Jeffrey C Grossman

List of Publications by Year
in descending order

127 papers	8,310 citations	57681 46 h-index	56606 87 g-index
129 all docs	129 docs citations	129 times ranked	14847 citing authors

#	Article	IF	Citations
1	Oxynitride-Encapsulated Silver Nanowire Transparent Electrode with Enhanced Thermal, Electrical, and Chemical Stability. ACS Applied Materials & Interfaces, 2022, 14, 4423-4433.	4.0	12
2	Kinetics of Sorption in Hygroscopic Hydrogels. Nano Letters, 2022, 22, 1100-1107.	4.5	65
3	Electronic, Structural, and Magnetic Upgrading of Coal-Based Products through Laser Annealing. ACS Nano, 2022, 16, 2101-2109.	7.3	9
4	Printing Air-Stable High-Tc Molecular Magnet with Tunable Magnetic Interaction. Nano Letters, 2022, 22, 545-553.	4.5	4
5	Upgrading carbonaceous materials: Coal, tar, pitch, and beyond. Matter, 2022, 5, 430-447.	5.0	24
6	Atoms to fibers: Identifying novel processing methods in the synthesis of pitch-based carbon fibers. Science Advances, 2022, 8, eabn1905.	4.7	12
7	2D Monolayers for Superior Transparent Electromagnetic Interference Shielding. ACS Nano, 2022, 16, 9498-9509.	7.3	13
8	Conductive carbonaceous membranes: recent progress and future opportunities. Journal of Materials Chemistry A, 2021, 9, 3270-3289.	5.2	28
9	Failing Forward: Stability of Transparent Electrodes Based on Metal Nanowire Networks. Advanced Materials, 2021, 33, e2004356.	11.1	74
10	Silver Nanowire Back Electrode Stabilized with Graphene Oxide Encapsulation for Inverted Semitransparent Organic Solar Cells with Longer Lifetime. ACS Applied Energy Materials, 2021, 4, 1431-1441.	2.5	31
11	Charting lattice thermal conductivity for inorganic crystals and discovering rare earth chalcogenides for thermoelectrics. Energy and Environmental Science, 2021, 14, 3559-3566.	15.6	51
12	Highly Conductive and Permeable Nanocomposite Ultrafiltration Membranes Using Laser-Reduced Graphene Oxide. Nano Letters, 2021, 21, 2429-2435.	4.5	26
13	Highâ€Pressureâ€Sinteringâ€Induced Microstructural Engineering for an Ultimate Phonon Scattering of Thermoelectric Halfâ€Heusler Compounds. Small, 2021, 17, e2102045.	5.2	17
14	Laserâ€Induced Cooperative Transition in Molecular Electronic Crystal. Advanced Materials, 2021, 33, e2103000.	11.1	6
15	Adsorption-based membranes for air separation using transition metal oxides. Nanoscale Advances, 2021, 3, 4502-4512.	2.2	3
16	Atomic Structure of Dislocations and Grain Boundaries in Two-Dimensional PtSe₂. ACS Nano, 2021, 15, 16748-16759.	7.3	12
17	Screening and Understanding Li Adsorption on Two-Dimensional Metallic Materials by Learning Physics and Physics-Simplified Learning. Jacs Au, 2021, 1, 1904-1914.	3.6	12
18	Laserâ€Induced Cooperative Transition in Molecular Electronic Crystal (Adv. Mater. 39/2021). Advanced Materials, 2021, 33, .	11.1	0

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19	Emerged Metallicity in Molecular Ferromagnetic Wires. Nano Letters, 2021, 21, 9746-9753.	4.5	5
20	Numerical validation of the dusty-gas model for binary diffusion in low aspect ratio capillaries. Physics of Fluids, 2021, 33, .	1.6	4
21	Blue Light Emitting Defective Nanocrystals Composed of Earthâ€Abundant Elements. Angewandte Chemie - International Edition, 2020, 59, 860-867.	7.2	20
22	Blue Light Emitting Defective Nanocrystals Composed of Earthâ€Abundant Elements. Angewandte Chemie, 2020, 132, 870-877.	1.6	12
23	Fundamental Insights on Hydration Environment of Boric Acid and Its Role in Separation from Saline Water. Journal of Physical Chemistry C, 2020, 124, 1438-1445.	1.5	35
24	Effect of Chemical Variations in the Structure of Poly(ethylene oxide)-Based Polymers on Lithium Transport in Concentrated Electrolytes. Chemistry of Materials, 2020, 32, 121-126.	3.2	27
25	Laser-Induced Graphene from Polyimide and Polyethersulfone Precursors as a Sensing Electrode in Anodic Stripping Voltammetry. ACS Applied Materials & Interfaces, 2020, 12, 48511-48517.	4.0	33
26	A 3D-printed molecular ferroelectric metamaterial. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 27204-27210.	3.3	25
27	Design Rules for Transparent Pushâ€“Pull Electron Acceptors: A Case Study on Perylenediimide Derivatives. Journal of Physical Chemistry Letters, 2020, 11, 9265-9271.	2.1	6
28	Capillary-fed, thin film evaporation devices. Journal of Applied Physics, 2020, 128, .	1.1	51
29	Emerging Magnetic Interactions in van der Waals Heterostructures. Nano Letters, 2020, 20, 7852-7859.	4.5	5
30	Unveiling the phonon scattering mechanisms in half-Heusler thermoelectric compounds. Energy and Environmental Science, 2020, 13, 5165-5176.	15.6	49
31	Transport-Based Modeling of Bubble Nucleation on Gas Evolving Electrodes. Langmuir, 2020, 36, 15112-15118.	1.6	15
32	Cyclobutene based macrocycles. Materials Chemistry Frontiers, 2020, 4, 3529-3538.	3.2	3
33	Importance of Equilibration Method and Sampling for Ab Initio Molecular Dynamics Simulations of Solventâ€“Lithium-Salt Systems in Lithium-Oxygen Batteries. Journal of Chemical Theory and Computation, 2020, 16, 7255-7266.	2.3	9
34	Laser-Induced Tar-Mediated Sintering of Metals and Refractory Carbides in Air. ACS Nano, 2020, 14, 10413-10420.	7.3	9
35	Preserving nanoscale features in polymers during laser induced graphene formation using sequential infiltration synthesis. Nature Communications, 2020, 11, 3636.	5.8	39
36	Low-frequency Raman spectrum of 2D layered perovskites: Local atomistic motion or superlattice modes?. Journal of Chemical Physics, 2020, 153, 044710.	1.2	26

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37	Toward Designing Highly Conductive Polymer Electrolytes by Machine Learning Assisted Coarse-Grained Molecular Dynamics. Chemistry of Materials, 2020, 32, 4144-4151.	3.2	63
38	Thermodynamic-driven polychromatic quantum dot patterning for light-emitting diodes beyond eye-limiting resolution. Nature Communications, 2020, 11, 3040.	5.8	53
39	Quantitative Mapping of Molecular Substituents to Macroscopic Properties Enables Predictive Design of Oligoethylene Glycol-Based Lithium Electrolytes. ACS Central Science, 2020, 6, 1115-1128.	5.3	15
40	Charge Density and Redox Potential of LiNiO₂ Using Ab Initio Diffusion Quantum Monte Carlo. Journal of Physical Chemistry C, 2020, 124, 5893-5901.	1.5	16
41	Atomic structure and defect dynamics of monolayer lead iodide nanodisks with epitaxial alignment on graphene. Nature Communications, 2020, 11, 823.	5.8	31
42	Solvent- and Anion-Dependent Li⁺â€“O₂^{â€“} Coupling Strength and Implications on the Thermodynamics and Kinetics of Liâ€“O₂ Batteries. Journal of Physical Chemistry C, 2020, 124, 4953-4967.	1.5	29
43	Double-Sided Graphene Oxide Encapsulated Silver Nanowire Transparent Electrode with Improved Chemical and Electrical Stability. ACS Applied Materials & Interfaces, 2020, 12, 17909-17920.	4.0	60
44	Laser-sculptured ultrathin transition metal carbide layers for energy storage and energy harvesting applications. Nature Communications, 2019, 10, 3112.	5.8	91
45	Charge Transport in Highly Heterogeneous Natural Carbonaceous Materials. Advanced Functional Materials, 2019, 29, 1904283.	7.8	5
46	Role of solvent-anion charge transfer in oxidative degradation of battery electrolytes. Nature Communications, 2019, 10, 3360.	5.8	46
47	Natural Carbon Byâ€Products for Transparent Heaters: The Case of Steamâ€Cracker Tar. Advanced Materials, 2019, 31, e1900331.	11.1	13
48	Striated 2D Lattice with Subâ€nm 1D Etch Channels by Controlled Thermally Induced Phase Transformations of PdSe₂. Advanced Materials, 2019, 31, e1904251.	11.1	31
49	Tuning the Potential Energy Landscape to Suppress Ostwald Ripening in Surface-Supported Catalyst Systems. Nano Letters, 2019, 19, 8388-8398.	4.5	12
50	Ionic Highways from Covalent Assembly in Highly Conducting and Stable Anion Exchange Membrane Fuel Cells. Journal of the American Chemical Society, 2019, 141, 18152-18159.	6.6	99
51	Inorganic Cage Motion Dominates Excited-State Dynamics in 2D-Layered Perovskites (C_xH₂_x₊₁NH₃)₂PbI₄ (x = 4â€“9). Journal of Physical Chemistry C, 2019, 123, 27904-27916.	4.5	46
52	Predicting charge density distribution of materials using a local-environment-based graph convolutional network. Physical Review B, 2019, 100, .	1.1	31
53	Sleep quality, duration, and consistency are associated with better academic performance in college students. Npj Science of Learning, 2019, 4, 16.	1.5	133
54	Graph dynamical networks for unsupervised learning of atomic scale dynamics in materials. Nature Communications, 2019, 10, 2667.	5.8	82

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55	Bandlike Transport in PbS Quantum Dot Superlattices with Quantum Confinement. Journal of Physical Chemistry Letters, 2019, 10, 3756-3762.	2.1	10
56	Revealing the Clusterâ€Cloud and Its Role in Nanocrystallization. Advanced Materials, 2019, 31, e1808225.	11.1	41
57	Correlations from Ion Pairing and the Nernst-Einstein Equation. Physical Review Letters, 2019, 122, 136001.	2.9	101
58	Role of Structural Defects in the Water Adsorption Properties of MOF-801. Journal of Physical Chemistry C, 2018, 122, 5545-5552.	1.5	68
59	Origins of the Stokes Shift in PbS Quantum Dots: Impact of Polydispersity, Ligands, and Defects. ACS Nano, 2018, 12, 2838-2845.	7.3	50
60	Strain-induced accelerated asymmetric spatial degradation of polymeric vascular scaffolds. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 2640-2645.	3.3	46
61	Crystal Graph Convolutional Neural Networks for an Accurate and Interpretable Prediction of Material Properties. Physical Review Letters, 2018, 120, 145301.	2.9	1,102
62	Hierarchical visualization of materials space with graph convolutional neural networks. Journal of Chemical Physics, 2018, 149, 174111.	1.2	52
63	Polarity governs atomic interaction through two-dimensional materials. Nature Materials, 2018, 17, 999-1004.	13.3	182
64	Atomic Structure and Dynamics of Self-Limiting Sub-Nanometer Pores in Monolayer WS₂. ACS Nano, 2018, 12, 11638-11647.	7.3	30
65	Freestanding Organic Charge-Transfer Conformal Electronics. Nano Letters, 2018, 18, 4346-4354.	4.5	10
66	Ultralong 1D Vacancy Channels for Rapid Atomic Migration during 2D Void Formation in Monolayer MoS₂. ACS Nano, 2018, 12, 7721-7730.	7.3	54
67	Machine Learning Enabled Computational Screening of Inorganic Solid Electrolytes for Suppression of Dendrite Formation in Lithium Metal Anodes. ACS Central Science, 2018, 4, 996-1006.	5.3	158
68	Optically-regulated thermal energy storage in diverse organic phase-change materials. Chemical Communications, 2018, 54, 10722-10725.	2.2	55
69	Nanoporous Silicon-Assisted Patterning of Monolayer MoS₂ with Thermally Controlled Porosity: A Scalable Method for Diverse Applications. ACS Applied Nano Materials, 2018, 1, 3548-3556.	2.4	3
70	Electronâ^'hole separation in ferroelectric oxides for efficient photovoltaic responses. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 6566-6571.	3.3	40
71	Optical and Electronic Properties of Two-Dimensional Layered Materials. Nanophotonics, 2017, 6, 479-493.	2.9	145
72	Enhanced Cell Capture on Functionalized Graphene Oxide Nanosheets through Oxygen Clustering. ACS Nano, 2017, 11, 1548-1558.	7.3	52

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73	Atomic Structure and Dynamics of Single Platinum Atom Interactions with Monolayer MoS₂. ACS Nano, 2017, 11, 3392-3403.	7.3	126
74	Molecularly Engineered Azobenzene Derivatives for High Energy Density Solid-State Solar Thermal Fuels. ACS Applied Materials & Interfaces, 2017, 9, 8679-8687.	4.0	97
75	Ultra-high aspect ratio functional nanoporous silicon via nucleated catalysts. RSC Advances, 2017, 7, 11537-11542.	1.7	8
76	Engineering Efficient pâ€Type TMD/Metal Contacts Using Fluorographene as a Buffer Layer. Advanced Electronic Materials, 2017, 3, 1600318.	2.6	9
77	Epitaxial Templating of Two-Dimensional Metal Chloride Nanocrystals on Monolayer Molybdenum Disulfide. ACS Nano, 2017, 11, 6404-6415.	7.3	20
78	Investigation of a Quantum Monte Carlo Protocol To Achieve High Accuracy and High-Throughput Materials Formation Energies. Journal of Chemical Theory and Computation, 2017, 13, 1943-1951.	2.3	20
79	Nanostructured Bulk-Heterojunction Solar Cells Based on Amorphous Carbon. ACS Energy Letters, 2017, 2, 882-888.	8.8	3
80	Photoluminescent Arrays of Nanopatterned Monolayer MoS₂. Advanced Functional Materials, 2017, 27, 1703688.	7.8	35
81	Ultralow thermal conductivity in all-inorganic halide perovskites. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 8693-8697.	3.3	246
82	Atomically Flat Zigzag Edges in Monolayer MoS₂ by Thermal Annealing. Nano Letters, 2017, 17, 5502-5507.	4.5	70
83	Optically-controlled long-term storage and release of thermal energy in phase-change materials. Nature Communications, 2017, 8, 1446.	5.8	210
84	Atomic Structure and Dynamics of Defects in 2D MoS₂ Bilayers. ACS Omega, 2017, 2, 3315-3324.	1.6	32
85	Band Engineering by Controlling vdW Epitaxy Growth Mode in 2D Gallium Chalcogenides. Advanced Materials, 2016, 28, 7375-7382.	11.1	28
86	MoS₂ Enhanced T-Phase Stabilization and Tunability Through Alloying. Journal of Physical Chemistry Letters, 2016, 7, 2304-2309.	2.1	54
87	Rethinking Coal: Thin Films of Solution Processed Natural Carbon Nanoparticles for Electronic Devices. Nano Letters, 2016, 16, 2951-2957.	4.5	39
88	Computer calculations across time and length scales in photovoltaic solar cells. Energy and Environmental Science, 2016, 9, 2197-2218.	15.6	27
89	Photon energy storage materials with high energy densities based on diacetyleneâ€“azobenzene derivatives. Journal of Materials Chemistry A, 2016, 4, 16157-16165.	5.2	86
90	Conformal Electroplating of Azobenzene-Based Solar Thermal Fuels onto Large-Area and Fiber Geometries. ACS Applied Materials & Interfaces, 2016, 8, 26319-26325.	4.0	33

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91	Solidâ€State Solar Thermal Fuels for Heat Release Applications. Advanced Energy Materials, 2016, 6, 1502006.	10.2	94
92	Optimization of the Thermoelectric Figure of Merit in Crystalline C₆₀ with Intercalation Chemistry. Nano Letters, 2016, 16, 4203-4209.	4.5	10
93	Multilayer Nanoporous Graphene Membranes for Water Desalination. Nano Letters, 2016, 16, 1027-1033.	4.5	331
94	Torsional Deformations in Subnanometer MoS Interconnecting Wires. Nano Letters, 2016, 16, 1210-1217.	4.5	30
95	Self-Driven Photodetector and Ambipolar Transistor in Atomically Thin GaTe-MoS₂ pâ€“n vdW Heterostructure. ACS Applied Materials & Interfaces, 2016, 8, 2533-2539.	4.0	160
96	Catalyst Self-Assembly for Scalable Patterning of Sub 10 nm Ultrahigh Aspect Ratio Nanopores in Silicon. ACS Applied Materials & Interfaces, 2016, 8, 8043-8049.	4.0	18
97	Chemically Driven Interfacial Coupling in Charge-Transfer Mediated Functional Superstructures. Nano Letters, 2016, 16, 2851-2859.	4.5	14
98	Photovoltaic Performance of PbS Quantum Dots Treated with Metal Salts. ACS Nano, 2016, 10, 3382-3388.	7.3	75
99	Unintended consequences: Why carbonation can dominate in microscale hydration of calcium silicates. Journal of Materials Research, 2015, 30, 2425-2433.	1.2	1
100	Stress effects on the Raman spectrum of an amorphous material: Theory and experiment on<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>a</mml:mi></mml:math>-Si:H. Physical Review B, 2015, 92, .	1.1	30
101	Sound and noisy light: Optical control of phonons in photoswitchable structures. Physical Review B, 2015, 92, .	1.1	2
102	Identifying and Eliminating Emissive Subâ€bandgap States in Thin Films of PbS Nanocrystals. Advanced Materials, 2015, 27, 4481-4486.	11.1	77
103	Functionalized Graphene Superlattice as a Singleâ€Sheet Solar Cell. Advanced Functional Materials, 2015, 25, 5199-5205.	7.8	7
104	Heat Conduction in Nanostructured Materials Predicted by Phonon Bulk Mean Free Path Distribution. Journal of Heat Transfer, 2015, 137, .	1.2	36
105	All-polymeric control of nanoferronics. Science Advances, 2015, 1, e1501264.	4.7	18
106	Room Temperature Multiferroicity of Charge Transfer Crystals. ACS Nano, 2015, 9, 9373-9379.	7.3	38
107	Insight on Tricalcium Silicate Hydration and Dissolution Mechanism from Molecular Simulations. ACS Applied Materials & Interfaces, 2015, 7, 14726-14733.	4.0	76
108	Exciton Radiative Lifetimes in Two-Dimensional Transition Metal Dichalcogenides. Nano Letters, 2015, 15, 2794-2800.	4.5	517

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109	High-Efficiency Thermoelectrics with Functionalized Graphene. Nano Letters, 2015, 15, 2830-2835.	4.5	67
110	Atomistic understandings of reduced graphene oxide as an ultrathin-film nanoporous membrane for separations. Nature Communications, 2015, 6, 8335.	5.8	214
111	Origins of hole traps in hydrogenated nanocrystalline and amorphous silicon revealed through machine learning. Physical Review B, 2014, 89, .	1.1	31
112	Scalable enhancement of graphene oxide properties by thermally driven phase transformation. Nature Chemistry, 2014, 6, 151-158.	6.6	326
113	Quantifying the potential of ultra-permeable membranes for water desalination. Energy and Environmental Science, 2014, 7, 1134-1141.	15.6	282
114	Water permeability of nanoporous graphene at realistic pressures for reverse osmosis desalination. Journal of Chemical Physics, 2014, 141, 074704.	1.2	163
115	The Characterization, Stability, and Reactivity of Synthetic Calcium Silicate Surfaces from First Principles. Journal of Physical Chemistry C, 2014, 118, 15214-15219.	1.5	58
116	Templated assembly of photoswitches significantly increases the energy-storage capacity of solar thermal fuels. Nature Chemistry, 2014, 6, 441-447.	6.6	261
117	Novel nanomaterials for water desalination technology. , 2013, , .		6
118	High Surface Reactivity and Water Adsorption on NiFe₂O₄ (111) Surfaces. Journal of Physical Chemistry C, 2013, 117, 5678-5683.	1.5	52
119	Photoswitchable Molecular Rings for Solar-Thermal Energy Storage. Journal of Physical Chemistry Letters, 2013, 4, 854-860.	2.1	74
120	Resonant behavior in heat transfer across weak molecular interfaces. Journal of Applied Physics, 2013, 114, 234308.	1.1	1
121	Interplay between intrinsic defects, doping, and free carrier concentration in SrTiO<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>3</mml:mn></mml:msub></mml:math>thin films. Physical Review B, 2012, 85, .	1.1	46
122	Solar energy generation in three dimensions. Energy and Environmental Science, 2012, 5, 6880.	15.6	73
123	Mesoscale modeling of phononic thermal conductivity of porous Si: interplay between porosity, morphology and surface roughness. Journal of Computational Electronics, 2012, 11, 8-13.	1.3	32
124	Mpemba-Like Behavior in Carbon Nanotube Resonators. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2011, 42, 3907-3912.	1.1	30
125	Evidence of Conjugation Enhancement in P3HT/SWNT Mixtures for Organic Photovoltaics. Materials Research Society Symposia Proceedings, 2011, 1286, 56.	0.1	1
126	Three-dimensional photovoltaics. Applied Physics Letters, 2010, 96, 071902.	1.5	28

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127	Charge separation in nanoscale photovoltaic materials: recent insights from first-principles electronic structure theory. Journal of Materials Chemistry, 2010, 20, 1053-1061.	6.7	38