

Prashant K Jain

List of Publications by Citations

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113
papers

21,171
citations

48
h-index

122
g-index

122
ext. papers

23,266
ext. citations

10.7
avg, IF

7.36
L-index

#	Paper	IF	Citations
113	Calculated absorption and scattering properties of gold nanoparticles of different size, shape, and composition: applications in biological imaging and biomedicine. <i>Journal of Physical Chemistry B</i> , 2006 , 110, 7238-48	3.4	3334
112	Noble metals on the nanoscale: optical and photothermal properties and some applications in imaging, sensing, biology, and medicine. <i>Accounts of Chemical Research</i> , 2008 , 41, 1578-86	24.3	3252
111	Plasmonic photothermal therapy (PPTT) using gold nanoparticles. <i>Lasers in Medical Science</i> , 2008 , 23, 217-28	3.1	1648
110	Localized surface plasmon resonances arising from free carriers in doped quantum dots. <i>Nature Materials</i> , 2011 , 10, 361-6	27	1283
109	On the Universal Scaling Behavior of the Distance Decay of Plasmon Coupling in Metal Nanoparticle Pairs: A Plasmon Ruler Equation. <i>Nano Letters</i> , 2007 , 7, 2080-2088	11.5	1240
108	Gold nanoparticles: interesting optical properties and recent applications in cancer diagnostics and therapy. <i>Nanomedicine</i> , 2007 , 2, 681-93	5.6	1046
107	Review of Some Interesting Surface Plasmon Resonance-enhanced Properties of Noble Metal Nanoparticles and Their Applications to Biosystems. <i>Plasmonics</i> , 2007 , 2, 107-118	2.4	973
106	Au nanoparticles target cancer. <i>Nano Today</i> , 2007 , 2, 18-29	17.9	881
105	Plasmonic coupling in noble metal nanostructures. <i>Chemical Physics Letters</i> , 2010 , 487, 153-164	2.5	688
104	Plasmon coupling in nanorod assemblies: optical absorption, discrete dipole approximation simulation, and exciton-coupling model. <i>Journal of Physical Chemistry B</i> , 2006 , 110, 18243-53	3.4	685
103	Cation exchange on the nanoscale: an emerging technique for new material synthesis, device fabrication, and chemical sensing. <i>Chemical Society Reviews</i> , 2013 , 42, 89-96	58.5	388
102	Determination of the minimum temperature required for selective photothermal destruction of cancer cells with the use of immunotargeted gold nanoparticles. <i>Photochemistry and Photobiology</i> , 2006 , 82, 412-7	3.6	324
101	Coupling of optical resonances in a compositionally asymmetric plasmonic nanoparticle dimer. <i>Nano Letters</i> , 2010 , 10, 2655-60	11.5	305
100	Universal scaling of plasmon coupling in metal nanostructures: extension from particle pairs to nanoshells. <i>Nano Letters</i> , 2007 , 7, 2854-8	11.5	261
99	Plasmonic Control of Multi-Electron Transfer and C-C Coupling in Visible-Light-Driven CO Reduction on Au Nanoparticles. <i>Nano Letters</i> , 2018 , 18, 2189-2194	11.5	238
98	Nanoheterostructure cation exchange: anionic framework conservation. <i>Journal of the American Chemical Society</i> , 2010 , 132, 9997-9	16.4	236
97	Surface plasmon resonance enhanced magneto-optics (SuPREMO): Faraday rotation enhancement in gold-coated iron oxide nanocrystals. <i>Nano Letters</i> , 2009 , 9, 1644-50	11.5	236

96	Noble metal nanoparticle pairs: effect of medium for enhanced nanosensing. <i>Nano Letters</i> , 2008 , 8, 4347-4352	11.5	233
95	Plasmon Resonances of Semiconductor Nanocrystals: Physical Principles and New Opportunities. <i>Journal of Physical Chemistry Letters</i> , 2014 , 5, 976-85	6.4	222
94	Ultrafast cooling of photoexcited electrons in gold nanoparticle-thiolated DNA conjugates involves the dissociation of the gold-thiol bond. <i>Journal of the American Chemical Society</i> , 2006 , 128, 2426-33	16.4	185
93	Surface Plasmon Coupling and Its Universal Size Scaling in Metal Nanostructures of Complex Geometry: Elongated Particle Pairs and Nanosphere Trimers. <i>Journal of Physical Chemistry C</i> , 2008 , 112, 4954-4960	3.8	178
92	Harvesting multiple electron-hole pairs generated through plasmonic excitation of Au nanoparticles. <i>Nature Chemistry</i> , 2018 , 10, 763-769	17.6	175
91	Surface Plasmon Resonance Sensitivity of Metal Nanostructures: Physical Basis and Universal Scaling in Metal Nanoshells. <i>Journal of Physical Chemistry C</i> , 2007 , 111, 17451-17454	3.8	157
90	Plasmon resonances for solar energy harvesting: A mechanistic outlook. <i>Nano Today</i> , 2015 , 10, 67-80	17.9	151
89	Activation Energies of Plasmonic Catalysts. <i>Nano Letters</i> , 2016 , 16, 3399-407	11.5	143
88	Opportunities and Challenges of Solar-Energy-Driven Carbon Dioxide to Fuel Conversion with Plasmonic Catalysts. <i>ACS Energy Letters</i> , 2017 , 2, 2058-2070	20.1	124
87	The effect of plasmon field on the coherent lattice phonon oscillation in electron-beam fabricated gold nanoparticle pairs. <i>Nano Letters</i> , 2007 , 7, 3227-34	11.5	123
86	Watching Visible Light-Driven CO Reduction on a Plasmonic Nanoparticle Catalyst. <i>ACS Nano</i> , 2018 , 12, 8330-8340	16.7	104
85	Ultrafast electron relaxation dynamics in coupled metal nanoparticles in aggregates. <i>Journal of Physical Chemistry B</i> , 2006 , 110, 136-42	3.4	104
84	Doped nanocrystals as plasmonic probes of redox chemistry. <i>Angewandte Chemie - International Edition</i> , 2013 , 52, 13671-5	16.4	103
83	Size Dependence of a Temperature-Induced Solid-Solid Phase Transition in Copper(I) Sulfide. <i>Journal of Physical Chemistry Letters</i> , 2011 , 2, 2402-2406	6.4	102
82	Plasmonic photosynthesis of C-C hydrocarbons from carbon dioxide assisted by an ionic liquid. <i>Nature Communications</i> , 2019 , 10, 2022	17.4	86
81	Near-field manipulation of spectroscopic selection rules on the nanoscale. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012 , 109, 8016-9	11.5	82
80	Taking the Heat Off of Plasmonic Chemistry. <i>Journal of Physical Chemistry C</i> , 2019 , 123, 24347-24351	3.8	73
79	Quantitative analysis of localized surface plasmons based on molecular probing. <i>ACS Nano</i> , 2010 , 4, 4579-86	16.6	68

78	Synergy between Plasmonic and Electrocatalytic Activation of Methanol Oxidation on Palladium-Silver Alloy Nanotubes. <i>Angewandte Chemie - International Edition</i> , 2019 , 58, 8794-8798	16.4	66
77	A DFT-Based Study of the Low-Energy Electronic Structures and Properties of Small Gold Clusters. <i>Structural Chemistry</i> , 2005 , 16, 421-426	1.8	64
76	Plasmons in Photocharged ZnO Nanocrystals Revealing the Nature of Charge Dynamics. <i>Journal of Physical Chemistry Letters</i> , 2013 , 4, 3024-3030	6.4	61
75	Highly luminescent nanocrystals from removal of impurity atoms residual from ion-exchange synthesis. <i>Angewandte Chemie - International Edition</i> , 2012 , 51, 2387-90	16.4	60
74	Identification of a critical intermediate in galvanic exchange reactions by single-nanoparticle-resolved kinetics. <i>Angewandte Chemie - International Edition</i> , 2014 , 53, 2867-72	16.4	59
73	Probing redox photocatalysis of trapped electrons and holes on single Sb-doped titania nanorod surfaces. <i>Journal of the American Chemical Society</i> , 2012 , 134, 3946-9	16.4	55
72	Spatially indirect emission in a luminescent nanocrystal molecule. <i>Nano Letters</i> , 2011 , 11, 2358-62	11.5	55
71	The Ligand Shell as an Energy Barrier in Surface Reactions on Transition Metal Nanoparticles. <i>Journal of the American Chemical Society</i> , 2016 , 138, 6765-73	16.4	53
70	Co-operativity in a nanocrystalline solid-state transition. <i>Nature Communications</i> , 2013 , 4, 2933	17.4	51
69	Size Dependence of the Plasmonic Near-Field Measured via Single-Nanoparticle Photoimaging. <i>Journal of Physical Chemistry C</i> , 2013 , 117, 10669-10676	3.8	51
68	Plasmonics with Doped Quantum Dots. <i>Israel Journal of Chemistry</i> , 2012 , 52, 983-991	3.4	50
67	Liquid-like cationic sub-lattice in copper selenide clusters. <i>Nature Communications</i> , 2017 , 8, 14514	17.4	49
66	The impact of the competence quorum sensing system on <i>Streptococcus pneumoniae</i> biofilms varies depending on the experimental model. <i>BMC Microbiology</i> , 2011 , 11, 75	4.5	49
65	Plasmon-Enhanced Multicarrier Photocatalysis. <i>Nano Letters</i> , 2018 , 18, 4370-4376	11.5	46
64	Single-nanocrystal reaction trajectories reveal sharp cooperative transitions. <i>Nano Letters</i> , 2014 , 14, 987-92	11.5	45
63	Plasmon-in-a-Box: On the Physical Nature of Few-Carrier Plasmon Resonances. <i>Journal of Physical Chemistry Letters</i> , 2014 , 5, 3112-9	6.4	44
62	Controlling localized surface plasmon resonances in GeTe nanoparticles using an amorphous-to-crystalline phase transition. <i>Physical Review Letters</i> , 2013 , 111, 037401	7.4	41
61	Unified Theoretical Framework for Realizing Diverse Regimes of Strong Coupling between Plasmons and Electronic Transitions. <i>Journal of Physical Chemistry C</i> , 2014 , 118, 2710-2717	3.8	40

60	A regenerable oxide-based H ₂ S adsorbent with nanofibrous morphology. <i>Nature Nanotechnology</i> , 2012 , 7, 810-5	28.7	40
59	The Nature of Plasmonically Assisted Hot-Electron Transfer in a Donor-Bridge-Acceptor Complex. <i>ACS Catalysis</i> , 2017 , 7, 4360-4365	13.1	35
58	In Situ Single-Nanoparticle Spectroscopy Study of Bimetallic Nanostructure Formation. <i>Angewandte Chemie - International Edition</i> , 2016 , 55, 9979-83	16.4	35
57	Selective Branching of Plasmonic Photosynthesis into Hydrocarbon Production and Hydrogen Generation. <i>ACS Energy Letters</i> , 2019 , 4, 2295-2300	20.1	33
56	Mechanistic Understanding of Plasmon-Enhanced Electrochemistry. <i>Journal of Physical Chemistry C</i> , 2019 , 123, 29360-29369	3.8	32
55	The Chemical Potential of Plasmonic Excitations. <i>Angewandte Chemie - International Edition</i> , 2020 , 59, 2085-2088	16.4	31
54	In Situ formation of catalytically active graphene in ethylene photo-epoxidation. <i>Nature Communications</i> , 2018 , 9, 3056	17.4	30
53	Luminescence blinking of a reacting quantum dot. <i>Nano Letters</i> , 2015 , 15, 2504-9	11.5	28
52	Light-Induced Voltages in Catalysis by Plasmonic Nanostructures. <i>Accounts of Chemical Research</i> , 2020 , 53, 1773-1781	24.3	26
51	Synergy between Plasmonic and Electrocatalytic Activation of Methanol Oxidation on Palladium-Silver Alloy Nanotubes. <i>Angewandte Chemie</i> , 2019 , 131, 8886-8890	3.6	24
50	Nanoscale optical imaging in chemistry. <i>Chemical Society Reviews</i> , 2020 ,	58.5	24
49	A rich catalog of C-C bonded species formed in CO reduction on a plasmonic photocatalyst. <i>Nature Communications</i> , 2021 , 12, 2612	17.4	23
48	Using plasmonically generated carriers as redox equivalents. <i>MRS Bulletin</i> , 2020 , 45, 43-48	3.2	21
47	Off-Resonant Optical Excitation of Gold Nanorods: Nanoscale Imprint of Polarization Surface Charge Distribution. <i>Journal of Physical Chemistry Letters</i> , 2011 , 2, 7-11	6.4	20
46	Ion Exchange Transformation of Magic-Sized Clusters. <i>Chemistry of Materials</i> , 2016 , 28, 8391-8398	9.6	19
45	Plasmonic Spheroidal Metal Nanoshells Showing Larger Tunability and Stronger Near Fields Than Their Spherical Counterparts: An Effect of Enhanced Plasmon Coupling. <i>Journal of Physical Chemistry Letters</i> , 2011 , 2, 374-378	6.4	19
44	Structural Dynamics of the Oxygen-Evolving Complex of Photosystem II in Water-Splitting Action. <i>Journal of the American Chemical Society</i> , 2018 , 140, 5853-5859	16.4	16
43	Kinetics of self-assembled monolayer formation on individual nanoparticles. <i>Physical Chemistry Chemical Physics</i> , 2016 , 18, 23990-7	3.6	16

42	Ammonia Oxidation Enhanced by Photopotential Generated by Plasmonic Excitation of a Bimetallic Electrocatalyst. <i>Angewandte Chemie - International Edition</i> , 2020 , 59, 18430-18434	16.4	15
41	Synthesis of Monodisperse Palladium Nanoclusters Using Metal-Organic Frameworks as Sacrificial Templates. <i>ChemNanoMat</i> , 2016 , 2, 810-815	3.5	15
40	Regioselective plasmonic coupling in metamolecular analogs of benzene derivatives. <i>Nano Letters</i> , 2015 , 15, 542-8	11.5	14
39	Polarization-Dependent Surface-Enhanced Raman Scattering Activity of Anisotropic Plasmonic Nanorattles. <i>Journal of Physical Chemistry C</i> , 2016 , 120, 16899-16906	3.8	14
38	Mechanism of sulfidation of small zinc oxide nanoparticles.. <i>RSC Advances</i> , 2018 , 8, 34476-34482	3.7	14
37	Galvanic reactions at the single-nanoparticle level: tuning between mechanistic extremes. <i>Journal of Materials Chemistry A</i> , 2017 , 5, 11940-11948	13	13
36	In-situ electron microscopy mapping of an order-disorder transition in a superionic conductor. <i>Nature Communications</i> , 2019 , 10, 1505	17.4	13
35	Ultrashort, Angstrom-Scale Decay of Surface-Enhanced Raman Scattering at Hot Spots. <i>Journal of Physical Chemistry C</i> , 2016 , 120, 24973-24981	3.8	13
34	Doped Nanocrystals as Plasmonic Probes of Redox Chemistry. <i>Angewandte Chemie</i> , 2013 , 125, 13916-13920	3.7	13
33	Control of Chemical Reaction Pathways by Light-Matter Coupling. <i>Annual Review of Physical Chemistry</i> , 2021 , 72, 423-443	15.7	13
32	One-to-One Correlation between Structure and Optical Response in a Heterogeneous Distribution of Plasmonic Constructs. <i>Journal of Physical Chemistry C</i> , 2015 , 119, 24086-24094	3.8	12
31	Roadmap on quantum nanotechnologies. <i>Nanotechnology</i> , 2021 , 32, 162003	3.4	12
30	A Non-Natural Wurtzite Polymorph of HgSe: A Potential 3D Topological Insulator. <i>Chemistry of Materials</i> , 2017 , 29, 6356-6366	9.6	11
29	Strain Stabilization of Superionicity in Copper and Lithium Selenides. <i>Journal of Physical Chemistry Letters</i> , 2018 , 9, 1200-1205	6.4	10
28	Identification of a Critical Intermediate in Galvanic Exchange Reactions by Single-Nanoparticle-Resolved Kinetics. <i>Angewandte Chemie</i> , 2014 , 126, 2911-2916	3.6	10
27	Highly Luminescent Nanocrystals From Removal of Impurity Atoms Residual From Ion-Exchange Synthesis. <i>Angewandte Chemie</i> , 2012 , 124, 2437-2440	3.6	10
26	Comment on "Thermal effects - an alternative mechanism for plasmon-assisted photocatalysis" by Y. Dubi, I. W. Un and Y. Sivan, , 2020, , 5017. <i>Chemical Science</i> , 2020 , 11, 9022-9023	9.4	10
25	Catalytic activation of a solid oxide in electronic contact with gold nanoparticles. <i>Angewandte Chemie - International Edition</i> , 2015 , 54, 992-7	16.4	8

24	STM Imaging of Localized Surface Plasmons on Individual Gold Nanoislands. <i>Journal of Physical Chemistry Letters</i> , 2018 , 9, 1970-1976	6.4	8
23	Spectral Heterogeneity of Hybrid Lead Halide Perovskites Demystified by Spatially Resolved Emission. <i>Journal of Physical Chemistry C</i> , 2017 , 121, 19392-19400	3.8	8
22	The Chemical Potential of Plasmonic Excitations. <i>Angewandte Chemie</i> , 2020 , 132, 2101-2104	3.6	8
21	Isotope Effects in Plasmonic Photosynthesis. <i>Angewandte Chemie - International Edition</i> , 2020 , 59, 22480-22483	16.4	7
20	Unconventional Long-Range Cation Ordering in Copper Selenide Nanocrystals. <i>Chemistry of Materials</i> , 2019 , 31, 68-72	9.6	7
19	Lithiation of Copper Selenide Nanocrystals. <i>Angewandte Chemie - International Edition</i> , 2018 , 57, 9315-9319	16.4	6
18	Photoinduced Electron and Energy Transfer Pathways and Photocatalytic Mechanisms in Hybrid Plasmonic Photocatalysis. <i>Advanced Optical Materials</i> , 2018 , 10, 2101128	8.1	6
17	One-Dimensional Cuprous Selenide Nanostructures with Switchable Plasmonic and Super-ionic Phase Attributes. <i>Angewandte Chemie - International Edition</i> , 2019 , 58, 8410-8415	16.4	5
16	In Situ Single-Nanoparticle Spectroscopy Study of Bimetallic Nanostructure Formation. <i>Angewandte Chemie</i> , 2016 , 128, 10133-10137	3.6	5
15	Room-temperature superionic-phase nanocrystals synthesized with a twinned lattice. <i>Nature Communications</i> , 2019 , 10, 3285	17.4	5
14	Ammonia Oxidation Enhanced by Photopotential Generated by Plasmonic Excitation of a Bimetallic Electrocatalyst. <i>Angewandte Chemie</i> , 2020 , 132, 18588-18592	3.6	5
13	Revealing the Thermodynamic Properties of Elementary Chemical Reactions at the Single-Molecule Level. <i>Journal of Physical Chemistry B</i> , 2019 , 123, 6253-6259	3.4	4
12	Synergistic Photochemistry of Alcohols Catalyzed by Plasmonic Nanoparticles and a Metal Complex. <i>ACS Energy Letters</i> , 2021 , 6, 1980-1989	20.1	3
11	Physical models for energy-converting nanofluids. <i>Physics Today</i> , 2018 , 71, 10-11	0.9	2
10	Catalytic Activation of a Solid Oxide in Electronic Contact With Gold Nanoparticles. <i>Angewandte Chemie</i> , 2015 , 127, 1006-1011	3.6	2
9	Isotope Effects in Plasmonic Photosynthesis. <i>Angewandte Chemie</i> , 2020 , 132, 22666-22669	3.6	2
8	Crystal Symmetry, Strain, and Facet-Dependent Nature of Topological Surface States in Mercury Selenide. <i>Journal of Physical Chemistry C</i> , 2020 , 124, 10344-10352	3.8	1
7	Lithiation of Copper Selenide Nanocrystals. <i>Angewandte Chemie</i> , 2018 , 130, 9459-9463	3.6	1

- 6 Ab Initio Investigation of Cooperativity in Ion Exchange. *Journal of Physical Chemistry C*, **2020**, 124, 25615-25620
- 5 Motion of Defects in Ion-Conducting Nanowires. *Nano Letters*, **2021**, 21, 556-561 11.5 1
- 4 Stochastic Noise in Single-Nanoparticle Catalysis. *Journal of Physical Chemistry C*, **2021**, 125, 17734-17743 11.8 1
- 3 Room-temperature catalyst-free methane chlorination. *Cell Reports Physical Science*, **2021**, 2, 100545 6.1 1
- 2 One-Dimensional Cuprous Selenide Nanostructures with Switchable Plasmonic and Super-ionic Phase Attributes. *Angewandte Chemie*, **2019**, 131, 8498 3.6
- 1 Plasmonic Catalysis, Photoredox Chemistry, and Photosynthesis **2021**, 137-164