilayer Films: Deposition, Characterization, and Applications. ACS Applied Materials & Interfaces, 2011, 3, 4268-4278.	8.0	73
56	Nanoindentation measurements on modified diamond-like carbon thin films. Applied Surface Science, 2011, 257, 9953-9959.	6.1	49
57	Studies of nanostructured copper/hydrogenated amorphous carbon multilayer films. Journal of Alloys and Compounds, 2011, 509, 1285-1293.	5.5	51
58	Effect of ambient gaseous environment on the properties of amorphous carbon thin films. Materials Chemistry and Physics, 2011, 125, 558-567.	4.0	29
59	Influence of bonding environment on nano-mechanical properties of nitrogen containing hydrogenated amorphous carbon thin films. Materials Chemistry and Physics, 2011, 130, 775-785.	4.0	26
60	Nano indentation measurements on nitrogen incorporated diamond-like carbon coatings. Applied Physics A: Materials Science and Processing, 2011, 102, 225-230.	2.3	29
61	Field emission, morphological and mechanical properties of variety of diamond-like carbon thin films. Applied Physics A: Materials Science and Processing, 2011, 105, 417-425.	2.3	22
62	Role of Metallic Niï£¿Cr Dots on the Adhesion, Electrical, Optical and Mechanical Properties of Diamondâ€like Carbon Thin Films. Plasma Processes and Polymers, 2011, 8, 100-107.	3.0	26
63	Correlation of sp3 and sp2 fraction of carbon with electrical, optical and nano-mechanical properties of argon-diluted diamond-like carbon films. Applied Surface Science, 2011, 257, 6804-6810.	6.1	113
64	Role of Sandwich Cu Layer in and Effect of Self-Bias on Nanomechanical Properties of Copper/Diamond-Like Carbon Bilayer Films. ISRN Nanotechnology, 2011, 2011, 1-7.	1.3	2
65	Influence of cobalt doping on the crystalline structure, optical and mechanical properties of ZnO thin films. Thin Solid Films, 2010, 518, 5257-5264.	1.8	66
66	Influence of argon dilution on growth and properties of hydrogenated nanocrystalline silicon films. Solar Energy Materials and Solar Cells, 2010, 94, 892-899.	6.2	32
67	Properties of nitrogen diluted hydrogenated amorphous carbon (n-type a-C:H) films and their realization in n-type a-C:H/p-type crystalline silicon heterojunction diodes. Vacuum, 2010, 84, 882-889.	3.5	32
68	RF power density dependent phase formation in hydrogenated silicon films. Journal of Non-Crystalline Solids, 2010, 356, 1774-1778.	3.1	8
69	Amorphous and nanocrystalline silicon made by varying deposition pressure in PECVD process. Journal of Non-Crystalline Solids, 2009, 355, 2228-2232.	3.1	24
70	High-pressure condition of SiH4+Ar+H2 plasma for deposition of hydrogenated nanocrystalline silicon film. Solar Energy Materials and Solar Cells, 2008, 92, 1199-1204.	6.2	19
71	Effect of power on the growth of nanocrystalline silicon films. Journal of Physics Condensed Matter, 2008, 20, 335215.	1.8	24
72	High Pressure Growth of Nanocrystalline Silicon Films. Journal of Nanoscience and Nanotechnology, 2008, 8, 4211-4217.	0.9	8

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73	Optical and electronic properties of plasma-deposited hydrogenated amorphous carbon nitride and carbon oxide films. Thin Solid Films, 2005, 482, 24-33.	1.8	27
74	Electronic transport in amorphous carbon nitride (a-CNx:H) and carbon oxide (a-COx:H) films. Solid State Communications, 2004, 130, 331-334.	1.9	6
75	Dependence of field-emission threshold in diamond-like carbon films grown by various techniques. Vacuum, 2003, 72, 183-192.	3.5	23
76	Field-enhanced electrical transport mechanisms in amorphous carbon films. Philosophical Magazine, 2003, 83, 3351-3365.	1.6	34
77	High rate deposition of diamond like carbon films by very high frequency plasma enhanced chemical vapor deposition at 100 MHz. Journal of Applied Physics, 2003, 93, 6361-6369.	2.5	19
78	Correlation of residual stress with optical absorption edge in diamond-like carbon films. Diamond and Related Materials, 2003, 12, 1576-1583.	3.9	14
79	Electron field-emission from diamond-like carbon films grown by a saddle field fast atom beam source. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 2003, 21, 1986.	1.6	4
80	Diamond-like carbon films with extremely low stress. Thin Solid Films, 1999, 346, 130-137.	1.8	35
81	Possible solution to the problem of high built-up stresses in diamond-like carbon films. Journal of Applied Physics, 1999, 85, 3866-3876.	2.5	63
82	Filtered saddle field fast atom beam deposition of diamondlike carbon films. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1998, 16, 203-206.	2.1	13
83	Diamondâ€like carbon films grown by very high frequency (100 MHz) plasma enhanced chemical vapor deposition technique. Applied Physics Letters, 1996, 69, 49-51.	3.3	17
84	Diamondâ€like carbon films grown using a saddle field source. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1995, 13, 2519-2524.	2.1	22
85	Onset of photoconduction in hydrogenated amorphous carbon films prepared by RF asymmetric PECVD technique. Solid State Communications, 1994, 90, 421-423.	1.9	12