F Pelayo Garca De Arquer

List of Publications by Citations

121 papers	17,650 citations	55 h-index	132 g-index
132 ext. papers	21,986 ext. citations	21.2 avg, IF	6.72 L-index

#	Paper	IF	Citations
121	Perovskite light-emitting diodes with external quantum efficiency exceeding 20 per cent. *Nature*, **2018**, 562, 245-248	50.4	1802
120	Efficient and stable solution-processed planar perovskite solar cells via contact passivation. *Science*, **2017**, 355, 722-726	33.3	1667
119	Hybrid graphene-quantum dot phototransistors with ultrahigh gain. *Nature Nanotechnology*, **2012**, 7, 363-8	28.7	1588
118	Homogeneously dispersed multimetal oxygen-evolving catalysts. *Science*, **2016**, 352, 333-7	33.3	1459
117	Enhanced electrocatalytic CO reduction via field-induced reagent concentration. *Nature*, **2016**, 537, 382-386	50.4	997
116	CO electroreduction to ethylene via hydroxide-mediated copper catalysis at an abrupt interface. *Science*, **2018**, 360, 783-787	33.3	980
115	Solution-processed semiconductors for next-generation photodetectors. *Nature Reviews Materials*, **2017**, 2,	73.3	674
114	Hybrid organic-inorganic inks flatten the energy landscape in colloidal quantum dot solids. *Nature Materials*, **2017**, 16, 258-263	27	432
113	CO electrolysis to multicarbon products at activities greater than 1 A cm. *Science*, **2020**, 367, 661-666	33.3	403
112	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	17.6	328
111	Tailoring the Energy Landscape in Quasi-2D Halide Perovskites Enables Efficient Green-Light Emission. *Nano Letters*, **2017**, 17, 3701-3709	11.5	309
110	Passivation Using Molecular Halides Increases Quantum Dot Solar Cell Performance. *Advanced Materials*, **2016**, 28, 299-304	24	279
109	10.6% Certified Colloidal Quantum Dot Solar Cells via Solvent-Polarity-Engineered Halide Passivation. *Nano Letters*, **2016**, 16, 4630-4	11.5	275
108	Perovskites for Light Emission. *Advanced Materials*, **2018**, 30, e1801996	24	270
107	Multi-site electrocatalysts for hydrogen evolution in neutral media by destabilization of water molecules. *Nature Energy*, **2019**, 4, 107-114	62.3	264
106	Sulfur-Modulated Tin Sites Enable Highly Selective Electrochemical Reduction of CO2 to Formate. *Joule*, **2017**, 1, 794-805	27.8	263
105	2D matrix engineering for homogeneous quantum dot coupling in photovoltaic solids. *Nature Nanotechnology*, **2018**, 13, 456-462	28.7	196

104	Solution-processed inorganic bulk nano-heterojunctions and their application to solar cells. *Nature Photonics*, **2012**, 6, 529-534	33.9	194
103	Metal-Organic Frameworks Mediate Cu Coordination for Selective CO Electroreduction. *Journal of the American Chemical Society*, **2018**, 140, 11378-11386	16.4	188
102	Binding Site Diversity Promotes CO Electroreduction to Ethanol. *Journal of the American Chemical Society*, **2019**, 141, 8584-8591	16.4	178
101	High-Efficiency Colloidal Quantum Dot Photovoltaics via Robust Self-Assembled Monolayers. *Nano Letters*, **2015**, 15, 7691-6	11.5	175
100	Efficient electrically powered CO2-to-ethanol via suppression of deoxygenation. *Nature Energy*, **2020**, 5, 478-486	62.3	163
99	Pure Cubic-Phase Hybrid Iodobismuthates AgBi2 I7 for Thin-Film Photovoltaics. *Angewandte Chemie - International Edition*, **2016**, 55, 9586-90	16.4	156
98	Colloidal Quantum Dot Photovoltaics Enhanced by Perovskite Shelling. *Nano Letters*, **2015**, 15, 7539-43	11.5	155
97	Lattice anchoring stabilizes solution-processed semiconductors. *Nature*, **2019**, 570, 96-101	50.4	149
96	High-valence metals improve oxygen evolution reaction performance by modulating 3d metal oxidation cycle energetics. *Nature Catalysis*, **2020**, 3, 985-992	36.5	149
95	Semiconductor quantum dots: Technological progress and future challenges. *Science*, **2021**, 373,	33.3	138
94	High Rate, Selective, and Stable Electroreduction of CO2 to CO in Basic and Neutral Media. *ACS Energy Letters*, **2018**, 3, 2835-2840	20.1	136
93	A Surface Reconstruction Route to High Productivity and Selectivity in CO Electroreduction toward C Hydrocarbons. *Advanced Materials*, **2018**, 30, e1804867	24	131
92	2D Metal Oxyhalide-Derived Catalysts for Efficient CO Electroreduction. *Advanced Materials*, **2018**, 30, e1802858	24	123
91	CO electrolysis to multicarbon products in strong acid. *Science*, **2021**, 372, 1074-1078	33.3	115
90	Enhanced optical path and electron diffusion length enable high-efficiency perovskite tandems. *Nature Communications*, **2020**, 11, 1257	17.4	114
89	Mixed-quantum-dot solar cells. *Nature Communications*, **2017**, 8, 1325	17.4	113
88	Cascade surface modification of colloidal quantum dot inks enables efficient bulk homojunction photovoltaics. *Nature Communications*, **2020**, 11, 103	17.4	110
87	Double-Sided Junctions Enable High-Performance Colloidal-Quantum-Dot Photovoltaics. *Advanced Materials*, **2016**, 28, 4142-8	24	100

86	Chloride Passivation of ZnO Electrodes Improves Charge Extraction in Colloidal Quantum Dot Photovoltaics. *Advanced Materials*, **2017**, 29, 1702350	24	97
85	Photoelectric energy conversion of plasmon-generated hot carriers in metal-insulator-semiconductor structures. *ACS Nano*, **2013**, 7, 3581-8	16.7	97
84	Heterovalent cation substitutional doping for quantum dot homojunction solar cells. *Nature Communications*, **2013**, 4, 2981	17.4	92
83	Efficient near-infrared light-emitting diodes based on quantum dots in layered perovskite. *Nature Photonics*, **2020**, 14, 227-233	33.9	91
82	Ultrafast narrowband exciton routing within layered perovskite nanoplatelets enables low-loss luminescent solar concentrators. *Nature Energy*, **2019**, 4, 197-205	62.3	87
81	Monolayer Perovskite Bridges Enable Strong Quantum Dot Coupling for Efficient Solar Cells. *Joule*, **2020**, 4, 1542-1556	27.8	85
80	Edge stabilization in reduced-dimensional perovskites. *Nature Communications*, **2020**, 11, 170	17.4	79
79	Efficient hybrid colloidal quantum dot/organic solar cells mediated by near-infrared sensitizing small molecules. *Nature Energy*, **2019**, 4, 969-976	62.3	78
78	0D-2D Quantum Dot: Metal Dichalcogenide Nanocomposite Photocatalyst Achieves Efficient Hydrogen Generation. *Advanced Materials*, **2017**, 29, 1605646	24	73
77	Field-emission from quantum-dot-in-perovskite solids. *Nature Communications*, **2017**, 8, 14757	17.4	68
76	CO2 Electroreduction from Carbonate Electrolyte. *ACS Energy Letters*, **2019**, 4, 1427-1431	20.1	66
75	Increasing Polymer Solar Cell Fill Factor by Trap-Filling with F4-TCNQ at Parts Per Thousand Concentration. *Advanced Materials*, **2016**, 28, 6491-6	24	66
74	Near IR-Sensitive, Non-toxic, Polymer/Nanocrystal Solar Cells Employing Bi2S3 as the Electron Acceptor. *Advanced Energy Materials*, **2011**, 1, 1029-1035	21.8	63
73	Solution-processed upconversion photodetectors based on quantum dots. *Nature Electronics*, **2020**, 3, 251-258	28.4	59
72	Overcoming the Ambient Manufacturability-Scalability-Performance Bottleneck in Colloidal Quantum Dot Photovoltaics. *Advanced Materials*, **2018**, 30, e1801661	24	58
71	Efficient Photon Recycling and Radiation Trapping in Cesium Lead Halide Perovskite Waveguides. *ACS Energy Letters*, **2018**, 3, 1492-1498	20.1	56
70	Stable Colloidal Quantum Dot Inks Enable Inkjet-Printed High-Sensitivity Infrared Photodetectors. *ACS Nano*, **2019**, 13, 11988-11995	16.7	55
69	A Facet-Specific Quantum Dot Passivation Strategy for Colloid Management and Efficient Infrared Photovoltaics. *Advanced Materials*, **2019**, 31, e1805580	24	55

68	Large-Area Plasmonic-Crystal Hot-Electron-Based Photodetectors. *ACS Photonics*, **2015**, 2, 950-957	6.3	55
67	Remote trap passivation in colloidal quantum dot bulk nano-heterojunctions and its effect in solution-processed solar cells. *Advanced Materials*, **2014**, 26, 4741-7	24	55
66	$ZnFe_2O_4$ Leaves Grown on TiO_2 Trees Enhance Photoelectrochemical Water Splitting. *Small*, **2016**, 12, 3181-8	11	50
65	Butylamine-Catalyzed Synthesis of Nanocrystal Inks Enables Efficient Infrared CQD Solar Cells. *Advanced Materials*, **2018**, 30, e1803830	24	48
64	Flexible Filter-Free Narrowband Photodetector with High Gain and Customized Responsive Spectrum. *Advanced Functional Materials*, **2017**, 27, 1702360	15.6	44
63	Plasmonic light trapping leads to responsivity increase in colloidal quantum dot photodetectors. *Applied Physics Letters*, **2012**, 100, 043101	3.4	44
62	Enhanced Open-Circuit Voltage in Colloidal Quantum Dot Photovoltaics via Reactivity-Controlled Solution-Phase Ligand Exchange. *Advanced Materials*, **2017**, 29, 1703627	24	42
61	Mixed Lead Halide Passivation of Quantum Dots. *Advanced Materials*, **2019**, 31, e1904304	24	42
60	. *IEEE Transactions on Antennas and Propagation*, **2011**, 59, 3144-3153	4.9	42
59	Nanoimprint-Transfer-Patterned Solids Enhance Light Absorption in Colloidal Quantum Dot Solar Cells. *Nano Letters*, **2017**, 17, 2349-2353	11.5	39
58	Molecular Doping of the Hole-Transporting Layer for Efficient, Single-Step-Deposited Colloidal Quantum Dot Photovoltaics. *ACS Energy Letters*, **2017**, 2, 1952-1959	20.1	39
57	High-Rate and Efficient Ethylene Electrosynthesis Using a Catalyst/Promoter/Transport Layer. *ACS Energy Letters*, **2020**, 5, 2811-2818	20.1	39
56	CO_2 Electroreduction to Formate at a Partial Current Density of 930 mA cm with InP Colloidal Quantum Dot Derived Catalysts. *ACS Energy Letters*, **2021**, 6, 79-84	20.1	39
55	Multibandgap quantum dot ensembles for solar-matched infrared energy harvesting. *Nature Communications*, **2018**, 9, 4003	17.4	39
54	A Chemically Orthogonal Hole Transport Layer for Efficient Colloidal Quantum Dot Solar Cells. *Advanced Materials*, **2020**, 32, e1906199	24	38
53	Acid-Assisted Ligand Exchange Enhances Coupling in Colloidal Quantum Dot Solids. *Nano Letters*, **2018**, 18, 4417-4423	11.5	37
52	Nanostructured Back Reflectors for Efficient Colloidal Quantum-Dot Infrared Optoelectronics. *Advanced Materials*, **2019**, 31, e1901745	24	36
51	Pure Cubic-Phase Hybrid Iodobismuthates $AgBi_2I_7$ for Thin-Film Photovoltaics. *Angewandte Chemie* , **2016**, 128, 9738-9742	3.6	35

50	Activated Electron-Transport Layers for Infrared Quantum Dot Optoelectronics. *Advanced Materials* , **2018**, 30, e1801720	24	34
49	Solution-Processed In2O3/ZnO Heterojunction Electron Transport Layers for Efficient Organic Bulk Heterojunction and Inorganic Colloidal Quantum-Dot Solar Cells. *Solar Rrl*, **2018**, 2, 1800076	7.1	32
48	Molecular interfaces for plasmonic hot electron photovoltaics. *Nanoscale*, **2015**, 7, 2281-8	7.7	31
47	Controlled Steric Hindrance Enables Efficient Ligand Exchange for Stable, Infrared-Bandgap Quantum Dot Inks. *ACS Energy Letters*, **2019**, 4, 1225-1230	20.1	30
46	Metal-Organic Framework Thin Films on High-Curvature Nanostructures Toward Tandem Electrocatalysis. *ACS Applied Materials & Interfaces*, **2018**, 10, 31225-31232	9.5	30
45	Enhanced Solar-to-Hydrogen Generation with Broadband Epsilon-Near-Zero Nanostructured Photocatalysts. *Advanced Materials*, **2017**, 29, 1701165	24	29
44	Tailoring the Electronic Properties of Colloidal Quantum Dots in Metal-Semiconductor Nanocomposites for High Performance Photodetectors. *Small*, **2015**, 11, 2636-41	11	28
43	Ligand-Assisted Reconstruction of Colloidal Quantum Dots Decreases Trap State Density. *Nano Letters*, **2020**, 20, 3694-3702	11.5	27
42	Halide Re-Shelled Quantum Dot Inks for Infrared Photovoltaics. *ACS Applied Materials & Interfaces*, **2017**, 9, 37536-37541	9.5	26
41	Regioselective magnetization in semiconducting nanorods. *Nature Nanotechnology*, **2020**, 15, 192-197	28.7	25
40	A Tuned Alternating D-A Copolymer Hole-Transport Layer Enables Colloidal Quantum Dot Solar Cells with Superior Fill Factor and Efficiency. *Advanced Materials*, **2020**, 32, e2004985	24	25
39	Colloidal quantum dot photodetectors with 10-ns response time and 80% quantum efficiency at 1,550 nm. *Matter*, **2021**, 4, 1042-1053	12.7	25
38	Advances in solution-processed near-infrared light-emitting diodes. *Nature Photonics*, **2021**, 15, 656-669	33.9	25
37	Stable, active CO reduction to formate via redox-modulated stabilization of active sites. *Nature Communications*, **2021**, 12, 5223	17.4	25
36	Micron Thick Colloidal Quantum Dot Solids. *Nano Letters*, **2020**, 20, 5284-5291	11.5	23
35	Absorption enhancement in solution processed metal-semiconductor nanocomposites. *Optics Express*, **2011**, 19, 21038-49	3.3	23
34	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	24	23
33	Bright and Stable Light-Emitting Diodes Based on Perovskite Quantum Dots in Perovskite Matrix. *Journal of the American Chemical Society*, **2021**, 143, 15606-15615	16.4	22

32	Orthogonal colloidal quantum dot inks enable efficient multilayer optoelectronic devices. *Nature Communications*, **2020**, 11, 4814	17.4	19
31	Optical Resonance Engineering for Infrared Colloidal Quantum Dot Photovoltaics. *ACS Energy Letters*, **2016**, 1, 852-857	20.1	19
30	Electrical effects of metal nanoparticles embedded in ultra-thin colloidal quantum dot films. *Applied Physics Letters*, **2012**, 101, 041103	3.4	17
29	Spatial Collection in Colloidal Quantum Dot Solar Cells. *Advanced Functional Materials*, **2020**, 30, 1908200	15.6	14
28	Colloidal-quantum-dot-in-perovskite nanowires. *Infrared Physics and Technology*, **2019**, 98, 16-22	2.7	14
27	Control Over Ligand Exchange Reactivity in Hole Transport Layer Enables High-Efficiency Colloidal Quantum Dot Solar Cells. *ACS Energy Letters*, **2021**, 6, 468-476	20.1	14
26	Metal-insulator-semiconductor heterostructures for plasmonic hot-carrier optoelectronics. *Optics Express*, **2015**, 23, 14715-23	3.3	13
25	Facet-Oriented Coupling Enables Fast and Sensitive Colloidal Quantum Dot Photodetectors. *Advanced Materials*, **2021**, 33, e2101056	24	13
24	Infrared Cavity-Enhanced Colloidal Quantum Dot Photovoltaics Employing Asymmetric Multilayer Electrodes. *ACS Energy Letters*, **2018**, 3, 2908-2913	20.1	12
23	Low-Temperature-Processed Colloidal Quantum Dots as Building Blocks for Thermoelectrics. *Advanced Energy Materials*, **2019**, 9, 1803049	21.8	11
22	Colloidal Quantum Dot Bulk Heterojunction Solids with Near-Unity Charge Extraction Efficiency. *Advanced Science*, **2020**, 7, 2000894	13.6	10
21	A Highly Sensitive Pyroresistive All-Organic Infrared Bolometer. *Advanced Electronic Materials*, **2015** , 1, 1500090	6.4	10
20	Highly Passivated n-Type Colloidal Quantum Dots for Solution-Processed Thermoelectric Generators with Large Output Voltage. *Advanced Energy Materials*, **2019**, 9, 1901244	21.8	9
19	Efficient electrosynthesis of n-propanol from carbon monoxide using a AgRuCu catalyst. *Nature Energy*,	62.3	9
18	Efficient and Stable Colloidal Quantum Dot Solar Cells with a Green-Solvent Hole-Transport Layer. *Advanced Energy Materials*, **2020**, 10, 2002084	21.8	9
17	Band-aligned C3N4S3x/2 stabilizes CdS/CuInGaS2 photocathodes for efficient water reduction. *Journal of Materials Chemistry A*, **2017**, 5, 3167-3171	13	8
16	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	16.4	7
15	Monolithic Organic/Colloidal Quantum Dot Hybrid Tandem Solar Cells via Buffer Engineering. *Advanced Materials*, **2020**, 32, e2004657	24	7

14	Gradient-Doped Colloidal Quantum Dot Solids Enable Thermophotovoltaic Harvesting of Waste Heat. *ACS Energy Letters*, **2016**, 1, 740-746	20.1	7
13	Ligand Exchange at a Covalent Surface Enables Balanced Stoichiometry in III-V Colloidal Quantum Dots. *Nano Letters*, **2021**, 21, 6057-6063	11.5	7
12	Carbon-efficient carbon dioxide electrolysers. *Nature Sustainability*,	22.1	7
11	Single-Precursor Intermediate Shelling Enables Bright, Narrow Line Width InAs/InZnP-Based QD Emitters. *Chemistry of Materials*, **2020**, 32, 2919-2925	9.6	6
10	Accelerated solution-phase exchanges minimize defects in colloidal quantum dot solids. *Nano Energy*, **2019**, 63, 103876	17.1	6
9	Colloidal Quantum Dot Solar Cell Band Alignment using Two-Step Ionic Doping **2020**, 2, 1583-1589		6
8	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	6.1	5
7	Suppression of Auger Recombination by Gradient Alloying in InAs/CdSe/CdS QDs. *Chemistry of Materials*, **2020**, 32, 7703-7709	9.6	4
6	Gold Adparticles on Silver Combine Low Overpotential and High Selectivity in Electrochemical CO2 Conversion. *ACS Applied Energy Materials*, **2021**, 4, 7504-7512	6.1	4
5	Concentrated Ethanol Electrosynthesis from CO via a Porous Hydrophobic Adlayer.. *ACS Applied Materials & Interfaces*, **2022**, 14, 4155-4162	9.5	3
4	Solar Cells: Overcoming the Ambient Manufacturability-Scalability-Performance Bottleneck in Colloidal Quantum Dot Photovoltaics (Adv. Mater. 35/2018). *Advanced Materials*, **2018**, 30, 1870260	24	3
3	Self-Aligned Non-Centrosymmetric Conjugated Molecules Enable Electro-Optic Perovskites. *Advanced Optical Materials*,2100730	8.1	3
2	InP-Quantum-Dot-in-ZnS-Matrix Solids for Thermal and Air Stability. *Chemistry of Materials*, **2020**, 32, 9584-9590	9.6	2
1	Dopant-Assisted Matrix Stabilization Enables Thermoelectric Performance Enhancement in n-Type Quantum Dot Films. *ACS Applied Materials & Interfaces*, **2021**, 13, 18999-19007	9.5	0