Louis E Brus

List of Publications by Year
in descending order

127 papers	34,215 citations	7069 78 h-index	14702 127 g-index
128 all docs	128 docs citations	128 times ranked	37725 citing authors

#	Article	IF	Citations
1	Anomalous Lattice Vibrations of Single- and Few-Layer MoS₂. ACS Nano, 2010, 4, 2695-2700.	7.3	4,028
2	Electronic wave functions in semiconductor clusters: experiment and theory. The Journal of Physical Chemistry, 1986, 90, 2555-2560.	2.9	2,901
3	Tuning the Graphene Work Function by Electric Field Effect. Nano Letters, 2009, 9, 3430-3434.	4.5	1,255
4	The Optical Resonances in Carbon Nanotubes Arise from Excitons. Science, 2005, 308, 838-841.	6.0	1,114
5	Ag Nanocrystal Junctions as the Site for Surface-Enhanced Raman Scattering of Single Rhodamine 6G Molecules. Journal of Physical Chemistry B, 2000, 104, 11965-11971.	1.2	1,017
6	Charge Transfer on the Nanoscale:â€‰ Current Status. Journal of Physical Chemistry B, 2003, 107, 6668-6697.	1.2	946
7	Semiconductor crystallites: a class of large molecules. Accounts of Chemical Research, 1990, 23, 183-188.	7.6	927
8	Luminescence Photophysics in Semiconductor Nanocrystals. Accounts of Chemical Research, 1999, 32, 407-414.	7.6	883
9	Drying-mediated self-assembly of nanoparticles. Nature, 2003, 426, 271-274.	13.7	866
10	Nucleation and Growth of CdSe on ZnS Quantum Crystallite Seeds, and Vice Versa, in Inverse Micelle Media. Journal of the American Chemical Society, 1990, 112, 1327-1332.	6.6	845
11	Single Molecule Raman Spectroscopy at the Junctions of Large Ag Nanocrystals. Journal of Physical Chemistry B, 2003, 107, 9964-9972.	1.2	814
12	Graphene Oxidation: Thickness-Dependent Etching and Strong Chemical Doping. Nano Letters, 2008, 8, 1965-1970.	4.5	773
13	Atmospheric Oxygen Binding and Hole Doping in Deformed Graphene on a SiO₂ Substrate. Nano Letters, 2010, 10, 4944-4951.	4.5	706
14	High-resolution scanning tunneling microscopy imaging of mesoscopic graphene sheets on an insulating surface. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 9209-9212.	3.3	553
15	Coulomb engineering of the bandgap and excitons in two-dimensional materials. Nature Communications, 2017, 8, 15251.	5.8	526
16	Reversible Basal Plane Hydrogenation of Graphene. Nano Letters, 2008, 8, 4597-4602.	4.5	513
17	Noble Metal Nanocrystals: Plasmon Electron Transfer Photochemistry and Single-Molecule Raman Spectroscopy. Accounts of Chemical Research, 2008, 41, 1742-1749.	7.6	510
18	Crystal Structure and the Paraelectric-to-Ferroelectric Phase Transition of Nanoscale BaTiO₃. Journal of the American Chemical Society, 2008, 130, 6955-6963.	6.6	509

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19	Silver Nanodisk Growth by Surface Plasmon Enhanced Photoreduction of Adsorbed [Ag+]. Nano Letters, 2003, 3, 1611-1615.	4.5	504
20	Probing the Intrinsic Properties of Exfoliated Graphene: Raman Spectroscopy of Free-Standing Monolayers. Nano Letters, 2009, 9, 346-352.	4.5	498
21	Local Polar Fluctuations in Lead Halide Perovskite Crystals. Physical Review Letters, 2017, 118, 136001.	2.9	489
22	Luminescence of Silicon Materials: Chains, Sheets, Nanocrystals, Nanowires, Microcrystals, and Porous Silicon. The Journal of Physical Chemistry, 1994, 98, 3575-3581.	2.9	468
23	Synthesis of Monodisperse Nanoparticles of Barium Titanate:Â Toward a Generalized Strategy of Oxide Nanoparticle Synthesis. Journal of the American Chemical Society, 2001, 123, 12085-12086.	6.6	450
24	Magnetite Fe3O4Nanocrystals:Â Spectroscopic Observation of Aqueous Oxidation Kineticsâ€. Journal of Physical Chemistry B, 2003, 107, 7501-7506.	1.2	344
25	Photochemical Reactivity of Graphene. Journal of the American Chemical Society, 2009, 131, 17099-17101.	6.6	330
26	Energy Transfer from Individual Semiconductor Nanocrystals to Graphene. ACS Nano, 2010, 4, 2964-2968.	7.3	329
27	Observation of Excitonic Rydberg States in Monolayer MoS₂ and WS₂ by Photoluminescence Excitation Spectroscopy. Nano Letters, 2015, 15, 2992-2997.	4.5	327
28	Imaging Stacking Order in Few-Layer Graphene. Nano Letters, 2011, 11, 164-169.	4.5	321
29	Electronic Structure and Luminescence of 1.1- and 1.4-nm Silicon Nanocrystals:Â Oxide Shell versus Hydrogen Passivation. Nano Letters, 2003, 3, 163-167.	4.5	292
30	Charge, Polarizability, and Photoionization of Single Semiconductor Nanocrystals. Physical Review Letters, 1999, 83, 4840-4843.	2.9	290
31	Time-Resolved Fluorescence of Carbon Nanotubes and Its Implication for Radiative Lifetimes. Physical Review Letters, 2004, 92, 177401.	2.9	290
32	Chemical Synthesis and Luminescence Applications of Colloidal Semiconductor Quantum Dots. Journal of the American Chemical Society, 2017, 139, 10939-10943.	6.6	286
33	Electrochemical Ostwald Ripening of Colloidal Ag Particles on Conductive Substrates. Nano Letters, 2005, 5, 131-135.	4.5	266
34	Charge Transfer Chemical Doping of Few Layer Graphenes: Charge Distribution and Band Gap Formation. Nano Letters, 2009, 9, 4133-4137.	4.5	263
35	Photovoltage Mechanism for Room Light Conversion of Citrate Stabilized Silver Nanocrystal Seeds to Large Nanoprisms. Journal of the American Chemical Society, 2008, 130, 9500-9506.	6.6	244
36	Fluctuations and Local Symmetry in Single-Molecule Rhodamine 6G Raman Scattering on Silver Nanocrystal Aggregatesâ€. Journal of Physical Chemistry B, 2002, 106, 8096-8099.	1.2	235

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37	Controlling Energy-Level Alignments at Carbon Nanotube/Au Contacts. Nano Letters, 2003, 3, 783-787.	4.5	233
38	Optical Spectroscopy of Individual Single-Walled Carbon Nanotubes of Defined Chiral Structure. Science, 2006, 312, 554-556.	6.0	231
39	Probing Electronic Transitions in Individual Carbon Nanotubes by Rayleigh Scattering. Science, 2004, 306, 1540-1543.	6.0	228
40	Nanocrystal Quantum Dots: From Discovery to Modern Development. ACS Nano, 2021, 15, 6192-6210.	7.3	228
41	Reversible Surface Oxidation and Efficient Luminescence Quenching in Semiconductor Single-Wall Carbon Nanotubes. Journal of the American Chemical Society, 2004, 126, 15269-15276.	6.6	227
42	Structural Dependence of Excitonic Optical Transitions and Band-Gap Energies in Carbon Nanotubes. Nano Letters, 2005, 5, 2314-2318.	4.5	226
43	Pressure-Induced Structural Transformations in Si Nanocrystals: Surface and Shape Effects. Physical Review Letters, 1996, 76, 4384-4387.	2.9	221
44	Binding of an Anti-Fullerene IgG Monoclonal Antibody to Single Wall Carbon Nanotubes. Nano Letters, 2001, 1, 465-467.	4.5	203
45	Nanoscale Atoms in Solid-State Chemistry. Science, 2013, 341, 157-160.	6.0	199
46	Synthesis, Self-Assembly, and Nonlinear Optical Properties of Conjugated Helical Metal Phthalocyanine Derivatives. Journal of the American Chemical Society, 1999, 121, 3453-3459.	6.6	196
47	Electron and Optical Phonon Temperatures in Electrically Biased Graphene. Physical Review Letters, 2010, 104, 227401.	2.9	190
48	Observation of rapid Auger recombination in optically excited semiconducting carbon nanotubes. Physical Review B, 2004, 70, .	1.1	183
49	Energy Transfer from Quantum Dots to Graphene and MoS₂: The Role of Absorption and Screening in Two-Dimensional Materials. Nano Letters, 2016, 16, 2328-2333.	4.5	179
50	Probing the Dynamics of the Metallic-to-Semiconducting Structural Phase Transformation in MoS₂ Crystals. Nano Letters, 2015, 15, 5081-5088.	4.5	174
51	Strong Charge-Transfer Doping of 1 to 10 Layer Graphene by NO₂. ACS Nano, 2012, 6, 1865-1875.	7.3	166
52	Continuousâ€Wave Lasing in Cesium Lead Bromide Perovskite Nanowires. Advanced Optical Materials, 2018, 6, 1700982.	3.6	161
53	Evidence for Spinodal Phase Separation in Two-Dimensional Nanocrystal Self-Assembly. Journal of Physical Chemistry B, 2000, 104, 9573-9575.	1.2	151
54	On the ionization potential of small metal and dielectric particles. Journal of Chemical Physics, 1988, 88, 5076-5085.	1.2	149

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55	Raman Spectroscopy of Lithographically Patterned Graphene Nanoribbons. ACS Nano, 2011, 5, 4123-4130.	7.3	148
56	Molecular Interactions in One-Dimensional Organic Nanostructures. Journal of the American Chemical Society, 2004, 126, 5234-5242.	6.6	140
57	An Organometallic Synthesis of TiO2Nanoparticles. Nano Letters, 2005, 5, 543-548.	4.5	140
58	Solid-Solution Nanoparticles:Â Use of a Nonhydrolytic Solâ^'Gel Synthesis To Prepare HfO2and HfxZr1-xO2Nanocrystals. Chemistry of Materials, 2004, 16, 1336-1342.	3.2	139
59	Raman Enhancement on Graphene: Adsorbed and Intercalated Molecular Species. ACS Nano, 2010, 4, 7005-7013.	7.3	137
60	Quantitative Noncontact Electrostatic Force Imaging of Nanocrystal Polarizability. Journal of Physical Chemistry B, 2003, 107, 1525-1531.	1.2	134
61	Charge and Photoionization Properties of Single Semiconductor Nanocrystals. Journal of Physical Chemistry B, 2001, 105, 1725-1733.	1.2	133
62	Rayleigh and Raman Scattering from Individual Carbon Nanotube Bundles. Journal of Physical Chemistry B, 2001, 105, 1123-1134.	1.2	124
63	Racemic Single-Walled Carbon Nanotubes Exhibit Circular Dichroism When Wrapped with DNA. Journal of the American Chemical Society, 2006, 128, 9004-9005.	6.6	124
64	Photovoltage and Photocatalyzed Growth in Citrate-Stabilized Colloidal Silver Nanocrystalsâ€. Journal of Physical Chemistry C, 2007, 111, 8942-8947.	1.5	122
65	Electronic Structure of Tubular Aromatic Molecules Derived from the Metallic (5,5) Armchair Single Wall Carbon Nanotube. Journal of the American Chemical Society, 2004, 126, 3597-3607.	6.6	118
66	Interactions between Individual Carbon Nanotubes Studied by Rayleigh Scattering Spectroscopy. Physical Review Letters, 2006, 96, 167401.	2.9	117
67	Chemical approaches to semiconductor nanocrystals. Journal of Physics and Chemistry of Solids, 1998, 59, 459-465.	1.9	115
68	Dynamic emission Stokes shift and liquid-like dielectric solvation of band edge carriers in lead-halide perovskites. Nature Communications, 2019, 10, 1175.	5.8	111
69	Interdot interactions and band gap changes in CdSe nanocrystal arrays at elevated pressure. Journal of Applied Physics, 2001, 89, 8127-8140.	1.1	104
70	Negligible Environmental Sensitivity of Graphene in a Hexagonal Boron Nitride/Graphene/h-BN Sandwich Structure. ACS Nano, 2012, 6, 9314-9319.	7.3	98
71	Plasmon Induced Photovoltage and Charge Separation in Citrate-Stabilized Gold Nanoparticles. Journal of Physical Chemistry C, 2010, 114, 12896-12899.	1.5	97
72	Synthesis and Electrical Characterization of Magnetic Bilayer Graphene Intercalate. Nano Letters, 2011, 11, 860-865.	4.5	92

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73	Li Intercalation into Graphite: Direct Optical Imaging and Cahnâ€“Hilliard Reaction Dynamics. Journal of Physical Chemistry Letters, 2016, 7, 2151-2156.	2.1	92
74	R6G on Graphene: High Raman Detection Sensitivity, Yet Decreased Raman Cross-Section. Nano Letters, 2012, 12, 1571-1577.	4.5	90
75	Interplay between organic cations and inorganic framework and incommensurability in hybrid lead-halide perovskite <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>CH</mml:mi><mml:mn>3</mml:mn></ Physical Review Materials, 2017, 1, .	0.9	87
76	Gasâ^'Liquidâ^'Solid Phase Transition Model for Two-Dimensional Nanocrystal Self-Assembly on Graphite. Journal of Physical Chemistry B, 2002, 106, 5653-5658.	1.2	85
77	Direct Measurement of the Lifetime of Optical Phonons in Single-Walled Carbon Nanotubes. Physical Review Letters, 2008, 100, 225503.	2.9	84
78	Electronic Structure of 1 to 2 nm Diameter Silicon Core/Shell Nanocrystals:â€‰ Surface Chemistry, Optical Spectra, Charge Transfer, and Doping. Journal of the American Chemical Society, 2003, 125, 15599-15607.	6.6	83
79	The Role of Photon Energy and Semiconductor Substrate in the Plasmon-Mediated Photooxidation of Citrate by Silver Nanoparticles. Journal of Physical Chemistry C, 2013, 117, 26238-26247.	1.5	83
80	Structure of capped cadmium selenide clusters by EXAFS. The Journal of Physical Chemistry, 1991, 95, 1572-1576.	2.9	79
81	Reversible Oxidation Effect in Raman Scattering from Metallic Single-Wall Carbon Nanotubes. Journal of Physical Chemistry A, 2000, 104, 10995-10999.	1.1	76
82	Intrinsic Line Shape of the Raman 2D-Mode in Freestanding Graphene Monolayers. Nano Letters, 2013, 13, 3517-3523.	4.5	75
83	(n, m) Structural Assignments and Chirality Dependence in Single-Wall Carbon Nanotube Raman Scattering. Journal of Physical Chemistry B, 2001, 105, 6831-6837.	1.2	74
84	Surface States in the Photoionization of High-Quality CdSe Core/Shell Nanocrystals. ACS Nano, 2009, 3, 1267-1273.	7.3	69
85	Extracting subnanometer single shells from ultralong multiwalled carbon nanotubes. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 14155-14158.	3.3	64
86	Self-assembly of 1-D organic semiconductor nanostructures. Physical Chemistry Chemical Physics, 2007, 9, 1515.	1.3	62
87	High-resolution spatial mapping of the temperature distribution of a Joule self-heated graphene nanoribbon. Applied Physics Letters, 2011, 99, .	1.5	62
88	Photoionization of Individual CdSe/CdS Core/Shell Nanocrystals on Silicon with 2-nm Oxide Depends on Surface Band Bending. Nano Letters, 2003, 3, 497-501.	4.5	60
89	Optical Reflectivity and Raman Scattering in Few-Layer-Thick Graphene Highly Doped by K and Rb.. ACS Nano, 2011, 5, 5708-5716.	7.3	60
90	Ferromagnetic Ordering in Superatomic Solids. Journal of the American Chemical Society, 2014, 136, 16926-16931.	6.6	58

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91	Physical Adsorption and Charge Transfer of Molecular Br₂ on Graphene. ACS Nano, 2014, 8, 2943-2950.	7.3	58
92	â€œHot Electronâ€•Photo-Charging and Electrochemical Discharge Kinetics of Silver Nanocrystals. Journal of Physical Chemistry C, 2007, 111, 14849-14854.	1.5	57
93	Time-resolved Raman scattering study of adsorbed, semioxidized eosin Y formed by excited-state electron transfer into colloidal titanium(IV) oxide particles. Journal of the American Chemical Society, 1984, 106, 4336-4340.	6.6	56
94	Model for carrier dynamics and photoluminescence quenching in wet and dry porous silicon thin films. Physical Review B, 1996, 53, 4649-4656.	1.1	56
95	Electrostatic Force Microscopy Characterization of Trioctylphosphine Oxide Self-assembled Monolayers on Graphite. Journal of Physical Chemistry B, 2000, 104, 11936-11941.	1.2	55
96	Excitons and high-order optical transitions in individual carbon nanotubes: A Rayleigh scattering spectroscopy study. Physical Review B, 2010, 81, .	1.1	55
97	Realistic Cluster Modeling of Electron Transport and Trapping in Solvated TiO2Nanoparticles. Journal of the American Chemical Society, 2012, 134, 12028-12042.	6.6	55
98	Tuning Intermolecular Attraction to Create Polar Order and One-Dimensional Nanostructures on Surfaces. Journal of the American Chemical Society, 2002, 124, 15051-15054.	6.6	51
99	Enhancement of Excitonâ€“Phonon Scattering from Monolayer to Bilayer WS₂. Nano Letters, 2018, 18, 6135-6143.	4.5	50
100	Semiconductor colloids: individual nanocrystals, opals and porous silicon. Current Opinion in Colloid and Interface Science, 1996, 1, 197-201.	3.4	49
101	Size, Dimensionality, and Strong Electron Correlation in Nanoscience. Accounts of Chemical Research, 2014, 47, 2951-2959.	7.6	49
102	Controlled Electrochemical Intercalation of Graphene/h-BN van der Waals Heterostructures. Nano Letters, 2018, 18, 460-466.	4.5	49
103	Electrostatic Field and Partial Fermi Level Pinning at the Pentaceneâ^'SiO2Interface. Journal of Physical Chemistry B, 2005, 109, 1834-1838.	1.2	47
104	Fast Surface Diffusion of Large Disk-Shaped Nanocrystal Aggregates. Nano Letters, 2001, 1, 219-222.	4.5	46
105	Organic ligand and solvent kinetics during the assembly of CdSe nanocrystal arrays using infrared attenuated total reflection. Applied Physics Letters, 2000, 76, 3715-3717.	1.5	36
106	Commentary: Carbon Nanotubes, CdSe Nanocrystals, and Electronâ^'Electron Interaction. Nano Letters, 2010, 10, 363-365.	4.5	35
107	Slow Gold Adatom Diffusion on Graphene: Effect of Silicon Dioxide and Hexagonal Boron Nitride Substrates. Journal of Physical Chemistry B, 2013, 117, 4305-4312.	1.2	34
108	Quantum Chemical Investigation of Cluster Models for TiO₂ Nanoparticles with Water-Derived Ligand Passivation: Studies of Excess Electron States and Implications for Charge Transport in the Gratzel Cell. Journal of Physical Chemistry C, 2009, 113, 19806-19811.	1.5	32

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109	Capped nanometer silicon electronic materials. Advanced Materials, 1993, 5, 286-288.	11.1	31
110	Electric Fields on Oxidized Silicon Surfaces:Â Static Polarization of PbSe Nanocrystalsâ€. Journal of Physical Chemistry A, 2004, 108, 7814-7819.	1.1	30
111	Imaging the Photoionization of Individual CdSe/CdS Coreâ^'Shell Nanocrystals on n- and p-Type Silicon Substrates with Thin Oxides. Journal of Physical Chemistry B, 2004, 108, 4946-4961.	1.2	30
112	Structure and electronic states of quantum semiconductor crystallites. Scripta Materialia, 1992, 1, 71-75.	0.5	27
113	Covalent Oâ€“H Bonds as Electron Traps in Proton-Rich Rutile TiO₂ Nanoparticles. Nano Letters, 2014, 14, 1785-1789.	4.5	27
114	Graphite, Tubular PAHs, and the Diffuse Interstellar Bands. Astrophysical Journal, 2006, 638, L105-L108.	1.6	25
115	Measurement of the optical Stark effect in semiconducting carbon nanotubes. Applied Physics A: Materials Science and Processing, 2009, 96, 283-287.	1.1	25
116	Squeezing light from silicon. Nature, 1991, 353, 301-302.	13.7	24
117	Crystalline Graphite from an Organometallic Solution-Phase Reaction. Journal of the American Chemical Society, 2006, 128, 15590-15591.	6.6	22
118	Growing gold nanoprisms with light. Nature Materials, 2016, 15, 824-825.	13.3	20
119	Photoinduced Thermal Copper Reduction onto Gold Nanocrystals under Potentiostatic Controlâ€. Journal of Physical Chemistry B, 2006, 110, 25158-25162.	1.2	18
120	Photoinduced Interfacial Charging and â€œExplosionâ€•of Monolayer Pentacene Islands. Nano Letters, 2005, 5, 2241-2245.	4.5	15
121	Narrow Mie Optical Cavity Resonances from Individual 100 nm Hematite Crystallites. Journal of Physical Chemistry B, 2001, 105, 599-603.	1.2	13
122	Radiationless Transitions in CdSe Quantum Crystallites. Israel Journal of Chemistry, 1993, 33, 9-13.	1.0	11
123	Visualizing Individual Carbon Nanotubes with Optical Microscopy. Journal of the American Chemical Society, 2014, 136, 8536-8539.	6.6	11
124	Chapter 8 Silicon Polymers and Nanocrystals. Semiconductors and Semimetals, 1997, 49, 303-328.	0.4	8
125	Luminescence of Silicon Nanocrystals and Porous Silicon. Japanese Journal of Applied Physics, 1995, 34, 5.	0.8	4
126	The Rise of Computation. Nano Letters, 2020, 20, 801-802.	4.5	3

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127	Devices and desires. Nature, 1994, 369, 273-274.	13.7	0