# Prashant K Jain

List of Publications by Year
in descending order

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Version: 2024-02-01

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|---|---|---|---|
| 113 papers | 25,139 citations | 36203 51 h-index | 19690 117 g-index |
| 122 all docs | 122 docs citations | 122 times ranked | 28249 citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Calculated Absorption and Scattering Properties of Gold Nanoparticles of Different Size, Shape, and Composition:Â Applications in Biological Imaging and Biomedicine. Journal of Physical Chemistry B, 2006, 110, 7238-7248. | 1.2 | 3,896 |
| 2 | Noble Metals on the Nanoscale: Optical and Photothermal Properties and Some Applications in Imaging, Sensing, Biology, and Medicine. Accounts of Chemical Research, 2008, 41, 1578-1586. | 7.6 | 3,680 |
| 3 | Plasmonic photothermal therapy (PPTT) using gold nanoparticles. Lasers in Medical Science, 2008, 23, 217-228. | 1.0 | 1,950 |
| 4 | Localized surface plasmon resonances arising from free carriers in doped quantum dots. Nature Materials, 2011, 10, 361-366. | 13.3 | 1,520 |
| 5 | On the Universal Scaling Behavior of the Distance Decay of Plasmon Coupling in Metal Nanoparticle Pairs: A Plasmon Ruler Equation. Nano Letters, 2007, 7, 2080-2088. | 4.5 | 1,415 |
| 6 | Gold nanoparticles: interesting optical properties and recent applications in cancer diagnostics and therapy. Nanomedicine, 2007, 2, 681-693. | 1.7 | 1,231 |
| 7 | Review of Some Interesting Surface Plasmon Resonance-enhanced Properties of Noble Metal Nanoparticles and Their Applications to Biosystems. Plasmonics, 2007, 2, 107-118. | 1.8 | 1,119 |
| 8 | Au nanoparticles target cancer. Nano Today, 2007, 2, 18-29. | 6.2 | 995 |
| 9 | Plasmonic coupling in noble metal nanostructures. Chemical Physics Letters, 2010, 487, 153-164. | 1.2 | 798 |
| 10 | Plasmon Coupling in Nanorod Assemblies:Â Optical Absorption, Discrete Dipole Approximation Simulation, and Exciton-Coupling Model. Journal of Physical Chemistry B, 2006, 110, 18243-18253. | 1.2 | 754 |
| 11 | Cation exchange on the nanoscale: an emerging technique for new material synthesis, device fabrication, and chemical sensing. Chemical Society Reviews, 2013, 42, 89-96. | 18.7 | 443 |
| 12 | Determination of the Minimum Temperature Required for Selective Photothermal Destruction of Cancer Cells with the Use of Immunotargeted Gold Nanoparticles. Photochemistry and Photobiology, 2006, 82, 412. | 1.3 | 369 |
| 13 | Plasmonic Control of Multi-Electron Transfer and Câ€“C Coupling in Visible-Light-Driven CO<sub>2</sub> Reduction on Au Nanoparticles. Nano Letters, 2018, 18, 2189-2194. | 4.5 | 358 |
| 14 | Coupling of Optical Resonances in a Compositionally Asymmetric Plasmonic Nanoparticle Dimer. Nano Letters, 2010, 10, 2655-2660. | 4.5 | 351 |
| 15 | Universal Scaling of Plasmon Coupling in Metal Nanostructures:â€‰ Extension from Particle Pairs to Nanoshells. Nano Letters, 2007, 7, 2854-2858. | 4.5 | 285 |
| 16 | Surface Plasmon Resonance Enhanced Magneto-Optics (SuPREMO): Faraday Rotation Enhancement in Gold-Coated Iron Oxide Nanocrystals. Nano Letters, 2009, 9, 1644-1650. | 4.5 | 281 |
| 17 | Harvesting multiple electronâ€“hole pairs generated through plasmonic excitation of Au nanoparticles. Nature Chemistry, 2018, 10, 763-769. | 6.6 | 278 |
| 18 | Noble Metal Nanoparticle Pairs: Effect of Medium for Enhanced Nanosensing. Nano Letters, 2008, 8, 4347-4352. | 4.5 | 258 |

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|---|---|---|---|
| 19 | Plasmon Resonances of Semiconductor Nanocrystals: Physical Principles and New Opportunities. Journal of Physical Chemistry Letters, 2014, 5, 976-985. | 2.1 | 258 |
| 20 | Nanoheterostructure Cation Exchange: Anionic Framework Conservation. Journal of the American Chemical Society, 2010, 132, 9997-9999. | 6.6 | 253 |
| 21 | Ultrafast Cooling of Photoexcited Electrons in Gold Nanoparticleâ^'Thiolated DNA Conjugates Involves the Dissociation of the Goldâ^'Thiol Bond. Journal of the American Chemical Society, 2006, 128, 2426-2433. | 6.6 | 211 |
| 22 | Surface Plasmon Coupling and Its Universal Size Scaling in Metal Nanostructures of Complex Geometry:â€‰ Elongated Particle Pairs and Nanosphere Trimers. Journal of Physical Chemistry C, 2008, 112, 4954-4960. | 1.5 | 195 |
| 23 | Plasmon resonances for solar energy harvesting: A mechanistic outlook. Nano Today, 2015, 10, 67-80. | 6.2 | 190 |
| 24 | Activation Energies of Plasmonic Catalysts. Nano Letters, 2016, 16, 3399-3407. | 4.5 | 190 |
| 25 | Surface Plasmon Resonance Sensitivity of Metal Nanostructures:â€‰ Physical Basis and Universal Scaling in Metal Nanoshells. Journal of Physical Chemistry C, 2007, 111, 17451-17454. | 1.5 | 170 |
| 26 | Opportunities and Challenges of Solar-Energy-Driven Carbon Dioxide to Fuel Conversion with Plasmonic Catalysts. ACS Energy Letters, 2017, 2, 2058-2070. | 8.8 | 168 |
| 27 | Watching Visible Light-Driven CO<sub>2</sub> Reduction on a Plasmonic Nanoparticle Catalyst. ACS Nano, 2018, 12, 8330-8340. | 7.3 | 148 |
| 28 | Plasmonic photosynthesis of C1â€“C3 hydrocarbons from carbon dioxide assisted by an ionic liquid. Nature Communications, 2019, 10, 2022. | 5.8 | 142 |
| 29 | The Effect of Plasmon Field on the Coherent Lattice Phonon Oscillation in Electron-Beam Fabricated Gold Nanoparticle Pairs. Nano Letters, 2007, 7, 3227-3234. | 4.5 | 141 |
| 30 | Taking the Heat Off of Plasmonic Chemistry. Journal of Physical Chemistry C, 2019, 123, 24347-24351. | 1.5 | 123 |
| 31 | Doped Nanocrystals as Plasmonic Probes of Redox Chemistry. Angewandte Chemie - International Edition, 2013, 52, 13671-13675. | 7.2 | 120 |
| 32 | Synergy between Plasmonic and Electrocatalytic Activation of Methanol Oxidation on Palladiumâ€“Silver Alloy Nanotubes. Angewandte Chemie - International Edition, 2019, 58, 8794-8798. | 7.2 | 120 |
| 33 | Ultrafast Electron Relaxation Dynamics in Coupled Metal Nanoparticles in Aggregates. Journal of Physical Chemistry B, 2006, 110, 136-142. | 1.2 | 112 |
| 34 | Size Dependence of a Temperature-Induced Solidâ€“Solid Phase Transition in Copper(I) Sulfide. Journal of Physical Chemistry Letters, 2011, 2, 2402-2406. | 2.1 | 111 |
| 35 | Near-field manipulation of spectroscopic selection rules on the nanoscale. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 8016-8019. | 3.3 | 92 |
| 36 | A DFT-Based Study of the Low-Energy Electronic Structures and Properties of Small Gold Clusters. Structural Chemistry, 2005, 16, 421-426. | 1.0 | 80 |

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|---|---|---|---|
| 37 | Quantitative Analysis of Localized Surface Plasmons Based on Molecular Probing. ACS Nano, 2010, 4, 4579-4586. | 7.3 | 78 |
| 38 | The impact of the competence quorum sensing system on Streptococcus pneumoniaebiofilms varies depending on the experimental model. BMC Microbiology, 2011, 11, 75. | 1.3 | 74 |
| 39 | A rich catalog of Câ€“C bonded species formed in CO2 reduction on a plasmonic photocatalyst. Nature Communications, 2021, 12, 2612. | 5.8 | 73 |
| 40 | Liquid-like cationic sub-lattice in copper selenide clusters. Nature Communications, 2017, 8, 14514. | 5.8 | 71 |
| 41 | Plasmons in Photocharged ZnO Nanocrystals Revealing the Nature of Charge Dynamics. Journal of Physical Chemistry Letters, 2013, 4, 3024-3030. | 2.1 | 69 |
| 42 | Size Dependence of the Plasmonic Near-Field Measured via Single-Nanoparticle Photoimaging. Journal of Physical Chemistry C, 2013, 117, 10669-10676. | 1.5 | 68 |
| 43 | Identification of a Critical Intermediate in Galvanic Exchange Reactions by Singleâ€Nanoparticleâ€Resolved Kinetics. Angewandte Chemie - International Edition, 2014, 53, 2867-2872. | 7.2 | 68 |
| 44 | Highly Luminescent Nanocrystals From Removal of Impurity Atoms Residual From Ionâ€Exchange Synthesis. Angewandte Chemie - International Edition, 2012, 51, 2387-2390. | 7.2 | 66 |
| 45 | Probing Redox Photocatalysis of Trapped Electrons and Holes on Single Sb-doped Titania Nanorod Surfaces. Journal of the American Chemical Society, 2012, 134, 3946-3949. | 6.6 | 64 |
| 46 | The Ligand Shell as an Energy Barrier in Surface Reactions on Transition Metal Nanoparticles. Journal of the American Chemical Society, 2016, 138, 6765-6773. | 6.6 | 61 |
| 47 | Plasmon-Enhanced Multicarrier Photocatalysis. Nano Letters, 2018, 18, 4370-4376. | 4.5 | 58 |
| 48 | Spatially Indirect Emission in a Luminescent Nanocrystal Molecule. Nano Letters, 2011, 11, 2358-2362. | 4.5 | 57 |
| 49 | Co-operativity in a nanocrystalline solid-state transition. Nature Communications, 2013, 4, 2933. | 5.8 | 57 |
| 50 | Light-Induced Voltages in Catalysis by Plasmonic Nanostructures. Accounts of Chemical Research, 2020, 53, 1773-1781. | 7.6 | 56 |
| 51 | Mechanistic Understanding of Plasmon-Enhanced Electrochemistry. Journal of Physical Chemistry C, 2019, 123, 29360-29369. | 1.5 | 54 |
| 52 | The Nature of Plasmonically Assisted Hot-Electron Transfer in a Donorâ€“Bridgeâ€“Acceptor Complex. ACS Catalysis, 2017, 7, 4360-4365. | 5.5 | 53 |
| 53 | Plasmonics with Doped Quantum Dots. Israel Journal of Chemistry, 2012, 52, 983-991. | 1.0 | 52 |
| 54 | Single-Nanocrystal Reaction Trajectories Reveal Sharp Cooperative Transitions. Nano Letters, 2014, 14, 987-992. | 4.5 | 52 |

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|---|---|---|---|
| 55 | The Chemical Potential of Plasmonic Excitations. Angewandte Chemie - International Edition, 2020, 59, 2085-2088. | 7.2 | 51 |
| 56 | Unified Theoretical Framework for Realizing Diverse Regimes of Strong Coupling between Plasmons and Electronic Transitions. Journal of Physical Chemistry C, 2014, 118, 2710-2717. | 1.5 | 50 |
| 57 | Plasmon-in-a-Box: On the Physical Nature of Few-Carrier Plasmon Resonances. Journal of Physical Chemistry Letters, 2014, 5, 3112-3119. | 2.1 | 49 |
| 58 | Controlling Localized Surface Plasmon Resonances in GeTe Nanoparticles Using an Amorphous-to-Crystalline Phase Transition. Physical Review Letters, 2013, 111, 037401. | 2.9 | 48 |
| 59 | Roadmap on quantum nanotechnologies. Nanotechnology, 2021, 32, 162003. | 1.3 | 45 |
| 60 | A regenerable oxide-based H2S adsorbent with nanofibrous morphology. Nature Nanotechnology, 2012, 7, 810-815. | 15.6 | 44 |
| 61 | Selective Branching of Plasmonic Photosynthesis into Hydrocarbon Production and Hydrogen Generation. ACS Energy Letters, 2019, 4, 2295-2300. | 8.8 | 44 |
| 62 | In Situ Singleâ€Nanoparticle Spectroscopy Study of Bimetallic Nanostructure Formation. Angewandte Chemie - International Edition, 2016, 55, 9979-9983. | 7.2 | 42 |
| 63 | Ammonia Oxidation Enhanced by Photopotential Generated by Plasmonic Excitation of a Bimetallic Electrocatalyst. Angewandte Chemie - International Edition, 2020, 59, 18430-18434. | 7.2 | 42 |
| 64 | Nanoscale optical imaging in chemistry. Chemical Society Reviews, 2020, 49, 6087-6112. | 18.7 | 40 |
| 65 | Plasmon-Assisted Ammonia Electrosynthesis. Journal of the American Chemical Society, 2022, 144, 10743-10751. | 6.6 | 38 |
| 66 | InÂsitu formation of catalytically active graphene in ethylene photo-epoxidation. Nature Communications, 2018, 9, 3056. | 5.8 | 37 |
| 67 | Luminescence Blinking of a Reacting Quantum Dot. Nano Letters, 2015, 15, 2504-2509. | 4.5 | 33 |
| 68 | Synergy between Plasmonic and Electrocatalytic Activation of Methanol Oxidation on Palladiumâ€“Silver Alloy Nanotubes. Angewandte Chemie, 2019, 131, 8886-8890. | 1.6 | 33 |
| 69 | Control of Chemical Reaction Pathways by Lightâ€“Matter Coupling. Annual Review of Physical Chemistry, 2021, 72, 423-443. | 4.8 | 30 |
| 70 | Ion Exchange Transformation of Magic-Sized Clusters. Chemistry of Materials, 2016, 28, 8391-8398. | 3.2 | 27 |
| 71 | Using plasmonically generated carriers as redox equivalents. MRS Bulletin, 2020, 45, 43-48. | 1.7 | 25 |
| 72 | Photoinduced Electron and Energy Transfer Pathways and Photocatalytic Mechanisms in Hybrid Plasmonic Photocatalysis. Advanced Optical Materials, 2021, 9, 2101128. | 3.6 | 25 |

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| 73 | Plasmonic Spheroidal Metal Nanoshells Showing Larger Tunability and Stronger Near Fields Than Their Spherical Counterparts: An Effect of Enhanced Plasmon Coupling. Journal of Physical Chemistry Letters, 2011, 2, 374-378. | 2.1 | 23 |
| 74 | Mechanism of sulfidation of small zinc oxide nanoparticles. RSC Advances, 2018, 8, 34476-34482. | 1.7 | 23 |
| 75 | Comment on â€œThermal effects â€“ an alternative mechanism for plasmon-assisted photocatalysisâ€•by Y. Dubi, I. W. Un and Y. Sivan, Chem. Sci., 2020, 11, 5017. Chemical Science, 2020, 11, 9022-9023. | 3.7 | 23 |
| 76 | Off-Resonant Optical Excitation of Gold Nanorods: Nanoscale Imprint of Polarization Surface Charge Distribution. Journal of Physical Chemistry Letters, 2011, 2, 7-11. | 2.1 | 22 |
| 77 | Structural Dynamics of the Oxygen-Evolving Complex of Photosystem II in Water-Splitting Action. Journal of the American Chemical Society, 2018, 140, 5853-5859. | 6.6 | 21 |
| 78 | In-situ electron microscopy mapping of an order-disorder transition in a superionic conductor. Nature Communications, 2019, 10, 1505. | 5.8 | 19 |
| 79 | Isotope Effects in Plasmonic Photosynthesis. Angewandte Chemie - International Edition, 2020, 59, 22480-22483. | 7.2 | 19 |
| 80 | Synthesis of Monodisperse Palladium Nanoclusters Using Metalâ€“Organic Frameworks as Sacrificial Templates. ChemNanoMat, 2016, 2, 810-815. | 1.5 | 18 |
| 81 | Polarization-Dependent Surface-Enhanced Raman Scattering Activity of Anisotropic Plasmonic Nanorattles. Journal of Physical Chemistry C, 2016, 120, 16899-16906. | 1.5 | 18 |
| 82 | Kinetics of self-assembled monolayer formation on individual nanoparticles. Physical Chemistry Chemical Physics, 2016, 18, 23990-23997. | 1.3 | 16 |
| 83 | Regioselective Plasmonic Coupling in Metamolecular Analogs of Benzene Derivatives. Nano Letters, 2015, 15, 542-548. | 4.5 | 15 |
| 84 | Galvanic reactions at the single-nanoparticle level: tuning between mechanistic extremes. Journal of Materials Chemistry A, 2017, 5, 11940-11948. | 5.2 | 15 |
| 85 | Ultrashort, Angstrom-Scale Decay of Surface-Enhanced Raman Scattering at Hot Spots. Journal of Physical Chemistry C, 2016, 120, 24973-24981. | 1.5 | 14 |
| 86 | Synergistic Photochemistry of Alcohols Catalyzed by Plasmonic Nanoparticles and a Metal Complex. ACS Energy Letters, 2021, 6, 1980-1989. | 8.8 | 14 |
| 87 | One-to-One Correlation between Structure and Optical Response in a Heterogeneous Distribution of Plasmonic Constructs. Journal of Physical Chemistry C, 2015, 119, 24086-24094. | 1.5 | 13 |
| 88 | Room-temperature superionic-phase nanocrystals synthesized with a twinned lattice. Nature Communications, 2019, 10, 3285. | 5.8 | 13 |
| 89 | Ammonia Oxidation Enhanced by Photopotential Generated by Plasmonic Excitation of a Bimetallic Electrocatalyst. Angewandte Chemie, 2020, 132, 18588-18592. | 1.6 | 13 |
| 90 | A Non-Natural Wurtzite Polymorph of HgSe: A Potential 3D Topological Insulator. Chemistry of Materials, 2017, 29, 6356-6366. | 3.2 | 12 |

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| 91 | Strain Stabilization of Superionicity in Copper and Lithium Selenides. Journal of Physical Chemistry Letters, 2018, 9, 1200-1205. | 2.1 | 12 |
| 92 | Catalytic Activation of a Solid Oxide in Electronic Contact With Gold Nanoparticles. Angewandte Chemie - International Edition, 2015, 54, 992-997. | 7.2 | 11 |
| 93 | STM Imaging of Localized Surface Plasmons on Individual Gold Nanoislands. Journal of Physical Chemistry Letters, 2018, 9, 1970-1976. | 2.1 | 11 |
| 94 | Lithiation of Copper Selenide Nanocrystals. Angewandte Chemie - International Edition, 2018, 57, 9315-9319. | 7.2 | 11 |
| 95 | The Chemical Potential of Plasmonic Excitations. Angewandte Chemie, 2020, 132, 2101-2104. | 1.6 | 11 |
| 96 | Spectral Heterogeneity of Hybrid Lead Halide Perovskites Demystified by Spatially Resolved Emission. Journal of Physical Chemistry C, 2017, 121, 19392-19400. | 1.5 | 10 |
| 97 | Oneâ€Dimensional Cuprous Selenide Nanostructures with Switchable Plasmonic and Superâ€ionic Phase Attributes. Angewandte Chemie - International Edition, 2019, 58, 8410-8415. | 7.2 | 9 |
| 98 | Unconventional Long-Range Cation Ordering in Copper Selenide Nanocrystals. Chemistry of Materials, 2019, 31, 68-72. | 3.2 | 8 |
| 99 | In Situ Singleâ€Nanoparticle Spectroscopy Study of Bimetallic Nanostructure Formation. Angewandte Chemie, 2016, 128, 10133-10137. | 1.6 | 7 |
| 100 | Plasmon Resonances and Structures of Chalcogenide Alloy Nanocrystals. Chemistry of Materials, 2022, 34, 4992-4999. | 3.2 | 6 |
| 101 | Revealing the Thermodynamic Properties of Elementary Chemical Reactions at the Single-Molecule Level. Journal of Physical Chemistry B, 2019, 123, 6253-6259. | 1.2 | 5 |
| 102 | Motion of Defects in Ion-Conducting Nanowires. Nano Letters, 2021, 21, 556-561. | 4.5 | 5 |
| 103 | Isotope Effects in Plasmonic Photosynthesis. Angewandte Chemie, 2020, 132, 22666-22669. | 1.6 | 4 |
| 104 | Stochastic Noise in Single-Nanoparticle Catalysis. Journal of Physical Chemistry C, 2021, 125, 17734-17741. | 1.5 | 4 |
| 105 | Lithiation of Copper Selenide Nanocrystals. Angewandte Chemie, 2018, 130, 9459-9463. | 1.6 | 3 |
| 106 | Physical models for energy-converting nanofluids. Physics Today, 2018, 71, 10-11. | 0.3 | 2 |
| 107 | Ab Initio Investigation of Cooperativity in Ion Exchange. Journal of Physical Chemistry C, 2020, 124, 25615-25620. | 1.5 | 2 |
| 108 | Crystal Symmetry, Strain, and Facet-Dependent Nature of Topological Surface States in Mercury Selenide. Journal of Physical Chemistry C, 2020, 124, 10344-10352. | 1.5 | 2 |

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| 109 | Room-temperature catalyst-free methane chlorination. Cell Reports Physical Science, 2021, 2, 100545. | 2.8 | 2 |
| 110 | Oneâ€Dimensional Cuprous Selenide Nanostructures with Switchable Plasmonic and Superâ€ionic Phase Attributes. Angewandte Chemie, 2019, 131, 8498-8503. | 1.6 | 1 |
| 111 | (Invited) Multi-Electron Harvesting and Catalysis Using Plasmonic Nanoparticles: A Mechanistic Understanding. ECS Meeting Abstracts, 2019, , . | 0.0 | 0 |
| 112 | (Invited) Plasmonic Photosynthesis. ECS Meeting Abstracts, 2019, , . | 0.0 | 0 |
| 113 | (Invited) Plasmon Excitation-Driven Reduction and Coupling of Carbon Dioxide Molecules. ECS Meeting Abstracts, 2019, , . | 0.0 | 0 |