David Cahen

List of Publications by Citations

490 papers	31,111 citations	89 h-index	161 g-index
553 ext. papers	33,835 ext. citations	9.7 avg, IF	7.46 L-index

#	Paper	IF	Citations
490	Hybrid organic□inorganic perovskites: low-cost semiconductors with intriguing charge-transport properties. *Nature Reviews Materials*, **2016**, 1,	73.3	912
489	Comparison of Electronic Transport Measurements on Organic Molecules. *Advanced Materials*, **2003**, 15, 1881-1890	24	772
488	How Important Is the Organic Part of Lead Halide Perovskite Photovoltaic Cells? Efficient CsPbBr3 Cells. *Journal of Physical Chemistry Letters*, **2015**, 6, 2452-6	6.4	771
487	Cesium Enhances Long-Term Stability of Lead Bromide Perovskite-Based Solar Cells. *Journal of Physical Chemistry Letters*, **2016**, 7, 167-72	6.4	665
486	Nature of Photovoltaic Action in Dye-Sensitized Solar Cells. *Journal of Physical Chemistry B*, **2000**, 104, 2053-2059	3.4	625
485	Electron Energetics at Surfaces and Interfaces: Concepts and Experiments. *Advanced Materials*, **2003**, 15, 271-277	24	564
484	Interface energetics in organo-metal halide perovskite-based photovoltaic cells. *Energy and Environmental Science*, **2014**, 7, 1377	35.4	554
483	Physical Chemical Principles of Photovoltaic Conversion with Nanoparticulate, Mesoporous Dye-Sensitized Solar Cells. *Journal of Physical Chemistry B*, **2004**, 108, 8106-8118	3.4	539
482	Why lead methylammonium tri-iodide perovskite-based solar cells require a mesoporous electron transporting scaffold (but not necessarily a hole conductor). *Nano Letters*, **2014**, 14, 1000-4	11.5	505
481	Elucidating the charge carrier separation and working mechanism of CH3NH3PbI(3-x)Cl(x) perovskite solar cells. *Nature Communications*, **2014**, 5, 3461	17.4	461
480	High Open-Circuit Voltage Solar Cells Based on Organic-Inorganic Lead Bromide Perovskite. *Journal of Physical Chemistry Letters*, **2013**, 4, 897-902	6.4	438
479	Photovoltaic solar cell technologies: analysing the state of the art. *Nature Reviews Materials*, **2019**, 4, 269-285	73.3	430
478	Advances in Perovskite Solar Cells. *Advanced Science*, **2016**, 3, 1500324	13.6	397
477	Photoelectrochemical energy conversion and storage using polycrystalline chalcogenide electrodes. *Nature*, **1976**, 261, 403-404	50.4	371
476	Chemical bath deposited CdS/CdSe-sensitized porous TiO2 solar cells. *Journal of Photochemistry and Photobiology A: Chemistry*, **2006**, 181, 306-313	4.7	351
475	Preparation of Single-Phase Films of CH3NH3Pb(I1-xBrx)3 with Sharp Optical Band Edges. *Journal of Physical Chemistry Letters*, **2014**, 5, 2501-5	6.4	347
474	Crystallization of methyl ammonium lead halide perovskites: implications for photovoltaic applications. *Journal of the American Chemical Society*, **2014**, 136, 13249-56	16.4	345

473	Hybrid Organic-Inorganic Perovskites (HOIPs): Opportunities and Challenges. *Advanced Materials*, **2015**, 27, 5102-12	24	325
472	Rain on Methylammonium Lead Iodide Based Perovskites: Possible Environmental Effects of Perovskite Solar Cells. *Journal of Physical Chemistry Letters*, **2015**, 6, 1543-7	6.4	323
471	Surface Photovoltage Spectroscopy of Dye-Sensitized Solar Cells with TiO2, Nb2O5, and SrTiO3Nanocrystalline Photoanodes:Indication for Electron Injection from Higher Excited Dye States. *Journal of Physical Chemistry B*, **2001**, 105, 6347-6352	3.4	314
470	Molecular control over Au/GaAs diodes. *Nature*, **2000**, 404, 166-8	50.4	310
469	Chloride Inclusion and Hole Transport Material Doping to Improve Methyl Ammonium Lead Bromide Perovskite-Based High Open-Circuit Voltage Solar Cells. *Journal of Physical Chemistry Letters*, **2014**, 5, 429-33	6.4	309
468	Molecular adjustment of the electronic properties of nanoporous electrodes in dye-sensitized solar cells. *Journal of Physical Chemistry B*, **2005**, 109, 18907-13	3.4	308
467	Tungsten trioxide as a photoanode for a photoelectrochemical cell (PEC). *Nature*, **1976**, 260, 312-313	50.4	306
466	Electrocatalytic Electrodes for the Polysulfide Redox System. *Journal of the Electrochemical Society*, **1980**, 127, 544-549	3.9	302
465	Energetics of molecular interfaces. *Materials Today*, **2005**, 8, 32-41	21.8	290
464	Halide Perovskites: Is It All about the Interfaces?. *Chemical Reviews*, **2019**, 119, 3349-3417	68.1	287
463	Effects of Sodium on Polycrystalline Cu(In,Ga)Se2 and Its Solar Cell Performance. *Advanced Materials*, **1998**, 10, 31-36	24	282
462	Molecular engineering of semiconductor surfaces and devices. *Accounts of Chemical Research*, **2002**, 35, 121-8	24.3	276
461	Stability of CdTe/CdS thin-film solar cells. *Solar Energy Materials and Solar Cells*, **2000**, 62, 295-325	6.4	266
460	Valence and Conduction Band Densities of States of Metal Halide Perovskites: A Combined Experimental-Theoretical Study. *Journal of Physical Chemistry Letters*, **2016**, 7, 2722-9	6.4	264
459	Low-Temperature Solution-Grown CsPbBr3 Single Crystals and Their Characterization. *Crystal Growth and Design*, **2016**, 16, 5717-5725	3.5	256
458	Nanocrystalline Mesoporous Strontium Titanate as Photoelectrode Material for Photosensitized Solar Devices: Increasing Photovoltage through Flatband Potential Engineering. *Journal of Physical Chemistry B*, **1999**, 103, 9328-9332	3.4	232
457	A model for the successful growth of polycrystalline films of CuInSe2 by multisource physical vacuum evaporation. *Advanced Materials*, **1993**, 5, 114-119	24	226
456	Large-Area, Ensemble Molecular Electronics: Motivation and Challenges. *Chemical Reviews*, **2017**, 117, 4248-4286	68.1	221

455	Stability Issues of Cu(In,Ga)Se2-Based Solar Cells. *Journal of Physical Chemistry B*, **2000**, 104, 4849-4862	3.4	204
454	Molecules on si: electronics with chemistry. *Advanced Materials*, **2010**, 22, 140-59	24	197
453	Mechanical properties of APbX3 (A = Cs or CH3NH3; X= I or Br) perovskite single crystals. *MRS Communications*, **2015**, 5, 623-629	2.7	195
452	Tetragonal CHNHPbI is ferroelectric. *Proceedings of the National Academy of Sciences of the United States of America*, **2017**, 114, E5504-E5512	11.5	187
451	CsSnBr3, A Lead-Free Halide Perovskite for Long-Term Solar Cell Application: Insights on SnF2 Addition. *ACS Energy Letters*, **2016**, 1, 1028-1033	20.1	187
450	What Remains Unexplained about the Properties of Halide Perovskites?. *Advanced Materials*, **2018**, 30, e1800691	24	174
449	Understanding how excess lead iodide precursor improves halide perovskite solar cell performance. *Nature Communications*, **2018**, 9, 3301	17.4	173
448	Molecular Control over Semiconductor Surface Electronic Properties: Dicarboxylic Acids on CdTe, CdSe, GaAs, and InP. *Journal of the American Chemical Society*, **1999**, 121, 10545-10553	16.4	169
447	Making contact: Connecting molecules electrically to the macroscopic world. *Progress in Surface Science*, **2008**, 83, 217-261	6.6	168
446	Are Mobilities in Hybrid Organic-Inorganic Halide Perovskites Actually "High"?. *Journal of Physical Chemistry Letters*, **2015**, 6, 4754-7	6.4	167
445	Oxygenation and air-annealing effects on the electronic properties of Cu(In,Ga)Se2 films and devices. *Journal of Applied Physics*, **1999**, 86, 497-505	2.5	162
444	Defect chemical explanation for the effect of air anneal on CdS/CuInSe2 solar cell performance. *Applied Physics Letters*, **1989**, 54, 558-560	3.4	160
443	The Importance of Chemical Bonding to the Contact for Tunneling through Alkyl Chains. *Journal of Physical Chemistry B*, **2002**, 106, 10432-10439	3.4	158
442	How Polycrystalline Devices Can Outperform Single-Crystal Ones: Thin Film CdTe/CdS Solar Cells. *Advanced Materials*, **2004**, 16, 879-883	24	152
441	The Cooperative Molecular Field Effect. *Advanced Functional Materials*, **2005**, 15, 1571-1578	15.6	150
440	Electronic transport via proteins. *Advanced Materials*, **2014**, 26, 7142-61	24	146
439	Understanding the Beneficial Role of Grain Boundaries in Polycrystalline Solar Cells from Single-Grain-Boundary Scanning Probe Microscopy. *Advanced Functional Materials*, **2006**, 16, 649-660	15.6	144
438	Photoacoustic measurements of photosynthetic activities in whole leaves. Photochemistry and gas exchange. *Biochimica Et Biophysica Acta - Bioenergetics*, **1982**, 679, 452-465	4.6	142

437	Molecules and Electronic Materials. *Advanced Materials*, **2002**, 14, 789	24	140
436	Chemical Modification of Semiconductor Surfaces for Molecular Electronics. *Chemical Reviews*, **2017**, 117, 4624-4666	68.1	139
435	Stone Tools, Toolkits, and Human Behavior in Prehistory [and Comments and Reply]. *Current Anthropology*, **1979**, 20, 661-683	2.1	137
434	Proteins as electronic materials: electron transport through solid-state protein monolayer junctions. *Journal of the American Chemical Society*, **2010**, 132, 4131-40	16.4	136
433	Photovoltaic efficiency limits and material disorder. *Energy and Environmental Science*, **2012**, 5, 6022	35.4	134
432	Importance of monolayer quality for interpreting current transport through organic molecules: alkyls on oxide-free Si. *Langmuir*, **2006**, 22, 6915-22	4	133
431	Subsurface movements of stone artefacts and their implications for the prehistory of Central Africa. *Nature*, **1977**, 266, 812-815	50.4	132
430	How SnF2 Impacts the Material Properties of Lead-Free Tin Perovskites. *Journal of Physical Chemistry C*, **2018**, 122, 13926-13936	3.8	126
429	X-ray photoelectron and Auger electron spectroscopic analysis of surface treatments and electrochemical decomposition of CuInSe2 photoelectrodes. *Journal of Applied Physics*, **1985**, 57, 4761-4771	2.5	125
428	Photoacoustic detection of photosynthetic oxygen evolution from leaves. Quantitative analysis by phase and amplitude measurements. *Biochimica Et Biophysica Acta - Bioenergetics*, **1983**, 724, 433-446	4.6	124
427	Protein bioelectronics: a review of what we do and do not know. *Reports on Progress in Physics*, **2018**, 81, 026601	14.4	123
426	How do electronic carriers cross Si-bound alkyl monolayers?. *Physical Review Letters*, **2005**, 95, 266807	7.4	119
425	What is the Barrier for Tunneling Through Alkyl Monolayers? Results from n- and p-Si/Alkyl/Hg Junctions. *Advanced Materials*, **2007**, 19, 445-450	24	118
424	Effects of Light and Electron Beam Irradiation on Halide Perovskites and Their Solar Cells. *Accounts of Chemical Research*, **2016**, 49, 347-54	24.3	117
423	High-Work-Function Molybdenum Oxide Hole Extraction Contacts in Hybrid Organic-Inorganic Perovskite Solar Cells. *ACS Applied Materials & Interfaces*, **2016**, 8, 31491-31499	9.5	116
422	Contacting organic molecules by soft methods: towards molecule-based electronic devices. *Accounts of Chemical Research*, **2008**, 41, 359-66	24.3	114
421	Phase segregation, Cu migration and junction formation in Cu(In,Ga)Se2. *EPJ Applied Physics*, **1999**, 6, 131-139	1.1	110
420	Interface-Dependent Ion Migration/Accumulation Controls Hysteresis in MAPbI3 Solar Cells. *Journal of Physical Chemistry C*, **2016**, 120, 16399-16411	3.8	106

419	Proteins as solid-state electronic conductors. *Accounts of Chemical Research*, **2010**, 43, 945-53	24.3	103
418	Electronic structure of Si(111)-bound alkyl monolayers: Theory and experiment. *Physical Review B*, **2006**, 74,	3.3	102
417	Copper sulfide as a light absorber in wet-chemical synthesized extremely thin absorber (ETA) solar cells. *Energy and Environmental Science*, **2009**, 2, 220-223	35.4	100
416	Electron Tunneling at the TiO2/Substrate Interface Can Determine Dye-Sensitized Solar Cell Performance. *Journal of Physical Chemistry B*, **2004**, 108, 17946-17951	3.4	100
415	Self-Healing Inside APbBr Halide Perovskite Crystals. *Advanced Materials*, **2018**, 30, 1706273	24	99
414	Hybrids of organic molecules and flat, oxide-free silicon: high-density monolayers, electronic properties, and functionalization. *Langmuir*, **2012**, 28, 9920-9	4	98
413	How organic molecules can control electronic devices. *Trends in Biotechnology*, **2002**, 20, 22-9	15.1	98
412	Effect of molecule-metal electronic coupling on through-bond hole tunneling across metal-organic monolayer-semiconductor junctions. *Journal of the American Chemical Society*, **2002**, 124, 2886-7	16.4	97
411	Controlling semiconductor/metal junction barriers by incomplete, nonideal molecular monolayers. *Journal of the American Chemical Society*, **2006**, 128, 6854-69	16.4	95
410	The dependence of electron transfer efficiency on the conformational order in organic monolayers. *Science*, **1994**, 263, 948-50	33.3	93
409	Soft Contact Deposition onto Molecularly Modified GaAs. Thin Metal Film Flotation: Principles and Electrical Effects. *Advanced Functional Materials*, **2002**, 12, 795-807	15.6	92
408	All-solid-state, semiconductor-sensitized nanoporous solar cells. *Accounts of Chemical Research*, **2012**, 45, 705-13	24.3	91
407	Current routes in polycrystalline CuInSe2 and Cu(In,Ga)Se2 films. *Solar Energy Materials and Solar Cells*, **2007**, 91, 85-90	6.4	91
406	Painted, Polycrystalline Thin Film Photoelectrodes for Photoelectrochemical Solar Cells. *Journal of the Electrochemical Society*, **1980**, 127, 2252-2254	3.9	91
405	Updated assessment of possibilities and limits for solar cells. *Advanced Materials*, **2014**, 26, 1622-8	24	90
404	Polar Ligand Adsorption Controls Semiconductor Surface Potentials. *Journal of the American Chemical Society*, **1994**, 116, 2972-2977	16.4	90
403	Cu(In,Ga)Se2 Solar Cells: Device Stability Based on Chemical Flexibility. *Advanced Materials*, **1999**, 11, 957-961	24	89
402	Direct evidence for grain-boundary depletion in polycrystalline CdTe from nanoscale-resolved measurements. *Applied Physics Letters*, **2003**, 82, 556-558	3.4	88

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399	Room-temperature detection of mobile impurities in compound semiconductors by transient ion drift. *Journal of Applied Physics*, **1997**, 81, 6684-6691	2.5	85
398	Direct detection of low-concentration NO in physiological solutions by a new GaAs-based sensor. *Chemistry - A European Journal*, **2001**, 7, 1743-9	4.8	85
397	Molecular electronics at metal/semiconductor junctions. Si inversion by sub-nanometer molecular films. *Nano Letters*, **2009**, 9, 2390-4	11.5	82
396	Defect level identification in copper indium selenide (CuInSe2) from photoluminescence studies. *Chemistry of Materials*, **1990**, 2, 286-293	9.6	82
395	Electroplated CuInS2 and CuInSe2 layers: Preparation and physical and photovoltaic characterization. *Thin Solid Films*, **1985**, 128, 93-106	2.2	82
394	Electronic Transport via Homopeptides: The Role of Side Chains and Secondary Structure. *Journal of the American Chemical Society*, **2015**, 137, 9617-26	16.4	81
393	Fine Tuning of Au/SiO2/Si Diodes by Varying Interfacial Dipoles Using Molecular Monolayers. *Advanced Materials*, **2001**, 13, 508-511	24	81
392	Energy, the global challenge, and materials. *Materials Today*, **2008**, 11, 16-20	21.8	79
391	Simultaneous Control of Surface Potential and Wetting of Solids with Chemisorbed Multifunctional Ligands. *Journal of the American Chemical Society*, **1997**, 119, 5720-5728	16.4	78
390	Bacteriorhodopsin as an electronic conduction medium for biomolecular electronics. *Chemical Society Reviews*, **2008**, 37, 2422-32	58.5	78
389	Bacteriorhodopsin (bR) as an electronic conduction medium: current transport through bR-containing monolayers. *Proceedings of the National Academy of Sciences of the United States of America*, **2006**, 103, 8601-6	11.5	77
388	Controlling the Work Function of GaAs by Chemisorption of Benzoic Acid Derivatives. *Journal of Physical Chemistry B*, **1997**, 101, 2678-2684	3.4	76
387	Molecular electronic tuning of Si surfaces. *Chemical Physics Letters*, **1997**, 279, 270-274	2.5	76
386	Molecule Metal Polarization at Rectifying GaAs Interfaces. *Journal of Physical Chemistry B*, **2003**, 107, 6360-6376	3.4	76
385	Light-Induced Increase of Electron Diffusion Length in a p-n Junction Type CH3NH3PbBr3 Perovskite Solar Cell. *Journal of Physical Chemistry Letters*, **2015**, 6, 2469-76	6.4	75
384	Surface Photovoltage Spectroscopy Study of Organo-Lead Perovskite Solar Cells. *Journal of Physical Chemistry Letters*, **2014**, 5, 2408-13	6.4	75

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381	Impedance Spectroscopic Indication for Solid State Electrochemical Reaction in (CH3NH3)PbI3 Films. *Journal of Physical Chemistry Letters*, **2016**, 7, 191-7	6.4	71
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379	Photoacoustic detection of photosynthetic activities in isolated broken chloroplasts. *Biochimica Et Biophysica Acta - Bioenergetics*, **1980**, 593, 330-41	4.6	69
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377	Temperature-Dependent Optical Band Gap in CsPbBr, MAPbBr, and FAPbBr Single Crystals. *Journal of Physical Chemistry Letters*, **2020**, 11, 2490-2496	6.4	68
376	Energy level and band alignment for GaAs-alkylthiol monolayer-Hg junctions from electrical transport and photoemission experiments. *Journal of Physical Chemistry B*, **2006**, 110, 14363-71	3.4	66
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368	Free energies and enthalpies of possible gas phase and surface reactions for preparation of. *Journal of Physics and Chemistry of Solids*, **1992**, 53, 991-1005	3.9	63
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366	Factors Affecting the Stability of CdTe/CdS Solar Cells Deduced from Stress Tests at Elevated Temperature. *Advanced Functional Materials*, **2003**, 13, 289-299	15.6	62

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360	Separating Charges at Organic Interfaces: Effects of Disorder, Hot States, and Electric Field. *Journal of Physical Chemistry Letters*, **2013**, 4, 1707-17	6.4	59
359	Molecular modification of an ionic semiconductor□metal interface: ZnO/molecule/Au diodes. *Applied Physics Letters*, **2003**, 82, 1051-1053	3.4	59
358	Ion migration in chalcopyrite semiconductors. *The Journal of Physical Chemistry*, **1992**, 96, 11009-11017		59
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356	What Is the Mechanism of MAPbI3 p-Doping by I2? Insights from Optoelectronic Properties. *ACS Energy Letters*, **2017**, 2, 2408-2414	20.1	58
355	Molecular length, monolayer density, and charge transport: lessons from Al-AlOx/alkyl-phosphonate/Hg junctions. *Langmuir*, **2012**, 28, 404-15	4	58
354	What Limits the Open-Circuit Voltage of Bromide Perovskite-Based Solar Cells?. *ACS Energy Letters*, **2019**, 4, 1-7	20.1	58
353	Tuning electronic transport via hepta-alanine peptides junction by tryptophan doping. *Proceedings of the National Academy of Sciences of the United States of America*, **2016**, 113, 10785-90	11.5	57
352	S/Se Substitution in Polycrystalline CdSe Photoelectrodes: Photoelectrochemical Energy Conversion. *Journal of the Electrochemical Society*, **1978**, 125, 1623-1628	3.9	57
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332	Temperature-dependent solid-state electron transport through bacteriorhodopsin: experimental evidence for multiple transport paths through proteins. *Journal of the American Chemical Society*, **2012**, 134, 4169-76	16.4	49
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