James F Cahoon

List of Publications by Year
in descending order

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66 papers	2,483 citations	201674 27 h-index	206112 48 g-index
67 all docs	67 docs citations	67 times ranked	3573 citing authors

#	Article	IF	Citations
1	Unveiling the complex configurational landscape of the intralayer cavities in a crystalline carbon nitride. Chemical Science, 2022, 13, 3187-3193.	7.4	13
2	Monolithic and Single-Crystalline Aluminumâ€“Silicon Heterostructures. ACS Applied Materials & Interfaces, 2022, 14, 26238-26244.	8.0	13
3	Electrostatic tip effects in scanning probe microscopy of nanostructures. Nanotechnology, 2021, 32, 195710.	2.6	6
4	Amino-Deliquescence and Amino-Efflorescence of Methylammonium Lead Iodide. Chemistry of Materials, 2021, 33, 3814-3822.	6.7	3
5	Lithographically Patterning Hybrid Perovskite Single Crystals by Surface-Engineered Amino-Deliquescence/Efflorescence. ACS Photonics, 2021, 8, 2329-2336.	6.6	4
6	Influence of Surface and Structural Variations in Donorâ€“Acceptorâ€“Donor Sensitizers on Photoelectrocatalytic Water Splitting. ACS Applied Materials & Interfaces, 2021, 13, 47499-47510.	8.0	3
7	Enabling Aqueous NiO Photocathodes by Passivating Surface Sites That Facilitate Proton-Coupled Charge Transfer. ACS Applied Energy Materials, 2020, 3, 10702-10713.	5.1	10
8	Organic Chromophores Designed for Hole Injection into Wide-Band-Gap Metal Oxides for Solar Fuel Applications. Chemistry of Materials, 2020, 32, 8158-8168.	6.7	12
9	Remote nongenetic optical modulation of neuronal activity using fuzzy graphene. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 13339-13349.	7.1	52
10	Abrupt degenerately-doped silicon nanowire tunnel junctions. Nanotechnology, 2020, 31, 415708.	2.6	2
11	Cation Effects in p-Type Dye-Sensitized Solar Cells. ACS Applied Energy Materials, 2020, 3, 1496-1505.	5.1	11
12	Ratcheting quasi-ballistic electrons in silicon geometric diodes at room temperature. Science, 2020, 368, 177-180.	12.6	22
13	Semi-transparent, flexible, and electrically conductive silicon mesh by capillarity-driven welding of vapor-liquid-solid-grown nanowires over large areas. Nano Research, 2020, 13, 1465-1471.	10.4	4
14	Observation of Phonon Propagation in Germanium Nanowires Using Femtosecond Pumpâ€“Probe Microscopy. ACS Photonics, 2019, 6, 2213-2222.	6.6	17
15	Optical Bound States in the Continuum with Nanowire Geometric Superlattices. Physical Review Letters, 2019, 122, 187402.	7.8	37
16	Geometric Nanophotonics: Light Management in Single Nanowires through Morphology. Accounts of Chemical Research, 2019, 52, 3511-3520.	15.6	20
17	Interfacial electron transfer yields in dye-sensitized NiO photocathodes correlated to excited-state dipole orientation of ruthenium chromophores. Canadian Journal of Chemistry, 2018, 96, 865-874.	1.1	11
18	Synthesized Silicon Nanostructures for Optical Switches and THz Electronics. , 2018, , .		0

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19	Solvent-Engineered Stress in Nanoscale Materials. ACS Applied Materials & Interfaces, 2018, 10, 44183-44189.	8.0	1
20	Interplay of Surface Recombination and Diode Geometry for the Performance of Axial pâ€“iâ€“n Nanowire Solar Cells. ACS Nano, 2018, 12, 10554-10563.	14.6	15
21	Mie-coupled bound guided states in nanowire geometric superlattices. Nature Communications, 2018, 9, 2781.	12.8	21
22	All-in-One Derivatized Tandem p⁺n-Siliconâ€“SnO₂/TiO₂ Water Splitting Photoelectrochemical Cell. Nano Letters, 2017, 17, 2440-2446.	9.1	53
23	Designing Morphology in Epitaxial Silicon Nanowires: The Role of Gold, Surface Chemistry, and Phosphorus Doping. ACS Nano, 2017, 11, 4453-4462.	14.6	46
24	Encoding Highly Nonequilibrium Boron Concentrations and Abrupt Morphology in p-Type/n-Type Silicon Nanowire Superlattices. ACS Applied Materials & Interfaces, 2017, 9, 37105-37111.	8.0	17
25	Letting photons out of the gate. Nature Nanotechnology, 2017, 12, 938-939.	31.5	3
26	Mapping Free-Carriers in Multijunction Silicon Nanowires Using Infrared Near-Field Optical Microscopy. Nano Letters, 2017, 17, 6591-6597.	9.1	29
27	Probing Intrawire, Interwire, and Diameter-Dependent Variations in Silicon Nanowire Surface Trap Density with Pumpâ€“Probe Microscopy. Nano Letters, 2017, 17, 5956-5961.	9.1	17
28	Enhancement of Light Absorption in Silicon Nanowire Photovoltaic Devices with Dielectric and Metallic Grating Structures. Nano Letters, 2017, 17, 7731-7736.	9.1	17
29	Self-Catalyzed Vaporâ€“Liquidâ€“Solid Growth of Lead Halide Nanowires and Conversion to Hybrid Perovskites. Nano Letters, 2017, 17, 7561-7568.	9.1	37
30	(Invited) Designing Symmetric and Asymmetric Morphology in Silicon Nanowires to Encode Advanced Electronic and Photonic Functionality. ECS Meeting Abstracts, 2017, , .	0.0	0
31	Designing Plasmonâ€Enhanced Thermochromic Films Using a Vanadium Dioxide Nanoparticle Elastomeric Composite. Advanced Optical Materials, 2016, 4, 578-583.	7.3	26
32	Material informatics driven design and experimental validation of lead titanate as an aqueous solar photocathode. Materials Discovery, 2016, 6, 9-16.	3.3	23
33	Barrierless Switching between a Liquid and Superheated Solid Catalyst during Nanowire Growth. Journal of Physical Chemistry Letters, 2016, 7, 4236-4242.	4.6	7
34	Capillarity-Driven Welding of Semiconductor Nanowires for Crystalline and Electrically Ohmic Junctions. Nano Letters, 2016, 16, 5241-5246.	9.1	36
35	Passivation of Nickel Vacancy Defects in Nickel Oxide Solar Cells by Targeted Atomic Deposition of Boron. Journal of Physical Chemistry C, 2016, 120, 16568-16576.	3.1	44
36	Imaging Spatial Variations in the Dissipation and Transport of Thermal Energy within Individual Silicon Nanowires Using Ultrafast Microscopy. Nano Letters, 2016, 16, 434-439.	9.1	11

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37	Site-Selective Passivation of Defects in NiO Solar Photocathodes by Targeted Atomic Deposition. ACS Applied Materials & Interfaces, 2016, 8, 4754-4761.	8.0	71
38	Chemically Engraving Semiconductor Nanowires: Using Three-Dimensional Nanoscale Morphology to Encode Functionality from the Bottom Up. Journal of Physical Chemistry Letters, 2016, 7, 685-692.	4.6	28
39	Understanding the vaporâ€“liquidâ€“solid mechanism of Si nanowire growth and doping to synthetically encode precise nanoscale morphology. Journal of Materials Chemistry C, 2016, 4, 3890-3897.	5.5	32
40	Doubling Absorption in Nanowire Solar Cells with Dielectric Shell Optical Antennas. Nano Letters, 2015, 15, 753-758.	9.1	109
41	Compositionally-tunable mechanochemical synthesis of Zn_xCo_{3â^'x}O₄ nanoparticles for mesoporous p-type photocathodes. Journal of Materials Chemistry A, 2015, 3, 21990-21994.	10.3	14
42	Sensitized Zincâ€“Cobaltâ€“Oxide Spinel p-Type Photoelectrode. Journal of Physical Chemistry C, 2014, 118, 25340-25349.	3.1	16
43	Reversible Strain-Induced Electronâ€“Hole Recombination in Silicon Nanowires Observed with Femtosecond Pumpâ€“Probe Microscopy. Nano Letters, 2014, 14, 6287-6292.	9.1	34
44	Direct Observation of Metal Ketenes Formed by Photoexcitation of a Fischer Carbene using Ultrafast Infrared Spectroscopy. Organometallics, 2014, 33, 6149-6153.	2.3	10
45	Encoding Abrupt and Uniform Dopant Profiles in Vaporâ€“Liquidâ€“Solid Nanowires by Suppressing the Reservoir Effect of the Liquid Catalyst. ACS Nano, 2014, 8, 11790-11798.	14.6	46
46	Ultrafast Carrier Dynamics in Individual Silicon Nanowires: Characterization of Diameter-Dependent Carrier Lifetime and Surface Recombination with Pumpâ€“Probe Microscopy. Journal of Physical Chemistry C, 2014, 118, 8634-8640.	3.1	50
47	Waveguide Scattering Microscopy for Dark-Field Imaging and Spectroscopy of Photonic Nanostructures. ACS Photonics, 2014, 1, 725-731.	6.6	22
48	Identifying Crystallization- and Incorporation-Limited Regimes during Vaporâ€“Liquidâ€“Solid Growth of Si Nanowires. ACS Nano, 2014, 8, 6081-6088.	14.6	38
49	Hierarchically-Structured NiO Nanoplatelets as Mesoscale p-Type Photocathodes for Dye-Sensitized Solar Cells. Journal of Physical Chemistry C, 2014, 118, 14177-14184.	3.1	49
50	Imaging Charge Separation and Carrier Recombination in Nanowire p-i-n Junctions Using Ultrafast Microscopy. Nano Letters, 2014, 14, 3079-3087.	9.1	48
51	Ultrafast Carrier Dynamics of Silicon Nanowire Ensembles: The Impact of Geometrical Heterogeneity on Charge Carrier Lifetime. Journal of Physical Chemistry C, 2014, 118, 8626-8633.	3.1	18
52	Synthetically Encoding 10 nm Morphology in Silicon Nanowires. Nano Letters, 2013, 13, 6281-6286.	9.1	87
53	Direct Imaging of Free Carrier and Trap Carrier Motion in Silicon Nanowires by Spatially-Separated Femtosecond Pumpâ€“Probe Microscopy. Nano Letters, 2013, 13, 1336-1340.	9.1	120
54	Horizontal Silicon Nanowires with Radial pâ€“n Junctions: A Platform for Unconventional Solar Cells. Journal of Physical Chemistry Letters, 2013, 4, 2002-2009.	4.6	41

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55	Design Principles for Photovoltaic Devices Based on Si Nanowires with Axial or Radial pâ€“n Junctions. Nano Letters, 2012, 12, 6024-6029.	9.1	119
56	Coaxial multishell nanowires with high-quality electronic interfaces and tunable optical cavities for ultrathin photovoltaics. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 1407-1412.	7.1	238
57	Tuning Light Absorption in Core/Shell Silicon Nanowire Photovoltaic Devices through Morphological Design. Nano Letters, 2012, 12, 4971-4976.	9.1	237
58	Synthetically Encoded Ultrashort-Channel Nanowire Transistors for Fast, Pointlike Cellular Signal Detection. Nano Letters, 2012, 12, 2639-2644.	9.1	82
59	Time-resolved IR Studies on the Mechanism for the Functionalization of Primary Câ^'H Bonds by Photoactivated Cp*W(CO)₃(Bpin). Journal of the American Chemical Society, 2010, 132, 1848-1859.	13.7	41
60	DFT and time-resolved IR investigation of electron transfer between photogenerated 17- and 19-electron organometallic radicals. Journal of Molecular Structure, 2008, 890, 328-338.	3.6	10
61	Determining Transition-State Geometries in Liquids Using 2D-IR. Science, 2008, 319, 1820-1823.	12.6	154
62	Direct Observation of Photoinduced Bent Nitrosyl Excited-State Complexes. Journal of Physical Chemistry A, 2008, 112, 8505-8514.	2.5	18
63	Mechanism for Iron-Catalyzed Alkene Isomerization in Solution. Organometallics, 2008, 27, 4370-4379.	2.3	44
64	19-Electron Intermediates in the Ligand Substitution of CpW(CO)3â€¢with a Lewis Base. Journal of the American Chemical Society, 2006, 128, 3152-3153.	13.7	19
65	19-Electron Intermediates and Cage-Effects in the Photochemical Disproportionation of [CpW(CO)3]2 with Lewis Bases. Journal of the American Chemical Society, 2005, 127, 12555-12565.	13.7	26
66	The Role of Odd-Electron Intermediates and In-Cage Electron Transfer in Ultrafast Photochemical Disproportionation Reactions in Lewis Bases. Journal of the American Chemical Society, 2004, 126, 11414-11415.	13.7	19