

# Ferenc Tasnadi

## List of Publications by Year in descending order

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73  
papers

2,722  
citations

147566

31  
h-index

189595

50  
g-index

76  
all docs

76  
docs citations

76  
times ranked

2461  
citing authors

#	ARTICLE	IF	CITATIONS
1	Origin of the Anomalous Piezoelectric Response in Wurtzite $\text{ScAl}_x\text{N}$ Alloys. Physical Review Letters, 2010, 104, 137601.	2.9	305
2	Fe-N system at high pressure reveals a compound featuring polymeric nitrogen chains. Nature Communications, 2018, 9, 2756.	5.8	153
3	Increased electromechanical coupling in $\text{TiAl}_x\text{N}$ . Applied Physics Letters, 2010, 97, .	1.5	149
4	<i>Ab initio</i> elastic tensor of cubic $\text{TiAl}_x\text{N}$ alloys: Dependence of elastic constants on size and shape of the supercell model and their convergence. Physical Review B, 2013, 87, .	1.1	125
5	Significant elastic anisotropy in $\text{TiAl}_x\text{N}$ alloys. Applied Physics Letters, 2010, 97, .	1.5	107
6	Improving thermal stability of hard coating films via a concept of multicomponent alloying. Applied Physics Letters, 2011, 99, .	1.5	95
7	High-Pressure Synthesis of Dirac Materials: Layered van der Waals Bonded $\text{BeN}_4$ Polymorph. Physical Review Letters, 2021, 126, 175501.	2.9	90
8	Elastic properties and electrostructural correlations in ternary scandium-based cubic inverse perovskites: A first-principles study. Physical Review B, 2009, 79, .	1.1	87
9	Phase Stability and Elasticity of TiAlN. Materials, 2011, 4, 1599-1618.	1.3	80
10	Temperature dependence of TiN elastic constants from <i>ab initio</i> molecular dynamics simulations. Physical Review B, 2013, 87, .	1.1	78
11	High-Pressure Synthesis of a Nitrogen-Rich Inclusion Compound $\text{ReN}_{8-x}\text{N}_2$ with Conjugated Polymeric Nitrogen Chains. Angewandte Chemie - International Edition, 2018, 57, 9048-9053.	7.2	70
12	Electric-field control of surface magnetic anisotropy: a density functional approach. New Journal of Physics, 2009, 11, 043007.	1.2	65
13	High-pressure synthesis of ultraincompressible hard rhenium nitride pernitride $\text{Re}_2(\text{N}_2)(\text{N})_2$ stable at ambient conditions. Nature Communications, 2019, 10, 2994.	5.8	65
14	Assessing the SCAN functional for itinerant electron ferromagnets. Physical Review B, 2018, 98, .	1.1	64
15	Importance of Correlation Effects in hcp Iron Revealed by a Pressure-Induced Electronic Topological Transition. Physical Review Letters, 2013, 110, 117206.	2.9	58
16	Realization of an Ideal Cairo Tessellation in Nickel Diazenide $\text{NiN}_2$ : High-Pressure Route to Pentagonal 2D Materials. ACS Nano, 2021, 15, 13539-13546.	7.3	55
17	Volume matching condition to establish the enhanced piezoelectricity in ternary $(\text{Sc,Y})\text{Al}_x(\text{Al,Ga,In})\text{N}$ alloys. Physical Review B, 2013, 87, .	1.1	53
18	Temperature-dependent elastic properties of $\text{TiAl}_x\text{N}$ alloys. Applied Physics Letters, 2015, 107, .	1.5	46

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19	Lattice parameters, deviations from Vegard's rule, and E2 phonons in InAlN. Applied Physics Letters, 2008, 93, .	1.5	44
20	Growth and thermal stability of TiN/ZrAlN: Effect of internal interfaces. Acta Materialia, 2016, 121, 396-406.	3.8	44
21	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
22	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
23	$\text{YAl}_x\text{N}$ thin films. Journal Physics D: Applied Physics, 2012, 45, 422001.	1.3	42
24	Large piezoelectric response of quaternary wurtzite nitride alloys and its physical origin from first principles. Physical Review B, 2015, 92, .	1.1	41
25	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
26	High-Pressure Synthesis of Metal-Organic Frameworks Hf <sub>4</sub> N <sub>20</sub> , WN <sub>8</sub> , and Os <sub>5</sub> N <sub>28</sub> with Polymeric Nitrogen Linkers. Angewandte Chemie - International Edition, 2020, 59, 10321-10326.	7.2	36
27	Materials synthesis at terapascal static pressures. Nature, 2022, 605, 274-278.	13.7	35
28	High pressure and high temperature stabilization of cubic AlN in Ti <sub>0.60</sub> Al <sub>0.40</sub> N. Journal of Applied Physics, 2013, 113, .	1.1	34
29	Macroscopic elastic properties of textured ZrN-AlN polycrystalline aggregates: From ab initio calculations to grain-scale interactions. Physical Review B, 2014, 90, .	1.1	34
30	Configurational disorder effects on adatom mobilities on TiAlN(001) surfaces from first principles. Physical Review B, 2012, 85, .	1.1	33
31	N and Ti adatom dynamics on stoichiometric polar TiN(111) surfaces. Surface Science, 2016, 649, 72-79.	0.8	32
32	Elastic constants, composition, and piezoelectric polarization in InAlN: From ab initio calculations to experimental implications for the applicability of Vegard's rule. Physical Review B, 2017, 95, 045411.	1.1	31
33	Exploring the high entropy alloy concept in (AlTiVNbCr)N. Thin Solid Films, 2017, 636, 346-352.	0.8	27
34	Significant configurational dependence of the electromechanical coupling constant of B <sub>0.125</sub> Al <sub>0.875</sub> N. Applied Physics Letters, 2009, 94, .	1.5	26
35	Temperature-dependent elastic properties of binary and multicomponent high-entropy refractory carbides. Materials and Design, 2021, 204, 109634.	3.3	26
36	Ab initio calculations and experimental study of piezoelectric YIn <sub>1-x</sub> N thin films deposited using reactive magnetron sputter epitaxy. Acta Materialia, 2016, 105, 199-206.	3.8	20

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37	Elinvar effect in $\hat{\Gamma}^2$ -Ti simulated by on-the-fly trained moment tensor potential. New Journal of Physics, 2020, 22, 113005.	1.2	20
38	Stabilization of wurtzite $\text{Sc}_{0.4}\text{Al}_{0.6}\text{N}$ in pseudomorphic epitaxial $\text{ScAl}_3/\text{InAl}_3$ superlattices. Acta Materialia, 2015, 94, 101-110.	3.8	19
39	Stability of the ternary perovskites		

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55	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. <i>Computational Materials Science</i> , 2015, 103, 194-199.	1.4	9
56	Finite-temperature interplay of structural stability, chemical complexity, and elastic properties of bcc multicomponent alloys from <i>ab initio</i> trained machine-learning potentials. <i>Physical Review Materials</i> , 2021, 5, .	0.9	9
57	New sum rules relating the 1-body momentum distribution of the homogeneous electron gas to the Kimball-Overhauser 2-body wave functions (geminals) of its pair density. <i>Physica Status Solidi (B): Basic Research</i> , 2003, 239, 185-192.	0.7	8
58	High-Pressure Synthesis of Metal-Inorganic Frameworks $\text{Hf}_4\text{N}_{20}\text{N}_2$ , $\text{WN}_8\text{N}_2$ , and $\text{Os}_5\text{N}_{28}\text{N}_2$ with Polymeric Nitrogen Linkers. <i>Angewandte Chemie</i> , 2020, 132, 10407-10412.	1.6	8
59	High temperature thermodynamics of spinodal decomposition in arc deposited $\text{Ti}_x\text{Nb}_y\text{Al}_z\text{N}$ coatings. <i>Materials and Design</i> , 2018, 150, 165-170.	3.3	7
60	Study of subspace density functional theory application of LSDA to excited states of atoms. <i>International Journal of Quantum Chemistry</i> , 2003, 92, 234-238.	1.0	6
61	The 2-matrix of the spin-polarized electron gas: contraction sum rules and spectral resolutions. <i>Annalen Der Physik</i> , 2004, 13, 124-148.	0.9	6
62	Local self-interaction-free approximate exchange-correlation potentials in the variational density functional theory for individual excited states. <i>Chemical Physics Letters</i> , 2002, 366, 496-503.	1.2	5
63	Thermal expansion of quaternary nitride coatings. <i>Journal of Physics Condensed Matter</i> , 2018, 30, 135901.	0.7	5
64	Efficient prediction of elastic properties of $\text{Ti}_0.5\text{Al}_0.5\text{N}$ at elevated temperature using machine learning interatomic potential. <i>Thin Solid Films</i> , 2021, 737, 138927.	0.8	4
65	Accurate prediction of high-temperature elastic constants of $\text{Ti}_0.5\text{Al}_0.5\text{N}$ random alloy. <i>Thin Solid Films</i> , 2021, 735, 138872.	0.8	4
66	Reduced density matrices, their spectral resolutions, and the Kimball-Overhauser approach. <i>Annalen Der Physik</i> , 2004, 13, 232-240.	0.9	3
67	Achieving low elastic moduli of bcc $\text{Ti-V}$ alloys in vicinity of mechanical instability. <i>AIP Advances</i> , 2020, 10, 105322.	0.6	3
68	Methods for electronic-structure calculations: Overview from a reduced-density-matrix point of view. <i>International Journal of Quantum Chemistry</i> , 2004, 100, 495-508.	1.0	2
69	Solution of the Poisson Equation for Two Dimensional Periodic Structures in an Overlapping Localized Site Density Scheme. <i>Journal of Computational and Theoretical Nanoscience</i> , 2007, 4, 1206-1217.	0.4	2
70	Thermodynamic and electronic properties of $\text{ReN}_2$ polymorphs at high pressure. <i>Physical Review B</i> , 2021, 104, .	1.1	1
71	The effect of strain and pressure on the electron-phonon coupling and superconductivity in $\text{MgB}_2$ Benchmark of theoretical methodologies and outlook for nanostructure design. <i>Journal of Applied Physics</i> , 2022, 131, 063902.	1.1	1
72	Methods for Electronic Structure Calculations: Overview from a Reduced-Density-Matrix Point of View. <i>ChemInform</i> , 2005, 36, no.	0.1	0

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73	Innenr¼cktitelbild: High-Pressure Synthesis of Metal-Inorganic Frameworks Hf <sub>4</sub> N <sub>20</sub> ...N <sub>2</sub> , WN <sub>8</sub> ...N <sub>2</sub> , and Os <sub>5</sub> N <sub>28</sub> ...3%N <sub>2</sub> with Polymeric Nitrogen Linkers (Angew. Chem.) Tj ETQq1 1 0.784314 rgsB	16	9