Richard L Brutchey

List of Publications by Year
in descending order

89 papers	4,398 citations	87888 38 h-index	110387 64 g-index
94 all docs	94 docs citations	94 times ranked	6491 citing authors

#	Article	IF	Citations
1	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
2	Kinetics and mechanistic details of bulk ZnO dissolution using a thiolâ€“imidazole system. Chemical Science, 2022, 13, 3208-3215.	7.4	5
3	Surface Functionalization of Surfactantâ€Free Particles: A Strategy to Tailor the Properties of Nanocomposites for Enhanced Thermoelectric Performance. Angewandte Chemie - International Edition, 2022, 61, .	13.8	15
4	Techno-Economic Analysis of Recycled Ionic Liquid Solvent Used in a Model Colloidal Platinum Nanoparticle Synthesis. ACS Sustainable Chemistry and Engineering, 2021, 9, 246-253.	6.7	15
5	The Surface Chemistry and Structure of Colloidal Lead Halide Perovskite Nanocrystals. Accounts of Chemical Research, 2021, 54, 707-718.	15.6	71
6	Structural Insights on Microwave-Synthesized Antimony-Doped Germanium Nanocrystals. ACS Nano, 2021, 15, 1685-1700.	14.6	7
7	Statistical Multiobjective Optimization of Thiospinel CoNi₂S₄ Nanocrystal Synthesis via Design of Experiments. ACS Nano, 2021, 15, 9422-9433.	14.6	18
8	Crystal Structure of Colloidally Prepared Metastable Ag₂Se Nanocrystals. Nano Letters, 2021, 21, 5881-5887.	9.1	16
9	Probing the Ligand Exchange of N-Heterocyclic Carbene-Capped Ag2S Nanocrystals with Amines and Carboxylic Acids. Inorganic Chemistry, 2021, 60, 13699-13706.	4.0	2
10	Discovery of a Wurtzite-like Cu₂FeSnSe₄ Semiconductor Nanocrystal Polymorph and Implications for Related CuFeSe₂ Materials. ACS Nano, 2021, 15, 13463-13474.	14.6	10
11	Solution Processing Cu₃BiS₃ Absorber Layers with a Thiolâ€“Amine Solvent Mixture. ACS Applied Energy Materials, 2021, 4, 11026-11031.	5.1	13
12	Progress of thiol-amine â€˜alkahestâ€™ solutions for thin film deposition. Trends in Chemistry, 2021, 3, 1061-1073.	8.5	18
13	Formation Pathway of Wurtzite-like Cu₂ZnSnSe₄ Nanocrystals. Inorganic Chemistry, 2021, 60, 17178-17185.	4.0	4
14	An Exceptionally Mild and Scalable Solution-Phase Synthesis of Molybdenum Carbide Nanoparticles for Thermocatalytic CO₂ Hydrogenation. Journal of the American Chemical Society, 2020, 142, 1010-1019.	13.7	79
15	Polymorphic Metastability in Colloidal Semiconductor Nanocrystals. ChemNanoMat, 2020, 6, 1567-1588.	2.8	20
16	Synthesis and Electrocatalytic HER Studies of Carbene-Ligated Cu_{3â€“x}P Nanocrystals. ACS Applied Materials & Interfaces, 2020, 12, 16394-16401.	8.0	19
17	Solution Deposition of a Bournonite CuPbSbS₃ Semiconductor Thin Film from the Dissolution of Bulk Materials with a Thiol-Amine Solvent Mixture. Journal of the American Chemical Society, 2020, 142, 6173-6179.	13.7	22
18	Ligand-Mediated Phase Control in Colloidal AgInSe₂ Nanocrystals. Chemistry of Materials, 2020, 32, 2935-2945.	6.7	23

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19	Surface Termination of CsPbBr₃ Perovskite Quantum Dots Determined by Solid-State NMR Spectroscopy. Journal of the American Chemical Society, 2020, 142, 6117-6127.	13.7	135
20	Self-optimizing parallel millifluidic reactor for scaling nanoparticle synthesis. Chemical Communications, 2020, 56, 3745-3748.	4.1	32
21	Surface coordination chemistry of germanium nanocrystals synthesized by microwave-assisted reduction in oleylamine. Nanoscale, 2020, 12, 2764-2772.	5.6	11
22	Continuous Flow Methods of Fabricating Catalytically Active Metal Nanoparticles. ACS Applied Materials & Interfaces, 2019, 11, 27479-27502.	8.0	34
23	Effects of interfacial ligand type on hybrid P3HT:CdSe quantum dot solar cell device parameters. Journal of Chemical Physics, 2019, 151, 074704.	3.0	15
24	Controlled Design of Phase- and Size-Tunable Monodisperse Ni₂P Nanoparticles in a Phosphonium-Based Ionic Liquid through Response Surface Methodology. Chemistry of Materials, 2019, 31, 1552-1560.	6.7	25
25	Solution Deposited Cu₂BaSnS_{4â€“x}Se_x from a Thiolâ€“Amine Solvent Mixture. Chemistry of Materials, 2018, 30, 304-308.	6.7	39
26	Preparation of electrocatalysts using a thiolâ€“amine solution processing method. Dalton Transactions, 2018, 47, 5137-5143.	3.3	5
27	Depressed Phase Transitions and Thermally Persistent Local Distortions in CsPbBr₃ Quantum Dots. Chemistry of Materials, 2018, 30, 6711-6716.	6.7	64
28	Utilizing Diselenide Precursors toward Rationally Controlled Synthesis of Metastable CuInSe₂ Nanocrystals. Chemistry of Materials, 2018, 30, 5704-5713.	6.7	59
29	Quantifying the Thermodynamics of Ligand Binding to CsPbBr 3 Quantum Dots. Angewandte Chemie, 2018, 130, 11885-11889.	2.0	21
30	Quantifying the Thermodynamics of Ligand Binding to CsPbBr₃ Quantum Dots. Angewandte Chemie - International Edition, 2018, 57, 11711-11715.	13.8	134
31	Phase Directing Ability of an Ionic Liquid Solvent for the Synthesis of HER-Active Ni₂P Nanocrystals. ACS Applied Energy Materials, 2018, 1, 1823-1827.	5.1	30
32	Phase control in the colloidal synthesis of well-defined nickel sulfide nanocrystals. Nanoscale, 2018, 10, 16298-16306.	5.6	29
33	Hybrid Polymer: Nanocrystal Solar Cells. Materials and Energy, 2018, , 405-444.	0.1	0
34	Tunable Room-Temperature Synthesis of Coinage Metal Chalcogenide Nanocrystals from N-Heterocyclic Carbene Synthons. Chemistry of Materials, 2017, 29, 1396-1403.	6.7	31
35	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
36	Solution processing of chalcogenide materials using thiolâ€“amine â€œalkahestâ€•solvent systems. Chemical Communications, 2017, 53, 4888-4902.	4.1	81

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37	Investigating the Mechanism of Reversible Lithium Insertion into Anti-NASICON Fe₂(WO₄)₃. ACS Applied Materials & Interfaces, 2017, 9, 10813-10819.	8.0	16
38	Bismuth Doping of Germanium Nanocrystals through Colloidal Chemistry. Chemistry of Materials, 2017, 29, 7353-7363.	6.7	26
39	Room Temperature Dissolution of Bulk Elemental Ni and Se for Solution Deposition of a NiSe2 HER Electrocatalyst. Inorganic Chemistry, 2017, 56, 10143-10146.	4.0	21
40	High-Throughput Continuous Flow Synthesis of Nickel Nanoparticles for the Catalytic Hydrodeoxygenation of Guaiacol. ACS Sustainable Chemistry and Engineering, 2017, 5, 632-639.	6.7	50
41	Flow invariant droplet formation for stable parallel microreactors. Nature Communications, 2016, 7, 10780.	12.8	90
42	Thermally activated rotational disorder in CaMoO₄nanocrystals. CrystEngComm, 2016, 18, 4485-4488.	2.6	14
43	Dielectric performance of high permitivity nanocomposites: impact of polystyrene grafting on BaTiO₃ and TiO₂. Nanocomposites, 2016, 2, 117-124.	4.2	37
44	Method for the Solution Deposition of Phase-Pure CoSe₂ as an Efficient Hydrogen Evolution Reaction Electrocatalyst. ACS Energy Letters, 2016, 1, 607-611.	17.4	62
45	Compositionally Dependent Phase Identity of Colloidal CsPbBr3â€“xIx Quantum Dots. Chemistry of Materials, 2016, 28, 7574-7577.	6.7	60
46	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
47	Lanthanide-activated scheelite nanocrystal phosphors prepared by the low-temperature vapor diffusion solâ€“gel method. Dalton Transactions, 2016, 45, 18069-18073.	3.3	16
48	Composition-dependent surface chemistry of colloidal Ba_xSr_{1â^'x}TiO₃ perovskite nanocrystals. Chemical Communications, 2016, 52, 13791-13794.	4.1	3
49	Influence of Rotational Distortions on Li⁺- and Na⁺-Intercalation in Anti-NASICON Fe₂(MoO₄)₃. Chemistry of Materials, 2016, 28, 4492-4500.	6.7	38
50	Earth abundant CuSbS₂ thin films solution processed from thiolâ€“amine mixtures. Journal of Materials Chemistry C, 2016, 4, 6230-6233.	5.5	53
51	Going with the Flow: Continuous Flow Routes to Colloidal Nanoparticles. Chemistry of Materials, 2016, 28, 1003-1005.	6.7	23
52	On the crystal structure of colloidally prepared CsPbBr₃ quantum dots. Chemical Communications, 2016, 52, 5246-5249.	4.1	276
53	Iodide-Passivated Colloidal PbS Nanocrystals Leading to Highly Efficient Polymer:Nanocrystal Hybrid Solar Cells. Chemistry of Materials, 2016, 28, 1897-1906.	6.7	71
54	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

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55	Solutionâ€Phase Conversion of Bulk Metal Oxides to Metal Chalcogenides Using a Simple Thiolâ€“Amine Solvent Mixture. Angewandte Chemie - International Edition, 2015, 54, 8378-8381.	13.8	78
56	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
57	Controlling the Trap State Landscape of Colloidal CdSe Nanocrystals with Cadmium Halide Ligands. Chemistry of Materials, 2015, 27, 744-756.	6.7	58
58	Nickel Oxide Particles Catalyze Photochemical Hydrogen Evolution from Waterâ€”Nanoscaling Promotes P-Type Character and Minority Carrier Extraction. ACS Nano, 2015, 9, 5135-5142.	14.6	98
59	Diorganyl Dichalcogenides as Useful Synthons for Colloidal Semiconductor Nanocrystals. Accounts of Chemical Research, 2015, 48, 2918-2926.	15.6	84
60	Ligand engineering in hybrid polymer:nanocrystal solar cells. Materials Today, 2015, 18, 31-38.	14.2	46
61	Structural Disorder in AMoO₄ (A = Ca, Sr, Ba) Scheelite Nanocrystals. Inorganic Chemistry, 2014, 53, 1056-1061.	4.0	43
62	Surface modification of BaTiO₃ inclusions in polydicyclopentadiene nanocomposites for energy storage. Journal of Applied Polymer Science, 2014, 131, .	2.6	15
63	Ligand Exchange of Colloidal CdSe Nanocrystals with Stibanates Derived from Sb₂S₃ Dissolved in a Thiol-Amine Mixture. Chemistry of Materials, 2014, 26, 6311-6317.	6.7	35
64	Low Temperature Solution-Phase Deposition of SnS Thin Films. Chemistry of Materials, 2014, 26, 5444-5446.	6.7	84
65	Effect of microwave heating on the synthesis of rhodium nanoparticles in ionic liquids. Inorganica Chimica Acta, 2014, 422, 65-69.	2.4	8
66	Chalcogenol Ligand Toolbox for CdSe Nanocrystals and Their Influence on Exciton Relaxation Pathways. ACS Nano, 2014, 8, 2512-2521.	14.6	48
67	Facile dissolution of selenium and tellurium in a thiolâ€“amine solvent mixture under ambient conditions. Chemical Science, 2014, 5, 2498.	7.4	113
68	Novel semi-random and alternating copolymer hybrid solar cells utilizing CdSe multipods as versatile acceptors. Chemical Communications, 2013, 49, 8602.	4.1	21
69	Alkahest for V₂VI₃ 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
70	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
71	Solution-Phase Synthesis of Highly Conductive Tungsten Diselenide Nanosheets. Chemistry of Materials, 2013, 25, 2385-2387.	6.7	43
72	Ligand Exchange on Colloidal CdSe Nanocrystals Using Thermally Labile tert-Butylthiol for Improved Photocurrent in Nanocrystal Films. Journal of the American Chemical Society, 2012, 134, 1085-1092.	13.7	108

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73	Low Temperature Synthesis of Complex Ba_{1â€“x}Sr_xTi_{1â€“y}Zr_yO₃ Perovskite Nanocrystals. Chemistry of Materials, 2012, 24, 3114-3116.	6.7	21
74	Effect of Ionic Liquid Impurities on the Synthesis of Silver Nanoparticles. Langmuir, 2012, 28, 15987-15993.	3.5	67
75	Synthesis and Characterization of Ternary Sn_xGe_{1â€“x}Se Nanocrystals. Chemistry of Materials, 2012, 24, 3514-3516.	6.7	20
76	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
77	Improving Open Circuit Potential in Hybrid P3HT:CdSe Bulk Heterojunction Solar Cells via Colloidal tert-Butylthiol Ligand Exchange. ACS Nano, 2012, 6, 4222-4230.	14.6	105
78	Structural Evolution of BaTiO₃ Nanocrystals Synthesized at Room Temperature. Journal of the American Chemical Society, 2012, 134, 9475-9487.	13.7	90
79	Synthesis and Characterization of Wurtzite-Phase Copper Tin Selenide Nanocrystals. Journal of the American Chemical Society, 2012, 134, 23-26.	13.7	119
80	Synthesis of Metastable Wurtzite CuInSe₂ Nanocrystals. Chemistry of Materials, 2010, 22, 1613-1615.	6.7	152
81	Flow-focused synthesis of monodisperse gold nanoparticles using ionic liquids on a microfluidic platform. Lab on A Chip, 2010, 10, 3377.	6.0	66
82	Low-temperature synthesis of solid-solution BaxSr1â^'xTiO3 nanocrystals. Journal of Materials Chemistry, 2010, 20, 5074.	6.7	46
83	Growth Kinetics of Monodisperse Cuâ^'Inâ^'S Nanocrystals Using a Dialkyl Disulfide Sulfur Source. Chemistry of Materials, 2009, 21, 4299-4304.	6.7	116
84	Solution-Phase Synthesis of Well-Defined Indium Sulfide Nanorods. Chemistry of Materials, 2009, 21, 1790-1792.	6.7	58
85	Silicatein and the Translation of its Molecular Mechanism of Biosilicification into Low Temperature Nanomaterial Synthesis. Chemical Reviews, 2008, 108, 4915-4934.	47.7	223
86	Very Low-Temperature, Gram-Scale Synthesis of Monodisperse BaTiO₃ Nanocrystals via an Interfacial Hydrolysis Reaction. Materials Research Society Symposia Proceedings, 2008, 1094, 1.	0.1	2
87	Transitioning rationally designed catalytic materials to real â€œworkingâ€•catalysts produced at commercial scale: nanoparticle materials. Catalysis, 0, , 213-281.	1.0	12
88	Rationalizing the Surface Structure of CsPbBr3 Perovskite QDs upon Post-synthesis Surface Treatments by Solid-State NMR Spectroscopy. , 0, , .		0
89	Temperature-dependent behavior in the local structure of BaTiO₃ nanocrystals. CrystEngComm, 0, , .	2.6	0