# F Pelayo Garca De Arquer

## List of Publications by Year in Descending Order



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|---|---|---|---|
| 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 | Concentrated Ethanol Electrosynthesis from CO via a Porous Hydrophobic Adlayer.. *ACS Applied Materials & Interfaces*, **2022**, 14, 4155-4162 | 9.5 | 3 |
| 120 | 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 |
| 119 | Colloidal quantum dot photodetectors with 10-ns response time and 80% quantum efficiency at 1,550 hm. *Matter*, **2021**, 4, 1042-1053 | 12.7 | 25 |
| 118 | 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 |
| 117 | CO electrolysis to multicarbon products in strong acid. *Science*, **2021**, 372, 1074-1078 | 33.3 | 115 |
| 116 | CO2 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 |
| 115 | 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 |
| 114 | Facet-Oriented Coupling Enables Fast and Sensitive Colloidal Quantum Dot Photodetectors. *Advanced Materials*, **2021**, 33, e2101056 | 24 | 13 |
| 113 | Ligand Exchange at a Covalent Surface Enables Balanced Stoichiometry in III-V Colloidal Quantum Dots. *Nano Letters*, **2021**, 21, 6057-6063 | 11.5 | 7 |
| 112 | Advances in solution-processed near-infrared light-emitting diodes. *Nature Photonics*, **2021**, 15, 656-669 | 33.9 | 25 |
| 111 | Semiconductor quantum dots: Technological progress and future challenges. *Science*, **2021**, 373, | 33.3 | 138 |
| 110 | Stable, active CO reduction to formate via redox-modulated stabilization of active sites. *Nature Communications*, **2021**, 12, 5223 | 17.4 | 25 |
| 109 | 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 |
| 108 | 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 |
| 107 | InP-Quantum-Dot-in-ZnS-Matrix Solids for Thermal and Air Stability. *Chemistry of Materials*, **2020**, 32, 9584-9590 | 9.6 | 2 |
| 106 | Efficient electrically powered CO2-to-ethanol via suppression of deoxygenation. *Nature Energy*, **2020**, 5, 478-486 | 62.3 | 163 |
| 105 | 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 |

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| 104 | Micron Thick Colloidal Quantum Dot Solids. *Nano Letters*, **2020**, 20, 5284-5291 | 11.5 | 23 |
| 103 | Colloidal Quantum Dot Bulk Heterojunction Solids with Near-Unity Charge Extraction Efficiency. *Advanced Science*, **2020**, 7, 2000894 | 13.6 | 10 |
| 102 | Monolayer Perovskite Bridges Enable Strong Quantum Dot Coupling for Efficient Solar Cells. *Joule*, **2020**, 4, 1542-1556 | 27.8 | 85 |
| 101 | A Chemically Orthogonal Hole Transport Layer for Efficient Colloidal Quantum Dot Solar Cells. *Advanced Materials*, **2020**, 32, e1906199 | 24 | 38 |
| 100 | Single-Precursor Intermediate Shelling Enables Bright, Narrow Line Width InAs/InZnP-Based QD Emitters. *Chemistry of Materials*, **2020**, 32, 2919-2925 | 9.6 | 6 |
| 99 | Enhanced optical path and electron diffusion length enable high-efficiency perovskite tandems. *Nature Communications*, **2020**, 11, 1257 | 17.4 | 114 |
| 98 | Solution-processed upconversion photodetectors based on quantum dots. *Nature Electronics*, **2020**, 3, 251-258 | 28.4 | 59 |
| 97 | CO electrolysis to multicarbon products at activities greater than 1 A cm. *Science*, **2020**, 367, 661-666 | 33.3 | 403 |
| 96 | Regioselective magnetization in semiconducting nanorods. *Nature Nanotechnology*, **2020**, 15, 192-197 | 28.7 | 25 |
| 95 | Efficient near-infrared light-emitting diodes based on quantum dots in layered perovskite. *Nature Photonics*, **2020**, 14, 227-233 | 33.9 | 91 |
| 94 | Ligand-Assisted Reconstruction of Colloidal Quantum Dots Decreases Trap State Density. *Nano Letters*, **2020**, 20, 3694-3702 | 11.5 | 27 |
| 93 | 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 |
| 92 | Edge stabilization in reduced-dimensional perovskites. *Nature Communications*, **2020**, 11, 170 | 17.4 | 79 |
| 91 | Spatial Collection in Colloidal Quantum Dot Solar Cells. *Advanced Functional Materials*, **2020**, 30, 1908200 | 15.6 | 14 |
| 90 | Cascade surface modification of colloidal quantum dot inks enables efficient bulk homojunction photovoltaics. *Nature Communications*, **2020**, 11, 103 | 17.4 | 110 |
| 89 | High-valence metals improve oxygen evolution reaction performance by modulating 3d metal oxidation cycle energetics. *Nature Catalysis*, **2020**, 3, 985-992 | 36.5 | 149 |
| 88 | High-Rate and Efficient Ethylene Electrosynthesis Using a Catalyst/Promoter/Transport Layer. *ACS Energy Letters*, **2020**, 5, 2811-2818 | 20.1 | 39 |
| 87 | 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 |

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| 86 | Colloidal Quantum Dot Solar Cell Band Alignment using Two-Step Ionic Doping **2020**, 2, 1583-1589 | | 6 |
| 85 | Efficient and Stable Colloidal Quantum Dot Solar Cells with a Green-Solvent Hole-Transport Layer. *Advanced Energy Materials*, **2020**, 10, 2002084 | 21.8 | 9 |
| 84 | Orthogonal colloidal quantum dot inks enable efficient multilayer optoelectronic devices. *Nature Communications*, **2020**, 11, 4814 | 17.4 | 19 |
| 83 | Monolithic Organic/Colloidal Quantum Dot Hybrid Tandem Solar Cells via Buffer Engineering. *Advanced Materials*, **2020**, 32, e2004657 | 24 | 7 |
| 82 | Suppression of Auger Recombination by Gradient Alloying in InAs/CdSe/CdS QDs. *Chemistry of Materials*, **2020**, 32, 7703-7709 | 9.6 | 4 |
| 81 | Mixed Lead Halide Passivation of Quantum Dots. *Advanced Materials*, **2019**, 31, e1904304 | 24 | 42 |
| 80 | Stable Colloidal Quantum Dot Inks Enable Inkjet-Printed High-Sensitivity Infrared Photodetectors. *ACS Nano*, **2019**, 13, 11988-11995 | 16.7 | 55 |
| 79 | Ultrafast narrowband exciton routing within layered perovskite nanoplatelets enables low-loss luminescent solar concentrators. *Nature Energy*, **2019**, 4, 197-205 | 62.3 | 87 |
| 78 | CO2 Electroreduction from Carbonate Electrolyte. *ACS Energy Letters*, **2019**, 4, 1427-1431 | 20.1 | 66 |
| 77 | Nanostructured Back Reflectors for Efficient Colloidal Quantum-Dot Infrared Optoelectronics. *Advanced Materials*, **2019**, 31, e1901745 | 24 | 36 |
| 76 | 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 |
| 75 | Lattice anchoring stabilizes solution-processed semiconductors. *Nature*, **2019**, 570, 96-101 | 50.4 | 149 |
| 74 | Binding Site Diversity Promotes CO Electroreduction to Ethanol. *Journal of the American Chemical Society*, **2019**, 141, 8584-8591 | 16.4 | 178 |
| 73 | Controlled Steric Hindrance Enables Efficient Ligand Exchange for Stable, Infrared-Bandgap Quantum Dot Inks. *ACS Energy Letters*, **2019**, 4, 1225-1230 | 20.1 | 30 |
| 72 | A Facet-Specific Quantum Dot Passivation Strategy for Colloid Management and Efficient Infrared Photovoltaics. *Advanced Materials*, **2019**, 31, e1805580 | 24 | 55 |
| 71 | Accelerated solution-phase exchanges minimize defects in colloidal quantum dot solids. *Nano Energy*, **2019**, 63, 103876 | 17.1 | 6 |
| 70 | Low-Temperature-Processed Colloidal Quantum Dots as Building Blocks for Thermoelectrics. *Advanced Energy Materials*, **2019**, 9, 1803049 | 21.8 | 11 |
| 69 | Colloidal-quantum-dot-in-perovskite nanowires. *Infrared Physics and Technology*, **2019**, 98, 16-22 | 2.7 | 14 |

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| 68 | Efficient hybrid colloidal quantum dot/organic solar cells mediated by near-infrared sensitizing small molecules. *Nature Energy*, **2019**, 4, 969-976 | 62.3 | 78 |
| 67 | Multi-site electrocatalysts for hydrogen evolution in neutral media by destabilization of water molecules. *Nature Energy*, **2019**, 4, 107-114 | 62.3 | 264 |
| 66 | 2D matrix engineering for homogeneous quantum dot coupling in photovoltaic solids. *Nature Nanotechnology*, **2018**, 13, 456-462 | 28.7 | 196 |
| 65 | 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 |
| 64 | Metal-Organic Frameworks Mediate Cu Coordination for Selective CO Electroreduction. *Journal of the American Chemical Society*, **2018**, 140, 11378-11386 | 16.4 | 188 |
| 63 | 2D Metal Oxyhalide-Derived Catalysts for Efficient CO Electroreduction. *Advanced Materials*, **2018**, 30, e1802858 | 24 | 123 |
| 62 | Metal-Organic Framework Thin Films on High-Curvature Nanostructures Toward Tandem Electrocatalysis. *ACS Applied Materials & Interfaces*, **2018**, 10, 31225-31232 | 9.5 | 30 |
| 61 | Acid-Assisted Ligand Exchange Enhances Coupling in Colloidal Quantum Dot Solids. *Nano Letters*, **2018**, 18, 4417-4423 | 11.5 | 37 |
| 60 | 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 |
| 59 | Infrared Cavity-Enhanced Colloidal Quantum Dot Photovoltaics Employing Asymmetric Multilayer Electrodes. *ACS Energy Letters*, **2018**, 3, 2908-2913 | 20.1 | 12 |
| 58 | Multibandgap quantum dot ensembles for solar-matched infrared energy harvesting. *Nature Communications*, **2018**, 9, 4003 | 17.4 | 39 |
| 57 | Butylamine-Catalyzed Synthesis of Nanocrystal Inks Enables Efficient Infrared CQD Solar Cells. *Advanced Materials*, **2018**, 30, e1803830 | 24 | 48 |
| 56 | A Surface Reconstruction Route to High Productivity and Selectivity in CO Electroreduction toward C Hydrocarbons. *Advanced Materials*, **2018**, 30, e1804867 | 24 | 131 |
| 55 | Perovskite light-emitting diodes with external quantum efficiency exceeding 20 per cent. *Nature*, **2018**, 562, 245-248 | 50.4 | 1802 |
| 54 | 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 |
| 53 | Perovskites for Light Emission. *Advanced Materials*, **2018**, 30, e1801996 | 24 | 270 |
| 52 | 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 |
| 51 | Activated Electron-Transport Layers for Infrared Quantum Dot Optoelectronics. *Advanced Materials* , **2018**, 30, e1801720 | 24 | 34 |

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| 50 | CO electroreduction to ethylene via hydroxide-mediated copper catalysis at an abrupt interface. *Science*, **2018**, 360, 783-787 | 33.3 | 980 |
| 49 | Efficient Photon Recycling and Radiation Trapping in Cesium Lead Halide Perovskite Waveguides. *ACS Energy Letters*, **2018**, 3, 1492-1498 | 20.1 | 56 |
| 48 | Overcoming the Ambient Manufacturability-Scalability-Performance Bottleneck in Colloidal Quantum Dot Photovoltaics. *Advanced Materials*, **2018**, 30, e1801661 | 24 | 58 |
| 47 | Solution-processed semiconductors for next-generation photodetectors. *Nature Reviews Materials*, **2017**, 2, | 73.3 | 674 |
| 46 | Efficient and stable solution-processed planar perovskite solar cells via contact passivation. *Science*, **2017**, 355, 722-726 | 33.3 | 1667 |
| 45 | Band-aligned C3N4⊠S3x/2 stabilizes CdS/CuInGaS2 photocathodes for efficient water reduction. *Journal of Materials Chemistry A*, **2017**, 5, 3167-3171 | 13 | 8 |
| 44 | 0D-2D Quantum Dot: Metal Dichalcogenide Nanocomposite Photocatalyst Achieves Efficient Hydrogen Generation. *Advanced Materials*, **2017**, 29, 1605646 | 24 | 73 |
| 43 | Enhanced Solar-to-Hydrogen Generation with Broadband Epsilon-Near-Zero Nanostructured Photocatalysts. *Advanced Materials*, **2017**, 29, 1701165 | 24 | 29 |
| 42 | Tailoring the Energy Landscape in Quasi-2D Halide Perovskites Enables Efficient Green-Light Emission. *Nano Letters*, **2017**, 17, 3701-3709 | 11.5 | 309 |
| 41 | Field-emission from quantum-dot-in-perovskite solids. *Nature Communications*, **2017**, 8, 14757 | 17.4 | 68 |
| 40 | Nanoimprint-Transfer-Patterned Solids Enhance Light Absorption in Colloidal Quantum Dot Solar Cells. *Nano Letters*, **2017**, 17, 2349-2353 | 11.5 | 39 |
| 39 | Enhanced Open-Circuit Voltage in Colloidal Quantum Dot Photovoltaics via Reactivity-Controlled Solution-Phase Ligand Exchange. *Advanced Materials*, **2017**, 29, 1703627 | 24 | 42 |
| 38 | Sulfur-Modulated Tin Sites Enable Highly Selective Electrochemical Reduction of CO2 to Formate. *Joule*, **2017**, 1, 794-805 | 27.8 | 263 |
| 37 | Halide Re-Shelled Quantum Dot Inks for Infrared Photovoltaics. *ACS Applied Materials & Interfaces*, **2017**, 9, 37536-37541 | 9.5 | 26 |
| 36 | Chloride Passivation of ZnO Electrodes Improves Charge Extraction in Colloidal Quantum Dot Photovoltaics. *Advanced Materials*, **2017**, 29, 1702350 | 24 | 97 |
| 35 | Flexible Filter-Free Narrowband Photodetector with High Gain and Customized Responsive Spectrum. *Advanced Functional Materials*, **2017**, 27, 1702360 | 15.6 | 44 |
| 34 | 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 |
| 33 | Mixed-quantum-dot solar cells. *Nature Communications*, **2017**, 8, 1325 | 17.4 | 113 |

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| 32 | Hybrid organic-inorganic inks flatten the energy landscape in colloidal quantum dot solids. *Nature Materials*, **2017**, 16, 258-263 | 27 | 432 |
| 31 | Pure Cubic-Phase Hybrid Iodobismuthates AgBi2 I7 for Thin-Film Photovoltaics. *Angewandte Chemie - International Edition*, **2016**, 55, 9586-90 | 16.4 | 156 |
| 30 | Pure Cubic-Phase Hybrid Iodobismuthates AgBi2I7 for Thin-Film Photovoltaics. *Angewandte Chemie* , **2016**, 128, 9738-9742 | 3.6 | 35 |
| 29 | 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 |
| 28 | ZnFe2 O4 Leaves Grown on TiO2 Trees Enhance Photoelectrochemical Water Splitting. *Small*, **2016**, 12, 3181-8 | 11 | 50 |
| 27 | 10.6% Certified Colloidal Quantum Dot Solar Cells via Solvent-Polarity-Engineered Halide Passivation. *Nano Letters*, **2016**, 16, 4630-4 | 11.5 | 275 |
| 26 | Passivation Using Molecular Halides Increases Quantum Dot Solar Cell Performance. *Advanced Materials*, **2016**, 28, 299-304 | 24 | 279 |
| 25 | Double-Sided Junctions Enable High-Performance Colloidal-Quantum-Dot Photovoltaics. *Advanced Materials*, **2016**, 28, 4142-8 | 24 | 100 |
| 24 | Homogeneously dispersed multimetal oxygen-evolving catalysts. *Science*, **2016**, 352, 333-7 | 33.3 | 1459 |
| 23 | Gradient-Doped Colloidal Quantum Dot Solids Enable Thermophotovoltaic Harvesting of Waste Heat. *ACS Energy Letters*, **2016**, 1, 740-746 | 20.1 | 7 |
| 22 | Optical Resonance Engineering for Infrared Colloidal Quantum Dot Photovoltaics. *ACS Energy Letters*, **2016**, 1, 852-857 | 20.1 | 19 |
| 21 | Enhanced electrocatalytic CO reduction via field-induced reagent concentration. *Nature*, **2016**, 537, 382-386 | 38.1 | 997 |
| 20 | Large-Area Plasmonic-Crystal Hot-Electron-Based Photodetectors. *ACS Photonics*, **2015**, 2, 950-957 | 6.3 | 55 |
| 19 | Metal-insulator-semiconductor heterostructures for plasmonic hot-carrier optoelectronics. *Optics Express*, **2015**, 23, 14715-23 | 3.3 | 13 |
| 18 | High-Efficiency Colloidal Quantum Dot Photovoltaics via Robust Self-Assembled Monolayers. *Nano Letters*, **2015**, 15, 7691-6 | 11.5 | 175 |
| 17 | Colloidal Quantum Dot Photovoltaics Enhanced by Perovskite Shelling. *Nano Letters*, **2015**, 15, 7539-43 | 11.5 | 155 |
| 16 | A Highly Sensitive Pyroresistive All-Organic Infrared Bolometer. *Advanced Electronic Materials*, **2015** , 1, 1500090 | 6.4 | 10 |
| 15 | Molecular interfaces for plasmonic hot electron photovoltaics. *Nanoscale*, **2015**, 7, 2281-8 | 7.7 | 31 |

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| 14 | Tailoring the Electronic Properties of Colloidal Quantum Dots in Metal-Semiconductor Nanocomposites for High Performance Photodetectors. *Small*, **2015**, 11, 2636-41 | 11 | 28 |
| 13 | 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 |
| 12 | Heterovalent cation substitutional doping for quantum dot homojunction solar cells. *Nature Communications*, **2013**, 4, 2981 | 17.4 | 92 |
| 11 | Photoelectric energy conversion of plasmon-generated hot carriers in metal-insulator-semiconductor structures. *ACS Nano*, **2013**, 7, 3581-8 | 16.7 | 97 |
| 10 | Electrical effects of metal nanoparticles embedded in ultra-thin colloidal quantum dot films. *Applied Physics Letters*, **2012**, 101, 041103 | 3.4 | 17 |
| 9 | Plasmonic light trapping leads to responsivity increase in colloidal quantum dot photodetectors. *Applied Physics Letters*, **2012**, 100, 043101 | 3.4 | 44 |
| 8 | Hybrid graphene-quantum dot phototransistors with ultrahigh gain. *Nature Nanotechnology*, **2012**, 7, 363-8 | 28.7 | 1588 |
| 7 | Solution-processed inorganic bulk nano-heterojunctions and their application to solar cells. *Nature Photonics*, **2012**, 6, 529-534 | 33.9 | 194 |
| 6 | . *IEEE Transactions on Antennas and Propagation*, **2011**, 59, 3144-3153 | 4.9 | 42 |
| 5 | Absorption enhancement in solution processed metal-semiconductor nanocomposites. *Optics Express*, **2011**, 19, 21038-49 | 3.3 | 23 |
| 4 | 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 |
| 3 | Efficient electrosynthesis of n-propanol from carbon monoxide using a Ag□Ru□Cu catalyst. *Nature Energy*, | 62.3 | 9 |
| 2 | Self-Aligned Non-Centrosymmetric Conjugated Molecules Enable Electro-Optic Perovskites. *Advanced Optical Materials*,2100730 | 8.1 | 3 |
| 1 | Carbon-efficient carbon dioxide electrolysers. *Nature Sustainability*, | 22.1 | 7 |