F Pelayo GarcÃ-a De Arquer

List of Publications by Year
in descending order

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125 papers	26,814 citations	17405 63 h-index	16127 124 g-index
132 all docs	132 docs citations	132 times ranked	25187 citing authors

#	Article	IF	Citations
1	Concentrated Ethanol Electrosynthesis from CO₂ via a Porous Hydrophobic Adlayer. ACS Applied Materials & Interfaces, 2022, 14, 4155-4162.	4.0	15
2	Efficient electrosynthesis of n-propanol from carbon monoxide using a Agâ€"Ruâ€"Cu catalyst. Nature Energy, 2022, 7, 170-176.	19.8	96
3	Carbon-efficient carbon dioxide electrolysers. Nature Sustainability, 2022, 5, 563-573.	11.5	95
4	Fast Nearâ€Infrared Photodetection Using IIIâ€"V Colloidal Quantum Dots. Advanced Materials, 2022, 34, .	11.1	34
5	CO₂ Electroreduction to Formate at a Partial Current Density of 930 mA cm^{â€"2} with InP Colloidal Quantum Dot Derived Catalysts. ACS Energy Letters, 2021, 6, 79-84.	8.8	100
6	Colloidal quantum dot photodetectors with 10-ns response time and 80% quantum efficiency at 1,550Ânm. Matter, 2021, 4, 1042-1053.	5.0	88
7	Dopant-Assisted Matrix Stabilization Enables Thermoelectric Performance Enhancement in n-Type Quantum Dot Films. ACS Applied Materials & Interfaces, 2021, 13, 18999-19007.	4.0	3
8	CO ₂ electrolysis to multicarbon products in strong acid. Science, 2021, 372, 1074-1078.	6.0	541
9	Gold Adparticles on Silver Combine Low Overpotential and High Selectivity in Electrochemical CO₂ Conversion. ACS Applied Energy Materials, 2021, 4, 7504-7512.	2.5	18
10	Facetâ€Oriented Coupling Enables Fast and Sensitive Colloidal Quantum Dot Photodetectors. Advanced Materials, 2021, 33, e2101056.	11.1	42
11	Ligand Exchange at a Covalent Surface Enables Balanced Stoichiometry in IIIâ€"V Colloidal Quantum Dots. Nano Letters, 2021, 21, 6057-6063.	4.5	34
12	Advances in solution-processed near-infrared light-emitting diodes. Nature Photonics, 2021, 15, 656-669.	15.6	136
13	Semiconductor quantum dots: Technological progress and future challenges. Science, 2021, 373, .	6.0	600
14	Stable, active CO2 reduction to formate via redox-modulated stabilization of active sites. Nature Communications, 2021, 12, 5223.	5.8	145
15	Bright and Stable Light-Emitting Diodes Based on Perovskite Quantum Dots in Perovskite Matrix. Journal of the American Chemical Society, 2021, 143, 15606-15615.	6.6	94
16	Control Over Ligand Exchange Reactivity in Hole Transport Layer Enables High-Efficiency Colloidal Quantum Dot Solar Cells. ACS Energy Letters, 2021, 6, 468-476.	8.8	32
17	Ternary Alloys Enable Efficient Production of Methoxylated Chemicals via Selective Electrocatalytic Hydrogenation of Lignin Monomers. Journal of the American Chemical Society, 2021, 143, 17226-17235.	6.6	43
18	Stabilizing Surface Passivation Enables Stable Operation of Colloidal Quantum Dot Photovoltaic Devices at Maximum Power Point in an Air Ambient. Advanced Materials, 2020, 32, e1906497.	11.1	47

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19	Edge stabilization in reduced-dimensional perovskites. Nature Communications, 2020, 11, 170.	5.8	147
20	Spatial Collection in Colloidal Quantum Dot Solar Cells. Advanced Functional Materials, 2020, 30, 1908200.	7.8	24
21	Cascade surface modification of colloidal quantum dot inks enables efficient bulk homojunction photovoltaics. Nature Communications, 2020, 11, 103.	5.8	181
22	High-valence metals improve oxygen evolution reaction performance by modulating 3d metal oxidation cycle energetics. Nature Catalysis, 2020, 3, 985-992.	16.1	390
23	High-Rate and Efficient Ethylene Electrosynthesis Using a Catalyst/Promoter/Transport Layer. ACS Energy Letters, 2020, 5, 2811-2818.	8.8	106
24	A Tuned Alternating Dâ€“A Copolymer Holeâ€Transport Layer Enables Colloidal Quantum Dot Solar Cells with Superior Fill Factor and Efficiency. Advanced Materials, 2020, 32, e2004985.	11.1	56
25	Colloidal Quantum Dot Solar Cell Band Alignment using Two-Step Ionic Doping. , 2020, 2, 1583-1589.		15
26	Efficient and Stable Colloidal Quantum Dot Solar Cells with a Greenâ€Solvent Holeâ€Transport Layer. Advanced Energy Materials, 2020, 10, 2002084.	10.2	23
27	Orthogonal colloidal quantum dot inks enable efficient multilayer optoelectronic devices. Nature Communications, 2020, 11, 4814.	5.8	48
28	Monolithic Organic/Colloidal Quantum Dot Hybrid Tandem Solar Cells via Buffer Engineering. Advanced Materials, 2020, 32, e2004657.	11.1	16
29	Suppression of Auger Recombination by Gradient Alloying in InAs/CdSe/CdS QDs. Chemistry of Materials, 2020, 32, 7703-7709.	3.2	15
30	InP-Quantum-Dot-in-ZnS-Matrix Solids for Thermal and Air Stability. Chemistry of Materials, 2020, 32, 9584-9590.	3.2	8
31	Efficient electrically powered CO2-to-ethanol via suppression of deoxygenation. Nature Energy, 2020, 5, 478-486.	19.8	363
32	Colloidal Quantum Dot Photovoltaics Using Ultrathin, Solution-Processed Bilayer In₂O₃/ZnO Electron Transport Layers with Improved Stability. ACS Applied Energy Materials, 2020, 3, 5135-5141.	2.5	13
33	Micron Thick Colloidal Quantum Dot Solids. Nano Letters, 2020, 20, 5284-5291.	4.5	47
34	Colloidal Quantum Dot Bulk Heterojunction Solids with Nearâ€Unity Charge Extraction Efficiency. Advanced Science, 2020, 7, 2000894.	5.6	22
35	Monolayer Perovskite Bridges Enable Strong Quantum Dot Coupling for Efficient Solar Cells. Joule, 2020, 4, 1542-1556.	11.7	143
36	A Chemically Orthogonal Hole Transport Layer for Efficient Colloidal Quantum Dot Solar Cells. Advanced Materials, 2020, 32, e1906199.	11.1	59

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37	Single-Precursor Intermediate Shelling Enables Bright, Narrow Line Width InAs/InZnP-Based QD Emitters. Chemistry of Materials, 2020, 32, 2919-2925.	3.2	13
38	Enhanced optical path and electron diffusion length enable high-efficiency perovskite tandems. Nature Communications, 2020, 11, 1257.	5.8	180
39	Solution-processed upconversion photodetectors based on quantum dots. Nature Electronics, 2020, 3, 251-258.	13.1	135
40	CO ₂ electrolysis to multicarbon products at activities greater than 1 A cm ^{âˆ’2}. Science, 2020, 367, 661-666.	6.0	860
41	Regioselective magnetization in semiconducting nanorods. Nature Nanotechnology, 2020, 15, 192-197.	15.6	51
42	Efficient near-infrared light-emitting diodes based on quantum dots in layered perovskite. Nature Photonics, 2020, 14, 227-233.	15.6	136
43	Ligand-Assisted Reconstruction of Colloidal Quantum Dots Decreases Trap State Density. Nano Letters, 2020, 20, 3694-3702.	4.5	46
44	Accelerated solution-phase exchanges minimize defects in colloidal quantum dot solids. Nano Energy, 2019, 63, 103876.	8.2	12
45	Mixed Lead Halide Passivation of Quantum Dots. Advanced Materials, 2019, 31, e1904304.	11.1	81
46	Stable Colloidal Quantum Dot Inks Enable Inkjet-Printed High-Sensitivity Infrared Photodetectors. ACS Nano, 2019, 13, 11988-11995.	7.3	99
47	Ultrafast narrowband exciton routing within layered perovskite nanoplatelets enables low-loss luminescent solar concentrators. Nature Energy, 2019, 4, 197-205.	19.8	132
48	CO₂ Electroreduction from Carbonate Electrolyte. ACS Energy Letters, 2019, 4, 1427-1431.	8.8	141
49	Nanostructured Back Reflectors for Efficient Colloidal Quantumâ€Dot Infrared Optoelectronics. Advanced Materials, 2019, 31, e1901745.	11.1	49
50	Highly Passivated nâ€Type Colloidal Quantum Dots for Solutionâ€Processed Thermoelectric Generators with Large Output Voltage. Advanced Energy Materials, 2019, 9, 1901244.	10.2	12
51	Lattice anchoring stabilizes solution-processed semiconductors. Nature, 2019, 570, 96-101.	13.7	208
52	Binding Site Diversity Promotes CO₂ Electroreduction to Ethanol. Journal of the American Chemical Society, 2019, 141, 8584-8591.	6.6	338
53	Controlled Steric Hindrance Enables Efficient Ligand Exchange for Stable, Infrared-Bandgap Quantum Dot Inks. ACS Energy Letters, 2019, 4, 1225-1230.	8.8	54
54	A Facetâ€Specific Quantum Dot Passivation Strategy for Colloid Management and Efficient Infrared Photovoltaics. Advanced Materials, 2019, 31, e1805580.	11.1	87

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55	Lowâ€Temperatureâ€Processed Colloidal Quantum Dots as Building Blocks for Thermoelectrics. Advanced Energy Materials, 2019, 9, 1803049.	10.2	19
56	Colloidal-quantum-dot-in-perovskite nanowires. Infrared Physics and Technology, 2019, 98, 16-22.	1.3	16
57	Efficient hybrid colloidal quantum dot/organic solar cells mediated by near-infrared sensitizing small molecules. Nature Energy, 2019, 4, 969-976.	19.8	120
58	Multi-site electrocatalysts for hydrogen evolution in neutral media by destabilization of water molecules. Nature Energy, 2019, 4, 107-114.	19.8	470
59	2D matrix engineering for homogeneous quantum dot coupling in photovoltaic solids. Nature Nanotechnology, 2018, 13, 456-462.	15.6	252
60	Solutionâ€Processed In₂O₃/ZnO Heterojunction Electron Transport Layers for Efficient Organic Bulk Heterojunction and Inorganic Colloidal Quantumâ€Dot Solar Cells. Solar Rrl, 2018, 2, 1800076.	3.1	34
61	Theory-driven design of high-valence metal sites for water oxidation confirmed using in situ soft X-ray absorption. Nature Chemistry, 2018, 10, 149-154.	6.6	476
62	Infrared Cavity-Enhanced Colloidal Quantum Dot Photovoltaics Employing Asymmetric Multilayer Electrodes. ACS Energy Letters, 2018, 3, 2908-2913.	8.8	20
63	Multibandgap quantum dot ensembles for solar-matched infrared energy harvesting. Nature Communications, 2018, 9, 4003.	5.8	56
64	Butylamineâ€Catalyzed Synthesis of Nanocrystal Inks Enables Efficient Infrared CQD Solar Cells. Advanced Materials, 2018, 30, e1803830.	11.1	67
65	A Surface Reconstruction Route to High Productivity and Selectivity in CO₂ Electroreduction toward C₂₊ Hydrocarbons. Advanced Materials, 2018, 30, e1804867.	11.1	200
66	Perovskite light-emitting diodes with external quantum efficiency exceeding 20 per cent. Nature, 2018, 562, 245-248.	13.7	2,589
67	High Rate, Selective, and Stable Electroreduction of CO₂ to CO in Basic and Neutral Media. ACS Energy Letters, 2018, 3, 2835-2840.	8.8	230
68	Perovskites for Light Emission. Advanced Materials, 2018, 30, e1801996.	11.1	417
69	Solar Cells: Overcoming the Ambient Manufacturabilityâ€Scalabilityâ€Performance Bottleneck in Colloidal Quantum Dot Photovoltaics (Adv. Mater. 35/2018). Advanced Materials, 2018, 30, 1870260.	11.1	3
70	Activated Electronâ€Transport Layers for Infrared Quantum Dot Optoelectronics. Advanced Materials, 2018, 30, e1801720.	11.1	57
71	CO ₂ electroreduction to ethylene via hydroxide-mediated copper catalysis at an abrupt interface. Science, 2018, 360, 783-787.	6.0	1,638
72	Efficient Photon Recycling and Radiation Trapping in Cesium Lead Halide Perovskite Waveguides. ACS Energy Letters, 2018, 3, 1492-1498.	8.8	70

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73	Overcoming the Ambient Manufacturabilityâ€Scalabilityâ€Performance Bottleneck in Colloidal Quantum Dot Photovoltaics. Advanced Materials, 2018, 30, e1801661.	11.1	79
74	Perovskite nanowires find an edge. Nature Electronics, 2018, 1, 380-381.	13.1	5
75	Metalâ€“Organic Frameworks Mediate Cu Coordination for Selective CO₂ Electroreduction. Journal of the American Chemical Society, 2018, 140, 11378-11386.	6.6	326
76	2D Metal Oxyhalideâ€Derived Catalysts for Efficient CO₂ Electroreduction. Advanced Materials, 2018, 30, e1802858.	11.1	200
77	Metalâ€“Organic Framework Thin Films on High-Curvature Nanostructures Toward Tandem Electrocatalysis. ACS Applied Materials & Interfaces, 2018, 10, 31225-31232.	4.0	57
78	Acid-Assisted Ligand Exchange Enhances Coupling in Colloidal Quantum Dot Solids. Nano Letters, 2018, 18, 4417-4423.	4.5	57
79	Solution-processed semiconductors for next-generation photodetectors. Nature Reviews Materials, 2017, 2, .	23.3	992
80	Efficient and stable solution-processed planar perovskite solar cells via contact passivation. Science, 2017, 355, 722-726.	6.0	2,019
81	Band-aligned C₃N_{4âˆ’x}S_{3x/2} stabilizes CdS/CuInGaS₂ photocathodes for efficient water reduction. Journal of Materials Chemistry A, 2017, 5, 3167-3171.	5.2	9
82	0Dâ€“2D Quantum Dot: Metal Dichalcogenide Nanocomposite Photocatalyst Achieves Efficient Hydrogen Generation. Advanced Materials, 2017, 29, 1605646.	11.1	89
83	Enhanced Solarâ€toâ€Hydrogen Generation with Broadband Epsilonâ€Nearâ€Zero Nanostructured Photocatalysts. Advanced Materials, 2017, 29, 1701165.	11.1	39
84	Tailoring the Energy Landscape in Quasi-2D Halide Perovskites Enables Efficient Green-Light Emission. Nano Letters, 2017, 17, 3701-3709.	4.5	409
85	Field-emission from quantum-dot-in-perovskite solids. Nature Communications, 2017, 8, 14757.	5.8	83
86	Nanoimprint-Transfer-Patterned Solids Enhance Light Absorption in Colloidal Quantum Dot Solar Cells. Nano Letters, 2017, 17, 2349-2353.	4.5	46
87	Enhanced Openâ€Circuit Voltage in Colloidal Quantum Dot Photovoltaics via Reactivityâ€Controlled Solutionâ€Phase Ligand Exchange. Advanced Materials, 2017, 29, 1703627.	11.1	49
88	Sulfur-Modulated Tin Sites Enable Highly Selective Electrochemical Reduction of CO2 to Formate. Joule, 2017, 1, 794-805.	11.7	390
89	Halide Re-Shelled Quantum Dot Inks for Infrared Photovoltaics. ACS Applied Materials & Interfaces, 2017, 9, 37536-37541.	4.0	35
90	Chloride Passivation of ZnO Electrodes Improves Charge Extraction in Colloidal Quantum Dot Photovoltaics. Advanced Materials, 2017, 29, 1702350.	11.1	126

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91	Flexible Filterâ€Free Narrowband Photodetector with High Gain and Customized Responsive Spectrum. Advanced Functional Materials, 2017, 27, 1702360.	7.8	57
92	Molecular Doping of the Hole-Transporting Layer for Efficient, Single-Step-Deposited Colloidal Quantum Dot Photovoltaics. ACS Energy Letters, 2017, 2, 1952-1959.	8.8	45
93	Mixed-quantum-dot solar cells. Nature Communications, 2017, 8, 1325.	5.8	148
94	Hybrid organicâ€"inorganic inks flatten the energy landscape in colloidal quantum dotÂsolids. Nature Materials, 2017, 16, 258-263.	13.3	563
95	Solution-processed nanomaterials for advanced optoelectronic and energy applications. , 2017, , .		0
96	Gradient-Doped Colloidal Quantum Dot Solids Enable Thermophotovoltaic Harvesting of Waste Heat. ACS Energy Letters, 2016, 1, 740-746.	8.8	8
97	Optical Resonance Engineering for Infrared Colloidal Quantum Dot Photovoltaics. ACS Energy Letters, 2016, 1, 852-857.	8.8	27
98	Enhanced electrocatalytic CO2 reduction via field-induced reagent concentration. Nature, 2016, 537, 382-386.	13.7	1,429
99	Pure Cubicâ€Phase Hybrid Iodobismuthates AgBi₂I₇ for Thinâ€Film Photovoltaics. Angewandte Chemie - International Edition, 2016, 55, 9586-9590.	7.2	201
100	Pure Cubicâ€Phase Hybrid Iodobismuthates AgBi₂I₇ for Thinâ€Film Photovoltaics. Angewandte Chemie, 2016, 128, 9738-9742.	1.6	42
101	Increasing Polymer Solar Cell Fill Factor by Trapâ€Filling with F4â€TCNQ at Parts Per Thousand Concentration. Advanced Materials, 2016, 28, 6491-6496.	11.1	85
102	ZnFe₂O₄ Leaves Grown on TiO₂ Trees Enhance Photoelectrochemical Water Splitting. Small, 2016, 12, 3181-3188.	5.2	56
103	10.6% Certified Colloidal Quantum Dot Solar Cells via Solvent-Polarity-Engineered Halide Passivation. Nano Letters, 2016, 16, 4630-4634.	4.5	312
104	Passivation Using Molecular Halides Increases Quantum Dot Solar Cell Performance. Advanced Materials, 2016, 28, 299-304.	11.1	312
105	Doubleâ€Sided Junctions Enable Highâ€Performance Colloidalâ€Quantumâ€Dot Photovoltaics. Advanced Materials, 2016, 28, 4142-4148.	11.1	121
106	Homogeneously dispersed multimetal oxygen-evolving catalysts. Science, 2016, 352, 333-337.	6.0	1,948
107	A Highly Sensitive Pyroresistive Allâ€Organic Infrared Bolometer. Advanced Electronic Materials, 2015, 1, 1500090.	2.6	21
108	Molecular interfaces for plasmonic hot electron photovoltaics. Nanoscale, 2015, 7, 2281-2288.	2.8	33

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109	Tailoring the Electronic Properties of Colloidal Quantum Dots in Metalâ€“Semiconductor Nanocomposites for High Performance Photodetectors. Small, 2015, 11, 2636-2641.	5.2	35
110	Large-Area Plasmonic-Crystalâ€“Hot-Electron-Based Photodetectors. ACS Photonics, 2015, 2, 950-957.	3.2	63
111	Metal-insulator-semiconductor heterostructures for plasmonic hot-carrier optoelectronics. Optics Express, 2015, 23, 14715.	1.7	15
112	High-Efficiency Colloidal Quantum Dot Photovoltaics via Robust Self-Assembled Monolayers. Nano Letters, 2015, 15, 7691-7696.	4.5	198
113	Colloidal Quantum Dot Photovoltaics Enhanced by Perovskite Shelling. Nano Letters, 2015, 15, 7539-7543.	4.5	173
114	Remote Trap Passivation in Colloidal Quantum Dot Bulk Nanoâ€heterojunctions and Its Effect in Solutionâ€Processed Solar Cells. Advanced Materials, 2014, 26, 4741-4747.	11.1	62
115	Heterovalent cation substitutional doping for quantum dot homojunction solar cells. Nature Communications, 2013, 4, 2981.	5.8	111
116	Photoelectric Energy Conversion of Plasmon-Generated Hot Carriers in Metalâ€“Insulatorâ€“Semiconductor Structures. ACS Nano, 2013, 7, 3581-3588.	7.3	116
117	Electrical effects of metal nanoparticles embedded in ultra-thin colloidal quantum dot films. Applied Physics Letters, 2012, 101, 041103.	1.5	19
118	Plasmonic light trapping leads to responsivity increase in colloidal quantum dot photodetectors. Applied Physics Letters, 2012, 100, .	1.5	52
119	Hybrid grapheneâ€“quantum dot phototransistors with ultrahigh gain. Nature Nanotechnology, 2012, 7, 363-368.	15.6	1,936
120	Solution-processed inorganic bulk nano-heterojunctions and their application to solar cells. Nature Photonics, 2012, 6, 529-534.	15.6	221
121	Engineering the Input Impedance of Optical Nano Dipole Antennas: Materials, Geometry and Excitation Effect. IEEE Transactions on Antennas and Propagation, 2011, 59, 3144-3153.	3.1	52
122	Absorption Enhancement in Solution Processed Metal-Semiconductor Nanocomposites. Optics Express, 2011, 19, 21038.	1.7	24
123	Near IRâ€Sensitive, Nonâ€toxic, Polymer/Nanocrystal Solar Cells Employing Bi₂S₃ as the Electron Acceptor. Advanced Energy Materials, 2011, 1, 1029-1035.	10.2	78
124	Selfâ€Aligned Nonâ€Centrosymmetric Conjugated Molecules Enable Electroâ€Optic Perovskites. Advanced Optical Materials, 0, , 2100730.	3.6	6
125	III-V Semiconductor Quantum Dots for Infrared Photodetection. , 0, , .		0