Miroslav Cerny

List of Publications by Year
in descending order

54 papers	1,019 citations	471509 17 h-index	454955 30 g-index
55 all docs	55 docs citations	55 times ranked	723 citing authors

#	Article	IF	Citations
1	Ab initio calculations of mechanical properties: Methods and applications. Progress in Materials Science, 2015, 73, 127-158.	32.8	114
2	Calculations of theoretical strength: State of the art and history. Journal of Computer-Aided Materials Design, 2004, 11, 1-28.	0.7	101
3	Ab initiocalculations of elastic and magnetic properties of Fe, Co, Ni, and Cr crystals under isotropic deformation. Physical Review B, 2003, 67, .	3.2	74
4	Ab initiocalculations of ideal tensile strength and mechanical stability in copper. Journal of Physics Condensed Matter, 2004, 16, 1045-1052.	1.8	61
5	Effect of normal stress on the ideal shear strength in covalent crystals. Physical Review B, 2008, 77, .	3.2	52
6	Ideal tensile strength of cubic crystals under superimposed transverse biaxial stresses from first principles. Physical Review B, 2010, 82, .	3.2	51
7	Influence of superimposed biaxial stress on the tensile strength of perfect crystals from first principles. Physical Review B, 2007, 76, .	3.2	46
8	Interface-induced electronic structure toughening of nitride superlattices. Surface and Coatings Technology, 2017, 325, 410-416.	4.8	34
9	The theoretical tensile strength of fcc crystals predicted from shear strength calculations. Journal of Physics Condensed Matter, 2009, 21, 145406.	1.8	29
10	Ab initio tensile tests of grain boundaries in the fcc crystals of Ni and Co with segregated sp-impurities. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2016, 669, 218-225.	5.6	29
11	Correlating structural and mechanical properties of AlN/TiN superlattice films. Scripta Materialia, 2019, 165, 159-163.	5.2	29
12	Influence of normal stress on theoretical shear strength of fcc metals. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2008, 483-484, 692-694.	5.6	25
13	Atomistic approaches to cleavage of interfaces. Modelling and Simulation in Materials Science and Engineering, 2019, 27, 035007.	2.0	24
14	Can twinning stabilize B19â€² structure in NiTi martensite?. Intermetallics, 2011, 19, 1567-1572.	3.9	21
15	Ab initio calcuation of ideal strength for cubic crystals under three-axial tension. European Physical Journal D, 1999, 49, 1495-1501.	0.4	20
16	The theoretical shear strength of fcc crystals under superimposed triaxial stress. Acta Materialia, 2010, 58, 3117-3123.	7.9	19
17	Shear instabilities in perfect bcc crystals during simulated tensile tests. Physical Review B, 2013, 87, .	3.2	17
18	Elastic stability of magnetic crystals under isotropic compression and tension. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2007, 462, 432-435.	5.6	16

#	Article	IF	Citations
19	Stability of fcc crystals under hydrostatic loading. Journal of Alloys and Compounds, 2004, 378, 159-162.	5.5	15
20	Influence of superimposed normal stress on the <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si17.gif" overflow="scroll"><mml:mrow><mml:mo stretchy="false">ã€ˆ</mml:mo><mml:mn>1</mml:mn><mml:mspace width="0.12em" /><mml:mn>1</mml:mn><mml:mspace width="0.12em" /><mml:mn>2</mml:mn><mml:mo stretchy="false">ã€‰</mml:mo><mml:mo stretchy="false">{</mml:mo><mml:mn>1</mml:mn><mml:mspace	3.0	14
21	Influence of superimposed normal stress on shear strength of perfect bcc crystals. Computational Materials Science, 2010, 47, 907-910.	3.0	14
22	Mechanical stability of Ni and Ir under hydrostatic and uniaxial loading. Modelling and Simulation in Materials Science and Engineering, 2015, 23, 055010.	2.0	14
23	Dynamic stability of fcc crystals under isotropic loading from first principles. Journal of Physics Condensed Matter, 2012, 24, 215403.	1.8	13
24	Strength of bcc crystals under combined shear and axial loading from first principles. Computational Materials Science, 2012, 55, 337-343.	3.0	12
25	Ab initio analysis of theoretical isotropic strength and elasticity of nickel aluminide compounds. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2004, 387-389, 923-925.	5.6	11
26	Stability and strength of covalent crystals under uniaxial and triaxial loading from first principles. Journal of Physics Condensed Matter, 2013, 25, 035401.	1.8	11
27	On the effect of deformation twins on stability of B19â€² structure in NiTi martensite. Computational Materials Science, 2014, 87, 107-111.	3.0	11
28	Theoretical Strength of Metals and Intermetallics from First Principles. Materials Science Forum, 2005, 482, 33-38.	0.3	10
29	The theoretical strength of fcc crystals under multiaxial loading. Computational Materials Science, 2011, 50, 2257-2261.	3.0	10
30	Elastic properties of B19â€™ structure of NiTi alloy under uniaxial and hydrostatic loading from first principles. Strength of Materials, 2008, 40, 12-15.	0.5	9
31	Multiscale modelling of nanoindentation test in copper crystal. Engineering Fracture Mechanics, 2008, 75, 3755-3762.	4.3	9
32	The origin of lattice instability in bcc tungsten under triaxial loading. Philosophical Magazine, 2017, 97, 2971-2984.	1.6	9
33	Ab initio aided strain gradient elasticity theory in prediction of nanocomponent fracture. Mechanics of Materials, 2019, 136, 103074.	3.2	9
34	A novel multiscale approach to brittle fracture of nano/microâ€sized components. Fatigue and Fracture of Engineering Materials and Structures, 2020, 43, 1630-1645.	3.4	9
35	Elasticity and Stability of Fe-P Ordered Systems from First Principles. Materials Science Forum, 2005, 482, 135-138.	0.3	8
36	Higher-energy Structures and Stability of Cu and Al Crystals Along Displacive Transformation Paths. Journal of Computer-Aided Materials Design, 2006, 12, 161-173.	0.7	8

#	Article	IF	Citations
37	Influence of normal stress on shear strength along ã€ˆ111ã€‰{110} and ã€ˆ111ã€‰{112} deformation paths in B2 NiTi alloy from first principles. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2008, 481-482, 247-249.	5.6	7
38	Tensile Strength of Perfect Cubic Crystals under Superimposed Transverse Plain Stress. Materials Science Forum, 2008, 567-568, 73-76.	0.3	6
39	Multiaxial stressâ€“strain response and displacive transformations in NiTi alloy from first principles. Acta Materialia, 2016, 109, 223-229.	7.9	6
40	Impact of Antiphase Boundaries on Structural, Magnetic and Vibrational Properties of Fe3Al. Materials, 2020, 13, 4884.	2.9	6
41	Energetics of NiTi allotropes under uniaxial compression. Scripta Materialia, 2017, 133, 92-95.	5.2	4
42	Extraordinary Response of H-Charged and H-Free Coherent Grain Boundaries in Nickel to Multiaxial Loading. Crystals, 2020, 10, 590.	2.2	4
43	On the effect of supercell size and strain localization in computational tensile tests. Modelling and Simulation in Materials Science and Engineering, 2020, 28, 065011.	2.0	4
44	First Principles Study of Ideal Composites Reinforced by Coherent Nano-Fibres. Key Engineering Materials, 0, 465, 73-76.	0.4	3
45	The [100] Compressive Strength of Perfect Cubic Crystals under Superimposed Biaxial Stresses. Key Engineering Materials, 0, 465, 183-186.	0.4	3
46	Strength of FePd/MgO and FePt/MgO interfaces from first principles. Modelling and Simulation in Materials Science and Engineering, 2018, 26, 035002.	2.0	3
47	Ab initio study of the theoretical strength and magnetism of the Feâˆ’Pd, Feâˆ’Pt and Feâˆ’Cu nanocomposites. Journal of Magnetism and Magnetic Materials, 2019, 469, 100-107.	2.3	3
48	The Impact of Vibrational Entropy on the Segregation of Cu to Antiphase Boundaries in Fe3Al. Magnetochemistry, 2021, 7, 108.	2.4	3
49	Onset of Microplasticity in Copper Crystal during Nanoindentation. Key Engineering Materials, 2007, 348-349, 801-804.	0.4	2
50	Modeling Load-displacement Curve and Pop-in Effect in Nanoindentation Tests. , 2014, 3, 1111-1116.		2
51	Influence of comp ound twinning on Youngâ€™s moduli in NiTi martensite. , 2009, , .		2
52	Stabilizing Effect of (100) Compound Twinning in NiTi Martensite. Key Engineering Materials, 0, 465, 81-84.	0.4	1
53	Stress Coupling Effect on Ideal Shear Strength: Tungsten as a Case Study. Advances in Materials Science and Engineering, 2016, 2016, 1-5.	1.8	1
54	Dynamic Stability of Ni FCC Crystal under Isotropic Tension. Key Engineering Materials, 0, 592-593, 47-50.	0.4	0