J Michael Winey

List of Publications by Year
in descending order

51 papers	1,635 citations	218381 26 h-index	288905 40 g-index
52 all docs	52 docs citations	52 times ranked	1355 citing authors

#	Article	IF	Citations
1	First-principles calculations of second- and third-order elastic constants for single crystals of arbitrary symmetry. Physical Review B, 2007, 75, .	1.1	210
2	A thermodynamic approach to determine accurate potentials for molecular dynamics simulations: thermoelastic response of aluminum. Modelling and Simulation in Materials Science and Engineering, 2009, 17, 055004.	0.8	92
3	Shock-Induced Chemical Changes in Neat Nitromethane:â€‰ Use of Time-Resolved Raman Spectroscopy. Journal of Physical Chemistry B, 1997, 101, 10733-10743.	1.2	73
4	Twinning and Dislocation Evolution during Shock Compression and Release of Single Crystals: Real-Time X-Ray Diffraction. Physical Review Letters, 2018, 120, 265503.	2.9	67
5	Nonlinear anisotropic description for the thermomechanical response of shocked single crystals: Inelastic deformation. Journal of Applied Physics, 2006, 99, 023510.	1.1	62
6	UVâˆ'Visible Absorption Spectroscopy To Examine Shock-Induced Decomposition in Neat Nitromethane. Journal of Physical Chemistry A, 1997, 101, 9333-9340.	1.1	61
7	Transformation of shock-compressed graphite to hexagonal diamond in nanoseconds. Science Advances, 2017, 3, eaao3561.	4.7	61
8	r-axis sound speed and elastic properties of sapphire single crystals. Journal of Applied Physics, 2001, 90, 3109-3111.	1.1	57
9	Determination of second-order elastic constants of cyclotetramethylene tetranitramine (Î²-HMX) using impulsive stimulated thermal scattering. Journal of Applied Physics, 2009, 106, .	1.1	56
10	Equation of state and temperature measurements for shocked nitromethane. Journal of Chemical Physics, 2000, 113, 7492-7501.	1.2	51
11	Second-order elastic constants of pentaerythritol tetranitrate and cyclotrimethylene trinitramine using impulsive stimulated thermal scattering. Journal of Applied Physics, 2008, 104, .	1.1	50
12	Structural Transformation and Melting in Gold Shock Compressed to 355ÂGPa. Physical Review Letters, 2019, 123, 045702.	2.9	48
13	Nonlinear anisotropic description for shocked single crystals: Thermoelastic response and pure mode wave propagation. Journal of Applied Physics, 2004, 96, 1993-1999.	1.1	45
14	Anisotropic material model and wave propagation simulations for shocked pentaerythritol tetranitrate single crystals. Journal of Applied Physics, 2010, 107, .	1.1	44
15	Shock wave compression and release of hexagonal-close-packed metal single crystals: Inelastic deformation of <i>c</i>-axis magnesium. Journal of Applied Physics, 2015, 117, .	1.1	41
16	UV/Visible Absorption Spectra of Shocked Nitromethane and Nitromethane-Amine Mixtures up to a Pressure of 14 GPa. The Journal of Physical Chemistry, 1994, 98, 7767-7776.	2.9	39
17	Large elastic wave amplitude and attenuation in shocked pure aluminum. Journal of Applied Physics, 2009, 105, .	1.1	39
18	Compressive shock wave response of a Zr-based bulk amorphous alloy. Applied Physics Letters, 2004, 84, 1692-1694.	1.5	37

#	Article	IF	Citations
19	What Determines the fcc-bcc Structural Transformation in Shock Compressed Noble Metals?. Physical Review Letters, 2020, 124, 235701.	2.9	36
20	Second-order elastic constants for pentaerythritol tetranitrate single crystals. Journal of Applied Physics, 2001, 90, 1669-1671.	1.1	35
21	Transformation of shock-compressed copper to the body-centered-cubic structure at 180 GPa. Physical Review B, 2020, 102, .	1.1	32
22	Density Functional Theory Calculations of Pressure Effects on the Vibrational Structure of Î±-RDX. Journal of Physical Chemistry A, 2008, 112, 12228-12234.	1.1	31
23	Response of a Zr-based bulk amorphous alloy to shock wave compression. Journal of Applied Physics, 2006, 100, 063522.	1.1	30
24	Elastic wave amplitudes in shock-compressed thin polycrystalline aluminum samples. Journal of Applied Physics, 2009, 106, .	1.1	30
25	Shock compression and release of <i>a</i>-axis magnesium single crystals: Anisotropy and time dependent inelastic response. Journal of Applied Physics, 2017, 121, .	1.1	28
26	Raman Spectra of Shock Compressed Pentaerythritol Tetranitrate Single Crystals:Â Anisotropic Response. Journal of Physical Chemistry B, 2006, 110, 20948-20953.	1.2	27
27	Unloading and reloading response of shocked aluminum single crystals: Time-dependent anisotropic material description. Journal of Applied Physics, 2012, 112, .	1.1	27
28	Elastic anisotropy of shocked aluminum single crystals: Use of molecular dynamics simulations. Physical Review B, 2011, 83, .	1.1	24
29	Nonlinear elastic response of strong solids: First-principles calculations of the third-order elastic constants of diamond. Physical Review B, 2016, 93, .	1.1	21
30	Shock-compressed graphite to diamond transformation on nanosecond time scales. Physical Review B, 2013, 87, .	1.1	18
31	Strength and deformation of shocked diamond single crystals: Orientation dependence. Physical Review B, 2018, 97, .	1.1	17
32	Thermomechanical model and temperature measurements for shocked ammonium perchlorate single crystals. Journal of Applied Physics, 2002, 91, 5650-5656.	1.1	16
33	Real-Time Observation of Stacking Faults in Gold Shock Compressed to 150ÂGPa. Physical Review X, 2020, 10, .	2.8	14
34	Shock wave compression of hexagonal-close-packed metal single crystals: Time-dependent, anisotropic elastic-plastic response of beryllium. Journal of Applied Physics, 2014, 116, 033505.	1.1	12
35	Structural Transformation and Chemical Stability of a Shock-Compressed Insensitive High Explosive Single Crystal: Time-Resolved Raman Spectroscopy. Journal of Physical Chemistry A, 2020, 124, 6521-6527.	1.1	12
36	Shock compression response of an insensitive high explosive single crystal: 1,1-diamino-2,2-dinitroethene (FOX-7). Journal of Applied Physics, 2020, 127, .	1.1	12

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37	Spectroscopic Study of Shock-Induced Decomposition in Ammonium Perchlorate Single Crystals. Journal of Physical Chemistry A, 2008, 112, 3947-3952.	1.1	10
38	Shock compression response of diamond single crystals at multimegabar stresses. Physical Review B, 2020, 101, .	1.1	9
39	Elastic Properties of Molecular Crystals Using Density Functional Calculations. AIP Conference Proceedings, 2004, , .	0.3	7
40	Shock compression of pyrolytic graphite to 18â€‰GPa: Role of orientational order. Journal of Applied Physics, 2013, 114, .	1.1	7
41	Sound velocities in highly oriented pyrolytic graphite shocked to 18â€‰GPa: Orientational order dependence and elastic instability. Journal of Applied Physics, 2015, 118, .	1.1	7
42	Sound Velocities in Shockâ€Synthesized Stishovite to 72ÂGPa. Geophysical Research Letters, 2019, 46, 13695-13703.	1.5	7
43	Near-optimal combination of high performance and insensitivity in a shock compressed high explosive single crystal. Journal of Applied Physics, 2021, 130, .	1.1	7
44	Shock compression of silver to 300 GPa: Wave profile measurements and melting transition. Physical Review B, 2021, 104, .	1.1	7
45	Inelastic deformation in shocked sapphire single crystals. Journal of Applied Physics, 2013, 113, 226102.	1.1	5
46	Photoacoustic measurements to determine acoustic velocities in shocked condensed materials: Application to liquid benzene. Applied Physics Letters, 2008, 92, 101926.	1.5	3
47	Complete equation of state for shocked liquid nitrogen: Analytical developments. Journal of Chemical Physics, 2016, 145, 054504.	1.2	3
48	Sound speed measurements in lithium fluoride single crystals shock compressed to 168â€‰GPa along [100]. Journal of Applied Physics, 2021, 130, .	1.1	3
49	Sound speed measurements in silver shock compressed to 300 GPa: Solid-state transition, melting, and liquid-state response. Physical Review B, 2021, 104, .	1.1	3
50	Equation of state and temperature measurements for shocked ammonium perchlorate. AIP Conference Proceedings, 2000, , .	0.3	1
51	Anisotropic Modeling for Shocked Single Crystals. AIP Conference Proceedings, 2006, , .	0.3	1