

Richard L Brutchey

List of Publications by Year in descending order

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papers

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citations

87888

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94
all docs

94
docs citations

94
times ranked

6491
citing authors

#	ARTICLE	IF	CITATIONS
1	On the crystal structure of colloidally prepared CsPbBr ₃ quantum dots. Chemical Communications, 2016, 52, 5246-5249.	4.1	276
2	Silicatein and the Translation of its Molecular Mechanism of Biosilicification into Low Temperature Nanomaterial Synthesis. Chemical Reviews, 2008, 108, 4915-4934.	47.7	223
3	Alkahest for V ₂ VI ₃ Chalcogenides: Dissolution of Nine Bulk Semiconductors in a Diamine-Dithiol Solvent Mixture. Journal of the American Chemical Society, 2013, 135, 15722-15725.	13.7	170
4	Synthesis of Metastable Wurtzite CuInSe ₂ Nanocrystals. Chemistry of Materials, 2010, 22, 1613-1615.	6.7	152
5	Surface Termination of CsPbBr ₃ Perovskite Quantum Dots Determined by Solid-State NMR Spectroscopy. Journal of the American Chemical Society, 2020, 142, 6117-6127.	13.7	135
6	Quantifying the Thermodynamics of Ligand Binding to CsPbBr ₃ Quantum Dots. Angewandte Chemie - International Edition, 2018, 57, 11711-11715.	13.8	134
7	Two-Phase Microfluidic Droplet Flows of Ionic Liquids for the Synthesis of Gold and Silver Nanoparticles. ACS Applied Materials & Interfaces, 2012, 4, 3077-3083.	8.0	121
8	Synthesis and Characterization of Wurtzite-Phase Copper Tin Selenide Nanocrystals. Journal of the American Chemical Society, 2012, 134, 23-26.	13.7	119
9	Growth Kinetics of Monodisperse Cu ⁺ In ⁺ S Nanocrystals Using a Dialkyl Disulfide Sulfur Source. Chemistry of Materials, 2009, 21, 4299-4304.	6.7	116
10	Facile dissolution of selenium and tellurium in a thiol-amine solvent mixture under ambient conditions. Chemical Science, 2014, 5, 2498.	7.4	113
11	Ligand Exchange on Colloidal CdSe Nanocrystals Using Thermally Labile <i>tert</i> -Butylthiol for Improved Photocurrent in Nanocrystal Films. Journal of the American Chemical Society, 2012, 134, 1085-1092.	13.7	108
12	Improving Open Circuit Potential in Hybrid P3HT:CdSe Bulk Heterojunction Solar Cells <i>via</i> Colloidal <i>tert</i> -Butylthiol Ligand Exchange. ACS Nano, 2012, 6, 4222-4230.	14.6	105
13	Nickel Oxide Particles Catalyze Photochemical Hydrogen Evolution from Water—Nanoscaling Promotes P-Type Character and Minority Carrier Extraction. ACS Nano, 2015, 9, 5135-5142.	14.6	98
14	Structural Evolution of BaTiO ₃ Nanocrystals Synthesized at Room Temperature. Journal of the American Chemical Society, 2012, 134, 9475-9487.	13.7	90
15	Flow invariant droplet formation for stable parallel microreactors. Nature Communications, 2016, 7, 10780.	12.8	90
16	Low Temperature Solution-Phase Deposition of SnS Thin Films. Chemistry of Materials, 2014, 26, 5444-5446.	6.7	84
17	Diorganyl Dichalcogenides as Useful Synthons for Colloidal Semiconductor Nanocrystals. Accounts of Chemical Research, 2015, 48, 2918-2926.	15.6	84
18	Solution processing of chalcogenide materials using thiol-amine "alkahest" solvent systems. Chemical Communications, 2017, 53, 4888-4902.	4.1	81

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19	An Exceptionally Mild and Scalable Solution-Phase Synthesis of Molybdenum Carbide Nanoparticles for Thermocatalytic CO ₂ Hydrogenation. <i>Journal of the American Chemical Society</i> , 2020, 142, 1010-1019.	13.7	79
20	Solution-Phase Conversion of Bulk Metal Oxides to Metal Chalcogenides Using a Simple Thiol-amine Solvent Mixture. <i>Angewandte Chemie - International Edition</i> , 2015, 54, 8378-8381.	13.8	78
21	Iodide-Passivated Colloidal PbS Nanocrystals Leading to Highly Efficient Polymer:Nanocrystal Hybrid Solar Cells. <i>Chemistry of Materials</i> , 2016, 28, 1897-1906.	6.7	71
22	The Surface Chemistry and Structure of Colloidal Lead Halide Perovskite Nanocrystals. <i>Accounts of Chemical Research</i> , 2021, 54, 707-718.	15.6	71
23	Effect of Ionic Liquid Impurities on the Synthesis of Silver Nanoparticles. <i>Langmuir</i> , 2012, 28, 15987-15993.	3.5	67
24	Flow-focused synthesis of monodisperse gold nanoparticles using ionic liquids on a microfluidic platform. <i>Lab on A Chip</i> , 2010, 10, 3377.	6.0	66
25	Depressed Phase Transitions and Thermally Persistent Local Distortions in CsPbBr ₃ Quantum Dots. <i>Chemistry of Materials</i> , 2018, 30, 6711-6716.	6.7	64
26	Method for the Solution Deposition of Phase-Pure CoSe ₂ as an Efficient Hydrogen Evolution Reaction Electrocatalyst. <i>ACS Energy Letters</i> , 2016, 1, 607-611.	17.4	62
27	Compositionally Dependent Phase Identity of Colloidal CsPbBr ₃ Quantum Dots. <i>Chemistry of Materials</i> , 2016, 28, 7574-7577.	6.7	60
28	Utilizing Diselenide Precursors toward Rationally Controlled Synthesis of Metastable CuInSe ₂ Nanocrystals. <i>Chemistry of Materials</i> , 2018, 30, 5704-5713.	6.7	59
29	Solution-Phase Synthesis of Well-Defined Indium Sulfide Nanorods. <i>Chemistry of Materials</i> , 2009, 21, 1790-1792.	6.7	58
30	Controlling the Trap State Landscape of Colloidal CdSe Nanocrystals with Cadmium Halide Ligands. <i>Chemistry of Materials</i> , 2015, 27, 744-756.	6.7	58
31	Earth abundant CuSbS ₂ thin films solution processed from thiol-amine mixtures. <i>Journal of Materials Chemistry C</i> , 2016, 4, 6230-6233.	5.5	53
32	High-Throughput Continuous Flow Synthesis of Nickel Nanoparticles for the Catalytic Hydrodeoxygenation of Guaiacol. <i>ACS Sustainable Chemistry and Engineering</i> , 2017, 5, 632-639.	6.7	50
33	Chalcogenol Ligand Toolbox for CdSe Nanocrystals and Their Influence on Exciton Relaxation Pathways. <i>ACS Nano</i> , 2014, 8, 2512-2521.	14.6	48
34	Low-temperature synthesis of solid-solution Ba _x Sr _{1-x} TiO ₃ nanocrystals. <i>Journal of Materials Chemistry</i> , 2010, 20, 5074.	6.7	46
35	Ligand engineering in hybrid polymer:nanocrystal solar cells. <i>Materials Today</i> , 2015, 18, 31-38.	14.2	46
36	Solution-Phase Synthesis of Highly Conductive Tungsten Diselenide Nanosheets. <i>Chemistry of Materials</i> , 2013, 25, 2385-2387.	6.7	43

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37	Structural Disorder in AMoO ₄ (A = Ca, Sr, Ba) Scheelite Nanocrystals. Inorganic Chemistry, 2014, 53, 1056-1061.	4.0	43
38	Continuous Flow Synthesis of Rh and RhAg Alloy Nanoparticle Catalysts Enables Scalable Production and Improved Morphological Control. Chemistry of Materials, 2017, 29, 4341-4350.	6.7	39
39	Solution Deposited Cu ₂ BaSnS ₄ Se from a Thiolâ€“Amine Solvent Mixture. Chemistry of Materials, 2018, 30, 304-308.	6.7	39
40	Influence of Rotational Distortions on Li ⁺ and Na ⁺ -Intercalation in Anti-NASICON Fe ₂ (MoO ₄) ₃ . Chemistry of Materials, 2016, 28, 4492-4500.	6.7	38
41	Dielectric performance of high permittivity nanocomposites: impact of polystyrene grafting on BaTiO ₃ and TiO ₂ . Nanocomposites, 2016, 2, 117-124.	4.2	37
42	Ligand Exchange of Colloidal CdSe Nanocrystals with Stibanates Derived from Sb ₂ S ₃ Dissolved in a Thiol-Amine Mixture. Chemistry of Materials, 2014, 26, 6311-6317.	6.7	35
43	Direct Spectroscopic Evidence of Ultrafast Electron Transfer from a Low Band Gap Polymer to CdSe Quantum Dots in Hybrid Photovoltaic Thin Films. Journal of the American Chemical Society, 2013, 135, 18418-18426.	13.7	34
44	Exposing the Dynamics and Energetics of the N-Heterocyclic Carbeneâ€“Nanocrystal Interface. Journal of the American Chemical Society, 2016, 138, 14844-14847.	13.7	34
45	Continuous Flow Methods of Fabricating Catalytically Active Metal Nanoparticles. ACS Applied Materials & Interfaces, 2019, 11, 27479-27502.	8.0	34
46	Dissolution of Sn, SnO, and SnS in a Thiolâ€“Amine Solvent Mixture: Insights into the Identity of the Molecular Solutes for Solution-Processed SnS. Inorganic Chemistry, 2016, 55, 3175-3180.	4.0	32
47	Self-optimizing parallel millifluidic reactor for scaling nanoparticle synthesis. Chemical Communications, 2020, 56, 3745-3748.	4.1	32
48	Tunable Room-Temperature Synthesis of Coinage Metal Chalcogenide Nanocrystals from N-Heterocyclic Carbene Synthons. Chemistry of Materials, 2017, 29, 1396-1403.	6.7	31
49	Phase Directing Ability of an Ionic Liquid Solvent for the Synthesis of HER-Active Ni ₂ P Nanocrystals. ACS Applied Energy Materials, 2018, 1, 1823-1827.	5.1	30
50	Phase control in the colloidal synthesis of well-defined nickel sulfide nanocrystals. Nanoscale, 2018, 10, 16298-16306.	5.6	29
51	Bismuth Doping of Germanium Nanocrystals through Colloidal Chemistry. Chemistry of Materials, 2017, 29, 7353-7363.	6.7	26
52	Controlled Design of Phase- and Size-Tunable Monodisperse Ni ₂ P Nanoparticles in a Phosphonium-Based Ionic Liquid through Response Surface Methodology. Chemistry of Materials, 2019, 31, 1552-1560.	6.7	25
53	Going with the Flow: Continuous Flow Routes to Colloidal Nanoparticles. Chemistry of Materials, 2016, 28, 1003-1005.	6.7	23
54	Ligand-Mediated Phase Control in Colloidal AgInSe ₂ Nanocrystals. Chemistry of Materials, 2020, 32, 2935-2945.	6.7	23

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55	Solution Deposition of a Bournonite CuPbSbS_3 Semiconductor Thin Film from the Dissolution of Bulk Materials with a Thiol-Amine Solvent Mixture. <i>Journal of the American Chemical Society</i> , 2020, 142, 6173-6179.	13.7	22
56	Low Temperature Synthesis of Complex BaTiZrO_3 Perovskite Nanocrystals. <i>Chemistry of Materials</i> , 2012, 24, 3114-3116.		21
57	Novel semi-random and alternating copolymer hybrid solar cells utilizing CdSe multipods as versatile acceptors. <i>Chemical Communications</i> , 2013, 49, 8602.	4.1	21
58	Room Temperature Dissolution of Bulk Elemental Ni and Se for Solution Deposition of a NiSe_2 HER Electrocatalyst. <i>Inorganic Chemistry</i> , 2017, 56, 10143-10146.	4.0	21
59	Quantifying the Thermodynamics of Ligand Binding to CsPbBr_3 Quantum Dots. <i>Angewandte Chemie</i> , 2018, 130, 11885-11889.	2.0	21
60	Synthesis and Characterization of Ternary SnGeSe Nanocrystals. <i>Chemistry of Materials</i> , 2012, 24, 3514-3516.	6.7	20
61	Polymorphic Metastability in Colloidal Semiconductor Nanocrystals. <i>ChemNanoMat</i> , 2020, 6, 1567-1588.	2.8	20
62	Synthesis and Electrocatalytic HER Studies of Carbene-Ligated Cu_3P Nanocrystals. <i>ACS Applied Materials & Interfaces</i> , 2020, 12, 16394-16401.	8.0	19
63	Statistical Multiobjective Optimization of Thiospinel CoNi_2S_4 Nanocrystal Synthesis via Design of Experiments. <i>ACS Nano</i> , 2021, 15, 9422-9433.	14.6	18
64	Progress of thiol-amine $\tilde{\text{alkahest}}^{\text{TM}}$ solutions for thin film deposition. <i>Trends in Chemistry</i> , 2021, 3, 1061-1073.	8.5	18
65	Lanthanide-activated scheelite nanocrystal phosphors prepared by the low-temperature vapor diffusion sol-gel method. <i>Dalton Transactions</i> , 2016, 45, 18069-18073.	3.3	16
66	Investigating the Mechanism of Reversible Lithium Insertion into Anti-NASICON $\text{Fe}_2(\text{WO}_4)_3$. <i>ACS Applied Materials & Interfaces</i> , 2017, 9, 10813-10819.	8.0	16
67	Crystal Structure of Colloidally Prepared Metastable Ag_2Se Nanocrystals. <i>Nano Letters</i> , 2021, 21, 5881-5887.	9.1	16
68	Surface modification of BaTiO_3 inclusions in polydicyclopentadiene nanocomposites for energy storage. <i>Journal of Applied Polymer Science</i> , 2014, 131, .	2.6	15
69	Effects of interfacial ligand type on hybrid P3HT:CdSe quantum dot solar cell device parameters. <i>Journal of Chemical Physics</i> , 2019, 151, 074704.	3.0	15
70	Techno-Economic Analysis of Recycled Ionic Liquid Solvent Used in a Model Colloidal Platinum Nanoparticle Synthesis. <i>ACS Sustainable Chemistry and Engineering</i> , 2021, 9, 246-253.	6.7	15
71	Surface Functionalization of Surfactant-Free Particles: A Strategy to Tailor the Properties of Nanocomposites for Enhanced Thermoelectric Performance. <i>Angewandte Chemie - International Edition</i> , 2022, 61, .	13.8	15
72	Thermally activated rotational disorder in CaMoO_4 nanocrystals. <i>CrystEngComm</i> , 2016, 18, 4485-4488.	2.6	14

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73	Solution Processing Cu ₃ BiS ₃ Absorber Layers with a Thiol–Amine Solvent Mixture. ACS Applied Energy Materials, 2021, 4, 11026-11031.	5.1	13
74	Transitioning rationally designed catalytic materials to real –working– catalysts produced at commercial scale: nanoparticle materials. Catalysis, 0, , 213-281.	1.0	12
75	Surface coordination chemistry of germanium nanocrystals synthesized by microwave-assisted reduction in oleylamine. Nanoscale, 2020, 12, 2764-2772.	5.6	11
76	Discovery of a Wurtzite-like Cu ₂ FeSnSe ₄ Semiconductor Nanocrystal Polymorph and Implications for Related CuFeSe ₂ Materials. ACS Nano, 2021, 15, 13463-13474.	14.6	10
77	Throughput Optimization of Molybdenum Carbide Nanoparticle Catalysts in a Continuous Flow Reactor Using Design of Experiments. ACS Applied Nano Materials, 2022, 5, 1966-1975.	5.0	10
78	Effect of microwave heating on the synthesis of rhodium nanoparticles in ionic liquids. Inorganica Chimica Acta, 2014, 422, 65-69.	2.4	8
79	Structural Insights on Microwave-Synthesized Antimony-Doped Germanium Nanocrystals. ACS Nano, 2021, 15, 1685-1700.	14.6	7
80	Effects of surface ligands on energetic disorder and charge transport of P3HT:CdSe hybrid solar cells. Physica Status Solidi (B): Basic Research, 2015, 252, 1325-1333.	1.5	5
81	Preparation of electrocatalysts using a thiol–amine solution processing method. Dalton Transactions, 2018, 47, 5137-5143.	3.3	5
82	Kinetics and mechanistic details of bulk ZnO dissolution using a thiol–imidazole system. Chemical Science, 2022, 13, 3208-3215.	7.4	5
83	Formation Pathway of Wurtzite-like Cu ₂ ZnSnSe ₄ Nanocrystals. Inorganic Chemistry, 2021, 60, 17178-17185.	4.0	4
84	Composition-dependent surface chemistry of colloidal Ba _x Sr _{1-x} TiO ₃ perovskite nanocrystals. Chemical Communications, 2016, 52, 13791-13794.	4.1	3
85	Very Low-Temperature, Gram-Scale Synthesis of Monodisperse BaTiO ₃ Nanocrystals via an Interfacial Hydrolysis Reaction. Materials Research Society Symposia Proceedings, 2008, 1094, 1.	0.1	2
86	Probing the Ligand Exchange of N-Heterocyclic Carbene-Capped Ag ₂ S Nanocrystals with Amines and Carboxylic Acids. Inorganic Chemistry, 2021, 60, 13699-13706.	4.0	2
87	Hybrid Polymer: Nanocrystal Solar Cells. Materials and Energy, 2018, , 405-444.	0.1	0
88	Rationalizing the Surface Structure of CsPbBr ₃ Perovskite QDs upon Post-synthesis Surface Treatments by Solid-State NMR Spectroscopy. , 0, , .		0
89	Temperature-dependent behavior in the local structure of BaTiO ₃ nanocrystals. CrystEngComm, 0, , .	2.6	0