

# Jai Prakash

## List of Publications by Year in descending order

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78  
papers

2,949  
citations

126858

33  
h-index

175177

52  
g-index

78  
all docs

78  
docs citations

78  
times ranked

2927  
citing authors

#	ARTICLE	IF	CITATIONS
1	Noble metals-TiO <sub>2</sub> nanocomposites: From fundamental mechanisms to photocatalysis, surface enhanced Raman scattering and antibacterial applications. <i>Applied Materials Today</i> , 2018, 11, 82-135.	2.3	231
2	Rational design of multifunctional air electrodes for rechargeable Zn-Air batteries: Recent progress and future perspectives. <i>Energy Storage Materials</i> , 2019, 21, 253-286.	9.5	171
3	Dual Functional Ta-Doped Electrospun TiO <sub>2</sub> Nanofibers with Enhanced Photocatalysis and SERS Detection for Organic Compounds. <i>ACS Applied Materials &amp; Interfaces</i> , 2017, 9, 28495-28507.	4.0	158
4	Design and engineering of high-performance photocatalytic systems based on metal oxide-graphene-noble metal nanocomposites. <i>Molecular Systems Design and Engineering</i> , 2017, 2, 422-439.	1.7	92
5	Noble metal nanoparticles embedding into polymeric materials: From fundamentals to applications. <i>Advances in Colloid and Interface Science</i> , 2015, 226, 187-202.	7.0	89
6	Synthesis, characterization and multifunctional properties of plasmonic Ag-TiO <sub>2</sub> nanocomposites. <i>Nanotechnology</i> , 2016, 27, 355707.	1.3	84
7	Photocatalytic TiO <sub>2</sub> nanomaterials as potential antimicrobial and antiviral agents: Scope against blocking the SARS-COV-2 spread. <i>Micro and Nano Engineering</i> , 2022, 14, 100100.	1.4	77
8	Engineering metal oxide semiconductor nanostructures for enhanced charge transfer: fundamentals and emerging SERS applications. <i>Journal of Materials Chemistry C</i> , 2021, 10, 73-95.	2.7	72
9	Nitrogen-doping processes of graphene by a versatile plasma-based method. <i>Carbon</i> , 2014, 73, 216-224.	5.4	71
10	Engineering of transition metal dichalcogenide-based 2D nanomaterials through doping for environmental applications. <i>Molecular Systems Design and Engineering</i> , 2019, 4, 804-827.	1.7	71
11	Novel rare earth metal-doped one-dimensional TiO <sub>2</sub> nanostructures: Fundamentals and multifunctional applications. <i>Materials Today Sustainability</i> , 2021, 13, 100066.	1.9	66
12	Plasmonic resonance of Ag nanoclusters diffused in soda-lime glasses. <i>Physical Chemistry Chemical Physics</i> , 2015, 17, 8596-8603.	1.3	65
13	Hydrothermal synthesis of TiO <sub>2</sub> nanorods: formation chemistry, growth mechanism, and tailoring of surface properties for photocatalytic activities. <i>Materials Today Chemistry</i> , 2021, 20, 100428.	1.7	65
14	Opacity and plasmonic properties of Ag embedded glass based metamaterials. <i>RSC Advances</i> , 2015, 5, 12555-12562.	1.7	64
15	Band gap tailoring of cauliflower-shaped CuO nanostructures by Zn doping for antibacterial applications. <i>Journal of Alloys and Compounds</i> , 2020, 832, 154968.	2.8	64
16	Spectroscopic Identification of an Fe <sup>III</sup> Center, not Fe <sup>IV</sup> , in the Crystalline Sc <sup>III</sup> -O <sup>II</sup> -Fe Adduct Derived from [Fe <sup>IV</sup> (O)(TMC)] <sup>2+</sup> . <i>Journal of the American Chemical Society</i> , 2015, 137, 3478-3481.	6.6	60
17	Embedded plasmonic nanostructures: synthesis, fundamental aspects and their surface enhanced Raman scattering applications. <i>International Reviews in Physical Chemistry</i> , 2016, 35, 353-398.	0.9	58
18	Role of silver doping on the defects related photoluminescence and antibacterial behaviour of zinc oxide nanoparticles. <i>Colloids and Surfaces B: Biointerfaces</i> , 2017, 159, 191-199.	2.5	58

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19	Progress in tailoring perovskite based solar cells through compositional engineering: Materials properties, photovoltaic performance and critical issues. <i>Materials Today Energy</i> , 2018, 9, 440-486.	2.5	58
20	Optical and surface enhanced Raman scattering properties of Au nanoparticles embedded in and located on a carbonaceous matrix. <i>Physical Chemistry Chemical Physics</i> , 2016, 18, 2468-2480.	1.3	55
21	Rational Design of Novel Catalysts with Atomic Layer Deposition for the Reduction of Carbon Dioxide. <i>Advanced Energy Materials</i> , 2019, 9, 1900889.	10.2	53
22	Phosphor Polymer Nanocomposite: ZnO:Tb <sup>3+</sup> Embedded Polystyrene Nanocomposite Thin Films for Solid-State Lighting Applications. <i>ACS Applied Nano Materials</i> , 2018, 1, 977-988.	2.4	51
23	Synthesis of Au nanoparticles at the surface and embedded in carbonaceous matrix by 150 keV Ar ion irradiation. <i>Journal Physics D: Applied Physics</i> , 2011, 44, 125302.	1.3	49
24	Swift heavy ion irradiation induced modification of the microstructure of NiO thin films. <i>Nuclear Instruments &amp; Methods in Physics Research B</i> , 2010, 268, 1613-1617.	0.6	48
25	TiO <sub>2</sub> nanoflower photocatalysts: Synthesis, modifications and applications in wastewater treatment for removal of emerging organic pollutants. <i>Environmental Research</i> , 2022, 212, 113550.	3.7	47
26	Surface roughness and power spectral density study of SHI irradiated ultra-thin gold films. <i>Applied Surface Science</i> , 2009, 256, 558-561.	3.1	46
27	Chemical vapour deposition of graphene: layer control, the transfer process, characterisation, and related applications. <i>International Reviews in Physical Chemistry</i> , 2019, 38, 149-199.	0.9	46
28	Iron (II) phthalocyanine/N-doped graphene: A highly efficient non-precious metal catalyst for oxygen reduction. <i>International Journal of Hydrogen Energy</i> , 2019, 44, 18103-18114.	3.8	44
29	An insight into the green synthesis of SiO <sub>2</sub> nanostructures as a novel adsorbent for removal of toxic water pollutants. <i>Environmental Research</i> , 2022, 212, 113328.	3.7	38
30	Emerging applications of atomic layer deposition for the rational design of novel nanostructures for surface-enhanced Raman scattering. <i>Journal of Materials Chemistry C</i> , 2019, 7, 1447-1471.	2.7	37
31	Fundamentals and applications of recyclable SERS substrates. <i>International Reviews in Physical Chemistry</i> , 2019, 38, 201-242.	0.9	36
32	Optical limiting applications of resonating plasmonic Au nanoparticles in a dielectric glass medium. <i>Nanotechnology</i> , 2021, 32, 345709.	1.3	35
33	Structural phase transformation in ZnS nanocrystalline thin films by swift heavy ion irradiation. <i>Solid State Communications</i> , 2010, 150, 1158-1161.	0.9	34
34	Role of surface and subsurface defects in MgO thin film: XANES and magnetic investigations. <i>Superlattices and Microstructures</i> , 2015, 77, 313-324.	1.4	34
35	Plasmonic and nonlinear optical behavior of nanostructures in glass matrix for photonics application. <i>Materials Research Bulletin</i> , 2020, 125, 110799.	2.7	34
36	Upside Down! Crystallographic and Spectroscopic Characterization of an [Fe <sup>IV</sup> (O <sub>syn</sub> )(TMC)] <sup>2+</sup> Complex. <i>Inorganic Chemistry</i> , 2015, 54, 11055-11057.	1.9	33

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37	Fabrication and characterization of nitrogen doped p-ZnO on n-Si heterojunctions. <i>Sensors and Actuators A: Physical</i> , 2016, 247, 475-481.	2.0	33
38	Multi-metallic catalysts for the electroreduction of carbon dioxide: Recent advances and perspectives. <i>Renewable and Sustainable Energy Reviews</i> , 2022, 155, 111922.	8.2	32
39	Ion beam induced interface mixing of Ni on PTFE bilayer system studied by quadrupole mass analysis and electron spectroscopy for chemical analysis. <i>Vacuum</i> , 2010, 84, 1275-1279.	1.6	28
40	Phenomenological understanding of dewetting and embedding of noble metal nanoparticles in thin films induced by ion irradiation. <i>Materials Chemistry and Physics</i> , 2014, 147, 920-924.	2.0	28
41	Oxoiron(IV) Complex of the Ethylene-Bridged Dialkylcyclam Ligand Me <sub>2</sub> EBC. <i>Inorganic Chemistry</i> , 2015, 54, 7828-7839.	1.9	28
42	Novel polypyrrole-graphene oxide-gold nanocomposite for high performance hydrogen peroxide sensing application. <i>Sensors and Actuators A: Physical</i> , 2021, 328, 112769.	2.0	28
43	Study Of Surface Morphology And Grain Size Of Irradiated MgO Thin Films. <i>Advanced Materials Letters</i> , 2012, 3, 112-117.	0.3	28
44	Design and engineering of graphene nanostructures as independent solar-driven photocatalysts for emerging applications in the field of energy and environment. <i>Molecular Systems Design and Engineering</i> , 2022, 7, 213-238.	1.7	26
45	A facile synthesis of novel polyaniline/graphene nanocomposite thin films for enzyme-free electrochemical sensing of hydrogen peroxide. <i>Molecular Systems Design and Engineering</i> , 2022, 7, 158-170.	1.7	24
46	Surface functionalization of bamboo leave mediated synthesized SiO <sub>2</sub> nanoparticles: Study of adsorption mechanism, isotherms and enhanced adsorption capacity for removal of Cr (VI) from aqueous solution. <i>Environmental Research</i> , 2022, 214, 113761.	3.7	24
47	Electrochemical Sensor Based on Nanodiamonds and Manioc Starch for Detection of Tetracycline. <i>Journal of Sensors</i> , 2021, 2021, 1-10.	0.6	22
48	Study of Tunable Plasmonic, Photoluminescence, and Nonlinear Optical Behavior of Ag Nanoclusters Embedded in a Glass Matrix for Multifunctional Applications. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2019, 216, 1800768.	0.8	21
49	A novel and facile green synthesis of SiO <sub>2</sub> nanoparticles for removal of toxic water pollutants. <i>Applied Nanoscience (Switzerland)</i> , 2023, 13, 735-747.	1.6	21
50	Swift heavy ion irradiation induced modification of structure and surface morphology of BiFeO <sub>3</sub> thin film. <i>Bulletin of Materials Science</i> , 2013, 36, 813-818.	0.8	17
51	Hydrothermal synthesis and Ta doping of TiO <sub>2</sub> nanorods: Effect of soaking time and doping on optical and charge transfer properties for enhanced SERS activity. <i>Materials Chemistry and Physics</i> , 2022, 278, 125642.	2.0	17
52	High-energy ion induced physical and surface modifications in antimony sulphide thin films. <i>Current Applied Physics</i> , 2010, 10, 1112-1116.	1.1	16
53	Study on synthesis of magnetic nanocomposite (Ni-Teflon) by swift heavy ion beam mixing. <i>Advanced Materials Letters</i> , 2012, 2, 71-75.	0.3	14
54	Surface evolution of titanium oxide thin film with swift heavy ion irradiation. <i>Radiation Effects and Defects in Solids</i> , 2011, 166, 571-577.	0.4	12

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55	130MeV Au ion irradiation induced dewetting on In <sub>2</sub> Te <sub>3</sub> thin film. Applied Surface Science, 2012, 258, 8558-8563.	3.1	12
56	PbTe formation by swift heavy ion beam induced interface mixing of Te/PbO bilayer. Nuclear Instruments & Methods in Physics Research B, 2012, 289, 22-27.	0.6	12
57	Improvement of opto-electro-structural properties of nanocrystalline CdS thin films induced by Au <sup>9+</sup> ion irradiation. Thin Solid Films, 2017, 626, 117-125.	0.8	11
58	Synthesis Of Ag Nanoparticles On Polymer Surface: 150 KeV Ar Ion Irradiation Of Ag-PVC Bilayer. Advanced Materials Letters, 2013, 4, 408-412.	0.3	11
59	Surface modifications of ultra-thin gold films by swift heavy ion irradiation. Indian Journal of Physics, 2010, 84, 1391-1397.	0.9	10
60	Investigation of swift heavy ion-induced mixing in metal/polymer systems. Radiation Effects and Defects in Solids, 2011, 166, 682-688.	0.4	9
61	Synthesis and studies of carbazole-based donor polymer for organic solar cell applications. Colloid and Polymer Science, 2018, 296, 1193-1203.	1.0	9
62	Facile Conversion of syn $\text{[Fe}^{\text{IV}}(\text{O})(\text{TMC})]^{2+}$ into the anti Isomer via Meunier's Oxo $\rightleftharpoons$ Hydroxo Tautomerism Mechanism. Angewandte Chemie - International Edition, 2019, 58, 1995-1999.	7.2	9
63	Formation of the syn isomer of $[\text{Fe}^{\text{IV}}(\text{O}^{\text{anti}})(\text{TMC})(\text{NCMe})]^{2+}$ in the reaction of Lewis acids with the side-on bound peroxo ligand in $[\text{Fe}^{\text{III}}(\text{O}^{\text{side-on}})(\text{TMC})]^{+}$ . Chemical Communications, 2016, 52, 8146-8148.	2.2	8
64	Recent Progress on Novel Ag $\rightleftharpoons$ TiO <sub>2</sub> Nanocomposites for Antibacterial Applications. Nanotechnology in the Life Sciences, 2019, , 121-143.	0.4	8
65	Design and chemical engineering of carbazole-based donor small molecules for organic solar cell applications. Journal of Materials Science: Materials in Electronics, 2018, 29, 14842-14851.	1.1	6
66	Unmasking Steps in Intramolecular Aromatic Hydroxylation by a Synthetic Nonheme Oxoiron(IV) Complex. Angewandte Chemie - International Edition, 2021, 60, 20991-20998.	7.2	6
67	Magnetization in MgO based multilayers fabricated by e-beam evaporation. AIP Conference Proceedings, 2012, , .	0.3	5
68	Facile Conversion of syn $\text{[Fe}^{\text{IV}}(\text{O})(\text{TMC})]^{2+}$ into the anti Isomer via Meunier's Oxo $\rightleftharpoons$ Hydroxo Tautomerism Mechanism. Angewandte Chemie, 2019, 131, 2017-2021.	1.6	4
69	Modifications Induced by Swift Heavy Ion Beam of 60 MeV Si <sup>5+</sup> in Poly(3-octylthiophene). Science of Advanced Materials, 2012, 4, 1024-1030.	0.1	4
70	Spectral studies on Ag <sup>8+</sup> ions irradiated LAHCl $\cdot$ H <sub>2</sub> O and LAHBr $\cdot$ H <sub>2</sub> O single crystals. Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy, 2011, 79, 884-888.	2.0	3
71	3D Graphene and Its Nanocomposites: From Synthesis to Multifunctional Applications. Carbon Nanostructures, 2019, , 363-388.	0.1	3
72	Interaction of Cu <sup>+1</sup> Salt and Polyaniline: Study of Optical Properties. Advanced Science, Engineering and Medicine, 2012, 4, 71-76.	0.3	2

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73	Synthesis of PbTe thermoelectric film by high energy heavy ion beam mixing. , 2011, , .		1
74	Chiral adsorption studied by field emission techniques: the case of alanine on platinum. New Journal of Chemistry, 2017, 41, 6638-6645.	1.4	1
75	Nanoscale Chiral Recognition Using Field Ion and Field Emission Microscopy. Microscopy and Microanalysis, 2017, 23, 626-627.	0.2	1
76	Surface Gold and Silver-Polymer Nanocomposite Self-Standing Films. , 2021, , 199-217.		1
77	Silver Nanostructures, Chemical Synthesis Methods, and Biomedical Applications. Nanotechnology in the Life Sciences, 2020, , 281-303.	0.4	0
78	Unmasking Steps in Intramolecular Aromatic Hydroxylation by a Synthetic Nonheme Oxoiron(IV) Complex. Angewandte Chemie, 2021, 133, 21159-21166.	1.6	0