

# Andrew F May

## List of Publications by Year in descending order

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129  
papers

8,068  
citations

66343

42  
h-index

48315

88  
g-index

137  
all docs

137  
docs citations

137  
times ranked

8010  
citing authors

#	ARTICLE	IF	CITATIONS
1	Two-dimensional itinerant ferromagnetism in atomically thin Fe <sub>3</sub> GeTe <sub>2</sub> . Nature Materials, 2018, 17, 778-782.	27.5	995
2	Giant anharmonic phonon scattering in PbTe. Nature Materials, 2011, 10, 614-619.	27.5	561
3	Zintl Chemistry for Designing High Efficiency Thermoelectric Materials. Chemistry of Materials, 2010, 22, 624-634.	6.7	560
4	Orbitally driven giant phonon anharmonicity in SnSe. Nature Physics, 2015, 11, 1063-1069.	16.7	539
5	Characterization and analysis of thermoelectric transport in $n$ -type $Ba_{1-x}Mn_xSb_2$ . Physical Review B, 2009, 80, 085111.	3.2	364
6	Traversing the Metal-Insulator Transition in a Zintl Phase: Rational Enhancement of Thermoelectric Efficiency in Yb <sub>14</sub> Mn <sub>1</sub> Al <sub>x</sub> Sb <sub>11</sub> . Advanced Functional Materials, 2008, 18, 2795-2800.	14.9	294
7	Ferromagnetism Near Room Temperature in the Cleavable van der Waals Crystal Fe <sub>5</sub> GeTe <sub>2</sub> . ACS Nano, 2019, 13, 4436-4442.	14.6	266
8	Thermoelectric performance of lanthanum telluride produced via mechanical alloying. Physical Review B, 2008, 78, .	3.2	224
9	Self-Tuning the Carrier Concentration of PbTe/Ag <sub>2</sub> Te Composites with Excess Ag for High Thermoelectric Performance. Advanced Energy Materials, 2011, 1, 291-296.	19.5	224
10	Emergent phenomena and proximity effects in two-dimensional magnets and heterostructures. Nature Materials, 2020, 19, 1276-1289.	27.5	213
11	Magnetic structure and phase stability of the van der Waals bonded ferromagnet $Fe_{1-x}Mn_xSb_2$ . Physical Review B, 2016, 93, .	3.2	201
12	Electronic structure and transport in thermoelectric compounds AZn <sub>2</sub> Sb <sub>2</sub> (A = Sr, Ca, Yb, Eu). Dalton Transactions, 2010, 39, 1046-1054.	3.3	184
13	Glass-like phonon scattering from a spontaneous nanostructure in AgSbTe <sub>2</sub> . Nature Nanotechnology, 2013, 8, 445-451.	31.5	161
14	Evolution of structural, magnetic, and transport properties in $MnBi_{1-x}Mn_xSb_2$ . Physical Review B, 2019, 100, .	3.2	150
15	Influence of band structure on the large thermoelectric performance of lanthanum telluride. Physical Review B, 2009, 79, .	3.2	129
16	Phonon Self-Energy and Origin of Anomalous Neutron Scattering Spectra in SnTe and PbTe Thermoelectrics. Physical Review Letters, 2014, 112, 175501.	7.8	125
17	Single-crystal high entropy perovskite oxide epitaxial films. Physical Review Materials, 2018, 2, .	2.4	102
18	Effect of Eu magnetism on the electronic properties of the candidate Dirac material $EuMnBi_{1-x}Mn_xSb_2$ . Physical Review B, 2014, 90, .	3.2	91

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19	Phonon anharmonicity and negative thermal expansion in SnSe. <i>Physical Review B</i> , 2016, 94, .	3.2	90
20	Phonon density of states and heat capacity of $\text{LaMnO}_3$ . <i>Physical Review B</i> , 2009, 80, .	3.2	89
21	Selective breakdown of phonon quasiparticles across superionic transition in CuCrSe <sub>2</sub> . <i>Nature Physics</i> , 2019, 15, 73-78.	16.7	88
22	Benefits of Carrier-Pocket Anisotropy to Thermoelectric Performance: The Case of $\text{AgBiSe}_2$ . <i>Physical Review Applied</i> , 2015, .	3.8	84
23	Structure and Properties of Single Crystalline $\text{CaMg}_2\text{Bi}_2$ , $\text{EuMg}_2\text{Bi}_2$ , and $\text{YbMg}_2\text{Bi}_2$ . <i>Inorganic Chemistry</i> , 2011, 50, 11127-11133.	3.2	75
24	Structure and Properties of Single Crystalline $\text{CaMg}_2\text{Bi}_2$ , $\text{EuMg}_2\text{Bi}_2$ , and $\text{YbMg}_2\text{Bi}_2$ . <i>Inorganic Chemistry</i> , 2011, 50, 11127-11133.	4.0	74
25	Anharmonic lattice dynamics and superionic transition in $\text{AgCrSe}_2$ . <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 3930-3937.	7.1	73
26	Physical properties and thermal stability of $\text{Fe}_5\text{GeTe}_2$ single crystals. <i>Physical Review Materials</i> , 2019, 3, .	2.1	71
27	Low-temperature heat capacity and localized vibrational modes in natural and synthetic tetrahedrites. <i>Journal of Applied Physics</i> , 2014, 115, 193515.	2.5	69
28	Thermoelectric properties of Co-, Ir-, and Os-doped FeSi alloys: Evidence for strong electron-phonon coupling. <i>Physical Review B</i> , 2011, 83, .	3.2	64
29	Anharmonicity and atomic distribution of SnTe and PbTe thermoelectrics. <i>Physical Review B</i> , 2014, 90, .	3.2	64
30	Thermoelectric properties of p-type LiZnSb: Assessment of <i>ab initio</i> calculations. <i>Journal of Applied Physics</i> , 2009, 105, .	2.5	62
31	The origin of incipient ferroelectricity in lead telluride. <i>Nature Communications</i> , 2016, 7, 12291.	12.8	58
32	Anisotropic Exchange within Decoupled Tetrahedra in the Quantum Breathing Pyrochlore $\text{BaMn}_3\text{Sb}_5$ . <i>Physical Review Letters</i> , 2016, 116, 257204.	7.8	55
33	Flat bands in the CoSn-type compounds. <i>Physical Review B</i> , 2020, 102, .	3.2	52
34	Tuning magnetic order in the van der Waals metal $\text{Fe}_2\text{Mn}_2\text{Sb}_2$ by cobalt substitution. <i>Physical Review Materials</i> , 2020, 4, .	2.4	50
35	Intrinsic anharmonic localization in thermoelectric PbSe. <i>Nature Communications</i> , 2019, 10, 1928.	12.8	51
36	Evidence of a magnetic transition in atomically thin $\text{Cr}_2\text{TiC}_2\text{T}_x$ MXene. <i>Nanoscale Horizons</i> , 2020, 5, 1557-1565.	8.0	51

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37	Properties of single crystalline $\text{Zn}_2\text{Sb}_2$ ( $\text{Ca}, \text{Eu}, \text{Yb}$ ). Journal of Applied Physics, 2012, 111, .	2.5	50
38	Quantum Critical Behavior in a Concentrated Ternary Solid Solution. Scientific Reports, 2016, 6, 26179.	3.3	50
39	Optimizing Thermoelectric Efficiency in $\text{La}_{3-x}\text{Te}_4$ via Yb Substitution. Chemistry of Materials, 2010, 22, 2995-2999.	6.7	49
40	Structural phase transition and phonon instability in $\text{Cu}_{12}\text{S}_{13}$ . Physical Review B, 2016, 93, .	3.2	48
41	Extended anharmonic collapse of phonon dispersions in SnS and SnSe. Nature Communications, 2020, 11, 4430.	12.8	46
42	Electronic and thermoelectric properties of CoSbS and FeSbS. Physical Review B, 2013, 87, .	3.2	45
43	Electron and phonon scattering in the high-temperature thermoelectric $\text{La}_3\text{Sb}_7$ . Physical Review B, 2010, 81, .	3.2	44
44	A practical guide for crystal growth of van der Waals layered materials. Journal of Applied Physics, 2020, 128, .	2.5	44
45	Transport, thermal, and magnetic properties of the narrow-gap semiconductor $\text{CrSb}_2$ . Physical Review B, 2012, 86, .	3.2	43
46	Negative thermal expansion and magnetoelastic coupling in the breathing pyrochlore lattice material $\text{LiGaCr}_4\text{S}_8$ . Physical Review B, 2018, 97, .	3.2	41
47	Magnetic order and interactions in ferrimagnetic $\text{Mn}_3\text{Sb}_7$ . Physical Review B, 2017, 95, .	3.2	40
48	High-temperature magnetostructural transition in van der Waals-layered $\text{Mn}_2\text{Sb}$ . Physical Review Materials, 2017, 1, .	3.2	37
49	Evolution of competing magnetic order in the $\text{J}_1\text{J}_2\text{Sr}_2\text{Te}_3$ state of $\text{Sr}_2\text{Te}_3$ . Physical Review B, 2015, 92, .	3.2	33
50	Transport properties of the layered Zintl compound $\text{SrZnSb}_2$ . Journal of Applied Physics, 2009, 106, .	2.5	32
51	Valence band study of thermoelectric Zintl phase $\text{SrZn}_2$ . Physical Review B, 2010, 81, .	3.2	32
52	Spin Reorientation in $\text{TlFe}_{1.6}\text{Se}_2$ . Complete Vacancy Ordering. Physical Review Letters, 2012, 109, 077003.	1.8	32
53	Heavy-impurity resonance, hybridization, and phonon spectral functions in $\text{La}_3\text{Sb}_7$ .		

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55	Transport and optical properties of heavily hole-doped semiconductors BaCu <sub>2</sub> Se <sub>2</sub> and BaCu <sub>2</sub> Te <sub>2</sub> . Journal of Solid State Chemistry, 2011, 184, 2744-2750.	2.9	25
56	Synthesis, magnetization, and heat capacity of triangular lattice materials $\text{NaErSe}_2$ and $\text{KErSe}_2$ and $\text{KErSe}_2$ . Physical Review Materials, 2019, 3, .	2.4	25
57	Van Hove singularity in the magnon spectrum of the antiferromagnetic quantum honeycomb lattice. Nature Communications, 2021, 12, 171.	12.8	24
58	Crystal and Magnetic Structures and Physical Properties of a New Pyroxene NaMnGe <sub>2</sub> O <sub>6</sub> Synthesized under High Pressure. Journal of the American Chemical Society, 2013, 135, 2776-2786.	13.7	23
59	New insights into the structure, chemistry, and properties of Cu <sub>4</sub> SnS <sub>4</sub> . Journal of Solid State Chemistry, 2017, 253, 192-201.	2.9	23
60	Unusual phase transitions and magnetoelastic coupling in TlFe <sub>1.6</sub> Se <sub>2</sub> single crystals. Physical Review B, 2011, 83, .	3.2	21
61	Magnetic excitations in the quasi-two-dimensional ferromagnet $\text{FeMn}_3$ measured with inelastic neutron scattering. Physical Review B, 2019, 99, .	2.2	20
62	Cluster Frustration in the Breathing Pyrochlore Magnet $\text{LiGaCr}_4\text{S}_8$ . Physical Review Letters, 2020, 125, 167201.	7.8	20
63	Influence of interstitial Mn on magnetism in the room-temperature ferromagnet $\text{Mn}_2\text{P}$ . Physical Review B, 2015, 91, .	2.9	19
64	Lattice dynamics and thermal transport in multiferroic $\text{CuCrO}_2$ . Physical Review B, 2017, 95, .	3.2	19
65	Quantum critical behavior in the asymptotic limit of high disorder in the medium entropy alloy NiCoCr <sub>0.8</sub> . Npj Quantum Materials, 2017, 2, .	5.2	18
66	Giant isotope effect on phonon dispersion and thermal conductivity in methylammonium lead iodide. Science Advances, 2020, 6, eaaz1842.	10.3	17
67	Tuning the flat bands of the Kagome metal CoSn with Fe, In, or Ni doping. Physical Review Materials, 2021, 5, .	2.4	17
68	Model-free reconstruction of magnetic correlations in frustrated magnets. IUCr, 2018, 5, 410-416.	2.2	17
69	Synthesis and anisotropic magnetism in quantum spin liquid candidates $\text{YbSe}_2$ ( $\chi = K$ and $T_{\text{N}} = 0.784314$ K). Physical Review Letters, 2017, 118, 177201.	5.1	17
70	Revealing room temperature ferromagnetism in exfoliated Fe <sub>5</sub> GeTe <sub>2</sub> flakes with quantum magnetic imaging. 2D Materials, 2022, 9, 025017.	4.4	17
71	Introduction to Modeling Thermoelectric Transport at High Temperatures. , 2017, , 207-224.		16
72	Spin-gap and two-dimensional magnetic excitations in $\text{Sr}_2\text{Mn}_2\text{O}_7$ . Physical Review B, 2018, 98, .	2.2	16

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73	Temperature dependent electronic transport in concentrated solid solutions of the $d$ -transition metals Ni, Fe, Co and Cr from first principles. Physical Review B, 2018, 98, .	4.2	16
74	Structural and physical properties of layered oxy-arsenides LnRuAsO (Ln=La, Nd, Sm, Gd). Journal of Solid State Chemistry, 2012, 191, 71-75.	2.9	14
75	Candidate Elastic Quantum Critical Point in $\text{LaCu}_6$ . Physical Review Letters, 2016, 117, 235701.	7.8	14
76	Tuning the room temperature ferromagnetism in $\text{Fe}_5\text{GeTe}_2$ by arsenic substitution. 2D Materials, 2022, 9, 015013.	4.4	14
77	Flux growth and physical properties of $\text{Mo}_3\text{Sb}_7$ single crystals. Physical Review B, 2013, 87, .	3.2	13
78	Phonon scattering rates and atomic ordering in $\text{Ag}_2\text{Mn}$		

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91	Comprehensive Electrical Control of Metamagnetic Transition of a Quasi-2D Antiferromagnet by In Situ Anisotropic Strain. <i>Advanced Materials</i> , 2020, 32, e2002451.	21.0	10
92	Observation of a Novel Lattice Instability in Ultrafast Photoexcited SnSe. <i>Physical Review X</i> , 2022, 12, .	8.9	10
93	Thermal Stability and Phase Purity in Polycrystalline Ba <sub>8</sub> Ga <sub>x</sub> Ge <sub>46-8x</sub> . <i>Journal of Electronic Materials</i> , 2009, 38, 1423-1426.	2.2	9
94	Competing magnetic ground states and their coupling to the crystal lattice in CuFe <sub>2</sub> Ge <sub>2</sub> . <i>Scientific Reports</i> , 2016, 6, 35325.	3.3	9
95	Physical properties of the trigonal binary compound Nd <sub>2</sub> O <sub>3</sub> . <i>Physical Review B</i> , 2016, 93, 041107.	2.4	9
96	Ferrimagnetic spin waves in honeycomb and triangular layers of MnSi <sub>2</sub> Te <sub>6</sub> . <i>Physical Review B</i> , 2022, 105, .	3.2	9
97	Growth and electrical transport properties of La <sub>0.7</sub> Sr <sub>0.3</sub> MnO <sub>3</sub> thin films on Sr <sub>2</sub> IrO <sub>4</sub> single crystals. <i>Physical Review B</i> , 2017, 95, .	3.2	8
98	Magnetic properties of ferrimagnetic Mn <sub>3</sub> Si <sub>2</sub> Se <sub>6</sub> . <i>Journal of Magnetism and Magnetic Materials</i> , 2020, 511, 166936.	2.3	8
99	Intrinsic anharmonicity and thermal properties of ultralow thermal conductivity Ba <sub>6</sub> K <sub>3</sub> Bi <sub>3</sub> . <i>Physical Review Materials</i> , 2021, 5, .	2.1	8
100	Controlling phonon lifetimes via sublattice disordering in Ag <sub>2</sub> Bi <sub>2</sub> Te <sub>3</sub> . <i>Physical Review Materials</i> , 2020, 4, .	2.1	8
101	Competing magnetic phases and field-induced dynamics in DyRuAsO. <i>Physical Review B</i> , 2014, 90, .	3.2	6
102	Complex magnetic phases in the polar tetragonal intermetallic NdCoGe <sub>3</sub> . <i>Physical Review B</i> , 2021, 103, .	2.1	6
103	Thermoelectric properties of polycrystalline NiSi <sub>3</sub> P <sub>4</sub> . <i>Journal of Applied Physics</i> , 2013, 113, 103707.	2.5	5
104	Fragile structural transition in Mo <sub>3</sub> . <i>Physical Review B</i> , 2015, 92, .	2.3	5
105	Structural and magnetic phase transitions in CeCu <sub>6</sub> . <i>Physical Review B</i> , 2015, 92, .	2.3	5



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109	Multicomponent fluctuation spectrum at the quantum critical point in $\text{CeCu}_6\text{Ag}_x$ . <i>Npj Quantum Materials</i> , 2019, 4, .	5.2	4
110	Impact of Sn substitution on the structure and magnetism of $\text{Sr}_{2-x}\text{Ca}_x\text{Mn}_2\text{As}_2$ . <i>Physical Review Materials</i> , 2018, 2, .	2.4	4
111	High-pressure nuclear inelastic scattering with backscattering monochromatization. <i>Journal of Synchrotron Radiation</i> , 2019, 26, 1592-1599.	2.4	4
112	Suppressed incommensurate order in swedenborgite $\text{Ca}_{0.5}\text{Y}_{0.5}\text{BaCo}_4\text{O}_7$ . <i>Physical Review B</i> , 2021, 104, .	3.2	4
113	Crystallographic and Magnetic Phase Transitions in the Layered Ruthenium Oxyarsenides $\text{TbRuAsO}$ and $\text{DyRuAsO}$ . <i>Inorganic Chemistry</i> , 2012, 51, 8502-8508.	4.0	3
114	Nanoscale Structure in $\text{AgSbTe}_2$ Determined by Diffuse Elastic Neutron Scattering. <i>Journal of Electronic Materials</i> , 2015, 44, 1536-1539.	2.2	3
115	Dynamic defect correlations dominate activated electronic transport in $\text{SrTiO}_3$ . <i>Scientific Reports</i> , 2016, 6, 30141.	3.3	3
116	Thermal Properties of the Quaternary Chalcogenide $\text{BaCdSnSe}_4$ . <i>Physica Status Solidi - Rapid Research Letters</i> , 2020, 14, 2000363.	2.4	3
117	Thermal properties of $\text{BaCu}_2\text{SnQ}_4$ ( $Q = \text{S}, \text{Se}$ ) quaternary chalcogenides. <i>Applied Physics Letters</i> , 2020, 117, 092101.	3.3	3
118	Twisting the thermoelectric potential. <i>Nature Materials</i> , 2021, 20, 451-452.	27.5	3
119	Resonant ultrasound spectroscopy probe for in-situ neutron scattering measurements. <i>Proceedings of Meetings on Acoustics</i> , 2021, , .	0.3	3
120	Influence of cobalt substitution on the magnetism of $\text{NiBr}_2$ . <i>Physical Review Materials</i> , 2019, 3, .	2.4	3
121	Self-regulated growth of candidate topological superconducting parkerite by molecular beam epitaxy. <i>APL Materials</i> , 2021, 9, 101110.	5.1	3
122	Observation of photo-induced plasmon-phonon coupling in $\text{PbTe}$ via ultrafast x-ray scattering. <i>Structural Dynamics</i> , 2022, 9, 024301.	2.3	3
123	Synthesis, Crystal Structure, and Physical Properties of $\text{BaSnS}_2$ . <i>Physica Status Solidi - Rapid Research Letters</i> , 2022, 16, .	2.4	2
124	Publisher's Note: Spin Reorientation in $\text{TlFe}_{1.6}\text{Se}_2$ with Complete Vacancy Ordering [ <i>Phys. Rev. Lett.</i> 109, 077003 (2012)]. <i>Physical Review Letters</i> , 2012, 109, .	7.8	1
125	STEM Study of Structure and Local Short-Range Orders in the $\text{Fe}_5\text{GeTe}_2$ Crystals with Ferromagnetism Near Room Temperature. <i>Microscopy and Microanalysis</i> , 2019, 25, 956-957.	0.4	1
126	Publisher's Note: Unusual phase transitions and magnetoelastic coupling in $\text{TlFe}_{1.6}\text{Se}_2$ single crystals [ <i>Phys. Rev. B</i> 83, 224510 (2011)]. <i>Physical Review B</i> , 2011, 84, .	3.2	0



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127	Heat capacity, resistivity, and angular dependent magnetization studies of single crystal Nd <sub>1-x</sub> Fe <sub>4x</sub> B <sub>4</sub> for x=0.17. Journal of Magnetism and Magnetic Materials, 2017, 435, 100-106.	2.3	0
128	Magnetism of Nd <sub>2</sub> O <sub>3</sub> single crystals near the Néel temperature. Physical Review B, 2020, 102, .	3.2	0
129	Magnetic properties of Fe-substituted NiBr <sub>2</sub> single crystals. Journal of Magnetism and Magnetic Materials, 2022, , 169452.	2.3	0