Kedar Hippalgaonkar

List of Publications by Year
in descending order

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72 papers	4,432 citations	94433 37 h-index	106344 65 g-index
75 all docs	75 docs citations	75 times ranked	6513 citing authors

#	Article	IF	Citations
1	Anisotropic in-plane thermal conductivity of black phosphorus nanoribbons at temperatures higher than 100â€‰K. Nature Communications, 2015, 6, 8573.	12.8	311
2	Anomalously low electronic thermal conductivity in metallic vanadium dioxide. Science, 2017, 355, 371-374.	12.6	307
3	Quantifying Surface Roughness Effects on Phonon Transport in Silicon Nanowires. Nano Letters, 2012, 12, 2475-2482.	9.1	285
4	Accelerating Materials Development via Automation, Machine Learning, and High-Performance Computing. Joule, 2018, 2, 1410-1420.	24.0	210
5	High thermoelectric power factor in two-dimensional crystals of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>Mo</mml:mi><mml:msub><mml:mi mathvariant="normal">S</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math>. Physical Review B, 2017, 95, .	3.2	201
6	Large Thermoelectric Figure-of-Merits from SiGe Nanowires by Simultaneously Measuring Electrical and Thermal Transport Properties. Nano Letters, 2012, 12, 2918-2923.	9.1	181
7	Multifunctional 0Dâ€“2D Ni₂P Nanocrystalsâ€“Black Phosphorus Heterostructure. Advanced Energy Materials, 2017, 7, 1601285.	19.5	149
8	Fabrication of Microdevices with Integrated Nanowires for Investigating Low-Dimensional Phonon Transport. Nano Letters, 2010, 10, 4341-4348.	9.1	148
9	2D Black Phosphorus for Energy Storage and Thermoelectric Applications. Small, 2017, 13, 1700661.	10.0	139
10	Temperature-Gated Thermal Rectifier for Active Heat Flow Control. Nano Letters, 2014, 14, 4867-4872.	9.1	126
11	Metastable 1Tâ€²-phase group VIB transition metal dichalcogenide crystals. Nature Materials, 2021, 20, 1113-1120.	27.5	119
12	nâ€Type SnSe₂ Orientedâ€Nanoplateâ€Based Pellets for High Thermoelectric Performance. Advanced Energy Materials, 2018, 8, 1702167.	19.5	103
13	Crystalline polymer nanofibers with ultra-high strength and thermal conductivity. Nature Communications, 2018, 9, 1664.	12.8	97
14	Axially Engineered Metalâ€“Insulator Phase Transition by Graded Doping VO₂ Nanowires. Journal of the American Chemical Society, 2013, 135, 4850-4855.	13.7	96
15	Fullâ€Parameter Omnidirectional Thermal Metadevices of Anisotropic Geometry. Advanced Materials, 2018, 30, e1804019.	21.0	87
16	Second-Harmonic Generation from Sub-5 nm Gaps by Directed Self-Assembly of Nanoparticles onto Template-Stripped Gold Substrates. Nano Letters, 2015, 15, 5976-5981.	9.1	86
17	Two-step machine learning enables optimized nanoparticle synthesis. Npj Computational Materials, 2021, 7, .	8.7	86
18	Thermal Conductance of the 2D MoS2/h-BN and graphene/h-BN Interfaces. Scientific Reports, 2017, 7, 43886.	3.3	79

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19	Perspectives on Thermoelectricity in Layered and 2D Materials. Advanced Electronic Materials, 2018, 4, 1800248.	5.1	77
20	Toward Accelerated Thermoelectric Materials and Process Discovery. ACS Applied Energy Materials, 2020, 3, 2240-2257.	5.1	75
21	Enhanced Thermoelectric Performance of PEDOT:PSS Films by Sequential Postâ€Treatment with Formamide. Macromolecular Materials and Engineering, 2018, 303, 1700429.	3.6	69
22	Observation of Anisotropy in Thermal Conductivity of Individual Single-Crystalline Bismuth Nanowires. ACS Nano, 2011, 5, 3954-3960.	14.6	68
23	Benchmarking the performance of Bayesian optimization across multiple experimental materials science domains. Npj Computational Materials, 2021, 7, .	8.7	62
24	An invertible crystallographic representation for general inverse design of inorganic crystals with targeted properties. Matter, 2022, 5, 314-335.	10.0	59
25	Polymer morphology and interfacial charge transfer dominate over energy-dependent scattering in organic-inorganic thermoelectrics. Nature Communications, 2018, 9, 5347.	12.8	58
26	Inertial effective mass as an effective descriptor for thermoelectrics via data-driven evaluation. Journal of Materials Chemistry A, 2019, 7, 23762-23769.	10.3	58
27	High thermoelectric performance enabled by convergence of nested conduction bands in Pb7Bi4Se13 with low thermal conductivity. Nature Communications, 2021, 12, 4793.	12.8	53
28	Improving carrier mobility in two-dimensional semiconductors with rippled materials. Nature Electronics, 2022, 5, 489-496.	26.0	52
29	Probing the Physical Origin of Anisotropic Thermal Transport in Black Phosphorus Nanoribbons. Advanced Materials, 2018, 30, e1804928.	21.0	50
30	New horizons in thermoelectric materials: Correlated electrons, organic transport, machine learning, and more. Journal of Applied Physics, 2019, 125, .	2.5	50
31	Organic materials as photocatalysts for water splitting. Journal of Materials Chemistry A, 2021, 9, 16222-16232.	10.3	50
32	Lowâ€Symmetry PdSe₂ for High Performance Thermoelectric Applications. Advanced Functional Materials, 2020, 30, 2004896.	14.9	49
33	Gateâ€Tunable Polar Optical Phonon to Piezoelectric Scattering in Fewâ€Layer Bi₂O₂Se for Highâ€Performance Thermoelectrics. Advanced Materials, 2021, 33, e2004786.	21.0	48
34	Ultralow Thermal Conductivity of Singleâ€Crystalline Porous Silicon Nanowires. Advanced Functional Materials, 2017, 27, 1702824.	14.9	47
35	Thermal Conductive 2D Boron Nitride for Highâ€Performance Allâ€Solidâ€State Lithiumâ€“Sulfur Batteries. Advanced Science, 2020, 7, 2001303.	11.2	46
36	Correlating charge and thermoelectric transport to paracrystallinity in conducting polymers. Nature Communications, 2020, 11, 1737.	12.8	45

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37	High-contrast and reversible polymer thermal regulator by structural phase transition. Science Advances, 2019, 5, eaax3777.	10.3	41
38	Poly(nickel-ethylenetetrathiolate) and Its Analogs: Theoretical Prediction of High-Performance Doping-Free Thermoelectric Polymers. Journal of the American Chemical Society, 2018, 140, 13200-13204.	13.7	39
39	High Thermoelectric Performance through Crystal Symmetry Enhancement in Triply Doped Diamondoid Compound Cu₂SnSe₃. Advanced Energy Materials, 2021, 11, 2100661.	19.5	39
40	Dual-mode solid-state thermal rectification. Nature Communications, 2020, 11, 4346.	12.8	37
41	Origin of High Thermoelectric Performance in Earth-Abundant Phosphideâ€“Tetrahedrite. ACS Applied Materials & Interfaces, 2020, 12, 9150-9157.	8.0	35
42	Designing hybrid architectures for advanced thermoelectric materials. Materials Chemistry Frontiers, 2017, 1, 2457-2473.	5.9	34
43	Large enhancement of thermoelectric performance in MoS ₂ / h -BN heterostructure due to vacancy-induced band hybridization. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 13929-13936.	7.1	34
44	Minimizing Isolate Catalyst Motion in Metal-Assisted Chemical Etching for Deep Trenching of Silicon Nanohole Array. ACS Applied Materials & Interfaces, 2017, 9, 20981-20990.	8.0	33
45	Effects Of Structural Phase Transition On Thermoelectric Performance in Lithium-Intercalated Molybdenum Disulfide (Li_xMoS₂). ACS Applied Materials & Interfaces, 2019, 11, 12184-12189.	8.0	31
46	EPIC STAR: a reliable and efficient approach for phonon- and impurity-limited charge transport calculations. Npj Computational Materials, 2020, 6, .	8.7	31
47	Unprecedented Enhancement of Thermoelectric Power Factor Induced by Pressure in Smallâ€Molecule Organic Semiconductors. Advanced Materials, 2019, 31, e1901956.	21.0	30
48	Extrapolative Bayesian Optimization with Gaussian Process and Neural Network Ensemble Surrogate Models. Advanced Intelligent Systems, 2021, 3, 2100101.	6.1	23
49	2D Singleâ€Layer Ï€â€Conjugated Nickel Bis(dithiolene) Complex: A Goodâ€Electronâ€Poorâ€Phonon Thermoelectric Material. Advanced Electronic Materials, 2019, 5, 1800892.	5.1	21
50	Multiâ€Fidelity Highâ€Throughput Optimization of Electrical Conductivity in P3HTâ€CNT Composites. Advanced Functional Materials, 2021, 31, 2102606.	14.9	20
51	Effect of dimensionality on thermoelectric powerfactor of molybdenum disulfide. Journal of Applied Physics, 2017, 121, .	2.5	17
52	Thermoelectric Properties of Substoichiometric Electron Beam Patterned Bismuth Sulfide. ACS Applied Materials & Interfaces, 2020, 12, 33647-33655.	8.0	17
53	Machine learning-assisted cross-domain prediction of ionic conductivity in sodium and lithium-based superionic conductors using facile descriptors. Journal of Physics Communications, 2020, 4, 055015.	1.2	16
54	Electronic transport descriptors for the rapid screening of thermoelectric materials. Materials Horizons, 2021, 8, 2463-2474.	12.2	16

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55	Direct measurement of the thermoelectric properties of electrochemically deposited Bi2Te3 thin films. Scientific Reports, 2020, 10, 17922.	3.3	15
56	Defect Passivation Using a Phosphonic Acid Surface Modifier for Efficient RP Perovskite Blue-Light-Emitting Diodes. ACS Applied Materials & Interfaces, 2022, 14, 34238-34246.	8.0	15
57	Employing a Bifunctional Molybdate Precursor To Grow the Highly Crystalline MoS₂ for High-Performance Field-Effect Transistors. ACS Applied Materials & Interfaces, 2019, 11, 14239-14248.	8.0	10
58	Tunable thermal conductivity in mesoporous silicon by slight porosity change. Applied Physics Letters, 2017, 111, .	3.3	8
59	Lithography-free resistance thermometry based technique to accurately measure Seebeck coefficient and electrical conductivity for organic and inorganic thin films. Review of Scientific Instruments, 2017, 88, 125112.	1.3	7
60	Accelerated automated screening of viscous graphene suspensions with various surfactants for optimal electrical conductivity. , 2022, 1, 139-146.		5
61	All-weather thermal regulation coatings. Joule, 2022, 6, 286-288.	24.0	5
62	Modulation of Spin Dynamics in 2D Transitionâ€Metal Dichalcogenide via Strainâ€Driven Symmetry Breaking. Advanced Science, 2022, , 2200816.	11.2	4
63	Tunable Thermal Transport in Polysilsesquioxane (PSQ) Hybrid Crystals. Scientific Reports, 2016, 6, 21452.	3.3	3
64	Fieldâ€Effect Transistors: Lowâ€Symmetry PdSe₂ for High Performance Thermoelectric Applications (Adv. Funct. Mater. 52/2020). Advanced Functional Materials, 2020, 30, 2070347.	14.9	3
65	Efficacious symmetry-adapted atomic displacement method for lattice dynamical studies. Computer Physics Communications, 2021, 259, 107635.	7.5	3
66	Thermal conductivity reduction in an individual single crystalline Bi nanowire by size effect. , 2010, , .		2
67	Experimental Studies of Thermal Transport in Nanostructures. , 2017, , 319-357.		2
68	Extrapolative Bayesian Optimization with Gaussian Process and Neural Network Ensemble Surrogate Models. Advanced Intelligent Systems, 2021, 3, .	6.1	2
69	High Performance Field Effect Transistor based on Large-sized Highly Crystalline MoS2 Single Crystal. , 2019, , .		1
70	Thermoelectric Materials: Gateâ€Tunable Polar Optical Phonon to Piezoelectric Scattering in Fewâ€Layer Bi₂O₂Se for Highâ€Performance Thermoelectrics (Adv. Mater. 4/2021). Advanced Materials, 2021, 33, 2170023.	21.0	1
71	An Invertible Crystallographic Representation for General Inverse Design of Inorganic Crystals with Targeted Properties. SSRN Electronic Journal, 0, , .	0.4	1
72	Room temperature observation of point defect on gold surface using thermovoltage mapping. Microelectronics Reliability, 2007, 47, 1580-1584.	1.7	0