

F Pelayo GarcÃ-a De Arquer

List of Publications by Year in descending order

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125
papers

26,814
citations

17429

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16164

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all docs

132
docs citations

132
times ranked

25187
citing authors

#	ARTICLE	IF	CITATIONS
1	Concentrated Ethanol Electrosynthesis from CO ₂ 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 Ag ⁺ /Ru ²⁺ /Cu catalyst. Nature Energy, 2022, 7, 170-176.	19.8	96
3	Carbon-efficient carbon dioxide electrolyzers. Nature Sustainability, 2022, 5, 563-573.	11.5	95
4	Fast Near-Infrared Photodetection Using InAs Colloidal Quantum Dots. Advanced Materials, 2022, 34, .	11.1	34
5	CO ₂ Electroreduction to Formate at a Partial Current Density of 930 mA cm ⁻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 1,550Ånm. 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 CO ₂ Conversion. ACS Applied Energy Materials, 2021, 4, 7504-7512.	2.5	18
10	Facet-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 InAs 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 CO ₂ 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

#	ARTICLE	IF	CITATIONS
19	Edge stabilization in reduced-dimensional perovskites. <i>Nature Communications</i> , 2020, 11, 170.	5.8	147
20	Spatial Collection in Colloidal Quantum Dot Solar Cells. <i>Advanced Functional Materials</i> , 2020, 30, 1908200.	7.8	24
21	Cascade surface modification of colloidal quantum dot inks enables efficient bulk homojunction photovoltaics. <i>Nature Communications</i> , 2020, 11, 103.	5.8	181
22	High-valence metals improve oxygen evolution reaction performance by modulating 3d metal oxidation cycle energetics. <i>Nature Catalysis</i> , 2020, 3, 985-992.	16.1	390
23	High-Rate and Efficient Ethylene Electrosynthesis Using a Catalyst/Promoter/Transport Layer. <i>ACS Energy Letters</i> , 2020, 5, 2811-2818.	8.8	106
24	A Tuned Alternating DA Copolymer HoleTransport Layer Enables Colloidal Quantum Dot Solar Cells with Superior Fill Factor and Efficiency. <i>Advanced Materials</i> , 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 GreenSolvent HoleTransport Layer. <i>Advanced Energy Materials</i> , 2020, 10, 2002084.	10.2	23
27	Orthogonal colloidal quantum dot inks enable efficient multilayer optoelectronic devices. <i>Nature Communications</i> , 2020, 11, 4814.	5.8	48
28	Monolithic Organic/Colloidal Quantum Dot Hybrid Tandem Solar Cells via Buffer Engineering. <i>Advanced Materials</i> , 2020, 32, e2004657.	11.1	16
29	Suppression of Auger Recombination by Gradient Alloying in InAs/CdSe/CdS QDs. <i>Chemistry of Materials</i> , 2020, 32, 7703-7709.	3.2	15
30	InP-Quantum-Dot-in-ZnS-Matrix Solids for Thermal and Air Stability. <i>Chemistry of Materials</i> , 2020, 32, 9584-9590.	3.2	8
31	Efficient electrically powered CO ₂ -to-ethanol via suppression of deoxygenation. <i>Nature Energy</i> , 2020, 5, 478-486.	19.8	363
32	Colloidal Quantum Dot Photovoltaics Using Ultrathin, Solution-Processed Bilayer In ₂ O ₃ /ZnO Electron Transport Layers with Improved Stability. <i>ACS Applied Energy Materials</i> , 2020, 3, 5135-5141.	2.5	13
33	Micron Thick Colloidal Quantum Dot Solids. <i>Nano Letters</i> , 2020, 20, 5284-5291.	4.5	47
34	Colloidal Quantum Dot Bulk Heterojunction Solids with NearUnity Charge Extraction Efficiency. <i>Advanced Science</i> , 2020, 7, 2000894.	5.6	22
35	Monolayer Perovskite Bridges Enable Strong Quantum Dot Coupling for Efficient Solar Cells. <i>Joule</i> , 2020, 4, 1542-1556.	11.7	143
36	A Chemically Orthogonal Hole Transport Layer for Efficient Colloidal Quantum Dot Solar Cells. <i>Advanced Materials</i> , 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. <i>Chemistry of Materials</i> , 2020, 32, 2919-2925.	3.2	13
38	Enhanced optical path and electron diffusion length enable high-efficiency perovskite tandems. <i>Nature Communications</i> , 2020, 11, 1257.	5.8	180
39	Solution-processed upconversion photodetectors based on quantum dots. <i>Nature Electronics</i> , 2020, 3, 251-258.	13.1	135
40	CO ₂ electrolysis to multicarbon products at activities greater than 1 A cm ⁻² . <i>Science</i> , 2020, 367, 661-666.	6.0	860
41	Regioselective magnetization in semiconducting nanorods. <i>Nature Nanotechnology</i> , 2020, 15, 192-197.	15.6	51
42	Efficient near-infrared light-emitting diodes based on quantum dots in layered perovskite. <i>Nature Photonics</i> , 2020, 14, 227-233.	15.6	136
43	Ligand-Assisted Reconstruction of Colloidal Quantum Dots Decreases Trap State Density. <i>Nano Letters</i> , 2020, 20, 3694-3702.	4.5	46
44	Accelerated solution-phase exchanges minimize defects in colloidal quantum dot solids. <i>Nano Energy</i> , 2019, 63, 103876.	8.2	12
45	Mixed Lead Halide Passivation of Quantum Dots. <i>Advanced Materials</i> , 2019, 31, e1904304.	11.1	81
46	Stable Colloidal Quantum Dot Inks Enable Inkjet-Printed High-Sensitivity Infrared Photodetectors. <i>ACS Nano</i> , 2019, 13, 11988-11995.	7.3	99
47	Ultrafast narrowband exciton routing within layered perovskite nanoplatelets enables low-loss luminescent solar concentrators. <i>Nature Energy</i> , 2019, 4, 197-205.	19.8	132
48	CO ₂ Electroreduction from Carbonate Electrolyte. <i>ACS Energy Letters</i> , 2019, 4, 1427-1431.	8.8	141
49	Nanostructured Back Reflectors for Efficient Colloidal Quantum Dot Infrared Optoelectronics. <i>Advanced Materials</i> , 2019, 31, e1901745.	11.1	49
50	Highly Passivated n-Type Colloidal Quantum Dots for Solution-Processed Thermoelectric Generators with Large Output Voltage. <i>Advanced Energy Materials</i> , 2019, 9, 1901244.	10.2	12
51	Lattice anchoring stabilizes solution-processed semiconductors. <i>Nature</i> , 2019, 570, 96-101.	13.7	208
52	Binding Site Diversity Promotes CO ₂ Electroreduction to Ethanol. <i>Journal of the American Chemical Society</i> , 2019, 141, 8584-8591.	6.6	338
53	Controlled Steric Hindrance Enables Efficient Ligand Exchange for Stable, Infrared-Bandgap Quantum Dot Inks. <i>ACS Energy Letters</i> , 2019, 4, 1225-1230.	8.8	54
54	A Facet-Specific Quantum Dot Passivation Strategy for Colloid Management and Efficient Infrared Photovoltaics. <i>Advanced Materials</i> , 2019, 31, e1805580.	11.1	87

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55	Low-temperature-processed colloidal quantum dots as building blocks for thermoelectrics. <i>Advanced Energy Materials</i> , 2019, 9, 1803049.	10.2	19
56	Colloidal-quantum-dot-in-perovskite nanowires. <i>Infrared Physics and Technology</i> , 2019, 98, 16-22.	1.3	16
57	Efficient hybrid colloidal quantum dot/organic solar cells mediated by near-infrared sensitizing small molecules. <i>Nature Energy</i> , 2019, 4, 969-976.	19.8	120
58	Multi-site electrocatalysts for hydrogen evolution in neutral media by destabilization of water molecules. <i>Nature Energy</i> , 2019, 4, 107-114.	19.8	470
59	2D matrix engineering for homogeneous quantum dot coupling in photovoltaic solids. <i>Nature Nanotechnology</i> , 2018, 13, 456-462.	15.6	252
60	Solution-processed In ₂ O ₃ /ZnO heterojunction electron transport layers for efficient organic bulk heterojunction and inorganic colloidal quantum dot solar cells. <i>Solar Rrl</i> , 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. <i>Nature Chemistry</i> , 2018, 10, 149-154.	6.6	476
62	Infrared cavity-enhanced colloidal quantum dot photovoltaics employing asymmetric multilayer electrodes. <i>ACS Energy Letters</i> , 2018, 3, 2908-2913.	8.8	20
63	Multibandgap quantum dot ensembles for solar-matched infrared energy harvesting. <i>Nature Communications</i> , 2018, 9, 4003.	5.8	56
64	Butylamine-catalyzed synthesis of nanocrystal inks enables efficient infrared CQD solar cells. <i>Advanced Materials</i> , 2018, 30, e1803830.	11.1	67
65	A surface reconstruction route to high productivity and selectivity in CO ₂ electroreduction toward C ₂₊ hydrocarbons. <i>Advanced Materials</i> , 2018, 30, e1804867.	11.1	200
66	Perovskite light-emitting diodes with external quantum efficiency exceeding 20 per cent. <i>Nature</i> , 2018, 562, 245-248.	13.7	2,589
67	High rate, selective, and stable electroreduction of CO ₂ to CO in basic and neutral media. <i>ACS Energy Letters</i> , 2018, 3, 2835-2840.	8.8	230
68	Perovskites for light emission. <i>Advanced Materials</i> , 2018, 30, e1801996.	11.1	417
69	Solar cells: overcoming the ambient manufacturability-scalability-performance bottleneck in colloidal quantum dot photovoltaics (<i>Adv. Mater.</i> 35/2018). <i>Advanced Materials</i> , 2018, 30, 1870260.	11.1	3
70	Activated electron transport layers for infrared quantum dot optoelectronics. <i>Advanced Materials</i> , 2018, 30, e1801720.	11.1	57
71	CO ₂ electroreduction to ethylene via hydroxide-mediated copper catalysis at an abrupt interface. <i>Science</i> , 2018, 360, 783-787.	6.0	1,638
72	Efficient photon recycling and radiation trapping in cesium lead halide perovskite waveguides. <i>ACS Energy Letters</i> , 2018, 3, 1492-1498.	8.8	70

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

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91	Flexible Filter-Free Narrowband Photodetector with High Gain and Customized Responsive Spectrum. <i>Advanced Functional Materials</i> , 2017, 27, 1702360.	7.8	57
92	Molecular Doping of the Hole-Transporting Layer for Efficient, Single-Step-Deposited Colloidal Quantum Dot Photovoltaics. <i>ACS Energy Letters</i> , 2017, 2, 1952-1959.	8.8	45
93	Mixed-quantum-dot solar cells. <i>Nature Communications</i> , 2017, 8, 1325.	5.8	148
94	Hybrid organic-inorganic inks flatten the energy landscape in colloidal quantum dot solids. <i>Nature Materials</i> , 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. <i>ACS Energy Letters</i> , 2016, 1, 740-746.	8.8	8
97	Optical Resonance Engineering for Infrared Colloidal Quantum Dot Photovoltaics. <i>ACS Energy Letters</i> , 2016, 1, 852-857.	8.8	27
98	Enhanced electrocatalytic CO ₂ reduction via field-induced reagent concentration. <i>Nature</i> , 2016, 537, 382-386.	13.7	1,429
99	Pure Cubic Phase Hybrid Iodobismuthates AgBi ₂ I ₇ for Thin-Film Photovoltaics. <i>Angewandte Chemie - International Edition</i> , 2016, 55, 9586-9590.	7.2	201
100	Pure Cubic Phase Hybrid Iodobismuthates AgBi ₂ I ₇ for Thin-Film Photovoltaics. <i>Angewandte Chemie</i> , 2016, 128, 9738-9742.	1.6	42
101	Increasing Polymer Solar Cell Fill Factor by Trap-Filling with F ₄ TCNQ at Parts Per Thousand Concentration. <i>Advanced Materials</i> , 2016, 28, 6491-6496.	11.1	85
102	ZnFe ₂ O ₄ Leaves Grown on TiO ₂ Trees Enhance Photoelectrochemical Water Splitting. <i>Small</i> , 2016, 12, 3181-3188.	5.2	56
103	10.6% Certified Colloidal Quantum Dot Solar Cells via Solvent-Polarity-Engineered Halide Passivation. <i>Nano Letters</i> , 2016, 16, 4630-4634.	4.5	312
104	Passivation Using Molecular Halides Increases Quantum Dot Solar Cell Performance. <i>Advanced Materials</i> , 2016, 28, 299-304.	11.1	312
105	Double-Sided Junctions Enable High-Performance Colloidal Quantum Dot Photovoltaics. <i>Advanced Materials</i> , 2016, 28, 4142-4148.	11.1	121
106	Homogeneously dispersed multimetal oxygen-evolving catalysts. <i>Science</i> , 2016, 352, 333-337.	6.0	1,948
107	A Highly Sensitive Pyroresistive All-Organic Infrared Bolometer. <i>Advanced Electronic Materials</i> , 2015, 1, 1500090.	2.6	21
108	Molecular interfaces for plasmonic hot electron photovoltaics. <i>Nanoscale</i> , 2015, 7, 2281-2288.	2.8	33

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109	Tailoring the Electronic Properties of Colloidal Quantum Dots in Metal-Semiconductor Nanocomposites for High Performance Photodetectors. <i>Small</i> , 2015, 11, 2636-2641.	5.2	35
110	Large-Area Plasmonic-Crystal-Hot-Electron-Based Photodetectors. <i>ACS Photonics</i> , 2015, 2, 950-957.	3.2	63
111	Metal-insulator-semiconductor heterostructures for plasmonic hot-carrier optoelectronics. <i>Optics Express</i> , 2015, 23, 14715.	1.7	15
112	High-Efficiency Colloidal Quantum Dot Photovoltaics via Robust Self-Assembled Monolayers. <i>Nano Letters</i> , 2015, 15, 7691-7696.	4.5	198
113	Colloidal Quantum Dot Photovoltaics Enhanced by Perovskite Shelling. <i>Nano Letters</i> , 2015, 15, 7539-7543.	4.5	173
114	Remote Trap Passivation in Colloidal Quantum Dot Bulk Nano-heterojunctions and Its Effect in Solution-Processed Solar Cells. <i>Advanced Materials</i> , 2014, 26, 4741-4747.	11.1	62
115	Heterovalent cation substitutional doping for quantum dot homojunction solar cells. <i>Nature Communications</i> , 2013, 4, 2981.	5.8	111
116	Photoelectric Energy Conversion of Plasmon-Generated Hot Carriers in Metal-Insulator-Semiconductor Structures. <i>ACS Nano</i> , 2013, 7, 3581-3588.	7.3	116
117	Electrical effects of metal nanoparticles embedded in ultra-thin colloidal quantum dot films. <i>Applied Physics Letters</i> , 2012, 101, 041103.	1.5	19
118	Plasmonic light trapping leads to responsivity increase in colloidal quantum dot photodetectors. <i>Applied Physics Letters</i> , 2012, 100, .	1.5	52
119	Hybrid graphene-quantum dot phototransistors with ultrahigh gain. <i>Nature Nanotechnology</i> , 2012, 7, 363-368.	15.6	1,936
120	Solution-processed inorganic bulk nano-heterojunctions and their application to solar cells. <i>Nature Photonics</i> , 2012, 6, 529-534.	15.6	221
121	Engineering the Input Impedance of Optical Nano Dipole Antennas: Materials, Geometry and Excitation Effect. <i>IEEE Transactions on Antennas and Propagation</i> , 2011, 59, 3144-3153.	3.1	52
122	Absorption Enhancement in Solution Processed Metal-Semiconductor Nanocomposites. <i>Optics Express</i> , 2011, 19, 21038.	1.7	24
123	Near IR-Sensitive, Non-toxic, Polymer/Nanocrystal Solar Cells Employing Bi ₂ S ₃ as the Electron Acceptor. <i>Advanced Energy Materials</i> , 2011, 1, 1029-1035.	10.2	78
124	Self-Aligned Non-Centrosymmetric Conjugated Molecules Enable Electro-Optic Perovskites. <i>Advanced Optical Materials</i> , 0, , 2100730.	3.6	6
125	III-V Semiconductor Quantum Dots for Infrared Photodetection. , 0, , .		0