Taylor D Sparks

List of Publications by Year
in descending order

81	3,302	218677	149698
papers	citations	26 h-index	56 g-index

97	97	97	4199
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Data-Driven Review of Thermoelectric Materials: Performance and Resource Considerations. Chemistry of Materials, 2013, 25, 2911-2920.	6.7	366
2	High-Throughput Machine-Learning-Driven Synthesis of Full-Heusler Compounds. Chemistry of Materials, 2016, 28, 7324-7331.	6.7	256
3	Machine Learning for Materials Scientists: An Introductory Guide toward Best Practices. Chemistry of Materials, 2020, 32, 4954-4965.	6.7	224
4	A practical field guide to thermoelectrics: Fundamentals, synthesis, and characterization. Applied Physics Reviews, 2018, 5, 021303.	11.3	223
5	Machine Learning Directed Search for Ultraincompressible, Superhard Materials. Journal of the American Chemical Society, 2018, 140, 9844-9853.	13.7	215
6	Perspective: Web-based machine learning models for real-time screening of thermoelectric materials properties. APL Materials, 2016, 4, .	5.1	150
7	Machine Learning and Energy Minimization Approaches for Crystal Structure Predictions: A Review and New Horizons. Chemistry of Materials, 2018, 30, 3601-3612.	6.7	136
8	Stable, Heat-Conducting Phosphor Composites for High-Power Laser Lighting. ACS Applied Materials & Interfaces, 2018, 10, 5673-5681.	8.0	121
9	Data mining our way to the next generation of thermoelectrics. Scripta Materialia, 2016, 111, 10-15.	5.2	106
10	Performance and resource considerations of Li-ion battery electrode materials. Energy and Environmental Science, 2015, 8, 1640-1650.	30.8	97
11	Thermal conductivity of the gadolinium calcium silicate apatites: Effect of different point defect types. Acta Materialia, 2011, 59, 3841-3850.	7.9	94
12	Compositionally restricted attention-based network for materials property predictions. Npj Computational Materials, 2021, 7, .	8.7	68
13	Magnetocapacitance as a sensitive probe of magnetostructural changes in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mtext>NiCr</mml:mtext><mml:mn>2</mml:mn></mml:msub> Physical Review B, 2014, 89, .	3.2	67
14	Machine Learning Prediction of Heat Capacity for Solid Inorganics. Integrating Materials and Manufacturing Innovation, 2018, 7, 43-51.	2.6	60
15	Cold temperature performance of phase change material based battery thermal management systems. Energy Reports, 2018, 4, 303-307.	5.1	59
16	Can machine learning find extraordinary materials?. Computational Materials Science, 2020, 174, 109498.	3.0	58
17	Ceria (Sm3+, Nd3+)/carbonates composite electrolytes with high electrical conductivity at low temperature. Composites Science and Technology, 2010, 70, 181-185.	7.8	55
18	Anisotropic Thermal Diffusivity and Conductivity of Laâ€Doped Strontium Niobate Sr₂Nb₂O₇. Journal of the American Ceramic Society, 2010, 93, 1136-1141.	3.8	48

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19	Data-Driven Studies of Li-Ion-Battery Materials. Crystals, 2019, 9, 54.	2.2	40
20	Perspective: Interactive material property databases through aggregation of literature data. APL Materials, 2016, 4, .	5.1	35
21	Is Domain Knowledge Necessary for Machine Learning Materials Properties?. Integrating Materials and Manufacturing Innovation, 2020, 9, 221-227.	2.6	34
22	From streetlights to phosphors: A review on the visibility of roadway markings. Progress in Organic Coatings, 2020, 148, 105749.	3.9	31
23	Commercial Marine-Degradable Polymers for Flexible Packaging. IScience, 2020, 23, 101353.	4.1	30
24	Enhancement of thermoelectric properties in the Nbâ€“Coâ€“Sn half-Heusler/Heusler system through spontaneous inclusion of a coherent second phase. Journal of Applied Physics, 2016, 120, .	2.5	29
25	Freezeâ€Casting of Surfaceâ€Magnetized Iron(II,III) Oxide Particles in a Uniform Static Magnetic Field Generated by a Helmholtz Coil. Advanced Engineering Materials, 2019, 21, 1801092.	3.5	29
26	Machine Learning for Structural Materials. Annual Review of Materials Research, 2020, 50, 27-48.	9.3	29
27	Comparison of coatings for SrAl2O4:Eu2+,Dy3+ powder in waterborne road striping paint under wet conditions. Progress in Organic Coatings, 2020, 144, 105637.	3.9	28
28	Tunable Coupling between Surface States of a Three-Dimensional Topological Insulator in the Quantum Hall Regime. Physical Review Letters, 2019, 123, 036804.	7.8	26
29	High Thermopower with Metallic Conductivity in p-Type Li-Substituted PbPdO₂. Chemistry of Materials, 2016, 28, 3367-3373.	6.7	25
30	Balancing Mechanical Properties and Sustainability in the Search for Superhard Materials. Integrating Materials and Manufacturing Innovation, 2017, 6, 1-8.	2.6	25
31	Topological Insulator-Based van der Waals Heterostructures for Effective Control of Massless and Massive Dirac Fermions. Nano Letters, 2018, 18, 8047-8053.	9.1	25
32	Potential application of developed methanogenic microbial consortia for coal biogasification. International Journal of Coal Geology, 2018, 188, 165-180.	5.0	23
33	Viewpoint: Atomic-Scale Design Protocols toward Energy, Electronic, Catalysis, and Sensing Applications. Inorganic Chemistry, 2019, 58, 14939-14980.	4.0	23
34	Spray pyrolysis of conductor- and binder-free porous FeS2 films for high-performance lithium ion batteries. Journal of Materials Science, 2019, 54, 4089-4104.	3.7	23
35	Extracting Knowledge from DFT: Experimental Band Gap Predictions Through Ensemble Learning. Integrating Materials and Manufacturing Innovation, 2020, 9, 213-220.	2.6	22
36	How much improvement in thermoelectric performance can come from reducing thermal conductivity?. Applied Physics Letters, 2014, 104, .	3.3	21

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37	Thermal Conductivity of the Rareâ€Earth Strontium Aluminates. Journal of the American Ceramic Society, 2010, 93, 1457-1460.	3.8	20
38	Growth and characterization of Arsenic doped CdTe single crystals grown by Cd-solvent traveling-heater method. Journal of Crystal Growth, 2017, 467, 6-11.	1.5	20
39	Benchmark AFLOW Data Sets for Machine Learning. Integrating Materials and Manufacturing Innovation, 2020, 9, 153-156.	2.6	19
40	Gd₁₂Co_{5.3}Bi and Gd₁₂Co₅Bi, Crystalline DoppelgÃnger with Low Thermal Conductivities. Inorganic Chemistry, 2016, 55, 6625-6633.	4.0	18
41	Optimization of biogenic methane production from coal. International Journal of Coal Geology, 2017, 183, 14-24.	5.0	18
42	Enhancement in surface mobility and quantum transport of Bi2â^'xSbxTe3â^'ySey topological insulator by controlling the crystal growth conditions. Scientific Reports, 2018, 8, 17290.	3.3	17
43	Environmentally friendly thermoelectric sulphide Cu₂ZnSnS₄ single crystals achieving a 1.6 dimensionless figure of merit ZT. Journal of Materials Chemistry A, 2021, 9, 15595-15604.	10.3	17
44	Developing methanogenic microbial consortia from diverse coal sources and environments. Journal of Natural Gas Science and Engineering, 2017, 46, 637-650.	4.4	16
45	Pore-graded and conductor- and binder-free FeS₂films deposited by spray pyrolysis for high-performance lithium-ion batteries. Journal of Materials Research, 2019, 34, 2456-2471.	2.6	16
46	Enhanced n-type thermopower in distortion-free LiMn2O4. Journal of Materials Chemistry, 2012, 22, 4631.	6.7	15
47	Synthesis of iron-doped Na-Î²â€•alumina + yttria-stabilized zirconia composite electrolytes by a vapor phase process. Solid State Ionics, 2016, 290, 77-82.	2.7	14
48	Landau Levels of Topologically-Protected Surface States Probed by Dual-Gated Quantum Capacitance. ACS Nano, 2020, 14, 1158-1165.	14.6	14
49	A Functionally Graded Carbide in the Taâ€“C System. Journal of the American Ceramic Society, 2016, 99, 392-394.	3.8	13
50	Synthesis and microstructural evolution in iron oxide kaolinite based proppant as a function of reducing atmosphere, sintering conditions, and composition. Ceramics International, 2018, 44, 9976-9983.	4.8	11
51	Atomic Substitution to Balance Hardness, Ductility, and Sustainability in Molybdenum Tungsten Borocarbide. Chemistry of Materials, 2019, 31, 7696-7703.	6.7	11
52	High-temperature structure of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Co</mml:mi><mml:mn>3</mml:mn></mml:mathvariant="normal">O</mml:mi><mml:mn>4</mml:mn></mml:msub></mml:mrow></mml:math> : Understanding spinel inversion using in situ and ex situ measurements. Physical Review B, 2019, 99, .	3.2	11
53	DiSCoVeR: a materials discovery screening tool for high performance, unique chemical compositions. , 2022, 1, 226-240.		11
54	Real-space visualization of short-range antiferromagnetic correlations in a magnetically enhanced thermoelectric. Matter, 2022, 5, 1853-1864.	10.0	11

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55	Anisotropic properties of Na-Î²â€³-alumina + YSZ composite synthesized by vapor phase method. Journal of Materials Research, 2018, 33, 81-89.	2.6	10
56	Single-step preparation and consolidation of reduced early-transition-metal oxide/metal n-type thermoelectric composites. AIP Advances, 2015, 5, 097144.	1.3	9
57	Not Just Par for the Course: 73 Quaternary Germanides RE4M2XGe4 (RE = Laâ€“Nd, Sm, Gdâ€“Tm, Lu; M =) Tj ETQq1 1 0.784314 rgBT / Chemistry, 2018, 57, 14249-14259.	4.0	9
58	Revised model for thermopower and site inversion in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Co</mml:mi><mml:mn>3</mml:mn></mml: mathvariant="normal">O</mml:mi><mml:mn>4</mml:mn></mml:msub></mml:mrow></mml:math> spinel. Physical Review B, 2018, 98, .	3.2	8
59	High-dimensional Bayesian optimization of 23 hyperparameters over 100 iterations for an attention-based network to predict materials property: A case study on CrabNet using Ax platform and SAASBO. Computational Materials Science, 2022, 211, 111505.	3.0	8
60	Comparison of fatigue in fiber-backed PVDF and PFA fluoropolymer linings. Polymer Degradation and Stability, 2019, 162, 122-128.	5.8	7
61	Benchmark datasets incorporating diverse tasks, sample sizes, material systems, and data heterogeneity for materials informatics. Data in Brief, 2021, 37, 107262.	1.0	7
62	Data-mining approach for battery materials. , 2015, , .		6
63	Synthesis of Ion Conducting Sodium Zirconium Gallate + Yttria-Stabilized Zirconia by a Vapor Phase Process. Journal of the Electrochemical Society, 2016, 163, A1560-A1565.	2.9	6
64	Three and Four-Electrode Electrochemical Impedance Spectroscopy Studies Using Embedded Composite Thin Film Pseudo-Reference Electrodes in Proton Exchange Membrane Fuel Cells. Journal of the Electrochemical Society, 2019, 166, F784-F795.	2.9	6
65	Optimizing Fractional Compositions to Achieve Extraordinary Properties. Integrating Materials and Manufacturing Innovation, 2021, 10, 689-695.	2.6	5
66	Measurement of Ionic Conductivity and Electrode Polarization at Low Temperatures on 8YSZ by a DC Technique. Journal of the Electrochemical Society, 2017, 164, F1543-F1550.	2.9	4
67	Materials Abundance, Price, and Availability Data from the Years 1998 to 2015. Integrating Materials and Manufacturing Innovation, 2020, 9, 144-150.	2.6	4
68	A data science approach for advanced solid polymer electrolyte design. Computational Materials Science, 2021, 187, 110108.	3.0	4
69	Sequential Machine Learning Applications of Particle Packing with Large Size Variations. Integrating Materials and Manufacturing Innovation, 2021, 10, 559-567.	2.6	3
70	Molecular Imprinted Hydrogels in Drug Delivery Applications. Materials Research Society Symposia Proceedings, 2015, 1797, 1.	0.1	2
71	Measurement of Polarization Resistance of LSM + YSZ Electrodes on YSZ Using AC and DC Methods. ECS Transactions, 2019, 91, 1363-1369.	0.5	2
72	Lattice strain and texture analysis of superhard Mo_{0.9}W_{1.1}BC and ReWC_{0.8}via diamond anvil cell deformation. Journal of Materials Chemistry A, 2019, 7, 24012-24018.	10.3	2

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73	Lifetime of electrochromic optical transition cycling of ethyl viologen diperchlorate-based electrochromic devices. SN Applied Sciences, 2021, 3, 1.	2.9	2
74	Comparing transfer learning to feature optimization in microstructure classification. IScience, 2022, 25, 103774.	4.1	2
75	Use of Yttria-Stabilized Zirconia for Potentiometric Measurements at Low Temperatures. Journal of the Electrochemical Society, 2016, 163, F416-F420.	2.9	1
76	The Materialism Podcast: Exploring New Avenues for Materials Science Education. Matter, 2020, 2, 276-278.	10.0	1
77	YMnO3-ZnO Thermoelectrics. Zeitschrift Fur Anorganische Und Allgemeine Chemie, 2012, 638, 1630-1630.	1.2	0
78	Exploration of Polytetrafluoroethylene as a Potential Material Replacement for Hemodialysis Applications. MRS Advances, 2016, 1, 2147-2153.	0.9	0
79	Electrochemical Studies on Na-Î²â€•Alumina + Yttria-Stabilized Zirconia (YSZ) Composite Mixed Na+-Ion-O2â˜’-Ion Conductors. Journal of the Electrochemical Society, 2019, 166, F679-F686.	2.9	0
80	Materials informatics and polymer science: Pushing the frontiers of our understanding. Matter, 2021, 4, 1454-1456.	10.0	0
81	Trends in Bulk Compressibility of Mo_{2â€“x}W_xBC Solid Solutions. Chemistry of Materials, 2022, 34, 2569-2575.	6.7	0