

Rahul Singhal

List of Publications by Year in descending order

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102
papers

1,449
citations

361413

20
h-index

395702

33
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102
all docs

102
docs citations

102
times ranked

1293
citing authors

#	ARTICLE	IF	CITATIONS
1	Au@ZnO: A tunable localized surface plasmonic nanocomposite. Applied Physics Letters, 2008, 92, 043107.	3.3	153
2	Enhanced room temperature ferromagnetism and green photoluminescence in Cu doped ZnO thin film synthesised by neutral beam sputtering. Scientific Reports, 2019, 9, 6675.	3.3	86
3	Electronic excitation induced tuning of surface plasmon resonance of Ag nanoparticles in fullerene C ₇₀ matrix. Journal Physics D: Applied Physics, 2009, 42, 155103.	2.8	55
4	Blue-Shifted SPR of Au Nanoparticles with Ordering of Carbon by Dense Ionization and Thermal Treatment. Plasmonics, 2013, 8, 295-305.	3.4	46
5	Thickness dependent phase transformation of magnetron-sputtered Ni-Mn-Sn ferromagnetic shape memory alloy thin films. Journal of Nanoparticle Research, 2011, 13, 3975-3990.	1.9	44
6	Synthesis and characterizations of silver-fullerene C70 nanocomposite. Applied Physics Letters, 2008, 93, .	3.3	42
7	Swift heavy ion induced modifications of optical and microstructural properties of silver@fullerene C60 nanocomposite. Nuclear Instruments & Methods in Physics Research B, 2009, 267, 1349-1352.	1.4	41
8	Electronic excitation induced controlled modifications of semiconductor-to-metal transition in epitaxial VO ₂ thin films. Journal of Materials Research, 2011, 26, 2901-2906.	2.6	41
9	Synthesis of Plasmonic Nanocomposites for Diverse Applications. Journal of Nanoscience and Nanotechnology, 2010, 10, 2705-2712.	0.9	38
10	Ion beam irradiation-induced tuning of SPR of Au nanoparticles in fullerene C70 matrix: dependence of energy loss. Journal of Nanoparticle Research, 2013, 15, 1.	1.9	38
11	RF magnetron sputtered Ag-Cu ₂ O-CuO nanocomposite thin films with highly enhanced photocatalytic and catalytic performance. Applied Surface Science, 2020, 517, 146169.	6.1	38
12	Swift heavy ion induced modifications of fullerene C70 thin films. Nuclear Instruments & Methods in Physics Research B, 2008, 266, 3257-3262.	1.4	37
13	Ion irradiation studies of silver/amorphous carbon nanocomposite thin film. Surface and Coatings Technology, 2013, 229, 50-54.	4.8	36
14	A comparative study of ion-induced damages in C60 and C70 fullerenes. Radiation Effects and Defects in Solids, 2009, 164, 38-48.	1.2	34
15	Engineering of hydrophilic and plasmonic properties of Ag thin film by atom beam irradiation. Applied Surface Science, 2011, 258, 1464-1469.	6.1	32
16	Synthesis, characterizations, and thermal induced structural transformation of silver-fullerene C60 nanocomposite thin films for applications in optical devices. Journal of Applied Physics, 2010, 107, .	2.5	29
17	Synthesis and characterizations of Au-C60 nanocomposite. Journal of Alloys and Compounds, 2017, 696, 9-15.	5.5	28
18	Ion track diameter in fullerene C70 thin film using Raman active vibrational modes of C70 molecule. Vacuum, 2016, 123, 35-41.	3.5	27

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19	Effect of low fluence radiation on nanocomposite thin films of Cu nanoparticles embedded in fullerene C 60. Vacuum, 2017, 142, 5-12.	3.5	24
20	Ion irradiation induced modifications of nanostructured Ni ⁴² Mn ⁵⁸ Sn ferromagnetic shape memory alloy thin films. Thin Solid Films, 2011, 520, 1631-1637.	1.8	22
21	Morphology Controlled CuO Nanostructures for Efficient Catalytic Reduction of 4-Nitrophenol. Catalysis Letters, 2020, 150, 471-481.	2.6	21
22	Reduced Energy Offsets and Low Energy Losses Lead to Efficient (~10% at 1 sun) Ternary Organic Solar Cells. ACS Energy Letters, 2018, 3, 2418-2424.	17.4	20
23	Studies on Carbon Nanotubes and Fullerenes Under Extreme Conditions. Journal of Nanoscience and Nanotechnology, 2010, 10, 3767-3779.	0.9	19
24	Ion irradiation induced modifications of P3HT: A donor material for organic photovoltaic devices. Vacuum, 2017, 135, 73-85.	3.5	18
25	Swift heavy ion induced optical and structural modifications in RF sputtered nanocrystalline ZnO thin film. Indian Journal of Physics, 2017, 91, 547-554.	1.8	16
26	Effect of Ag Ion Implantation on SPR of Cu-C60 Nanocomposite Thin Film. Plasmonics, 2018, 13, 669-679.	3.4	16
27	Synthesis Of Carbon Nanowires By SHI Irradiation Of Fullerene C70 thin Film. Advanced Materials Letters, 2013, 4, 413-417.	0.6	16
28	Structural, optical and electronic properties of Ag ⁴² TiO ₂ nanocomposite thin film. Applied Physics A: Materials Science and Processing, 2016, 122, 1.	2.3	14
29	Investigations on the Thermal Stability of Fullerene-Based (Ag-C70) Nanocomposite Thin Films. Plasmonics, 2017, 12, 1701-1708.	3.4	14
30	Thermally induced tuning of SPR of metal-fullerene Ag(26%)-C 70 nanocomposite. Surface and Coatings Technology, 2017, 324, 361-367.	4.8	14
31	Thermal-induced SPR tuning of Ag-ZnO nanocomposite thin film for plasmonic applications. Applied Surface Science, 2018, 439, 919-926.	6.1	13
32	Structural and optical investigations of 120 keV Ag ion implanted ZnO thin films. Thin Solid Films, 2018, 653, 377-383.	1.8	13
33	Low energy ion irradiation induced SPR of Cu-Fullerene C70 nanocomposite thin films. Journal of Alloys and Compounds, 2018, 767, 733-744.	5.5	13
34	Aluminum induced crystallization of amorphous Si: Thermal annealing and ion irradiation process. Journal of Non-Crystalline Solids, 2019, 523, 119628.	3.1	13
35	Surface and structural studies of fullerene C ₇₀ under ion irradiation. Surface Engineering, 2016, 32, 846-852.	2.2	13
36	Phase transformation in Ni ⁴² Mn ⁵⁸ Sn ferromagnetic shape memory alloy thin films induced by dense ionization. Applied Physics A: Materials Science and Processing, 2012, 107, 925-934.	2.3	12

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37	Study on swift heavy ions induced modifications of Ag-ZnO nanocomposite thin film. Superlattices and Microstructures, 2017, 103, 195-204.	3.1	12
38	Influence of fractal and multifractal morphology on the wettability and reflectivity of crystalline-Si thin film surfaces as photon absorber layers for solar cell. Journal of Applied Physics, 2021, 129, .	2.5	12
39	Energetic ion irradiation induced crystallization of Ni-Mn-Sn ferromagnetic shape memory alloy thin film. Vacuum, 2013, 89, 190-196.	3.5	11
40	Synthesis, characterization and thermally induced structural transformation of Au-C 70 nanocomposite thin films. Vacuum, 2017, 142, 146-153.	3.5	11
41	Optical properties of Cu-C70nanocomposite under low energy ion irradiation. Materials Research Express, 2018, 5, 035044.	1.6	11
42	Synergistic Effect of Singly Charged Oxygen Vacancies and Ligand Field for Regulating Transport Properties of Resistive Switching Memories. Journal of Physical Chemistry C, 2019, 123, 26812-26822.	3.1	11
43	Phase stability and transformation of the $\hat{\Gamma}$ to $\hat{\mu}$ -phase of Alq3 phosphor after thermal treatment and their photo-physical properties. Journal of Physics and Chemistry of Solids, 2018, 121, 396-408.	4.0	10
44	Unveiling Temperature-Mediated Dual-Band Edge in TiO ₂ Nanotubes with Enhanced Photocatalytic Effect. Journal of Physical Chemistry C, 2021, 125, 4846-4859.	3.1	10
45	Electronic excitation induced modifications of optical and morphological properties of PCBM thin films. Nuclear Instruments & Methods in Physics Research B, 2016, 379, 176-180.	1.4	9
46	Low energy ion irradiation studies of fullerene C 70 thin films – An emphasis on mapping the local structure modifications. Journal of Physics and Chemistry of Solids, 2018, 117, 204-214.	4.0	9
47	An assessment on crystallization phenomena of Si in Al/a-Si thin films via thermal annealing and ion irradiation. RSC Advances, 2020, 10, 4414-4426.	3.6	9
48	Electronic excitation induced modifications of structural, electrical and optical properties of Cu-C 60 nanocomposite thin films. Nuclear Instruments & Methods in Physics Research B, 2017, 407, 73-79.	1.4	8
49	Self-assembled nano-dots structures on Si(111) surfaces by oblique angle sputter-deposition. Nanotechnology, 2019, 30, 385301.	2.6	8
50	Structural, Optical and Decay Properties of Zinc(II) 8-Hydroxyquinoline and Its Thin Film. Journal of Electronic Materials, 2020, 49, 6096-6106.	2.2	8
51	Investigation of sequential thermal annealing effect on Cu-C70 nanocomposite thin film. Thin Solid Films, 2019, 680, 75-80.	1.8	7
52	Large Tuning of Surface Plasmon Resonance of Au-Fullerene Nanocomposite. Electronic Materials Letters, 2019, 15, 111-118.	2.2	7
53	Mapping the local structure of fullerene C60 and Cu-C60 nanocomposite thin films by gamma rays irradiation. Materials Chemistry and Physics, 2020, 252, 123192.	4.0	7
54	Influence of high energy ion irradiation on fullerene derivative (PCBM) thin films. Nuclear Instruments & Methods in Physics Research B, 2017, 396, 5-10.	1.4	6

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55	Thermal annealing and SHI irradiation induced modifications in sandwiched structured Carbon-gold-Carbon (a-C/Au/a-C) nanocomposite thin film. Nuclear Instruments & Methods in Physics Research B, 2017, 407, 118-124.	1.4	6
56	Ion Irradiation Induced SPR of Au Nanoparticles in Carbon. Procedia Engineering, 2017, 215, 41-59.	1.2	6
57	The modification in the photo-physical properties via transformation of synthetic dihydrated Znq2 to anhydrous (Znq2)4 tetramer by sublimation process. Optical Materials, 2018, 82, 175-189.	3.6	6
58	Temperature induced surface plasmon resonance in Au/a-C nanocomposite thin film. Vacuum, 2019, 167, 40-46.	3.5	6
59	Synthesis and modification of Cu-C70 nanocomposite for plasmonic applications. Applied Surface Science, 2019, 466, 615-627.	6.1	6
60	Optical and structural modifications of copper-fullerene nanocomposite thin films by 120 MeV Au ion irradiation. Radiation Physics and Chemistry, 2020, 166, 108442.	2.8	6
61	Electronic excitation induced phase transformation in FSMA thin film. Vacuum, 2013, 89, 215-219.	3.5	5
62	Electronic excitation induced modification in fullerene C70 thin films. Nuclear Instruments & Methods in Physics Research B, 2016, 379, 188-194.	1.4	5
63	Ag implantation-induced modification of Ni-Ti shape memory alloy thin films. Radiation Effects and Defects in Solids, 2017, 172, 629-642.	1.2	5
64	Effect of high energy ions on the electrical and morphological properties of Poly(3-Hexylthiophene) (P3HT) thin film. Physica B: Condensed Matter, 2018, 537, 306-313.	2.7	5
65	Synthesis and characterization of Cu-C60 plasmonic nanocomposite. Physica B: Condensed Matter, 2018, 550, 225-234.	2.7	5
66	Study on copper-fullerene nanocomposite irradiated by 120 MeV Au ions. Radiation Physics and Chemistry, 2018, 151, 276-282.	2.8	5
67	Investigation of C60 and C70 fullerenes under low energy ion impact. Journal of Materials Science: Materials in Electronics, 2018, 29, 14762-14773.	2.2	5
68	Surface patterning of high density polyethylene by oblique argon ion irradiation. Journal of Applied Physics, 2019, 126, .	2.5	5
69	Thermally induced plasmonic resonance of Cu nanoparticles in fullerene C70 matrix. Vacuum, 2019, 159, 423-429.	3.5	5
70	Thermal-induced structural and optical investigations of Ag ZnO nanocomposite thin films. Superlattices and Microstructures, 2018, 119, 72-80.	3.1	4
71	Effect of crystallographic orientation on structural and mechanical behaviors of Ni-Ti thin films irradiated by Ag7+ ions. Applied Physics A: Materials Science and Processing, 2018, 124, 1.	2.3	4
72	Metal-fullerene multilayer thin films for plasmonic properties. Materials Today: Proceedings, 2020, 32, 385-391.	1.8	4

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73	Ripple patterns over oblique Ar ⁺ sputtered SiC/Si(1 1 1) surfaces: Role of preferential sputtering. <i>Materials Letters</i> , 2022, 307, 131011.	2.6	4
74	Thickness effect on scaling law and surface properties of nano-dimensional SnTe thin films. <i>Journal of Applied Physics</i> , 2021, 130, .	2.5	4
75	220ÂkeV Ag ion irradiation-induced surface plasmon resonance shift of gold nanoparticles in fullerene C60 matrix. <i>Materials Letters</i> , 2022, 308, 131293.	2.6	4
76	Synthesis and annealing study of RF sputtered ZnO thin film. <i>AIP Conference Proceedings</i> , 2016, , .	0.4	3
77	Modulation of microstructure and interface properties of co-sputter derived Hf1â [~] xTi _x O ₂ thin films with various Ti content. <i>Journal of Materials Science: Materials in Electronics</i> , 2017, 28, 12408-12414.	2.2	3
78	A comprehensive study of SHI irradiated fullerene C 60 thin films: Polymerization to amorphization. <i>Synthetic Metals</i> , 2017, 227, 93-99.	3.9	3
79	Impact of SHI on structural and mechanical behavior of intermetallic NiTi thin films. <i>Physica B: Condensed Matter</i> , 2018, 546, 80-88.	2.7	3
80	Ion irradiation (low & high energy ion) induced surface plasmon resonance in Cu(10%)C70 nanocomposite thin films. <i>Materials Research Express</i> , 2019, 6, 085626.	1.6	3
81	Study on Cu-fullerene C₇₀ nanocomposite thin films under electronic excitations. <i>Materials Research Express</i> , 2019, 6, 015027.	1.6	3
82	Efficacy of ion irradiation in strengthening the surface plasmon resonance effect of Au nanoparticles. <i>Surfaces and Interfaces</i> , 2020, 21, 100633.	3.0	3
83	SHI irradiation induced modifications of plasmonic properties of Ag-TiO₂ thin film and study using FDTD simulation. <i>Materials Science-Poland</i> , 2019, 37, 373-380.	1.0	3
84	Microâ€m morphological investigations on wettability of Alâ€m incorporated <i>c</i>â€m Si thin films using statistical surface roughness parameters. <i>Surface and Interface Analysis</i> , 2022, 54, 174-186.	1.8	3
85	Synthesis of Ag metallic nanoparticles by 120â€%keV Agâ [~] ion implantation in TiO ₂ matrix. <i>Radiation Effects and Defects in Solids</i> , 2017, 172, 896-902.	1.2	2
86	Influence of thermal treatment on the structural and optical properties of methoxy-substituted 2, 4-diphenyl quinoline. <i>Applied Physics A: Materials Science and Processing</i> , 2019, 125, 1.	2.3	2
87	Evolution of SPR in 120ÂMeV silver ion irradiated Cu (18%) C60 nanocomposites thin films. <i>Journal of Materials Science: Materials in Electronics</i> , 2019, 30, 8301-8311.	2.2	2
88	Nano-scale depth-varying recrystallization of oblique Ar ⁺ sputtered Si(111) layers. <i>Scientific Reports</i> , 2020, 10, 11905.	3.3	2
89	High-efficiency fullerene free ternary organic solar cells based with two small molecules as donor. <i>Optical Materials</i> , 2021, 118, 111217.	3.6	2
90	Fabrication, characterization and annealing of polymer-fullerene bulk heterojunction organic solar cells. <i>AIP Conference Proceedings</i> , 2017, , .	0.4	1

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91	Phase transformation by the irradiation with swift heavy ions on vanadium oxide thin films. Radiation Effects and Defects in Solids, 2020, 175, 450-457.	1.2	1
92	Enhancing Non-linear Response of Fullerene via Incorporation of Gold Nanoparticles. Plasmonics, 2020, 15, 361-370.	3.4	1
93	Tuning of structural and optical properties of Au nanoparticles in amorphous-carbon. Physica Scripta, 2020, 95, 105002.	2.5	1
94	ZnO based RRAM performance enhancement by 100 MeV Ag ⁹⁺ irradiation. Applied Surface Science Advances, 2022, 9, 100260.	6.8	1
95	Au-ZnO: A tunable plasmonic nanocomposite for SERS and switching. , 2009, , .		0
96	Ion track in fullerene C70 thin film: Dependence of electronic energy loss. AIP Conference Proceedings, 2017, , .	0.4	0
97	Modifications in Fullerene C 70 Thin Film induced by Dense Ionization and Thermal Treatment. Procedia Engineering, 2017, 215, 89-108.	1.2	0
98	Electronic excitation induced modifications of Au-Carbon nanocomposite. Materials Research Express, 2019, 6, 115004.	1.6	0
99	Tuning of SPR and Structural Properties of Cu-Fullerene Nanocomposite. Advances in Sustainability Science and Technology, 2021, , 123-135.	0.6	0
100	Structural Transformations in Fullerene C70 Thin Film by 65ÅMeV Ni Ion Beam Irradiation. Springer Proceedings in Energy, 2020, , 149-157.	0.3	0
101	Surface patterning of argon ion sputtered low density polyethylene. Materials Letters, 2021, , 131375.	2.6	0
102	120ÅkeV Ar ion-induced red and blue shift of SPR Wavelength of Au nanoparticles in fullerene C60. Journal of Materials Science: Materials in Electronics, 0, , .	2.2	0