

# Louis E Brus

## List of Publications by Year in descending order

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128  
all docs

128  
docs citations

128  
times ranked

37725  
citing authors

#	ARTICLE	IF	CITATIONS
1	Nanocrystal Quantum Dots: From Discovery to Modern Development. ACS Nano, 2021, 15, 6192-6210.	7.3	228
2	The Rise of Computation. Nano Letters, 2020, 20, 801-802.	4.5	3
3	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
4	Continuous-Wave Lasing in Cesium Lead Bromide Perovskite Nanowires. Advanced Optical Materials, 2018, 6, 1700982.	3.6	161
5	Controlled Electrochemical Intercalation of Graphene/h-BN van der Waals Heterostructures. Nano Letters, 2018, 18, 460-466.	4.5	49
6	Enhancement of Exciton-Phonon Scattering from Monolayer to Bilayer WS <sub>2</sub> . Nano Letters, 2018, 18, 6135-6143.	4.5	50
7	Coulomb engineering of the bandgap and excitons in two-dimensional materials. Nature Communications, 2017, 8, 15251.	5.8	526
8	Local Polar Fluctuations in Lead Halide Perovskite Crystals. Physical Review Letters, 2017, 118, 136001.	2.9	489
9	Chemical Synthesis and Luminescence Applications of Colloidal Semiconductor Quantum Dots. Journal of the American Chemical Society, 2017, 139, 10939-10943.	6.6	286
10	Interplay between organic cations and inorganic framework and incommensurability in hybrid lead-halide perovskite $\text{CH}_3\text{NH}_3\text{PbBr}_3$ . Physical Review Materials, 2017, 1, .	0.9	87
11	Growing gold nanoprisms with light. Nature Materials, 2016, 15, 824-825.	13.3	20
12	Li Intercalation into Graphite: Direct Optical Imaging and Cahn-Hilliard Reaction Dynamics. Journal of Physical Chemistry Letters, 2016, 7, 2151-2156.	2.1	92
13	Energy Transfer from Quantum Dots to Graphene and MoS <sub>2</sub> : The Role of Absorption and Screening in Two-Dimensional Materials. Nano Letters, 2016, 16, 2328-2333.	4.5	179
14	Probing the Dynamics of the Metallic-to-Semiconducting Structural Phase Transformation in MoS <sub>2</sub> Crystals. Nano Letters, 2015, 15, 5081-5088.	4.5	174
15	Observation of Excitonic Rydberg States in Monolayer MoS <sub>2</sub> and WS <sub>2</sub> by Photoluminescence Excitation Spectroscopy. Nano Letters, 2015, 15, 2992-2997.	4.5	327
16	Covalent O-H Bonds as Electron Traps in Proton-Rich Rutile TiO <sub>2</sub> Nanoparticles. Nano Letters, 2014, 14, 1785-1789.	4.5	27
17	Ferromagnetic Ordering in Superatomic Solids. Journal of the American Chemical Society, 2014, 136, 16926-16931.	6.6	58
18	Size, Dimensionality, and Strong Electron Correlation in Nanoscience. Accounts of Chemical Research, 2014, 47, 2951-2959.	7.6	49

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19	Physical Adsorption and Charge Transfer of Molecular Br <sub>2</sub> on Graphene. ACS Nano, 2014, 8, 2943-2950.	7.3	58
20	Visualizing Individual Carbon Nanotubes with Optical Microscopy. Journal of the American Chemical Society, 2014, 136, 8536-8539.	6.6	11
21	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
22	Nanoscale Atoms in Solid-State Chemistry. Science, 2013, 341, 157-160.	6.0	199
23	Intrinsic Line Shape of the Raman 2D-Mode in Freestanding Graphene Monolayers. Nano Letters, 2013, 13, 3517-3523.	4.5	75
24	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
25	Negligible Environmental Sensitivity of Graphene in a Hexagonal Boron Nitride/Graphene/h-BN Sandwich Structure. ACS Nano, 2012, 6, 9314-9319.	7.3	98
26	Strong Charge-Transfer Doping of 1 to 10 Layer Graphene by NO <sub>2</sub> . ACS Nano, 2012, 6, 1865-1875.	7.3	166
27	R6G on Graphene: High Raman Detection Sensitivity, Yet Decreased Raman Cross-Section. Nano Letters, 2012, 12, 1571-1577.	4.5	90
28	Realistic Cluster Modeling of Electron Transport and Trapping in Solvated TiO <sub>2</sub> Nanoparticles. Journal of the American Chemical Society, 2012, 134, 12028-12042.	6.6	55
29	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
30	Synthesis and Electrical Characterization of Magnetic Bilayer Graphene Intercalate. Nano Letters, 2011, 11, 860-865.	4.5	92
31	High-resolution spatial mapping of the temperature distribution of a Joule self-heated graphene nanoribbon. Applied Physics Letters, 2011, 99, .	1.5	62
32	Raman Spectroscopy of Lithographically Patterned Graphene Nanoribbons. ACS Nano, 2011, 5, 4123-4130.	7.3	148
33	Imaging Stacking Order in Few-Layer Graphene. Nano Letters, 2011, 11, 164-169.	4.5	321
34	Anomalous Lattice Vibrations of Single- and Few-Layer MoS <sub>2</sub> . ACS Nano, 2010, 4, 2695-2700.	7.3	4,028
35	Atmospheric Oxygen Binding and Hole Doping in Deformed Graphene on a SiO <sub>2</sub> Substrate. Nano Letters, 2010, 10, 4944-4951.	4.5	706
36	Plasmon Induced Photovoltage and Charge Separation in Citrate-Stabilized Gold Nanoparticles. Journal of Physical Chemistry C, 2010, 114, 12896-12899.	1.5	97

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37	Commentary: Carbon Nanotubes, CdSe Nanocrystals, and Electron-Electron Interaction. Nano Letters, 2010, 10, 363-365.	4.5	35
38	Excitons and high-order optical transitions in individual carbon nanotubes: A Rayleigh scattering spectroscopy study. Physical Review B, 2010, 81, .	1.1	55
39	Energy Transfer from Individual Semiconductor Nanocrystals to Graphene. ACS Nano, 2010, 4, 2964-2968.	7.3	329
40	Raman Enhancement on Graphene: Adsorbed and Intercalated Molecular Species. ACS Nano, 2010, 4, 7005-7013.	7.3	137
41	Electron and Optical Phonon Temperatures in Electrically Biased Graphene. Physical Review Letters, 2010, 104, 227401.	2.9	190
42	Measurement of the optical Stark effect in semiconducting carbon nanotubes. Applied Physics A: Materials Science and Processing, 2009, 96, 283-287.	1.1	25
43	Surface States in the Photoionization of High-Quality CdSe Core/Shell Nanocrystals. ACS Nano, 2009, 3, 1267-1273.	7.3	69
44	Quantum Chemical Investigation of Cluster Models for TiO <sub>2</sub> 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
45	Charge Transfer Chemical Doping of Few Layer Graphenes: Charge Distribution and Band Gap Formation. Nano Letters, 2009, 9, 4133-4137.	4.5	263
46	Tuning the Graphene Work Function by Electric Field Effect. Nano Letters, 2009, 9, 3430-3434.	4.5	1,255
47	Probing the Intrinsic Properties of Exfoliated Graphene: Raman Spectroscopy of Free-Standing Monolayers. Nano Letters, 2009, 9, 346-352.	4.5	498
48	Photochemical Reactivity of Graphene. Journal of the American Chemical Society, 2009, 131, 17099-17101.	6.6	330
49	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
50	Reversible Basal Plane Hydrogenation of Graphene. Nano Letters, 2008, 8, 4597-4602.	4.5	513
51	Graphene Oxidation: Thickness-Dependent Etching and Strong Chemical Doping. Nano Letters, 2008, 8, 1965-1970.	4.5	773
52	Crystal Structure and the Paraelectric-to-Ferroelectric Phase Transition of Nanoscale BaTiO <sub>3</sub> . Journal of the American Chemical Society, 2008, 130, 6955-6963.	6.6	509
53	Noble Metal Nanocrystals: Plasmon Electron Transfer Photochemistry and Single-Molecule Raman Spectroscopy. Accounts of Chemical Research, 2008, 41, 1742-1749.	7.6	510
54	Direct Measurement of the Lifetime of Optical Phonons in Single-Walled Carbon Nanotubes. Physical Review Letters, 2008, 100, 225503.	2.9	84

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55	Self-assembly of 1-D organic semiconductor nanostructures. <i>Physical Chemistry Chemical Physics</i> , 2007, 9, 1515.	1.3	62
56	“Hot Electron” Photo-Charging and Electrochemical Discharge Kinetics of Silver Nanocrystals. <i>Journal of Physical Chemistry C</i> , 2007, 111, 14849-14854.	1.5	57
57	Photovoltage and Photocatalyzed Growth in Citrate-Stabilized Colloidal Silver Nanocrystals. <i>Journal of Physical Chemistry C</i> , 2007, 111, 8942-8947.	1.5	122
58	High-resolution scanning tunneling microscopy imaging of mesoscopic graphene sheets on an insulating surface. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2007, 104, 9209-9212.	3.3	553
59	Photoinduced Thermal Copper Reduction onto Gold Nanocrystals under Potentiostatic Control. <i>Journal of Physical Chemistry B</i> , 2006, 110, 25158-25162.	1.2	18
60	Interactions between Individual Carbon Nanotubes Studied by Rayleigh Scattering Spectroscopy. <i>Physical Review Letters</i> , 2006, 96, 167401.	2.9	117
61	Racemic Single-Walled Carbon Nanotubes Exhibit Circular Dichroism When Wrapped with DNA. <i>Journal of the American Chemical Society</i> , 2006, 128, 9004-9005.	6.6	124
62	Crystalline Graphite from an Organometallic Solution-Phase Reaction. <i>Journal of the American Chemical Society</i> , 2006, 128, 15590-15591.	6.6	22
63	Graphite, Tubular PAHs, and the Diffuse Interstellar Bands. <i>Astrophysical Journal</i> , 2006, 638, L105-L108.	1.6	25
64	Optical Spectroscopy of Individual Single-Walled Carbon Nanotubes of Defined Chiral Structure. <i>Science</i> , 2006, 312, 554-556.	6.0	231
65	The Optical Resonances in Carbon Nanotubes Arise from Excitons. <i>Science</i> , 2005, 308, 838-841.	6.0	1,114
66	Structural Dependence of Excitonic Optical Transitions and Band-Gap Energies in Carbon Nanotubes. <i>Nano Letters</i> , 2005, 5, 2314-2318.	4.5	226
67	Extracting subnanometer single shells from ultralong multiwalled carbon nanotubes. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2005, 102, 14155-14158.	3.3	64
68	Photoinduced Interfacial Charging and “Explosion” of Monolayer Pentacene Islands. <i>Nano Letters</i> , 2005, 5, 2241-2245.	4.5	15
69	Electrochemical Ostwald Ripening of Colloidal Ag Particles on Conductive Substrates. <i>Nano Letters</i> , 2005, 5, 131-135.	4.5	266
70	Electrostatic Field and Partial Fermi Level Pinning at the Pentacene/SiO <sub>2</sub> Interface. <i>Journal of Physical Chemistry B</i> , 2005, 109, 1834-1838.	1.2	47
71	An Organometallic Synthesis of TiO <sub>2</sub> Nanoparticles. <i>Nano Letters</i> , 2005, 5, 543-548.	4.5	140
72	Observation of rapid Auger recombination in optically excited semiconducting carbon nanotubes. <i>Physical Review B</i> , 2004, 70, .	1.1	183

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73	Molecular Interactions in One-Dimensional Organic Nanostructures. <i>Journal of the American Chemical Society</i> , 2004, 126, 5234-5242.	6.6	140
74	Solid-Solution Nanoparticles: Use of a Nonhydrolytic Sol-Gel Synthesis To Prepare HfO <sub>2</sub> and Hf <sub>x</sub> Zr <sub>1-x</sub> O <sub>2</sub> Nanocrystals. <i>Chemistry of Materials</i> , 2004, 16, 1336-1342.	3.2	139
75	Reversible Surface Oxidation and Efficient Luminescence Quenching in Semiconductor Single-Wall Carbon Nanotubes. <i>Journal of the American Chemical Society</i> , 2004, 126, 15269-15276.	6.6	227
76	Electric Fields on Oxidized Silicon Surfaces: Static Polarization of PbSe Nanocrystals. <i>Journal of Physical Chemistry A</i> , 2004, 108, 7814-7819.	1.1	30
77	Time-Resolved Fluorescence of Carbon Nanotubes and Its Implication for Radiative Lifetimes. <i>Physical Review Letters</i> , 2004, 92, 177401.	2.9	290
78	Electronic Structure of Tubular Aromatic Molecules Derived from the Metallic (5,5) Armchair Single Wall Carbon Nanotube. <i>Journal of the American Chemical Society</i> , 2004, 126, 3597-3607.	6.6	118
79	Imaging the Photoionization of Individual CdSe/CdS Core-Shell Nanocrystals on n- and p-Type Silicon Substrates with Thin Oxides. <i>Journal of Physical Chemistry B</i> , 2004, 108, 4946-4961.	1.2	30
80	Probing Electronic Transitions in Individual Carbon Nanotubes by Rayleigh Scattering. <i>Science</i> , 2004, 306, 1540-1543.	6.0	228
81	Drying-mediated self-assembly of nanoparticles. <i>Nature</i> , 2003, 426, 271-274.	13.7	866
82	Charge Transfer on the Nanoscale: Current Status. <i>Journal of Physical Chemistry B</i> , 2003, 107, 6668-6697.	1.2	946
83	Magnetite Fe <sub>3</sub> O <sub>4</sub> Nanocrystals: Spectroscopic Observation of Aqueous Oxidation Kinetics. <i>Journal of Physical Chemistry B</i> , 2003, 107, 7501-7506.	1.2	344
84	Silver Nanodisk Growth by Surface Plasmon Enhanced Photoreduction of Adsorbed [Ag <sup>+</sup> ]. <i>Nano Letters</i> , 2003, 3, 1611-1615.	4.5	504
85	Quantitative Noncontact Electrostatic Force Imaging of Nanocrystal Polarizability. <i>Journal of Physical Chemistry B</i> , 2003, 107, 1525-1531.	1.2	134
86	Single Molecule Raman Spectroscopy at the Junctions of Large Ag Nanocrystals. <i>Journal of Physical Chemistry B</i> , 2003, 107, 9964-9972.	1.2	814
87	Controlling Energy-Level Alignments at Carbon Nanotube/Au Contacts. <i>Nano Letters</i> , 2003, 3, 783-787.	4.5	233
88	Electronic Structure of 1 to 2 nm Diameter Silicon Core/Shell Nanocrystals: Surface Chemistry, Optical Spectra, Charge Transfer, and Doping. <i>Journal of the American Chemical Society</i> , 2003, 125, 15599-15607.	6.6	83
89	Electronic Structure and Luminescence of 1.1- and 1.4-nm Silicon Nanocrystals: Oxide Shell versus Hydrogen Passivation. <i>Nano Letters</i> , 2003, 3, 163-167.	4.5	292
90	Photoionization of Individual CdSe/CdS Core/Shell Nanocrystals on Silicon with 2-nm Oxide Depends on Surface Band Bending. <i>Nano Letters</i> , 2003, 3, 497-501.	4.5	60

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91	Fluctuations and Local Symmetry in Single-Molecule Rhodamine 6G Raman Scattering on Silver Nanocrystal Aggregates. <i>Journal of Physical Chemistry B</i> , 2002, 106, 8096-8099.	1.2	235
92	Tuning Intermolecular Attraction to Create Polar Order and One-Dimensional Nanostructures on Surfaces. <i>Journal of the American Chemical Society</i> , 2002, 124, 15051-15054.	6.6	51
93	Gas-Liquid-Solid Phase Transition Model for Two-Dimensional Nanocrystal Self-Assembly on Graphite. <i>Journal of Physical Chemistry B</i> , 2002, 106, 5653-5658.	1.2	85
94	Binding of an Anti-Fullerene IgG Monoclonal Antibody to Single Wall Carbon Nanotubes. <i>Nano Letters</i> , 2001, 1, 465-467.	4.5	203
95	Charge and Photoionization Properties of Single Semiconductor Nanocrystals. <i>Journal of Physical Chemistry B</i> , 2001, 105, 1725-1733.	1.2	133
96	Synthesis of Monodisperse Nanoparticles of Barium Titanate: A Toward a Generalized Strategy of Oxide Nanoparticle Synthesis. <i>Journal of the American Chemical Society</i> , 2001, 123, 12085-12086.	6.6	450
97	Fast Surface Diffusion of Large Disk-Shaped Nanocrystal Aggregates. <i>Nano Letters</i> , 2001, 1, 219-222.	4.5	46
98	Interdot interactions and band gap changes in CdSe nanocrystal arrays at elevated pressure. <i>Journal of Applied Physics</i> , 2001, 89, 8127-8140.	1.1	104
99	Rayleigh and Raman Scattering from Individual Carbon Nanotube Bundles. <i>Journal of Physical Chemistry B</i> , 2001, 105, 1123-1134.	1.2	124
100	(n, m) Structural Assignments and Chirality Dependence in Single-Wall Carbon Nanotube Raman Scattering. <i>Journal of Physical Chemistry B</i> , 2001, 105, 6831-6837.	1.2	74
101	Narrow Mie Optical Cavity Resonances from Individual 100 nm Hematite Crystallites. <i>Journal of Physical Chemistry B</i> , 2001, 105, 599-603.	1.2	13
102	Ag Nanocrystal Junctions as the Site for Surface-Enhanced Raman Scattering of Single Rhodamine 6G Molecules. <i>Journal of Physical Chemistry B</i> , 2000, 104, 11965-11971.	1.2	1,017
103	Reversible Oxidation Effect in Raman Scattering from Metallic Single-Wall Carbon Nanotubes. <i>Journal of Physical Chemistry A</i> , 2000, 104, 10995-10999.	1.1	76
104	Organic ligand and solvent kinetics during the assembly of CdSe nanocrystal arrays using infrared attenuated total reflection. <i>Applied Physics Letters</i> , 2000, 76, 3715-3717.	1.5	36
105	Evidence for Spinodal Phase Separation in Two-Dimensional Nanocrystal Self-Assembly. <i>Journal of Physical Chemistry B</i> , 2000, 104, 9573-9575.	1.2	151
106	Electrostatic Force Microscopy Characterization of Trioctylphosphine Oxide Self-assembled Monolayers on Graphite. <i>Journal of Physical Chemistry B</i> , 2000, 104, 11936-11941.	1.2	55
107	Charge, Polarizability, and Photoionization of Single Semiconductor Nanocrystals. <i>Physical Review Letters</i> , 1999, 83, 4840-4843.	2.9	290
108	Luminescence Photophysics in Semiconductor Nanocrystals. <i>Accounts of Chemical Research</i> , 1999, 32, 407-414.	7.6	883

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109	Synthesis, Self-Assembly, and Nonlinear Optical Properties of Conjugated Helical Metal Phthalocyanine Derivatives. <i>Journal of the American Chemical Society</i> , 1999, 121, 3453-3459.	6.6	196
110	Chemical approaches to semiconductor nanocrystals. <i>Journal of Physics and Chemistry of Solids</i> , 1998, 59, 459-465.	1.9	115
111	Chapter 8 Silicon Polymers and Nanocrystals. <i>Semiconductors and Semimetals</i> , 1997, 49, 303-328.	0.4	8
112	Pressure-Induced Structural Transformations in Si Nanocrystals: Surface and Shape Effects. <i>Physical Review Letters</i> , 1996, 76, 4384-4387.	2.9	221
113	Semiconductor colloids: individual nanocrystals, opals and porous silicon. <i>Current Opinion in Colloid and Interface Science</i> , 1996, 1, 197-201.	3.4	49
114	Model for carrier dynamics and photoluminescence quenching in wet and dry porous silicon thin films. <i>Physical Review B</i> , 1996, 53, 4649-4656.	1.1	56
115	Luminescence of Silicon Nanocrystals and Porous Silicon. <i>Japanese Journal of Applied Physics</i> , 1995, 34, 5.	0.8	4
116	Devices and desires. <i>Nature</i> , 1994, 369, 273-274.	13.7	0
117	Luminescence of Silicon Materials: Chains, Sheets, Nanocrystals, Nanowires, Microcrystals, and Porous Silicon. <i>The Journal of Physical Chemistry</i> , 1994, 98, 3575-3581.	2.9	468
118	Capped nanometer silicon electronic materials. <i>Advanced Materials</i> , 1993, 5, 286-288.	11.1	31
119	Radiationless Transitions in CdSe Quantum Crystallites. <i>Israel Journal of Chemistry</i> , 1993, 33, 9-13.	1.0	11
120	Structure and electronic states of quantum semiconductor crystallites. <i>Scripta Materialia</i> , 1992, 1, 71-75.	0.5	27
121	Structure of capped cadmium selenide clusters by EXAFS. <i>The Journal of Physical Chemistry</i> , 1991, 95, 1572-1576.	2.9	79
122	Squeezing light from silicon. <i>Nature</i> , 1991, 353, 301-302.	13.7	24
123	Semiconductor crystallites: a class of large molecules. <i>Accounts of Chemical Research</i> , 1990, 23, 183-188.	7.6	927
124	Nucleation and Growth of CdSe on ZnS Quantum Crystallite Seeds, and Vice Versa, in Inverse Micelle Media. <i>Journal of the American Chemical Society</i> , 1990, 112, 1327-1332.	6.6	845
125	On the ionization potential of small metal and dielectric particles. <i>Journal of Chemical Physics</i> , 1988, 88, 5076-5085.	1.2	149
126	Electronic wave functions in semiconductor clusters: experiment and theory. <i>The Journal of Physical Chemistry</i> , 1986, 90, 2555-2560.	2.9	2,901



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127	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