Hong Sun

List of Publications by Year
in descending order

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46 papers	2,329 citations	304743 22 h-index	223800 46 g-index
46 all docs	46 docs citations	46 times ranked	1742 citing authors

#	Article	IF	Citations
1	First-principles calculation of the superconducting transition inMgB2within the anisotropic Eliashberg formalism. Physical Review B, 2002, 66, .	3.2	323
2	Harder than Diamond: Superior Indentation Strength of Wurtzite BN and Lonsdaleite. Physical Review Letters, 2009, 102, 055503.	7.8	250
3	Superhard CubicBC2NCompared to Diamond. Physical Review Letters, 2004, 93, 195504.	7.8	214
4	Structural forms of cubicBC2N. Physical Review B, 2001, 64, .	3.2	159
5	Is Osmium Diboride An Ultra-Hard Material?. Journal of the American Chemical Society, 2008, 130, 7200-7201.	13.7	132
6	Structural deformation, strength, and instability of cubic BN compared to diamond: A first-principles study. Physical Review B, 2006, 73, .	3.2	125
7	Atomistic Deformation Modes in Strong Covalent Solids. Physical Review Letters, 2005, 94, 145505.	7.8	119
8	Large indentation strain-stiffening in nanotwinned cubic boron nitride. Nature Communications, 2014, 5, 4965.	12.8	105
9	First-principles studies of structural and electronic properties of hexagonalBC5. Physical Review B, 2006, 73, .	3.2	75
10	Extreme Mechanics of Probing the Ultimate Strength of Nanotwinned Diamond. Physical Review Letters, 2016, 117, 116103.	7.8	75
11	Colossal Shear-Strength Enhancement of Low-Density CubicBC2Nby Nanoindentation. Physical Review Letters, 2007, 98, 135505.	7.8	72
12	Indentation strength of ultraincompressible rhenium boride, carbide, and nitride from first-principles calculations. Physical Review B, 2012, 86, .	3.2	58
13	Soft Bond-Deformation Paths in Superhard<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>Î³</mml:mi></mml:math>-Boron. Physical Review Letters, 2010, 105, 215503.	7.8	55
14	Strain dependent bonding in solidC3N4: High elastic moduli but low strength. Physical Review B, 2006, 73, .	3.2	52
15	Unexpectedly low indentation strength of WB<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>3</mml:mn></mml:msub></mml:math>and MoB<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>3</mml:mn></mml:msub></mml:math>from first principles. Physical Review B, 2012, 86, .	3.2	49
16	Prediction of a sandwichlike conducting superhard boron carbide: First-principles calculations. Physical Review B, 2006, 73, .	3.2	48
17	Fundamental constraints on the strength of transition-metal borides: The case of CrB<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>4</mml:mn></mml:msub></mml:math>. Physical Review B, 2013, 87, .	3.2	46
18	First-principles calculation of the indentation strength of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi mathvariant="normal">FeB</mml:mi><mml:mn>4</mml:mn></mml:msub></mml:math>. Physical Review B, 2014, 90, .	3.2	36

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19	Ideal tensile and shear strength of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>Î²</mml:mi><mml:mtext>â^'</mml:mtext><mml:msub><mml:mi mathvariant="normal">C</mml:mi><mml:mn>3</mml:mn></mml:msub><mml:msub><mml:mi mathvariant="normal">N</mml:mi><mml:mn>4</mml:mn></mml:msub></mml:mrow></mml:math>from first-principles calculations. Physical Review B, 2007, 76, .	3.2	29
20	Diverging synthesis routes and distinct properties of cubicBC2Nat high pressure. Physical Review B, 2004, 70, .	3.2	26
21	Interlayer stacking and nature of the electronic band gap in graphiticBC2N: First-principles pseudopotential calculations. Physical Review B, 2006, 73, .	3.2	26
22	Ideal strength and structural instability of aluminum at finite temperatures. Physical Review B, 2012, 86, .	3.2	24
23	Indenter-angle-sensitive fracture modes and stress response at incipient plasticity. Physical Review B, 2009, 79, .	3.2	20
24	The Deformations of Carbon Nanotubes under Cutting. ACS Nano, 2017, 11, 8464-8470.	14.6	20
25	Reply to â€œComment on â€˜First-principles calculation of the superconducting transition inMgB2within the anisotropic Eliashberg formalismâ€™ â€• Physical Review B, 2004, 69, .	3.2	19
26	Ab initiostructural identification of high density cubicBC2N. Physical Review B, 2006, 73, .	3.2	17
27	Anomalous paramagnetism in graphene on hexagonal boron nitride substrates. Physical Review B, 2011, 84, .	3.2	17
28	Influence of carbon content on the strength of cubic<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>BC</mml:mtext></mml:mrow><mml:mi>x</mml:mi></mml:msub> A first-principles study. Physical Review B, 2008, 77, .	3.2	12
29	Superior magnetic and mechanical property of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mtext>MnFe</mml:mtext><mml:mn>2</mml:mn></mml:msub> by electron correlation and lattice anharmonicity. Physical Review B, 2015, 91, .	3.2	12
30	Layered Phosphorus-Rich Phosphide Composite as a Stable, High-Capacity Anode for Sodium Ion Batteries. ACS Applied Energy Materials, 2019, 2, 4309-4315.	5.1	11
31	Superhardness Induced by Grain Boundary Vertical Sliding in (001)-textured ZrB<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si3.svg"><mml:msub><mml:mrow /><mml:mn>2</mml:mn></mml:msub></mml:math> and TiB<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si3.svg"><mml:msub><mml:mrow /><mml:mn>2</mml:mn></mml:msub></mml:math> Nano Films. Acta Materialia, 2021, 218, 117212.	7.9	11
32	Unexpected structural softening of interstitial boron solid solution WB3+x. Applied Physics Letters, 2014, 105, 211901.	3.3	10
33	The Direct Synthesis of Graphene on a Gallium Nitride Substrate. Chemical Vapor Deposition, 2014, 20, 125-129.	1.3	10
34	Anomalous strength anisotropy of Î³â€²-Fe4N identified by first-principles calculations. Applied Physics Letters, 2009, 94, 151914.	3.3	9
35	Profound softening and shear-induced melting of diamond under extreme conditions: An ab-initio molecular dynamics study. Carbon, 2019, 155, 361-368.	10.3	9
36	Understanding shear-induced <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>s</mml:mi><mml:msup><mml:mi>p</mml:mi><mml:mn> -to- <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>s</mml:mi><mml:msup><mml:mi>p</mml:mi><mml:mn> phase transitions in glassy carbon at low pressure using first-principles calculations. Physical Review B, 2018, 98, .	3.2	8

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37	Extreme static compression of carbon to terapascal pressures. Carbon, 2019, 144, 161-170.	10.3	8
38	Comment on â€œSuperhard Pseudocubic<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>BC</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:mi mathvariant="normal">N</mml:mi></mml:math>Superlatticesâ€• Physical Review Letters, 2007, 99, 159601; author reply 159602.	7.8	7
39	Angle-dependent magnetoresistance as a sensitive probe of the charge density wave in quasi-one-dimensional semimetal Ta2NiSe7. Applied Physics Letters, 2018, 113, .	3.3	5
40	Manipulation of giant negative Poisson's ratios in three-dimensional graphene networks. Physical Review B, 2020, 102, .	3.2	5
41	Effects of boron defects on mechanical strengths of TiB₂ at high temperature: ab initio molecular dynamics studies. Physical Chemistry Chemical Physics, 2020, 22, 6560-6571.	2.8	5
42	Chemical anisotropy in diamondlike<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>BC</mml:mtext></mml:mrow><mml:mn>2</mml:mn></mml:msub><mml:mi mathvariant="normal">N</mml:mi></mml:mrow></mml:math>: First-principles calculations. Physical Review B, 2010, 81, .	3.2	4
43	Pressure-constrained deformation and superior strength: Compressed graphite versus diamond. Physical Review B, 2013, 88, .	3.2	4
44	Effects of temperature on strain engineering and transition-metal adatom magnetization in phosphorene: Ab initio molecular dynamics studies. Physical Review B, 2021, 103, .	3.2	4
45	Reply to â€˜Anisotropy governs strain stiffening in nanotwinned-materialsâ€™. Nature Communications, 2018, 9, 1585.	12.8	2
46	Mechanical strength and band alignment of BAs/GaN heterojunction polar interfaces: A first-principles calculation study. Physical Review Materials, 2022, 6, .	2.4	2