

# Jeffrey J Urban

## List of Publications by Year in descending order

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83  
papers

8,019  
citations

101384

36  
h-index

60497

81  
g-index

84  
all docs

84  
docs citations

84  
times ranked

10730  
citing authors

#	ARTICLE	IF	CITATIONS
1	Organic thermoelectric materials for energy harvesting and temperature control. <i>Nature Reviews Materials</i> , 2016, 1, .	23.3	927
2	Insight into the Ligand-Mediated Synthesis of Colloidal CsPbBr <sub>3</sub> Perovskite Nanocrystals: The Role of Organic Acid, Base, and Cesium Precursors. <i>ACS Nano</i> , 2016, 10, 7943-7954.	7.3	713
3	Air-stable magnesium nanocomposites provide rapid and high-capacity hydrogen storage without using heavy-metal catalysts. <i>Nature Materials</i> , 2011, 10, 286-290.	13.3	600
4	Synergism in binary nanocrystal superlattices leads to enhanced p-type conductivity in self-assembled PbTe/Ag <sub>2</sub> Te thin films. <i>Nature Materials</i> , 2007, 6, 115-121.	13.3	498
5	Nanostructured Metal Hydrides for Hydrogen Storage. <i>Chemical Reviews</i> , 2018, 118, 10775-10839.	23.0	461
6	Water-Processable Polymer-Nanocrystal Hybrids for Thermoelectrics. <i>Nano Letters</i> , 2010, 10, 4664-4667.	4.5	458
7	Self-Assembly of PbTe Quantum Dots into Nanocrystal Superlattices and Glassy Films. <i>Journal of the American Chemical Society</i> , 2006, 128, 3248-3255.	6.6	310
8	Anomalously low electronic thermal conductivity in metallic vanadium dioxide. <i>Science</i> , 2017, 355, 371-374.	6.0	307
9	Temperature-adaptive radiative coating for all-season household thermal regulation. <i>Science</i> , 2021, 374, 1504-1509.	6.0	251
10	Ultralow thermal conductivity in all-inorganic halide perovskites. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, 8693-8697.	3.3	246
11	Effect of Interfacial Properties on Polymer-Nanocrystal Thermoelectric Transport. <i>Advanced Materials</i> , 2013, 25, 1629-1633.	11.1	219
12	Power Factor Enhancement in Solution-Processed Organic n-Type Thermoelectrics Through Molecular Design. <i>Advanced Materials</i> , 2014, 26, 3473-3477.	11.1	196
13	Thermoelectric power factor optimization in PEDOT:PSS tellurium nanowire hybrid composites. <i>Physical Chemistry Chemical Physics</i> , 2013, 15, 4024.	1.3	188
14	Graphene oxide/metal nanocrystal multilaminates as the atomic limit for safe and selective hydrogen storage. <i>Nature Communications</i> , 2016, 7, 10804.	5.8	178
15	Enhanced permeation arising from dual transport pathways in hybrid polymer-MOF membranes. <i>Energy and Environmental Science</i> , 2016, 9, 922-931.	15.6	178
16	An assessment of strategies for the development of solid-state adsorbents for vehicular hydrogen storage. <i>Energy and Environmental Science</i> , 2018, 11, 2784-2812.	15.6	162
17	Ion-capture electro dialysis using multifunctional adsorptive membranes. <i>Science</i> , 2021, 372, 296-299.	6.0	152
18	Emerging Scientific and Engineering Opportunities within the Water-Energy Nexus. <i>Joule</i> , 2017, 1, 665-688.	11.7	109

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19	Varying the ionic functionalities of conjugated polyelectrolytes leads to both p- and n-type carbon nanotube composites for flexible thermoelectrics. <i>Energy and Environmental Science</i> , 2015, 8, 2341-2346.	15.6	102
20	Carrier Scattering at Alloy Nanointerfaces Enhances Power Factor in PEDOT:PSS Hybrid Thermoelectrics. <i>Nano Letters</i> , 2016, 16, 3352-3359.	4.5	93
21	Tethered tertiary amines as solid-state n-type dopants for solution-processable organic semiconductors. <i>Chemical Science</i> , 2016, 7, 1914-1919.	3.7	91
22	A nature-inspired hydrogen-bonded supramolecular complex for selective copper ion removal from water. <i>Nature Communications</i> , 2020, 11, 3947.	5.8	86
23	Dual-Channel, Molecular-Sieving Core/Shell ZIF@MOF Architectures as Engineered Fillers in Hybrid Membranes for Highly Selective CO <sub>2</sub> Separation. <i>Nano Letters</i> , 2017, 17, 6752-6758.	4.5	82
24	Hydrogen-Bonded Polyimide/Metal-Organic Framework Hybrid Membranes for Ultrafast Separations of Multiple Gas Pairs. <i>Advanced Functional Materials</i> , 2019, 29, 1903243.	7.8	78
25	Hierarchically Controlled Inside-Out Doping of Mg Nanocomposites for Moderate Temperature Hydrogen Storage. <i>Advanced Functional Materials</i> , 2017, 27, 1704316.	7.8	72
26	Progress and Perspective: Soft Thermoelectric Materials for Wearable and Internet of Things Applications. <i>Advanced Electronic Materials</i> , 2019, 5, 1800823.	2.6	71
27	Directing Selectivity of Electrochemical Carbon Dioxide Reduction Using Plasmonics. <i>ACS Energy Letters</i> , 2019, 4, 1098-1105.	8.8	68
28	In Situ ATR-SEIRAS of Carbon Dioxide Reduction at a Plasmonic Silver Cathode. <i>Journal of the American Chemical Society</i> , 2020, 142, 11750-11762.	6.6	68
29	Prospects for thermoelectricity in quantum dot hybrid arrays. <i>Nature Nanotechnology</i> , 2015, 10, 997-1001.	15.6	59
30	Polymer morphology and interfacial charge transfer dominate over energy-dependent scattering in organic-inorganic thermoelectrics. <i>Nature Communications</i> , 2018, 9, 5347.	5.8	58
31	Size-Dependent Permeability Deviations from Maxwell's Model in Hybrid Cross-Linked Poly(ethylene Terephthalate) Nanocomposites. <i>ACS Applied Materials</i> , 2017, 10, 7843-7856.	3.2	56
32	New horizons in thermoelectric materials: Correlated electrons, organic transport, machine learning, and more. <i>Journal of Applied Physics</i> , 2019, 125, .	1.1	50
33	Bottom-up design of de novo thermoelectric hybrid materials using chalcogenide resurfacing. <i>Journal of Materials Chemistry A</i> , 2017, 5, 3346-3357.	5.2	44
34	High-Performance, Wearable Thermoelectric Generator Based on a Highly Aligned Carbon Nanotube Sheet. <i>ACS Applied Energy Materials</i> , 2020, 3, 1199-1206.	2.5	43
35	Mismatching integration-enabled strains and defects engineering in LDH microstructure for high-rate and long-life charge storage. <i>Nature Communications</i> , 2022, 13, 1409.	5.8	42
36	Templated self-assembly of one-dimensional CsPbX <sub>3</sub> perovskite nanocrystal superlattices. <i>Nanoscale</i> , 2017, 9, 17688-17693.	2.8	39

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37	Atomically Thin Interfacial Suboxide Key to Hydrogen Storage Performance Enhancements of Magnesium Nanoparticles Encapsulated in Reduced Graphene Oxide. <i>Nano Letters</i> , 2017, 17, 5540-5545.	4.5	37
38	Engineering Synergy: Energy and Mass Transport in Hybrid Nanomaterials. <i>Advanced Materials</i> , 2015, 27, 5744-5752.	11.1	36
39	Lightweight wearable thermoelectric cooler with rationally designed flexible heatsink consisting of phase-change material/graphite/silicone elastomer. <i>Journal of Materials Chemistry A</i> , 2021, 9, 15696-15703.	5.2	35
40	Supercompliant and Soft $\text{CH}_3\text{COOH}$ Stretchable Hydrogel Membranes for High-Performance Thermoelectric Energy Conversion. <i>Physical Review Letters</i> , 2019, 123, 155901.	2.9	33
41	Tuning the Surface Plasmon Resonance of Lanthanum Hexaboride to Absorb Solar Heat: A Review. <i>Materials</i> , 2018, 11, 2473.	1.3	30
42	Decoupling electron and phonon transport in single-nanowire hybrid materials for high-performance thermoelectrics. <i>Science Advances</i> , 2021, 7, .	4.7	30
43	A Mechanistic Analysis of Phase Evolution and Hydrogen Storage Behavior in Nanocrystalline $\text{Mg}(\text{BH}_4)_2$ within Reduced Graphene Oxide. <i>ACS Nano</i> , 2020, 14, 1745-1756.	7.3	29
44	Enhanced $\text{CO}_2$ Capture and Hydrogen Purification by Hydroxy Metal-Organic Framework/Polyimide Mixed Matrix Membranes. <i>ChemSusChem</i> , 2019, 12, 4405-4411.	3.6	28
45	In-situ resonant band engineering of solution-processed semiconductors generates high performance n-type thermoelectric nano-inks. <i>Nature Communications</i> , 2020, 11, 2069.	5.8	23
46	Molecular insight into the lower critical solution temperature transition of aqueous alkyl phosphonium benzene sulfonates. <i>Communications Chemistry</i> , 2019, 2, .	2.0	22
47	Solar Desalination Using Thermally Responsive Ionic Liquids Regenerated with a Photonic Heater. <i>Environmental Science &amp; Technology</i> , 2021, 55, 3260-3269.	4.6	20
48	Stabilized open metal sites in bimetallic metal-organic framework catalysts for hydrogen production from alcohols. <i>Journal of Materials Chemistry A</i> , 2021, 9, 10869-10881.	5.2	20
49	Pyrazine-Fused Porous Graphitic Framework-Based Mixed Matrix Membranes for Enhanced Gas Separations. <i>ACS Applied Materials &amp; Interfaces</i> , 2020, 12, 16922-16929.	4.0	19
50	Important Considerations in Plasmon-Enhanced Electrochemical Conversion at Voltage-Biased Electrodes. <i>IScience</i> , 2020, 23, 100911.	1.9	19
51	Evolution of Vibrational Properties in Lanthanum Hexaboride Nanocrystals. <i>Journal of Physical Chemistry C</i> , 2016, 120, 5188-5195.	1.5	18
52	Moving the Plasmon of $\text{LaB}_6$ from IR to Near-IR via Eu-Doping. <i>Materials</i> , 2018, 11, 226.	1.3	18
53	Microstructure and heteroatom dictate the doping mechanism and thermoelectric properties of poly(alkyl-chalcogenophenes). <i>Applied Physics Letters</i> , 2021, 118, 233301.	1.5	18
54	Solvent-free synthesis of organometallic halides $\text{CH}_3\text{NH}_3\text{PbI}_3$ and $(\text{CH}_3\text{NH}_3)_3\text{Bi}_2\text{I}_9$ and their thermoelectric transport properties. <i>Applied Physics Letters</i> , 2019, 115, 072104.	1.5	17

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55	Molecular Level Insight into Enhanced n-Type Transport in Solution-Printed Hybrid Thermoelectrics. <i>Advanced Energy Materials</i> , 2019, 9, 1803469.	10.2	14
56	Reduction of carbon dioxide at a plasmonically active copper-silver cathode. <i>Chemical Communications</i> , 2020, 56, 9970-9973.	2.2	14
57	Spontaneous dynamical disordering of borophenes in MgB <sub>2</sub> and related metal borides. <i>Nature Communications</i> , 2021, 12, 6268.	5.8	14
58	A temperature-controlled photoelectrochemical cell for quantitative product analysis. <i>Review of Scientific Instruments</i> , 2018, 89, 055112.	0.6	13
59	In-Situ/Operando X-ray Characterization of Metal Hydrides. <i>ChemPhysChem</i> , 2019, 20, 1261-1271.	1.0	12
60	Anion-mediated negative thermal expansion in lanthanum hexaboride. <i>Solid State Communications</i> , 2017, 265, 47-51.	0.9	11
61	One model to rule them all. <i>Nature Materials</i> , 2017, 16, 157-159.	13.3	11
62	Design Rules for Self-Assembly of 2D Nanocrystal/Metal-Organic Framework Superstructures. <i>Angewandte Chemie - International Edition</i> , 2018, 57, 13172-13176.	7.2	11
63	Theoretical framework of the thermal memristor via a solid-state phase change material. <i>Journal of Applied Physics</i> , 2019, 125, 025109.	1.1	11
64	Defying Thermodynamics: Stabilization of Alane Within Covalent Triazine Frameworks for Reversible Hydrogen Storage. <i>Angewandte Chemie - International Edition</i> , 2021, 60, 25815-25824.	7.2	11
65	Runaway Carbon Dioxide Conversion Leads to Enhanced Uptake in a Nanohybrid Form of Porous Magnesium Borohydride. <i>Advanced Materials</i> , 2019, 31, e1904252.	11.1	10
66	Effects of Size and Structural Defects on the Vibrational Properties of Lanthanum Hexaboride Nanocrystals. <i>ACS Omega</i> , 2017, 2, 2248-2254.	1.6	9
67	Sugar-alcohol@ZIF nanocomposites display suppressed phase-change temperatures. <i>Journal of Materials Chemistry A</i> , 2020, 8, 23795-23802.	5.2	9
68	Chloride influence on the formation of lanthanum hexaboride: An in-situ diffraction study. <i>Journal of Crystal Growth</i> , 2018, 486, 60-65.	0.7	7
69	Synthesis of 2D anatase TiO <sub>2</sub> with highly reactive facets by fluorine-free topochemical conversion of 1T-TiS <sub>2</sub> nanosheets. <i>Journal of Materials Chemistry A</i> , 2022, 10, 13884-13894.	5.2	7
70	Understanding Diameter and Length Effects in a Solution-Processable Tellurium-Poly(3,4-Ethylenedioxythiophene) Polystyrene Sulfonate Hybrid Thermoelectric Nanowire Mesh. <i>Advanced Electronic Materials</i> , 2021, 7, 2000904.	2.6	6
71	Copper sulfide as the cation exchange template for synthesis of bimetallic catalysts for CO <sub>2</sub> -electroreduction. <i>RSC Advances</i> , 2021, 11, 23948-23959.	1.7	6
72	Additive Destabilization of Porous Magnesium Borohydride Framework with Core-Shell Structure. <i>Small</i> , 2021, 17, e2101989.	5.2	6

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73	Iron(III) Dopant Counterions Affect the Charge-Transport Properties of Poly(Thiophene) and Poly(Dialkoxythiophene) Derivatives. <i>ACS Applied Materials &amp; Interfaces</i> , 2022, 14, 29039-29051.	4.0	5
74	Bottom-up meets top-down: tailored raspberry-like Fe <sub>3</sub> O <sub>4</sub> @Pt nanocrystal superlattices. <i>Nanoscale</i> , 2018, 10, 5859-5863.	2.8	4
75	Soft Electronics: Progress and Perspective: Soft Thermoelectric Materials for Wearable and Internet of Things Applications ( <i>Adv. Electron. Mater.</i> 11/2019). <i>Advanced Electronic Materials</i> , 2019, 5, 1970056.	2.6	4
76	Effect of pressure and temperature on carbon dioxide reduction at a plasmonically active silver cathode. <i>Electrochimica Acta</i> , 2021, 374, 137820.	2.6	4
77	3D printing techniques for measurement of volumetric heat capacity and anisotropic thermal conductivity of a solution processable, hybrid organic/inorganic film, Te-PEDOT:PSS. <i>Journal of Applied Physics</i> , 2022, 131, 105109.	1.1	4
78	n-Type doping of a solution processed p-type semiconductor using isoelectronic surface dopants for homojunction fabrication. <i>Applied Surface Science</i> , 2022, 590, 153089.	3.1	4
79	Melting Point Depression and Phase Identification of Sugar Alcohols Encapsulated in ZIF Nanopores. <i>Journal of Physical Chemistry C</i> , 2021, 125, 10001-10010.	1.5	2
80	Defying Thermodynamics: Stabilization of Alane Within Covalent Triazine Frameworks for Reversible Hydrogen Storage. <i>Angewandte Chemie</i> , 2021, 133, 26019-26028.	1.6	2
81	Design Rules for Self-Assembly of 2D Nanocrystal/Metal-Organic Framework Superstructures. <i>Angewandte Chemie</i> , 2018, 130, 13356-13360.	1.6	1
82	Tackling Challenges in Seebeck Coefficient Measurement of Ultra-High Resistance Samples with an AC Technique. <i>Advanced Electronic Materials</i> , 2020, 6, 1901340.	2.6	0
83	Defying Thermodynamics: Stabilization of Alane Within Covalent Triazine Frameworks for Reversible Hydrogen Storage ( <i>Angew. Chem.</i> 49/2021). <i>Angewandte Chemie</i> , 2021, 133, 26204-26204.	1.6	0