Olivier A Delaire

List of Publications by Year
in descending order

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97 papers	5,844 citations	101384 36 h-index	74018 75 g-index
103 all docs	103 docs citations	103 times ranked	7131 citing authors

#	Article	IF	Citations
1	Observation of a Novel Lattice Instability in Ultrafast Photoexcited SnSe. Physical Review X, 2022, 12, .	2.8	10
2	Observation of photo-induced plasmonâ€“phonon coupling in PbTe via ultrafast x-ray scattering. Structural Dynamics, 2022, 9, 024301.	0.9	3
3	Strongly Anharmonic Phonons and Their Role in Superionic Diffusion and Ultralow Thermal Conductivity of Cu₇PSe₆. Advanced Energy Materials, 2022, 12, .	10.2	26
4	Direct Detection of V-V Atom Dimerization and Rotation Dynamic Pathways upon Ultrafast Photoexcitation in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mi>VO</mml:mi></mml:mrow><mml:mrow><mml:mn>2</mml:mn></mml:mrow></mml:msub></mml:mrow></mml:math> Physical Review X, 2022, 12, .	2.8	6
5	Ultrafast dynamics of Cu diffusion in superionic <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Cu</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:mi mathvariant="normal">X</mml:mi></mml:mrow></mml:math> <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mo>(</mml:mo><mml:mi>X</mml:mi><mml:mo>=</mml:mo> : A. Physical Review Materials, 2022, 6, .	0.9	7
6	CHESS: The future direct geometry spectrometer at the second target station. Review of Scientific Instruments, 2022, 93, .	0.6	9
7	Anisotropic magnon damping by zero-temperature quantum fluctuations in ferromagnetic CrGeTe3. Nature Communications, 2022, 13, .	5.8	10
8	Stoichiometric tuning of lattice flexibility and Na diffusion in NaAlSiO₄: quasielastic neutron scattering experiment and ab initio molecular dynamics simulations. Journal of Materials Chemistry A, 2021, 9, 16129-16136.	5.2	4
9	Two-dimensional overdamped fluctuations of the soft perovskite lattice in CsPbBr3. Nature Materials, 2021, 20, 977-983.	13.3	89
10	Soft anharmonic phonons and ultralow thermal conductivity in Mg ₃ (Sb, Bi) ₂ thermoelectrics. Science Advances, 2021, 7, .	4.7	52
11	Phonons and lithium diffusion in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>LiAlO</mml:mi><mml:mn>2</mml:mn></mml:msub></ Physical Review B, 2021, 103, .	3.2	11
12	Atomistic Mechanisms Underlying Non-Arrhenius Ion Transport in Superionic Conductor AgCrSe₂. ACS Applied Energy Materials, 2021, 4, 7157-7167.	2.5	10
13	A two-dimensional type I superionic conductor. Nature Materials, 2021, 20, 1683-1688.	13.3	15
14	Anisotropic Structural Collapse of Mg₃Sb₂ and Mg₃Bi₂ at High Pressure. Chemistry of Materials, 2021, 33, 567-573.	3.2	14
15	Fast Na diffusion and anharmonic phonon dynamics in superionic Na₃PS₄. Energy and Environmental Science, 2021, 14, 6554-6563.	15.6	36
16	Dynamically Tunable Terahertz Emission Enabled by Anomalous Optical Phonon Responses in Lead Telluride. ACS Photonics, 2021, 8, 3633-3640.	3.2	7
17	Extended anharmonic collapse of phonon dispersions in SnS and SnSe. Nature Communications, 2020, 11, 4430.	5.8	46
18	Clathrate BaNi₂P₄: An Interplay of Heat and Charge Transport Due to Strong Hostâ€“Guest Interactions. Chemistry of Materials, 2020, 32, 7932-7940.	3.2	9

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19	High Thermoelectric Performance of AgSb_{1â€“x}Pb_xSe₂ Prepared by Fast Nonequilibrium Synthesis. ACS Applied Materials & Interfaces, 2020, 12, 41333-41341.	4.0	15
20	Anharmonic lattice dynamics and superionic transition in AgCrSe ₂. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 3930-3937.	3.3	73
21	Magnetically driven phonon instability enables the metalâ€“insulator transition in h-FeS. Nature Physics, 2020, 16, 669-675.	6.5	26
22	Anharmonic Eigenvectors and Acoustic Phonon Disappearance in Quantum Paraelectric <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mi>SrTiO</mml:mi></mml:mrow><mml:mrow><mml:mn>3</mml:mn></ Physical Review Letters, 2020, 124, 145901.	2.9	33
23	Controlling phonon lifetimes via sublattice disordering in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>Ag</mml:mi><mml:mi>Bi</mml:mi><mml:msub><mml:mrow><mml Physical Review Materials, 2020, 4, .	2.9	4
24	Orthorhombic to monoclinic phase transition in NbNiTe2. Physical Review B, 2019, 100, .	1.1	1
25	Phase transition and anharmonicity in SnSe. Materials Today Physics, 2019, 10, 100093.	2.9	45
26	Frustrated Magnetism in Mott Insulating <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mo stretchy="false">(</mml:mo><mml:msub><mml:mrow><mml:mi) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 462 Td (mathvariant="normal"> 2019, 9,	2.8	14
27	Lattice dynamics of the hybrid improper ferroelectrics <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mrow><mml:mo>(</mml:mo><mml:mi>Ca</mml mathvariant="normal">O</mml:mi><mml:mn>7</mml:mn></mml:msub></mml:mrow></mml:math>. Physical Review B, 2019, 100, .	1.1	9
28	Selective breakdown of phonon quasiparticles across superionic transition in CuCrSe2. Nature Physics, 2019, 15, 73-78.	6.5	88
29	High-resolution phonon energy shift measurements with the inelastic neutron spin echo technique. Journal of Applied Crystallography, 2019, 52, 755-760.	1.9	6
30	Tuning mobility and stability of lithium ion conductors based on lattice dynamics. Energy and Environmental Science, 2018, 11, 850-859.	15.6	158
31	Recent progresses on physics and applications of vanadium dioxide. Materials Today, 2018, 21, 875-896.	8.3	318
32	Momentum-resolved observations of the phonon instability driving geometric improper ferroelectricity in yttrium manganite. Nature Communications, 2018, 9, 15.	5.8	30
33	Observation of low temperature metastable states in complex CaMn₇O₁₂. Journal of Physics Condensed Matter, 2018, 30, 075801.	0.7	6
34	Self-compensation induced vacancies for significant phonon scattering in InSb. Nano Energy, 2018, 48, 189-196.	8.2	30
35	Comparing the Descriptors for Investigating the Influence of Lattice Dynamics on Ionic Transport Using the Superionic Conductor Na₃PS_{4â€“x}Se_x. Journal of the American Chemical Society, 2018, 140, 14464-14473.	6.6	122
36	Ultrafast disordering of vanadium dimers in photoexcited VO ₂. Science, 2018, 362, 572-576.	6.0	159

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37	A practical field guide to thermoelectrics: Fundamentals, synthesis, and characterization. Applied Physics Reviews, 2018, 5, 021303.	5.5	223
38	Anomalously low electronic thermal conductivity in metallic vanadium dioxide. Science, 2017, 355, 371-374.	6.0	307
39	Itinerant Antiferromagnetism in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mi>RuO</mml:mi></mml:mrow><mml:mrow><mml:mn>2</mml:mn></mml:mrow></mml:msub></mml:mrow></mml:math>. Physical Review Letters, 2017, 118, 077201.	8.1	89
40	Lattice dynamics and thermal transport in multiferroic<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi mathvariant="bold">CuCrO</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:math>. Physical Review B, 2017, 95, .	1.1	19
41	The curious case of cuprous chloride: Giant thermal resistance and anharmonic quasiparticle spectra driven by dispersion nesting. Physical Review B, 2017, 96, .	1.1	23
42	Neutron and x-ray scattering study of phonon dispersion and diffuse scattering in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mrow><mml:mo>(</mml:mo><mml:mi>Na</mml:mi><mml:mi mathvariant="normal">O</mml:mi><mml:mn>3</mml:mn></mml:msub><mml:mtext>â^'</mml:mtext><mml:mi>x</mml:mi><mml:mi mathvariant="normal">O</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:mrow>. Physical Review B, 2017, 96, .	1.1	20
43	Complex optimization for big computational and experimental neutron datasets. Nanotechnology, 2016, 27, 484002.	1.3	3
44	Hierarchical domain structure of lead-free piezoelectric (Na1/2 Bi1/2)TiO3-(K1/2 Bi1/2)TiO3 single crystals. Journal of Applied Physics, 2016, 119, 174102.	1.1	5
45	Hierarchical optimization for neutron scattering problems. Journal of Computational Physics, 2016, 315, 39-51.	1.9	2
46	Phonon anharmonicity and negative thermal expansion in SnSe. Physical Review B, 2016, 94, .	1.1	90
47	Modeling non-harmonic behavior of materials from experimental inelastic neutron scattering and thermal expansion measurements. Journal of Physics Condensed Matter, 2016, 28, 385201.	0.7	4
48	Structural phase transition and phonon instability in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Cu</mml:mi><mml:mn>12</mml:mn></mml:msub><mml:mi mathvariant="normal">S</mml:mi><mml:mn>13</mml:mn></mml:msub></mml:mrow></mml:math>. Physical Review B, 2016, 93, .	1.1	48
49	The origin of incipient ferroelectricity in lead telluride. Nature Communications, 2016, 7, 12291.	5.8	58
50	Weak coupling of pseudoacoustic phonons and magnon dynamics in the incommensurate spin-ladder compound <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi mathvariant="normal">S</mml:mi><mml:msub><mml:mi mathvariant="normal">r</mml:mi><mml:mn>14</mml:mn></mml:msub><mml:mi mathvariant="normal">C</mml:mi><mml:msub><mml:mi mathvariant="normal">u</mml:mi><mml:mn>24</mml:mn></mml:msub><mml:msub><mml:mi mathvaria	1.1	14
51	Heavy-impurity resonance, hybridization, and phonon spectral functions in<mml:math		

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55	Orbitally driven giant phonon anharmonicity inÂSnSe. Nature Physics, 2015, 11, 1063-1069.	6.5	539
56	Origin of anomalous anharmonic lattice dynamics of lead telluride. Applied Physics Express, 2014, 7, 041801.	1.1	22
57	Low-temperature heat capacity and localized vibrational modes in natural and synthetic tetrahedrites. Journal of Applied Physics, 2014, 115, 193515.	1.1	69
58	Anharmonicity and atomic distribution of SnTe and PbTe thermoelectrics. Physical Review B, 2014, 90, .	1.1	64
59	Natural nanostructure and superlattice nanodomains in AgSbTe2. Journal of Applied Physics, 2014, 115, 144903.	1.1	12
60	Phonon scattering rates and atomic ordering in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Ag</mml:mi><mml:mrow><mml:mn>1</mm		

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73	Phonon softening and metallization of a narrow-gap semiconductor by thermal disorder. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 4725-4730.	3.3	96
74	Nonharmonic phonons in MgB2at elevated temperatures. Physical Review B, 2011, 83, .	1.1	4
75	Positive Vibrational Entropy of Chemical Ordering in FeV. Physical Review Letters, 2011, 107, 115501.	2.9	35
76	Giant anharmonic phonon scattering in PbTe. Nature Materials, 2011, 10, 614-619.	13.3	561
77	Thermoelectric properties of Co-, Ir-, and Os-doped FeSi alloys: Evidence for strong electron-phonon coupling. Physical Review B, 2011, 83, .	1.1	64
78	Studies of high-temperature electronâ€“phonon interactions withÂinelastic neutron scattering and first-principles computations. Applied Physics A: Materials Science and Processing, 2010, 99, 523-529.	1.1	2
79	Temperature and pressure dependence of the Fe-specific phonon density of states in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mtext>Ba</mml:mtext><mml:msub><mml:mrow><mml:mrow><mml:mo>(</mml:mo><mml:mrow Physical Review B, 2010, 81, .	1.1	18
80	Effects of chemical composition and B2 order on phonons in bcc Feâ€“Co alloys. Journal of Applied Physics, 2010, 108, .	1.1	13
81	Effects of composition, temperature, and magnetism on phonons in bcc Fe-V alloys. Physical Review B, 2010, 82, .	1.1	19
82	Effects of vacancies on phonon entropy of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>B</mml:mi><mml:mn>2</mml:mn></mml:mrow></mml:math>FeAl. Physical Review B, 2009, 80, .	1.1	7
83	Phonon density of states and heat capacity of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>La</mml:mtext></mml:mrow><mml:mrow><mml:mn>3</mml:mn></mml:mr Physical Review B, 2009, 80, .	1.1	89
84	Phonon Density of States of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>LaFeAsO</mml:mi><mml:mrow><mml:mn>1</mml:mn><mml:mo>â^’</mml:mo><mml:mi>x</m mathvariant="normal">F</mml:mi><mml:mi>x</mml:mi></mml:msub></mml:math>. Physical Review Letters, 2008, 101, 157004.	2.9	65
85	Electron-phonon interactions and high-temperature thermodynamics of vanadium and its alloys. Physical Review B, 2008, 77, .	1.1	36
86	Phonons in aluminum at high temperatures studied by inelastic neutron scattering. Physical Review B, 2008, 77, .	1.1	96
87	Adiabatic Electron-Phonon Interaction and High-Temperature Thermodynamics of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>A</mml:mi><mml:mn>15</mml:mn></mml:math>Compounds. Physical Review Letters, 2008, 101, 105504.	2.9	39
88	Neutron scattering measurements of phonons in nickel at elevated temperatures. Physical Review B, 2007, 75, .	1.1	66
89	Charge Redistribution and Phonon Entropy of Vanadium Alloys. Physical Review Letters, 2006, 97, 245701.	2.9	15
90	Vibrational entropy of the Î³â^’Î± martensitic transformation in Fe71Ni29. Philosophical Magazine, 2005, 85, 3567-3583.	0.7	13

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91	Vibrational entropy of spinodal decomposition in FeCr. Physical Review B, 2005, 72, .	1.1	35
92	Vibrations of Micro-eV Energies in Nanocrystalline Microstructures. Physical Review Letters, 2004, 93, 205501.	2.9	15
93	Negative Entropy of Mixing for Vanadium-Platinum Solutions. Physical Review Letters, 2004, 93, 185704.	2.9	61
94	Determination of the alloying content in the matrix of Zr alloys using synchrotron radiation microprobe X-ray fluorescence. Journal of Nuclear Materials, 2003, 321, 221-232.	1.3	27
95	The importance of high temperature electron-phonon coupling to the thermodynamic properties of Ce0.9Th0.1 and other f-electron bonded metals. Materials Research Society Symposia Proceedings, 2003, 802, 43.	0.1	0
96	No role for phonon entropy in thefccâ†'fccvolume collapse transition inCe0.9Th0.1at ambient pressure. Physical Review B, 2003, 67, .	1.1	34
97	Observation of second-phase particles in bulk zirconium alloys using synchrotron radiation. Journal of Nuclear Materials, 2001, 294, 299-304.	1.3	32