Ferenc Tasnadi

List of Publications by Year
in descending order

73	2,722	147566	189595
papers	citations	31 h-index	50 g-index

76	76	76	2461
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Predicting elastic properties of hard-coating alloys using ab-initio and machine learning methods. Npj Computational Materials, 2022, 8, .	3.5	16
2	The effect of strain and pressure on the electron-phonon coupling and superconductivity in MgB2â€"Benchmark of theoretical methodologies and outlook for nanostructure design. Journal of Applied Physics, 2022, 131, 063902.	1.1	1
3	Materials synthesis at terapascal static pressures. Nature, 2022, 605, 274-278.	13.7	35
4	High-Pressure Synthesis of Dirac Materials: Layered van der Waals Bonded <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow><mml:mi>BeN</mml:mi></mml:mrow><mml:mrow><mml:mn>4</mml:mn></mml:mrow></r Polymorph. Physical Review Letters, 2021, 126, 175501.	2.9	90
5	Temperature-dependent elastic properties of binary and multicomponent high-entropy refractory carbides. Materials and Design, 2021, 204, 109634.	3.3	26
6	Finite-temperature interplay of structural stability, chemical complexity, and elastic properties of bcc multicomponent alloys from ab initio trained machine-learning potentials. Physical Review Materials, 2021, 5, .	0.9	9
7	Realization of an Ideal Cairo Tessellation in Nickel Diazenide NiN₂: High-Pressure Route to Pentagonal 2D Materials. ACS Nano, 2021, 15, 13539-13546.	7.3	55
8	Efficient prediction of elastic properties of Ti0.5Al0.5N at elevated temperature using machine learning interatomic potential. Thin Solid Films, 2021, 737, 138927.	0.8	4
9	Accurate prediction of high-temperature elastic constants of Ti0.5Al0.5N random alloy. Thin Solid Films, 2021, 735, 138872.	0.8	4
10	Thermodynamic and electronic properties of ReN2 polymorphs at high pressure. Physical Review B, 2021, 104, .	1.1	1
11	Achieving low elastic moduli of bcc Tiâ€"V alloys in vicinity of mechanical instability. AIP Advances, 2020, 10, 105322.	0.6	3
12	Temperature dependence of the Kohn anomaly in bcc Nb from first-principles self-consistent phonon calculations. Physical Review B, 2020, 101, .	1.1	11
13	Highâ€Pressure Synthesis of Metalâ€"Inorganic Frameworks Hf 4 N 20 â‹…N 2 , WN 8 â‹…N 2 , and Os 5 N 28 â‹…3â€‰N 2 with Polymeric Nitrogen Linkers. Angewandte Chemie - International Edition, 2020, 59, 10321-10326.	7.2	36
14	Highâ€Pressure Synthesis of Metalâ€"Inorganic Frameworks Hf₄N₂₀â‹…N₂, WN₈â‹…N₂, and Os₅N₂₈â‹…3â€‰N₂ with Polymeric Nitrogen Linkers. Angewandte Chemie, 2020, 132, 10407-10412.	1.6	8
15	InnenrÃ¼cktitelbild: Highâ€Pressure Synthesis of Metalâ€"Inorganic Frameworks Hf₄N₂₀â‹…N₂, WN₈â‹…N₂, and Os₅N₂₈â‹…3â€‰N₂ with Polymeric Nitrogen Linkers (Angew. Chem.) Tj ETQq1 1 0.784314 rgB	1.6	0
16	Elinvar effect in Î²-Ti simulated by on-the-fly trained moment tensor potential. New Journal of Physics, 2020, 22, 113005.	1.2	20
17	Strength, transformation toughening, and fracture dynamics of rocksalt-structure <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi mathvariant="normal">T</mml:mi><mml:msub><mml:mi mathvariant="normal">i</mml:mi><mml:mrow><mml:mn>1</mml:mn><mml:mo>â^'</mml:mo><mml:mi>x</mml:mi></mml:mrow><mml mathvariant="normal">A</mml:mi><mml:msub><mml:mi mathvariant="normal">l</mml:mi><mml:mi>x</mml:mi></mml:msub><mml:mi mathvariant="normal">N	3.9	12
18	High-pressure synthesis of ultraincompressible hard rhenium nitride pernitride Re2(N2)(N)2 stable at ambient conditions. Nature Communications, 2019, 10, 2994.	5.8	65

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19	Thermal expansion of quaternary nitride coatings. Journal of Physics Condensed Matter, 2018, 30, 135901.	0.7	5
20	High temperature thermodynamics of spinodal decomposition in arc deposited TixNbyAlzN coatings. Materials and Design, 2018, 150, 165-170.	3.3	7
21	Assessing the SCAN functional for itinerant electron ferromagnets. Physical Review B, 2018, 98, .	1.1	64
22	Highâ€Pressure Synthesis of a Nitrogenâ€Rich Inclusion Compound ReN₈â‹…xâ€‰N₂ with Conjugated Polymeric Nitrogen Chains. Angewandte Chemie - International Edition, 2018, 57, 9048-9053.	7.2	70
23	Highâ€Pressure Synthesis of a Nitrogenâ€Rich Inclusion Compound ReN₈â‹…xâ€‰N₂ with Conjugated Polymeric Nitrogen Chains. Angewandte Chemie, 2018, 130, 9186-9191.	1.6	16
24	Fe-N system at high pressure reveals a compound featuring polymeric nitrogen chains. Nature Communications, 2018, 9, 2756.	5.8	153
25	Non-equilibrium vacancy formation energies in metastable alloys â€" A case study ofÂTi0.5Al0.5N. Materials and Design, 2017, 114, 484-493.	3.3	13
26	Systematic ab initio investigation of the elastic modulus in quaternary transition metal nitride alloys and their coherent multilayers. Acta Materialia, 2017, 127, 124-132.	3.8	44
27	Exploring the high entropy alloy concept in (AlTiVNbCr)N. Thin Solid Films, 2017, 636, 346-352.	0.8	27
28	Topological transitions of the Fermi surface of osmium under pressure: an LDA+DMFT study. New Journal of Physics, 2017, 19, 033020.	1.2	10
29	Strong piezoelectric response in stable TiZnN2, ZrZnN2, and HfZnN2 found by ab initio high-throughput approach. Journal of Applied Physics, 2016, 120, .	1.1	17
30	Effects of configurational disorder on the elastic properties of icosahedral boron-rich alloys based on B6O, B13C2, and B4C, and their mixing thermodynamics. Journal of Chemical Physics, 2016, 144, 134503.	1.2	18
31	Growth and thermal stability of TiN/ZrAlN: Effect of internal interfaces. Acta Materialia, 2016, 121, 396-406.	3.8	44
32	Coherency effects on the mixing thermodynamics of cubic<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Ti</mml:mi><mml:mrow><mml:mn>1</mml:mn><mml:mo>−</mml:mo><mml:mi>x</mml:mi></mml:mrow></mml:msub><mml:msub><mml:mi mathvariant="normal">N</mml:mi><mml:mi>y</mml:mi></mml:msub><mml:mo>/</mml:mo><mml:mi>TiN</mml:mi></mml:mrow></mml:math>(001) multilayers. Physical Review B, 2016, 93, .	1.1	10
33	Ab initio calculations and experimental study of piezoelectric Y In1âˆ'N thin films deposited using reactive magnetron sputter epitaxy. Acta Materialia, 2016, 105, 199-206.	3.8	20
34	N and Ti adatom dynamics on stoichiometric polar TiN(111) surfaces. Surface Science, 2016, 649, 72-79.	0.8	32
35	Large piezoelectric response of quarternary wurtzite nitride alloys and its physical origin from first principles. Physical Review B, 2015, 92, .	1.1	41
36	Temperature-dependent elastic properties of Ti1âˆ'xAlxN alloys. Applied Physics Letters, 2015, 107, .	1.5	46

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37	Stabilization of wurtzite Sc0.4Al0.6N in pseudomorphic epitaxial Sc Al1â^'N/In Al1â^'N superlattices. Acta Materialia, 2015, 94, 101-110.	3.8	19
38	Special quasirandom structure method in application for advanced properties of alloys: A study on Ti 0.5 Al 0.5 N and TiN/Ti 0.5 Al 0.5 N multilayer. Computational Materials Science, 2015, 103, 194-199.	1.4	9
39	High temperature phase decomposition in TixZryAlzN. AIP Advances, 2014, 4, .	0.6	13
40	Macroscopic elastic properties of textured ZrN-AlN polycrystalline aggregates: Fromab initiocalculations to grain-scale interactions. Physical Review B, 2014, 90, .	1.1	34
41	Anomalous epitaxial stability of (001) interfaces in ZrN/SiNx multilayers. APL Materials, 2014, 2, 046106.	2.2	10
42	Effect of Al substitution on Ti, Al, and N adatom dynamics on TiN(001), (011), and (111) surfaces. Surface Science, 2014, 630, 28-40.	0.8	37
43	Importance of Correlation Effects in hcp Iron Revealed by a Pressure-Induced Electronic Topological Transition. Physical Review Letters, 2013, 110, 117206.	2.9	58
44	Temperature dependence of TiN elastic constants fromab initiomolecular dynamics simulations. Physical Review B, 2013, 87, .	1.1	78
45	Systematic theoretical search for alloys with increased thermal stability for advanced hard coatings applications. New Journal of Physics, 2013, 15, 095010.	1.2	15
46	Volume matching condition to establish the enhanced piezoelectricity in ternary (Sc,Y)<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mrow><mml:mn>0.5</mml:mn></mml:mrow></mml:msub></mml:math>(Al,Ga,In)<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mrow><mml:mn>0.5</mml:mn></mml:mrow></mml:msub></mml:math>N alloys. Physical Review B, 2013, 87, .	1.1	53
47	High pressure and high temperature stabilization of cubic AlN in Ti0.60Al0.40N. Journal of Applied Physics, 2013, 113, .	1.1	34
48	Ab initioelastic tensor of cubic Ti<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mrow><mml:mn>0.5</mml:mn></mml:mrow></mml:msub></mml:math>Al<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mrow><mml:mn>0.5</mml:mn></mml:mrow></mml:msub></mml:math>N alloys: Dependence of elastic constants on size and shape of the supercell model and their convergence. Physical Review B, 2013, 87, .	1.1	125
49	xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mrow><mml:mn>1</mml:mn><mml:mo>â^'</mml:mo><mml:mi>x</mml:mi></mml:mrow></mml:msub></mml:math>Al<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mrow><mml:mi>x</mml:mi></mml:mrow></mml:msub></mml:math>N(001) surfaces from first principles. Physical Review	1.1	33
50	Elastic constants, composition, and piezoelectric polarization in In<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mrow><mml:mi>x</mml:mi></mml:mrow></mml:msub></mml:math>Al<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mrow><mml:mn>1</mml:mn><mml:mo>â^'</mml:mo><mml:mi>x</mml:mi></mml:mrow></mml:msub></mml:math>N: Fromab initiocalculations to experimental implications for the applicability of Vegard's rule.	1.1	31
51	First-principles study of the SiN<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mrow><mml:mi>x</mml:mi></mml:mrow></mml:msub></mml:math>/TiN(001) interface. Physical Review B, 2012, 85, .	1.1	17
52	Y_xAl_{1â^'x}N thin films. Journal Physics D: Applied Physics, 2012, 45, 422001.	1.3	42
53	Density functional investigation of rhombohedral stacks of graphene: Topological surface states, nonlinear dielectric response, and bulk limit. Physical Review B, 2011, 84, .	1.1	43
54	Phase Stability and Elasticity of TiAlN. Materials, 2011, 4, 1599-1618.	1.3	80

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55	Improving thermal stability of hard coating films via a concept of multicomponent alloying. Applied Physics Letters, 2011, 99, .	1.5	95
56	Significant elastic anisotropy in Ti1â^'xAlxN alloys. Applied Physics Letters, 2010, 97, .	1.5	107
57	Origin of the Anomalous Piezoelectric Response in Wurtzite<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>Sc</mml:mi><mml:mi>x</mml:mi></mml:msub><mml:msub><mml:mi>Al</mml:mi><mml:mr mathvariant="bold">N</mml:mi></mml:math>Alloys. Physical Review Letters, 2010, 104, 137601.	2.9	305
58	Increased electromechanical coupling in wâ^'ScxAl1â^'xN. Applied Physics Letters, 2010, 97, .	1.5	149
59	Elastic properties and electrostructural correlations in ternary scandium-based cubic inverse perovskites: A first-principles study. Physical Review B, 2009, 79, .	1.1	87
60	Stability of the ternary perovskites<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>Sc</mml:mtext></mml:mrow><mml:mn>3</mml:mn></mml:msub> xmlns:mml="http://www.w3.org/1998/Math/MathML"		

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73	Local self-interaction-free approximate exchange-correlation potentials in the variational density functional theory for individual excited states. Chemical Physics Letters, 2002, 366, 496-503.	1.2	5