Ryan Jacobs

List of Publications by Year
in descending order

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41 papers	2,059 citations	394421 19 h-index	302126 39 g-index
42 all docs	42 docs citations	42 times ranked	3246 citing authors

#	Article	IF	Citations
1	New frontiers for the materials genome initiative. Npj Computational Materials, 2019, 5, .	8.7	312
2	Origins of Large Voltage Hysteresis in High-Energy-Density Metal Fluoride Lithium-Ion Battery Conversion Electrodes. Journal of the American Chemical Society, 2016, 138, 2838-2848.	13.7	212
3	Opportunities and Challenges for Machine Learning in Materials Science. Annual Review of Materials Research, 2020, 50, 71-103.	9.3	183
4	Tuning perovskite oxides by strain: Electronic structure, properties, and functions in (electro)catalysis and ferroelectricity. Materials Today, 2019, 31, 100-118.	14.2	169
5	Predicting the thermodynamic stability of perovskite oxides using machine learning models. Computational Materials Science, 2018, 150, 454-463.	3.0	156
6	Understanding and Controlling the Work Function of Perovskite Oxides Using Density Functional Theory. Advanced Functional Materials, 2016, 26, 5471-5482.	14.9	127
7	Material Discovery and Design Principles for Stable, High Activity Perovskite Cathodes for Solid Oxide Fuel Cells. Advanced Energy Materials, 2018, 8, 1702708.	19.5	125
8	Assessing Correlations of Perovskite Catalytic Performance with Electronic Structure Descriptors. Chemistry of Materials, 2019, 31, 785-797.	6.7	106
9	Frontiers in Thermionic Cathode Research. IEEE Transactions on Electron Devices, 2018, 65, 2061-2071.	3.0	70
10	Materials Discovery of Stable and Nontoxic Halide Perovskite Materials for Highâ€Efficiency Solar Cells. Advanced Functional Materials, 2019, 29, 1804354.	14.9	61
11	Work function and surface stability of tungsten-based thermionic electron emission cathodes. APL Materials, 2017, 5, .	5.1	52
12	Error assessment and optimal cross-validation approaches in machine learning applied to impurity diffusion. Computational Materials Science, 2019, 169, 109075.	3.0	42
13	The Materials Simulation Toolkit for Machine learning (MAST-ML): An automated open source toolkit to accelerate data-driven materials research. Computational Materials Science, 2020, 176, 109544.	3.0	42
14	Electronic Structure-Based Descriptors for Oxide Properties and Functions. Accounts of Chemical Research, 2022, 55, 298-308.	15.6	42
15	Stretching Epitaxial La_{0.6}Sr_{0.4}CoO_{3â^'Î´} for Fast Oxygen Reduction. Journal of Physical Chemistry C, 2017, 121, 25651-25658.	3.1	38
16	Strain control of oxygen kinetics in the Ruddlesden-Popper oxide La1.85Sr0.15CuO4. Nature Communications, 2018, 9, 92.	12.8	38
17	Massive Vacancy Concentration Yields Strong Room-Temperature Ferromagnetism in Two-Dimensional ZnO. Nano Letters, 2019, 19, 7085-7092.	9.1	31
18	Factors Controlling Oxygen Interstitial Diffusion in the Ruddlesdenâ€“Popper Oxide La_{2â€“x}Sr_xNiO_{4+Î´}. Chemistry of Materials, 2018, 30, 7166-7177.	6.7	28

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19	Understanding the interplay of surface structure and work function in oxides: A case study on SrTiO3. APL Materials, 2020, 8, .	5.1	20
20	Deep learning object detection in materials science: Current state and future directions. Computational Materials Science, 2022, 211, 111527.	3.0	20
21	Counterintuitive Reconstruction of the Polar O-Terminated ZnO Surface with Zinc Vacancies and Hydrogen. Journal of Physical Chemistry Letters, 2016, 7, 4483-4487.	4.6	19
22	Exploring effective charge in electromigration using machine learning. MRS Communications, 2019, 9, 567-575.	1.8	18
23	Discovery and engineering of low work function perovskite materials. Journal of Materials Chemistry C, 2021, 9, 12778-12790.	5.5	15
24	Calibration after bootstrap for accurate uncertainty quantification in regression models. Npj Computational Materials, 2022, 8, .	8.7	15
25	Data and Supplemental information for predicting the thermodynamic stability of perovskite oxides using machine learning models. Data in Brief, 2018, 19, 261-263.	1.0	13
26	Work Function Trends and New Low-Work-Function Boride and Nitride Materials for Electron Emission Applications. Journal of Physical Chemistry C, 2021, 125, 17400-17410.	3.1	13
27	Graph network based deep learning of bandgaps. Journal of Chemical Physics, 2021, 155, 154702.	3.0	12
28	Valleyite: A new magnetic mineral with the sodalite-type structure. American Mineralogist, 2019, 104, 1238-1245.	1.9	11
29	Performance and limitations of deep learning semantic segmentation of multiple defects in transmission electron micrographs. Cell Reports Physical Science, 2022, 3, 100876.	5.6	10
30	Solid-phase epitaxial growth of the correlated-electron transparent conducting oxide <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>SrV</mml:mi><mml:msub><mml:mi mathvariant="normal">O</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:mrow></mml:math>. Physical Review Materials, 2021, 5, .	2.4	9
31	Combined ab initio and empirical model of the thermal conductivity of uranium, uranium-zirconium, and uranium-molybdenum. Physical Review Materials, 2018, 2, .	2.4	9
32	Machine learning predictions of irradiation embrittlement in reactor pressure vessel steels. Npj Computational Materials, 2022, 8, .	8.7	9
33	Semi-adsorption-controlled growth window for half-Heusler FeVSb epitaxial films. Physical Review Materials, 2020, 4, .	2.4	7
34	The incommensurately modulated structures of volcanic plagioclase: displacement, ordering and phase transition. Acta Crystallographica Section B: Structural Science, Crystal Engineering and Materials, 2019, 75, 643-656.	1.1	5
35	Machine learning for impurity charge-state transition levels in semiconductors from elemental properties using multi-fidelity datasets. Journal of Chemical Physics, 2022, 156, 114110.	3.0	5
36	The incommensurately modulated structures of low-temperature labradorite feldspars: a single-crystal X-ray and neutron diffraction study. Acta Crystallographica Section B: Structural Science, Crystal Engineering and Materials, 2020, 76, 93-107.	1.1	4

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37	Unconventional Highly Active and Stable Oxygen Reduction Catalysts Informed by Computational Design Strategies. Advanced Energy Materials, 2022, 12, .	19.5	4
38	Identification and Quantification of Boron Dopant Sites in Antiferromagnetic Cr2O3 Films by Electron Energy Loss Spectroscopy. Microscopy and Microanalysis, 2017, 23, 1584-1585.	0.4	2
39	Combining theory and experiment to model electron emission from polycrystalline tungsten cathode surfaces. , 2018, , .		2
40	Modified band alignment method to obtain hybrid functional accuracy from standard DFT: Application to defects in highly mismatched III-V:Bi alloys. Physical Review Materials, 2021, 5, .	2.4	2
41	High-throughput computational screening for low work function perovskite electron emitters. , 2017, , .		1