

Jarvist M Frost

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

65
papers

10,232
citations

45
h-index

72
g-index

72
ext. papers

11,456
ext. citations

12
avg, IF

6.68
L-index

#	Paper	IF	Citations
65	The Role of Long-Alkyl-Group Spacers in Glycolated Copolymers for High Performance Organic Electrochemical Transistors.. <i>Advanced Materials</i> , 2022 , e2202574	24	2
64	High Power Irradiance Dependence of Charge Species Dynamics in Hybrid Perovskites and Kinetic Evidence for Transient Vibrational Stark Effect in Formamidinium. <i>Nanomaterials</i> , 2022 , 12, 1616	5.4	
63	Accelerated Hot-Carrier Cooling in MAPbI Perovskite by Pressure-Induced Lattice Compression. <i>Journal of Physical Chemistry Letters</i> , 2021 , 12, 4118-4124	6.4	2
62	Giant Huang-Rhys Factor for Electron Capture by the Iodine Interstitial in Perovskite Solar Cells. <i>Journal of the American Chemical Society</i> , 2021 , 143, 9123-9128	16.4	11
61	Multipulse Terahertz Spectroscopy Unveils Hot Polaron Photoconductivity Dynamics in Metal-Halide Perovskites. <i>Journal of Physical Chemistry Letters</i> , 2021 , 12, 8732-8739	6.4	3
60	Assessment of dynamic structural instabilities across 24 cubic inorganic halide perovskites. <i>Journal of Chemical Physics</i> , 2020 , 152, 024703	3.9	28
59	Descriptors for Electron and Hole Charge Carriers in Metal Oxides. <i>Journal of Physical Chemistry Letters</i> , 2020 , 11, 438-444	6.4	15
58	Atomistic insights into the order-disorder transition in Cu ₂ ZnSnS ₄ solar cells from Monte Carlo simulations. <i>Journal of Materials Chemistry A</i> , 2019 , 7, 312-321	13	14
57	Dielectric and ferroic properties of metal halide perovskites. <i>APL Materials</i> , 2019 , 7, 010901	5.7	108
56	Relating Chain Conformation to the Density of States and Charge Transport in Conjugated Polymers: The Role of the β phase in Poly(9,9-dioctylfluorene). <i>Physical Review X</i> , 2019 , 9,	9.1	10
55	Impact of nonparabolic electronic band structure on the optical and transport properties of photovoltaic materials. <i>Physical Review B</i> , 2019 , 99,	3.3	33
54	Highly Luminescent Encapsulated Narrow Bandgap Polymers Based on Diketopyrrolopyrrole. <i>Journal of the American Chemical Society</i> , 2018 , 140, 1622-1626	16.4	48
53	Ultrafast Intraband Spectroscopy of Hot-Carrier Cooling in Lead-Halide Perovskites. <i>ACS Energy Letters</i> , 2018 , 3, 2199-2205	20.1	79
52	PolaronMobility.jl: Implementation of the Feynman variational polaron model. <i>Journal of Open Source Software</i> , 2018 , 3, 566	5.2	2
51	Acoustic phonon lifetimes limit thermal transport in methylammonium lead iodide. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018 , 115, 11905-11910	11.5	52
50	Rotational Cation Dynamics in Metal Halide Perovskites: Effect on Phonons and Material Properties. <i>Journal of Physical Chemistry Letters</i> , 2018 , 9, 5987-5997	6.4	45
49	Polaron States in Fullerene Adducts Modeled by Coarse-Grained Molecular Dynamics and Tight Binding. <i>Journal of Physical Chemistry Letters</i> , 2018 , 9, 6616-6623	6.4	6

48	Organic Cation Rotation and Immobilization in Pure and Mixed Methylammonium Lead-Halide Perovskites. <i>Journal of the American Chemical Society</i> , 2017 , 139, 4068-4074	16.4	87
47	Synthesis and Exciton Dynamics of Donor-Orthogonal Acceptor Conjugated Polymers: Reducing the Singlet-Triplet Energy Gap. <i>Journal of the American Chemical Society</i> , 2017 , 139, 11073-11080	16.4	71
46	Perspective: Theory and simulation of hybrid halide perovskites. <i>Journal of Chemical Physics</i> , 2017 , 146, 220901	3.9	87
45	Indirect to direct bandgap transition in methylammonium lead halide perovskite. <i>Energy and Environmental Science</i> , 2017 , 10, 509-515	35.4	237
44	Slow Cooling of Hot Polarons in Halide Perovskite Solar Cells. <i>ACS Energy Letters</i> , 2017 , 2, 2647-2652	20.1	94
43	Spontaneous Octahedral Tilting in the Cubic Inorganic Cesium Halide Perovskites CsSnX and CsPbX (X = F, Cl, Br, I). <i>Journal of Physical Chemistry Letters</i> , 2017 , 8, 4720-4726	6.4	126
42	Emergent Properties of an Organic Semiconductor Driven by its Molecular Chirality. <i>ACS Nano</i> , 2017 , 11, 8329-8338	16.7	90
41	Calculating polaron mobility in halide perovskites. <i>Physical Review B</i> , 2017 , 96,	3.3	119
40	Computational Screening of All Stoichiometric Inorganic Materials. <i>CheM</i> , 2016 , 1, 617-627	16.2	72
39	Dynamic disorder, phonon lifetimes, and the assignment of modes to the vibrational spectra of methylammonium lead halide perovskites. <i>Physical Chemistry Chemical Physics</i> , 2016 , 18, 27051-27066	3.6	243
38	Computational materials design of crystalline solids. <i>Chemical Society Reviews</i> , 2016 , 45, 6138-6146	58.5	72
37	What Is Moving in Hybrid Halide Perovskite Solar Cells?. <i>Accounts of Chemical Research</i> , 2016 , 49, 528-3524.3	24.3	319
36	Phonon anharmonicity, lifetimes, and thermal transport in CH ₃ NH ₃ PbI ₃ from many-body perturbation theory. <i>Physical Review B</i> , 2016 , 94,	3.3	101
35	Research Update: Relativistic origin of slow electron-hole recombination in hybrid halide perovskite solar cells. <i>APL Materials</i> , 2016 , 4, 091501	5.7	153
34	Direct Observation of Dynamic Symmetry Breaking above Room Temperature in Methylammonium Lead Iodide Perovskite. <i>ACS Energy Letters</i> , 2016 , 1, 880-887	20.1	177
33	Molecular Motion and Dynamic Crystal Structures of Hybrid Halide Perovskites 2016 , 1-17		6
32	Cubic Perovskite Structure of Black Formamidinium Lead Iodide, [HC(NH ₂) ₂] ⁺ PbI ₃ , at 298 K. <i>Journal of Physical Chemistry Letters</i> , 2015 , 6, 3209-3212	6.4	343
31	Ionic transport in hybrid lead iodide perovskite solar cells. <i>Nature Communications</i> , 2015 , 6, 7497	17.4	1649

30	Modular design of SPIRO-OMeTAD analogues as hole transport materials in solar cells. <i>Chemical Communications</i> , 2015 , 51, 8935-8	5.8	51
29	Polaron pair mediated triplet generation in polymer/fullerene blends. <i>Nature Communications</i> , 2015 , 6, 6501	17.4	65
28	Influence of Intermolecular Interactions on the Reorganization Energy of Charge Transfer between Surface-Attached Dye Molecules. <i>Journal of Physical Chemistry C</i> , 2015 , 119, 24337-24341	3.8	13
27	Role of Microstructure in the Electron-Hole Interaction of Hybrid Lead-Halide Perovskites. <i>Nature Photonics</i> , 2015 , 9, 695-701	33.9	203
26	Real-Time Observation of Organic Cation Reorientation in Methylammonium Lead Iodide Perovskites. <i>Journal of Physical Chemistry Letters</i> , 2015 , 6, 3663-9	6.4	281
25	Ferroelectric materials for solar energy conversion: photoferroics revisited. <i>Energy and Environmental Science</i> , 2015 , 8, 838-848	35.4	260
24	Models of charge pair generation in organic solar cells. <i>Physical Chemistry Chemical Physics</i> , 2015 , 17, 2311-2325	3.6	135
23	Band alignment of the hybrid halide perovskites CH ₃ NH ₃ PbCl ₃ , CH ₃ NH ₃ PbBr ₃ and CH ₃ NH ₃ PbI ₃ . <i>Materials Horizons</i> , 2015 , 2, 228-231	14.4	198
22	Lattice dynamics and vibrational spectra of the orthorhombic, tetragonal, and cubic phases of methylammonium lead iodide. <i>Physical Review B</i> , 2015 , 92,	3.3	360
21	The dynamics of methylammonium ions in hybrid organic-inorganic perovskite solar cells. <i>Nature Communications</i> , 2015 , 6, 7124	17.4	446
20	Influence of a nearby substrate on the reorganization energy of hole exchange between dye molecules. <i>Physical Chemistry Chemical Physics</i> , 2015 , 17, 7345-54	3.6	11
19	Distinguishing the influence of structural and energetic disorder on electron transport in fullerene multi-adducts. <i>Materials Horizons</i> , 2015 , 2, 113-119	14.4	42
18	Atomistic origins of high-performance in hybrid halide perovskite solar cells. <i>Nano Letters</i> , 2014 , 14, 2584-199	11.9	1756
17	Influence of Bridging Atom and Side Chains on the Structure and Crystallinity of Cyclopentadithiophene-Benzothiadiazole Polymers. <i>Chemistry of Materials</i> , 2014 , 26, 1226-1233	9.6	48
16	Molecular ferroelectric contributions to anomalous hysteresis in hybrid perovskite solar cells. <i>APL Materials</i> , 2014 , 2, 081506	5.7	443
15	Influence of Chemical Structure on the Charge Transfer State Spectrum of a Polymer:Fullerene Complex. <i>Journal of Physical Chemistry C</i> , 2014 , 118, 8253-8261	3.8	56
14	Effect of Molecular Fluctuations on Hole Diffusion within Dye Monolayers. <i>Chemistry of Materials</i> , 2014 , 26, 4731-4740	9.6	20
13	Parameter free calculation of the subgap density of states in poly(3-hexylthiophene). <i>Faraday Discussions</i> , 2014 , 174, 255-66	3.6	28

12	Controlling microstructure of pentacene derivatives by solution processing: impact of structural anisotropy on optoelectronic properties. <i>ACS Nano</i> , 2013 , 7, 7983-91	16.7	73
11	Isostructural, Deeper Highest Occupied Molecular Orbital Analogues of Poly(3-hexylthiophene) for High-Open Circuit Voltage Organic Solar Cells. <i>Chemistry of Materials</i> , 2013 , 25, 4239-4249	9.6	50
10	Effect of Fluorination on the Properties of a Donor-Acceptor Copolymer for Use in Photovoltaic Cells and Transistors. <i>Chemistry of Materials</i> , 2013 , 25, 277-285	9.6	201
9	Soluble fullerene derivatives: The effect of electronic structure on transistor performance and air stability. <i>Journal of Applied Physics</i> , 2011 , 110, 014506	2.5	18
8	A numerical study of mobility in thin films of fullerene derivatives. <i>Journal of Chemical Physics</i> , 2010 , 132, 064904	3.9	79
7	Energetic disorder in higher fullerene adducts: a quantum chemical and voltammetric study. <i>Advanced Materials</i> , 2010 , 22, 4881-4	24	82
6	Modeling charge transport in organic photovoltaic materials. <i>Accounts of Chemical Research</i> , 2009 , 42, 1768-78	24.3	215
5	The effect of morphology on electron field-effect mobility in disordered c60 thin films. <i>Nano Letters</i> , 2009 , 9, 1085-90	11.5	70
4	Zero-point fluctuations in naphthalene and their effect on charge transport parameters. <i>Journal of Physical Chemistry A</i> , 2008 , 112, 9113-7	2.8	13
3	Binary Organic Photovoltaic Blends: A Simple Rationale for Optimum Compositions. <i>Advanced Materials</i> , 2008 , 20, 3510-3515	24	342
2	Predictive study of charge transport in disordered semiconducting polymers. <i>Nano Letters</i> , 2007 , 7, 1785-8	18.5	77
1	Influence of polymer-blend morphology on charge transport and photocurrent generation in donor-acceptor polymer blends. <i>Nano Letters</i> , 2006 , 6, 1674-81	11.5	91