Raffaella Buonsanti

List of Publications by Year
in descending order

118 papers	8,779 citations	50170 46 h-index	42291 92 g-index
122 all docs	122 docs citations	122 times ranked	11140 citing authors

#	ARTICLE	IF	CITATIONS
1	Tailoring Copper Nanocrystals towards C₂ Products in Electrochemical CO₂ Reduction. Angewandte Chemie - International Edition, 2016, 55, 5789-5792.	7.2	667
2	Dynamically Modulating the Surface Plasmon Resonance of Doped Semiconductor Nanocrystals. Nano Letters, 2011, 11, 4415-4420.	4.5	491
3	Tunable Infrared Absorption and Visible Transparency of Colloidal Aluminum-Doped Zinc Oxide Nanocrystals. Nano Letters, 2011, 11, 4706-4710.	4.5	443
4	CsPbBr₃ QD/AlO_{<i>x</i>} Inorganic Nanocomposites with Exceptional Stability in Water, Light, and Heat. Angewandte Chemie - International Edition, 2017, 56, 10696-10701.	7.2	389
5	Structural Sensitivities in Bimetallic Catalysts for Electrochemical CO₂ Reduction Revealed by Agâ€“Cu Nanodimers. Journal of the American Chemical Society, 2019, 141, 2490-2499.	6.6	382
6	Facet-Dependent Selectivity of Cu Catalysts in Electrochemical CO₂ Reduction at Commercially Viable Current Densities. ACS Catalysis, 2020, 10, 4854-4862.	5.5	331
7	Chemistry of Doped Colloidal Nanocrystals. Chemistry of Materials, 2013, 25, 1305-1317.	3.2	310
8	Stability and Degradation Mechanisms of Copperâ€Based Catalysts for Electrochemical CO₂ Reduction. Angewandte Chemie - International Edition, 2020, 59, 14736-14746.	7.2	281
9	Potential-induced nanoclustering of metallic catalysts during electrochemical CO2 reduction. Nature Communications, 2018, 9, 3117.	5.8	253
10	Nonhydrolytic Synthesis of High-Quality Anisotropically Shaped Brookite TiO₂ Nanocrystals. Journal of the American Chemical Society, 2008, 130, 11223-11233.	6.6	247
11	Exceptionally Mild Reactive Stripping of Native Ligands from Nanocrystal Surfaces by Using Meerweinâ€™s Salt. Angewandte Chemie - International Edition, 2012, 51, 684-689.	7.2	240
12	Nb-Doped Colloidal TiO₂ Nanocrystals with Tunable Infrared Absorption. Chemistry of Materials, 2013, 25, 3383-3390.	3.2	177
13	Colloidal Strategies for Preparing Oxideâ€Based Hybrid Nanocrystals. European Journal of Inorganic Chemistry, 2008, 2008, 837-854.	1.0	175
14	Selective and Stable Electroreduction of CO₂ to CO at the Copper/Indium Interface. ACS Catalysis, 2018, 8, 6571-6581.	5.5	175
15	Seeded Growth of Asymmetric Binary Nanocrystals Made of a Semiconductor TiO2Rodlike Section and a Magnetic Î³-Fe2O3Spherical Domain. Journal of the American Chemical Society, 2006, 128, 16953-16970.	6.6	163
16	Architectural Control of Seeded-Grown Magneticâˆ’Semicondutor Iron Oxideâˆ’TiO₂ Nanorod Heterostructures: The Role of Seeds in Topology Selection. Journal of the American Chemical Society, 2010, 132, 2437-2464.	6.6	139
17	Correlating Magneto-Structural Properties to Hyperthermia Performance of Highly Monodisperse Iron Oxide Nanoparticles Prepared by a Seeded-Growth Route. Chemistry of Materials, 2011, 23, 4170-4180.	3.2	134
18	Water solubilization of hydrophobic nanocrystals by means of poly(maleic) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 62 Td (anhydride-alt-1-	6.7	133

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19	Elucidating the Facet-Dependent Selectivity for CO₂ Electroreduction to Ethanol of Cuâ€“Ag Tandem Catalysts. ACS Catalysis, 2021, 11, 4456-4463.	5.5	130
20	Synthesis of Cu/CeO_{2-x} Nanocrystalline Heterodimers with Interfacial Active Sites To Promote CO₂ Electroreduction. ACS Catalysis, 2019, 9, 5035-5046.	5.5	124
21	Nearâ€Infrared Spectrally Selective Plasmonic Electrochromic Thin Films. Advanced Optical Materials, 2013, 1, 215-220.	3.6	123
22	Substitutional or Interstitial Site-Selective Nitrogen Doping in TiO₂ Nanostructures. Journal of Physical Chemistry C, 2015, 119, 7443-7452.	1.5	118
23	Fabrication of Planar Heterojunction Perovskite Solar Cells by Controlled Low-Pressure Vapor Annealing. Journal of Physical Chemistry Letters, 2015, 6, 493-499.	2.1	112
24	Nanocrystal/Metalâ€“Organic Framework Hybrids as Electrocatalytic Platforms for CO₂ Conversion. Angewandte Chemie - International Edition, 2019, 58, 12632-12639.	7.2	112
25	Hyperbranched Anatase TiO₂Nanocrystals: Nonaqueous Synthesis, Growth Mechanism, and Exploitation in Dye-Sensitized Solar Cells. Journal of the American Chemical Society, 2011, 133, 19216-19239.	6.6	110
26	Realâ€time Monitoring Reveals Dissolution/Redeposition Mechanism in Copper Nanocatalysts during the Initial Stages of the CO₂ Reduction Reaction. Angewandte Chemie - International Edition, 2021, 60, 1347-1354.	7.2	108
27	Size dependent selectivity of Cu nano-octahedra catalysts for the electrochemical reduction of CO₂ to CH₄. Chemical Communications, 2019, 55, 8796-8799.	2.2	99
28	Nanocomposites of Titanium Dioxide and Polystyrene-Poly(ethylene oxide) Block Copolymer as Solid-State Electrolytes for Lithium Metal Batteries. Journal of the Electrochemical Society, 2013, 160, A1611-A1617.	1.3	96
29	Universal Oxide Shell Growth Enables in Situ Structural Studies of Perovskite Nanocrystals during the Anion Exchange Reaction. Journal of the American Chemical Society, 2019, 141, 8254-8263.	6.6	92
30	Colloidal Nanocrystals as Heterogeneous Catalysts for Electrochemical CO₂ Conversion. Chemistry of Materials, 2019, 31, 13-25.	3.2	91
31	Tailoring Copper Nanocrystals towards C₂ Products in Electrochemical CO₂ Reduction. Angewandte Chemie, 2016, 128, 5883-5886.	1.6	90
32	Assembly of Ligand-Stripped Nanocrystals into Precisely Controlled Mesoporous Architectures. Nano Letters, 2012, 12, 3872-3877.	4.5	88
33	Stability and Degradation Mechanisms of Copperâ€Based Catalysts for Electrochemical CO₂ Reduction. Angewandte Chemie, 2020, 132, 14844-14854.	1.6	88
34	Dynamical Formation of Spatially Localized Arrays of Aligned Nanowires in Plastic Films with Magnetic Anisotropy. ACS Nano, 2010, 4, 1873-1878.	7.3	87
35	General Method for the Synthesis of Hierarchical Nanocrystal-Based Mesoporous Materials. ACS Nano, 2012, 6, 6386-6399.	7.3	85
36	Polyoxometalates and colloidal nanocrystals as building blocks for metal oxide nanocomposite films. Journal of Materials Chemistry, 2011, 21, 11631.	6.7	70

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37	Magneticâ€“Fluorescent Colloidal Nanobeads: Preparation and Exploitation in Cell Separation Experiments. Macromolecular Bioscience, 2009, 9, 952-958.	2.1	66
38	Well-Defined Copper-Based Nanocatalysts for Selective Electrochemical Reduction of CO₂ to C₂ Products. ACS Energy Letters, 2022, 7, 1284-1291.	8.8	63
39	Size, Shape, and Internal Atomic Ordering of Nanocrystals by Atomic Pair Distribution Functions: A Comparative Study of Î³-Fe₂O₃ Nanosized Spheres and Tetrapods. Journal of the American Chemical Society, 2009, 131, 14264-14266.	6.6	59
40	Long-Range Exciton Diffusion in Two-Dimensional Assemblies of Cesium Lead Bromide Perovskite Nanocrystals. ACS Nano, 2020, 14, 6999-7007.	7.3	57
41	Quantitative 3D determination of self-assembled structures on nanoparticles using small angle neutron scattering. Nature Communications, 2018, 9, 1343.	5.8	54
42	Molecular tunability of surface-functionalized metal nanocrystals for selective electrochemical CO₂ reduction. Chemical Science, 2019, 10, 10356-10365.	3.7	54
43	Exploring the Chemical Reactivity of Gallium Liquid Metal Nanoparticles in Galvanic Replacement. Journal of the American Chemical Society, 2020, 142, 19283-19290.	6.6	54
44	NIR-Selective electrochromic heteromaterial frameworks: a platform to understand mesoscale transport phenomena in solid-state electrochemical devices. Journal of Materials Chemistry C, 2014, 2, 3328.	2.7	53
45	Dual-Facet Mechanism in Copper Nanocubes for Electrochemical CO₂ Reduction into Ethylene. Journal of Physical Chemistry Letters, 2019, 10, 4259-4265.	2.1	52
46	Colloidal Nanocrystals as Electrocatalysts with Tunable Activity and Selectivity. ACS Catalysis, 2021, 11, 1248-1295.	5.5	51
47	Constructing Functional Mesostructured Materials from Colloidal Nanocrystal Building Blocks. Accounts of Chemical Research, 2014, 47, 236-246.	7.6	50
48	Understanding the Formation Mechanism of Metal Nanocrystal@MOF-74 Hybrids. Chemistry of Materials, 2016, 28, 3839-3849.	3.2	50
49	Colloidal semiconductor/magnetic heterostructures based on iron-oxide-functionalized brookite TiO2 nanorods. Physical Chemistry Chemical Physics, 2009, 11, 3680.	1.3	48
50	Insights into Reaction Intermediates to Predict Synthetic Pathways for Shape-Controlled Metal Nanocrystals. Journal of the American Chemical Society, 2019, 141, 16312-16322.	6.6	47
51	Sub-micron Polymerâ€“Zeolitic Imidazolate Framework Layered Hybrids via Controlled Chemical Transformation of Naked ZnO Nanocrystal Films. Chemistry of Materials, 2015, 27, 7673-7679.	3.2	45
52	Carbonâ€Free TiO₂ Battery Electrodes Enabled by Morphological Control at the Nanoscale. Advanced Energy Materials, 2013, 3, 1286-1291.	10.2	41
53	Synthesis and Phase Stability of Metastable Bixbyite V2O3Colloidal Nanocrystals. Chemistry of Materials, 2013, 25, 3172-3179.	3.2	40
54	Synthesis and Size-Dependent Optical Properties of Intermediate Band Gap Cu₃VS₄ Nanocrystals. Chemistry of Materials, 2019, 31, 532-540.	3.2	39

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55	Bandgap Tunability in Sbâ€Alloyed BiVO₄ Quaternary Oxides as Visible Light Absorbers for Solar Fuel Applications. Advanced Materials, 2015, 27, 6733-6740.	11.1	38
56	Shaping Copper Nanocatalysts to Steer Selectivity in the Electrochemical CO₂ Reduction Reaction. Accounts of Chemical Research, 2022, 55, 629-637.	7.6	38
57	Elucidating the structure-dependent selectivity of CuZn towards methane and ethanol in CO₂ electroreduction using tailored Cu/ZnO precatalysts. Chemical Science, 2021, 12, 14484-14493.	3.7	37
58	Probing interfacial energetics and charge transfer kinetics in semiconductor nanocomposites: New insights into heterostructured TiO2/BiVO4 photoanodes. Nano Energy, 2017, 34, 375-384.	8.2	36
59	Metalâ€“ligand bond strength determines the fate of organic ligands on the catalyst surface during the electrochemical CO₂ reduction reaction. Chemical Science, 2020, 11, 9296-9302.	3.7	35
60	Tunneling Magnetoresistance with Sign Inversion in Junctions Based on Iron Oxide Nanocrystal Superlattices. ACS Nano, 2011, 5, 1731-1738.	7.3	34
61	Theory-Guided Enhancement of CO₂ Reduction to Ethanol on Agâ€“Cu Tandem Catalysts via Particle-Size Effects. ACS Catalysis, 2021, 11, 13330-13336.	5.5	34
62	High-quality photoelectrodes based on shape-tailored TiO2 nanocrystals for dye-sensitized solar cells. Journal of Materials Chemistry, 2011, 21, 13371.	6.7	33
63	Evolution of Ordered Metal Chalcogenide Architectures through Chemical Transformations. Journal of the American Chemical Society, 2013, 135, 7446-7449.	6.6	30
64	Chemical transformations at the nanoscale: nanocrystal-seeded synthesis of Î²-Cu₂V₂O₇ with enhanced photoconversion efficiencies. Chemical Science, 2018, 9, 5658-5665.	3.7	27
65	The Native Oxide Skin of Liquid Metal Ga Nanoparticles Prevents Their Rapid Coalescence during Electrocatalysis. Journal of the American Chemical Society, 2022, 144, 10053-10063.	6.6	26
66	Colloidal nanocrystals for photoelectrochemical and photocatalytic water splitting. Journal Physics D: Applied Physics, 2017, 50, 074006.	1.3	25
67	CsPbBr₃ QD/AlO_{<i>x</i>} Inorganic Nanocomposites with Exceptional Stability in Water, Light, and Heat. Angewandte Chemie, 2017, 129, 10836-10841.	1.6	25
68	Realâ€time Monitoring Reveals Dissolution/Redeposition Mechanism in Copper Nanocatalysts during the Initial Stages of the CO₂ Reduction Reaction. Angewandte Chemie, 2021, 133, 1367-1374.	1.6	25
69	Sizable Excitonic Effects Undermining the Photocatalytic Efficiency of Î²-Cu₂V₂O₇. Journal of Physical Chemistry Letters, 2018, 9, 5698-5703.	2.1	24
70	Nanocrystal/Metalâ€“Organic Framework Hybrids as Electrocatalytic Platforms for CO 2 Conversion. Angewandte Chemie, 2019, 131, 12762-12769.	1.6	23
71	Investigation of Ethylene and Propylene Production from CO₂ Reduction over Copper Nanocubes in an MEA-Type Electrolyzer. ACS Applied Materials & Interfaces, 2022, 14, 7779-7787.	4.0	22
72	Nanocrystals as Precursors in Solid-State Reactions for Size- and Shape-Controlled Polyelemental Nanomaterials. Journal of the American Chemical Society, 2020, 142, 15931-15940.	6.6	21

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73	Modulating the Reactivity of Liquid Ga Nanoparticle Inks by Modifying Their Surface Chemistry. Journal of the American Chemical Society, 2022, 144, 1993-2001.	6.6	20
74	Colloidal Nanocrystal Frameworks. Advanced Materials, 2015, 27, 5820-5829.	11.1	19
75	Efficient polymer passivation of ligandâ€stripped nanocrystal surfaces. Journal of Polymer Science Part A, 2012, 50, 3719-3727.	2.5	18
76	Stabilization of Battery Electrode/Electrolyte Interfaces Employing Nanocrystals with Passivating Epitaxial Shells. Chemistry of Materials, 2015, 27, 394-399.	3.2	17
77	Exploring Energy Transfer in a Metal/Perovskite Nanocrystal Antenna to Drive Photocatalysis. Journal of Physical Chemistry Letters, 2019, 10, 7797-7803.	2.1	17
78	Shaping non-noble metal nanocrystals <i>via</i> colloidal chemistry. Chemical Science, 2020, 11, 11394-11403.	3.7	17
79	Copper, my precious!. Nature Catalysis, 2021, 4, 736-737.	16.1	17
80	Colloidal Synthesis of Cuâ€“Mâ€“S (M = V, Cr, Mn) Nanocrystals by Tuning the Copper Precursor Reactivity. Chemistry of Materials, 2020, 32, 9780-9786.	3.2	15
81	Synthetic Tunability of Colloidal Covalent Organic Framework/Nanocrystal Hybrids. Chemistry of Materials, 2021, 33, 2646-2654.	3.2	15
82	Advances in the Chemical Fabrication of Complex Multimaterial Nanocrystals. Recent Patents on Nanotechnology, 2007, 1, 224-232.	0.7	14
83	Ligand Locking on Quantum Dot Surfaces via a Mild Reactive Surface Treatment. Journal of the American Chemical Society, 2021, 143, 13418-13427.	6.6	14
84	Tunable Metal Oxide Shell as a Spacer to Study Energy Transfer in Semiconductor Nanocrystals. Journal of Physical Chemistry Letters, 2020, 11, 3430-3435.	2.1	13
85	Reaction intermediates in the synthesis of colloidal nanocrystals. , 2022, 1, 344-351.		13
86	Understanding the mechanism of metal-induced degradation in perovskite nanocrystals. Nanoscale, 2019, 11, 19543-19550.	2.8	12
87	Polymer Lamellae as Reaction Intermediates in the Formation of Copper Nanospheres as Evidenced by Inâ€…Situ Xâ€ray Studies. Angewandte Chemie - International Edition, 2020, 59, 11627-11633.	7.2	12
88	Colloidal-ALD-Grown Hybrid Shells Nucleate via a Ligandâ€“Precursor Complex. Journal of the American Chemical Society, 2022, 144, 3998-4008.	6.6	12
89	Formation and microscopic investigation of iron oxide aligned nanowires into polymeric nanocomposite films. Microscopy Research and Technique, 2010, 73, 952-958.	1.2	11
90	Suitability of Cu-substituted Î²-Mn2V2O7 and Mn-substituted Î²-Cu2V2O7 for photocatalytic water-splitting. Journal of Chemical Physics, 2020, 153, 084704.	1.2	11

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91	Colloidal Nanocrystals as Precursors and Intermediates in Solid State Reactions for Multinary Oxide Nanomaterials. Accounts of Chemical Research, 2021, 54, 754-764.	7.6	11
92	Nanocrystal Superlattice Embedded within an Inorganic Semiconducting Matrix by in Situ Ligand Exchange: Fabrication and Morphology. Chemistry of Materials, 2015, 27, 2755-2758.	3.2	10
93	Ligand-mediated formation of Cu/metal oxide hybrid nanocrystals with tunable number of interfaces. Chemical Science, 2020, 11, 13094-13101.	3.7	10
94	Assembly of Î²-Cu₂V₂O₇/WO₃ heterostructured nanocomposites and the impact of their composition on structure and photoelectrochemical properties. Journal of Materials Chemistry C, 2018, 6, 12062-12069.	2.7	9
95	A solid advance in electrolytes. Nature Energy, 2019, 4, 728-729.	19.8	9
96	Atomic Control in Multicomponent Nanomaterials: when Colloidal Chemistry Meets Atomic Layer Deposition. , 2020, 2, 1182-1202.		8
97	Optimizing the Atomic Layer Deposition of Alumina on Perovskite Nanocrystal Films by Using O₂ As a Molecular Probe. Helvetica Chimica Acta, 2020, 103, e2000055.	1.0	8
98	Copper Phosphonate Lamella Intermediates Control the Shape of Colloidal Copper Nanocrystals. Journal of the American Chemical Society, 2022, 144, 12261-12271.	6.6	8
99	Deriving value from CO2: From catalyst design to industrial implementation. Chem Catalysis, 2021, 1, 751-753.	2.9	4
100	InnenrÃ¼cktitelbild: CsPbBr₃ QD/AlO_{<i>x</i>} Inorganic Nanocomposites with Exceptional Stability in Water, Light, and Heat (Angew. Chem. 36/2017). Angewandte Chemie, 2017, 129, 11099-11099.	1.6	3
101	Polymer Lamellae as Reaction Intermediates in the Formation of Copper Nanospheres as Evidenced by Inâ€…Situ Xâ€ray Studies. Angewandte Chemie, 2020, 132, 11724-11730.	1.6	3
102	Checking in with Women Materials Scientists During a Global Pandemic: May 2020. Chemistry of Materials, 2020, 32, 4859-4862.	3.2	3
103	Copper Nanocrystal Morphology Determines the Viability of Molecular Surface Functionalization in Tuning Electrocatalytic Behavior in CO2 Reduction. Inorganic Chemistry, 2021, 60, 6939-6945.	1.9	3
104	Photoluminescence emission induced by localized states in halide-passivated colloidal two-dimensional WS₂ nanoflakes. Journal of Materials Chemistry C, 2021, 9, 2398-2407.	2.7	3
105	Crystal-Phase Control of Ternary Metal Oxides by Solid-State Synthesis with Nanocrystals. ACS Nanoscience Au, 0, , .	2.0	3
106	Colloidal Chemistry to Advance Studies in Artificial Photosynthesis. Chimia, 2016, 70, 780.	0.3	1
107	Modulation of Carrier Type in Nanocrystal-in-Matrix Composites by Interfacial Doping. Chemistry of Materials, 2018, 30, 2544-2549.	3.2	1
108	Magic clusters are better together. Nature Materials, 2021, 20, 580-581.	13.3	1

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109	The Inorganic Chemistry of Nanoparticles. Inorganic Chemistry, 2021, 60, 4179-4181.	1.9	0
110	Metal oxide shells for quantum dots by colloidal atomic layer deposition. , 0, , .		0
111	Emerging collaborations at the forefront of growth in electrochemical synthesis. IScience, 2021, 24, 102639.	1.9	0
112	Mechanistic insights into the formation of Cu nanocrystals pave the way towards better catalysts to reduce CO2. , 0, , .		0
113	Developing the Chemistry of Colloidal Cu Nanocrystals to Advance the CO2 Electrochemical Reduction. Chimia, 2021, 75, 598-604.	0.3	0
114	Nanocrystal/Metal-Organic Framework Hybrids as Electrocatalytic Platform for CO2 Conversion. , 0, , .		0
115	Facet Dependent Reactivity of Copper Nanocrystals for Electrochemical CO2 Reduction to Valuable Products. , 0, , .		0
116	Metal Oxide Shell to Study Nanoscale Phenomena in Perovskite Quantum Dots. , 0, , .		0
117	Shape-controlled nanocrystals to unlock selectivity pathways in the electrochemical CO2 reduction reaction. , 0, , .		0
118	Size Dependent Product Selectivity for Shape-Controlled Ag/Cu Tandem Catalysts. , 0, , .		0