

# Qing-Miao Hu

## List of Publications by Year in descending order

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126907

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138  
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138  
docs citations

138  
times ranked

3393  
citing authors

#	ARTICLE	IF	CITATIONS
1	Phase decomposition and strengthening in HfNbTaTiZr high entropy alloy from first-principles calculations. <i>Acta Materialia</i> , 2022, 225, 117582.	7.9	23
2	Alloying Effect on the Stability of $\text{Ti}_5\text{Si}_3$ from First-Principles Study. <i>Physica Status Solidi (B): Basic Research</i> , 2022, 259, .	1.5	2
3	Theoretical design of BAs/WX <sub>2</sub> (X=As, Se) heterostructures for high-performance photovoltaic applications from DFT calculations. <i>Applied Surface Science</i> , 2022, 599, 153865.	6.1	5
4	Generalized stacking fault energies and critical resolved shear stresses of random $\beta$ -Ti-Al alloys from first-principles calculations. <i>Journal of Alloys and Compounds</i> , 2021, 850, 156314.	5.5	29
5	Effects of pressure on the generalized stacking fault energy and twinning propensity of face-centered cubic metals. <i>Journal of Alloys and Compounds</i> , 2021, 866, 158869.	5.5	20
6	New insights into $\beta$ -embrittlement in high misfit metastable $\beta$ -titanium alloys: Mechanically-driven $\beta$ -mediated amorphization. <i>Materials and Design</i> , 2021, 205, 109724.	7.0	6
7	Twinning pathways in Fe and Fe-Cr alloys from first-principles theory. <i>Acta Materialia</i> , 2021, 215, 117094.	7.9	9
8	Interaction between Al and other alloying atoms in $\beta$ -Ti for designing high temperature titanium alloy. <i>Computational Materials Science</i> , 2021, 197, 110620.	3.0	10
9	Structural stability and mechanical properties of B2 ordered refractory AlNbTiVZr high entropy alloys. <i>Journal of Alloys and Compounds</i> , 2021, 886, 161289.	5.5	15
10	Precipitates and alloying elements distribution in near $\beta$ titanium alloy Ti65. <i>Journal of Materials Science and Technology</i> , 2020, 36, 91-96.	10.7	39
11	Ab initio study of the elastic properties of body-centered cubic Ti-Mo-based alloys. <i>Computational Materials Science</i> , 2020, 172, 109320.	3.0	12
12	Understanding crystallographic orientation dependent dissolution rates of 90Cu-10Ni alloy: New insights based on AFM/SKPFM measurements and coordination number/electronic structure calculations. <i>Corrosion Science</i> , 2020, 164, 108320.	6.6	24
13	Phase stability of TiAl-X (X=V, Nb, Ta, Cr, Mo, W, and Mn) alloys. <i>Journal of Alloys and Compounds</i> , 2020, 819, 153291.	5.5	33
14	Large influence of vacancies on the elastic constants of cubic epitaxial tantalum nitride layers grown by reactive magnetron sputtering. <i>Acta Materialia</i> , 2020, 184, 254-266.	7.9	26
15	Influence of lattice distortion on stacking fault energies of CoCrFeNi and Al-CoCrFeNi high entropy alloys. <i>Journal of Alloys and Compounds</i> , 2020, 846, 156321.	5.5	49
16	Unconventional non-uniform local lattice distortion in dilute Ti-Mo solid solution. <i>Acta Materialia</i> , 2020, 197, 91-96.	7.9	16
17	New insights into formation mechanism of interfacial twin boundary $\beta$ -phase in metastable $\beta$ -Ti alloys. <i>Materials Characterization</i> , 2020, 164, 110363.	4.4	8
18	The effect of Co and Cr substitutions for Ni on mechanical properties and plastic deformation mechanism of FeMnCoCrNi high entropy alloys. <i>Journal of Materials Science and Technology</i> , 2020, 48, 146-155.	10.7	27

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19	Design of defected TaN supercells dataset for structural and elastic properties from ab initio simulations and comparison to experimental data. <i>Data in Brief</i> , 2020, 30, 105411.	1.0	1
20	Prediction on temperature dependent elastic constants of $\alpha$ -metal Al by AIMD and QHA. <i>Journal of Materials Science and Technology</i> , 2020, 45, 92-97.	10.7	7
21	Effect of alloying elements on lattice misfit and elasticities of Ni-based single crystal superalloys by first-principle calculations. <i>Solid State Communications</i> , 2020, 310, 113852.	1.9	8
22	Atomic scale modeling of interstitial loop-induced strengthening in nickel. <i>Nuclear Instruments &amp; Methods in Physics Research B</i> , 2019, 452, 36-39.	1.4	0
23	Atomic bonding and electronic stability of the binary sigma phase. <i>Journal of Alloys and Compounds</i> , 2019, 811, 152053.	5.5	7
24	First-principles study of dopant stability and related optical properties in CdSiP <sub>2</sub> crystal. <i>Journal of Alloys and Compounds</i> , 2019, 802, 310-317.	5.5	2
25	Site Occupation of Nb in $\hat{\gamma}$ -TiAl: Beyond the Point Defect Gas Approximation. <i>Acta Metallurgica Sinica (English Letters)</i> , 2019, 32, 1511-1520.	2.9	5
26	Dynamic recrystallization initiated by direct grain reorientation at high-angle grain boundary in $\hat{\alpha}$ -titanium. <i>Journal of Materials Research</i> , 2019, 34, 1608-1621.	2.6	4
27	Origin of the ductile-to-brittle transition of metastable $\hat{\beta}$ -titanium alloys: Self-hardening of $\hat{\beta}$ -precipitates. <i>Acta Materialia</i> , 2019, 170, 187-204.	7.9	76
28	Integrated modeling of molar volume of the sigma phase aided by first-principles calculations. <i>Journal of Alloys and Compounds</i> , 2019, 791, 994-1004.	5.5	6
29	Properties of $\hat{\beta}$ / $\hat{\alpha}$ phase interfaces in Ti and their implications on mechanical properties and $\hat{\beta}$ morphology. <i>Computational Materials Science</i> , 2019, 158, 49-57.	3.0	6
30	Experimental and DFT characterization of interphase boundaries in titanium and the implications for $\hat{\beta}$ -assisted $\hat{\alpha}$ phase precipitation. <i>Acta Materialia</i> , 2018, 151, 406-415.	7.9	30
31	On the abnormal fast diffusion of solute atoms in $\hat{\alpha}$ -Ti: A first-principles investigation. <i>Journal of Alloys and Compounds</i> , 2018, 740, 156-166.	5.5	28
32	Influence of atomic mixing and atomic order on molar volume of the binary sigma phase. <i>Intermetallics</i> , 2018, 98, 95-105.	3.9	4
33	The surface energy and stress of metals. <i>Surface Science</i> , 2018, 674, 51-68.	1.9	68
34	Strain rate-induced plasticity in bcc $\hat{\beta}$ -Ti alloy single crystal micropillars containing brittle $\hat{\beta}$ -precipitates. <i>Materials and Design</i> , 2018, 137, 404-413.	7.0	18
35	Influence of atomic order on the enthalpy of formation and bulk modulus of the sigma phase. <i>Fluid Phase Equilibria</i> , 2018, 459, 238-243.	2.5	6
36	Thermal vacancy formation enthalpy of random solid solutions: The FePt case. <i>Computational Materials Science</i> , 2018, 143, 206-211.	3.0	5

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37	Mapping deformation mechanisms in lamellar titanium aluminide. <i>Acta Materialia</i> , 2018, 144, 835-843.	7.9	27
38	First-principles investigations of $\epsilon$ -phase variant selection during athermal $\beta$ -phase transformation of binary Ti-xMo alloy. <i>Computational Materials Science</i> , 2018, 155, 524-533.	3.0	10
39	Effect of $\beta$ (110) texture intensity on $\beta$ -phase transformation in near $\beta$ titanium alloy. <i>Acta Materialia</i> , 2017, 126, 372-382.	7.9	102
40	Composition-dependent elastic properties in TiNi-Nb from first principle calculations. <i>Journal of Alloys and Compounds</i> , 2017, 706, 260-266.	5.5	11
41	Direct observation of solute interstitials and their clusters in Mg alloys. <i>Materials Characterization</i> , 2017, 128, 226-231.	4.4	10
42	Atomic self-diffusion anisotropy of HCP metals from first-principles calculations. <i>Computational Materials Science</i> , 2017, 128, 236-242.	3.0	12
43	CPA descriptions of random Cu-Au alloys in comparison with SQS approach. <i>Computational Materials Science</i> , 2017, 128, 302-309.	3.0	21
44	Chemical Origin of Termination-Functionalized MXenes: $\text{Ti}_3\text{C}_2\text{T}_2$ as a Case Study. <i>Journal of Physical Chemistry C</i> , 2017, 121, 19254-19261.	3.1	194
45	Origin of the abnormal diffusion of transition metal atoms in rutile. <i>Physical Review B</i> , 2017, 95, .	3.2	5
46	Longitudinal sound velocities, elastic anisotropy, and phase transition of high-pressure cubic $\text{Hf}_2\text{O}_7$ ice to 82 GPa. <i>Physical Review B</i> , 2017, 96, .	3.2	22
47	Stacking fault energy of C-alloyed steels: The effect of magnetism. <i>Acta Materialia</i> , 2017, 122, 72-81.	7.9	30
48	Alloying element's substitution in titanium alloy with improved oxidation resistance and enhanced magnetic properties. <i>Journal of Magnetism and Magnetic Materials</i> , 2017, 422, 20-24.	2.3	4
49	Local lattice distortion in high-entropy alloys. <i>Physical Review Materials</i> , 2017, 1, .	2.4	144
50	First-principles investigation of effects of alloying elements on Ti/TiO <sub>2</sub> interface. <i>Metallic Materials</i> , 2017, 55, 291-294.	0.3	0
51	Adsorption of oxygen on low-index surfaces of the TiAl <sub>3</sub> alloy. <i>Journal of Experimental and Theoretical Physics</i> , 2016, 123, 991-1007.	0.9	13
52	First-principles study of phase stability and elastic properties of binary Ti-xTM (TM = V,Cr,Nb,Mo) and ternary Ti-15TM-yAl alloys. <i>Materials and Design</i> , 2016, 110, 80-89.	7.0	39
53	Cooperative effect of silicon and other alloying elements on creep resistance of titanium alloys: insight from first-principles calculations. <i>Scientific Reports</i> , 2016, 6, 30611.	3.3	21
54	Strong deformation anisotropies of $\epsilon$ -phase precipitates and strengthening mechanisms in Ti-10V-2Fe-3Al alloy micropillars: Precipitates shearing vs precipitates disordering. <i>Acta Materialia</i> , 2016, 117, 68-80.	7.9	78



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73	Basal-plane stacking fault energy of hexagonal close-packed metals based on the Ising model. Acta Materialia, 2013, 61, 1136-1145.	7.9	44
74	The effect of long-range order on the elastic properties of Cu <sub>3</sub> Au. Journal of Physics Condensed Matter, 2013, 25, 085401.	1.8	20
75	Magnetic ordering and physical stability of X <sub>2</sub> Mn <sub>1+x</sub> Sn <sub>1-x</sub> (X=Ru, Os, Co, Rh, Ni, Pd, Cu, and Ag) Heusler alloys from a first-principles study. Physical Review B, 2013, 88, .	3.2	11
76	Lattice parameters and relative stability of $\hat{\Gamma}$ - $\hat{\Gamma}$ phase in binary titanium alloys from first-principles calculations. Solid State Communications, 2013, 159, 70-75.	1.9	47
77	Trapping of interstitial defects: filling the gap between the experimental measurements and DFT calculations. Journal of Physics Condensed Matter, 2013, 25, 435402.	1.8	3
78	<i>Ab initio</i> investigation of the elastic properties of Ni <sub>3</sub> Fe. Physical Review B, 2013, 88, .	3.2	14
79	The effect of Al on the 475 °C embrittlement of Fe-Cr alloys. Computational Materials Science, 2013, 74, 101-106.	3.0	47
80	Magnetic properties and temperature-dependent half-metallicity of Co <sub>2</sub> Mn(Ga <sub>1-x</sub> Z <sub>x</sub> ) (Z=Si, Ge, Sn) from first-principles calculation. Journal of Physics Condensed Matter, 2013, 25, 156003.	1.8	6
81	First-principles investigations of oxygen adsorption at TiNi surface and the TiO <sub>2</sub> /TiO <sub>2</sub> -TiNi interface. Physica B: Condensed Matter, 2013, 426, 118-126.	2.7	17
82	First-principles study of fcc-Ag/bcc-Fe interfaces. Physical Review B, 2013, 87, .	3.2	64
83	INVESTIGATION ON EFFECTS OF ALLOYING ON OXIDATION RESISTANCE OF $\hat{\Gamma}$ <sub>3</sub> -TiAl BY USING FIRST PRINCIPLE. <i>linshu Xuebao/Acta Metallurgica Sinica</i> , 2013, 49, 385.	0.3	6
84	Phase stability of Ni <sub>3</sub> Fe		

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91	Role of magnetic and atomic ordering in the martensitic transformation of Ni-Mn-In from a first-principles study. <i>Physical Review B</i> , 2012, 86, .	3.2	48
92	Composition dependent elastic modulus and phase stability of Ni <sub>2</sub> MnGa based ferromagnetic shape memory alloys. <i>Science China Technological Sciences</i> , 2012, 55, 295-305.	4.0	16
93	Electronic and magnetic properties of Fe <sub>3</sub> ~ <sup>x</sup> Cr x Si ordered alloys from first principles. <i>Journal of Materials Science</i> , 2012, 47, 797-803.	3.7	14
94	Energetic effects of dopants on the eutectoid decomposition of Nb~ <sup>Si</sup> in situ composites. <i>Philosophical Magazine Letters</i> , 2011, 91, 640-647.	1.2	5
95	Strengthening of $\hat{I}^3$ -TiAl-Nb by short-range ordering of point defects. <i>Intermetallics</i> , 2011, 19, 793-796.	3.9	39
96	Surface properties of 3<i>d</i> transition metals. <i>Philosophical Magazine</i> , 2011, 91, 3627-3640.	1.6	45
97	Stacking fault energies of Mn, Co and Nb alloyed austenitic stainless steels. <i>Acta Materialia</i> , 2011, 59, 5728-5734.	7.9	119
98	First-principles investigations of the five-layer modulated martensitic structure in Ni <sub>2</sub> Mn(Al Ga <sub>1</sub> ~ <sup>x</sup> ) alloys. <i>Acta Materialia</i> , 2011, 59, 5938-5945.	7.9	24
99	Composition and orientation dependence of the interfacial energy in Fe~ <sup>Cr</sup> stainless steel alloys. <i>Physica Status Solidi (B): Basic Research</i> , 2011, 248, 2087-2090.	1.5	3
100	The effect of defects on the electronic and magnetic properties of Fe<sub>2</sub>MnSi Heusler alloy. <i>Physica Status Solidi (B): Basic Research</i> , 2011, 248, 2893-2898.	1.5	24
101	Theoretical investigation of the effects of composition and atomic disordering on the properties of Ni <sub>2</sub> Mn(Al <sub>1</sub> ~ <sup>x</sup> Ga <sub>x</sub> ) alloy. <i>Acta Materialia</i> , 2011, 59, 971-980.	7.9	28
102	Site preference and elastic properties of Fe-, Co-, and Cu-doped Ni<math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow /></mml:msub></mml:mrow></math>MnGa shape memory alloys from first principles. <i>Physical Review B</i> , 2011, 84, .	3.2	56
103	<math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>P</mml:mi></mml:mrow></math><math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /></mml:msub></math> of yttrium above 206 GPa from first principles. <i>Physical Review B</i> , 2011, 84, .	3.2	27
104	Interplay between temperature and composition effects on the martensitic transformation in Ni <sub>2+x</sub> Mn <sub>1</sub> ~ <sup>x</sup> Ga alloys. <i>Applied Physics Letters</i> , 2011, 98, 261903.	3.3	12
105	Temperature dependence of elastic properties of Ni<math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /></mml:msub></math>Mn<math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /></mml:msub></math>Ga and Ni<math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /></mml:msub></math>. <i>Physical Review B</i> , 2011, .	3.2	27
106	The electronic structure and spin polarization of Fe <sub>3</sub> ~ <sup>x</sup> Mn <sub>x</sub> Si and Fe <sub>3</sub> ~ <sup>y</sup> Mn <sub>Si</sub> y alloys. <i>Journal of Applied Physics</i> , 2010, 107, .	2.5	25
107	First-principles determination of the<math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /></mml:msub></math> energy in Fe-Cr alloys. <i>Physical Review B</i> , 2010, 82, .	3.2	32
108	Magnetoelastic effects in<math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /></mml:msub></math>Ni<math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /></mml:msub></math> from first-principles calculations. <i>Physical Review B</i> , 2010, 81, .	3.2	18

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109	First-principles investigation of the composition dependent properties of Ni <sub>2+x</sub> Mn <sub>1-x</sub> shape-memory alloys. Physical Review B, 2010, 82, .	3.2	60
110	First-principles study of the elastic properties of In-Tl random alloys. Physical Review B, 2010, 82, .	3.2	23
111	Static equation of state of bcc iron. Physical Review B, 2010, 82, .	3.2	35
112	Site occupancy, magnetic moments, and elastic constants of off-stoichiometric $\text{Ni}_{1-x}\text{Mn}_x$ first-principles calculations. Physical Review B, 2009, 79, .	3.2	64
113	Rare earth elements in $\text{Ti}_{1-x}\text{Zr}_x$ : A first-principles investigation. Computational Materials Science, 2009, 46, 1187-1191.	3.0	11
114	Composition-dependent elastic properties and electronic structures of off-stoichiometric TiNi from first-principles calculations. Acta Materialia, 2008, 56, 4913-4920.	7.9	26
115	Hardness and elastic properties of covalent/ionic solid solutions from first-principles theory. Journal of Applied Physics, 2008, 103, .	2.5	16
116	First-principles Investigations of Point Defect Behavior and Elastic Properties of TiNi Based Alloys. Materials Research Society Symposia Proceedings, 2008, 1128, 90301.	0.1	2
117	Phase stability and elastic modulus of Ti alloys containing Nb, Zr, and/or Sn from first-principles calculations. Applied Physics Letters, 2008, 93, .	3.3	80
118	Elastic stability of $\text{Ti}^2$ under pressure calculated using a first-principles plane-wave pseudopotential method. Physical Review B, 2008, 78, .	3.2	32
119	Effect of Zr on the properties of (TiZr)Ni alloys from first-principles calculations. Physical Review B, 2007, 76, .	3.2	44
120	Interaction between hydrogen and the alloying atom in palladium. Physical Review B, 2007, 76, .	3.2	21
121	Towards an Exact Treatment of Exchange and Correlation in Materials: Application to the $\text{CO}$ Adsorption Puzzle and Other Systems. Physical Review Letters, 2007, 98, 176103.	7.8	110
122	Predicting hardness of covalent-ionic solid solution from first-principles theory. Applied Physics Letters, 2007, 91, .	3.3	14
123	Point defects and their interaction in TiNi from first-principles calculations. Physical Review B, 2007, 75, .	3.2	30
124	Features of hydrogen interaction in the Pd-based alloys with 3d transition metals. Journal of Surface Investigation, 2007, 1, 754-758.	0.5	3
125	Mechanical properties of structural materials from first-principles. Current Opinion in Solid State and Materials Science, 2006, 10, 19-25.	11.5	34
126	Super-elastic titanium alloy with unstable plastic deformation. Applied Physics Letters, 2005, 87, 091906.	3.3	204



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127	Concentrated Point Defects in and Order-Disorder Transition Temperature of Intermetallic Compounds. <i>Physical Review Letters</i> , 2004, 92, 185505.	7.8	19
128	Bonding characteristics of micro-alloyed B2 NiAl in relation to site occupancies and phase stability. <i>Acta Materialia</i> , 2003, 51, 5545-5554.	7.9	19
129	First-principles investigations of ordering in binary $\hat{\text{I}}\pm$ -Ti solid solutions. <i>Philosophical Magazine</i> , 2003, 83, 217-229.	1.6	10
130	Geometric and electronic structure of $\text{Ti}_2\text{AlX}$ ( $\text{X}=\text{V}, \text{Nb}, \text{or Ta}$ ). <i>Physical Review B</i> , 2003, 68, .	3.2	37
131	Energetics and electronic structure of grain boundaries and surfaces of B- and H-doped Ni <sub>3</sub> Al. <i>Physical Review B</i> , 2003, 67, .	3.2	48
132	First-principles investigation of solute-hydrogen interaction in a $\hat{\text{I}}\pm$ -Ti solid solution. <i>Physical Review B</i> , 2002, 66, .	3.2	22
133	First-principles investigations of the solute-vacancy interaction energy and its effect on the creep properties of $\hat{\text{I}}\pm$ -titanium. <i>Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties</i> , 2001, 81, 2809-2821.	0.6	17
134	Study of Nickel Segregation at the TiNi-Titanium Oxide Interface. <i>Materials Science Forum</i> , 0, 738-739, 269-273.	0.3	4