Patricio Vargas

List of Publications by Year
in descending order

139 papers	3,510 citations	218381 26 h-index	155451 55 g-index
146 all docs	146 docs citations	146 times ranked	3600 citing authors

#	Article	IF	Citations
1	Flat bands in slightly twisted bilayer graphene: Tight-binding calculations. Physical Review B, 2010, 82, .	1.1	656
2	FTIR and Raman Characterization of TiO2 Nanoparticles Coated with Polyethylene Glycol as Carrier for 2-Methoxyestradiol. Applied Sciences (Switzerland), 2017, 7, 49.	1.3	401
3	Electronic-structure calculations for amorphous solids using the recursion method and linear muffin-tin orbitals: Application toFe80B20. Physical Review B, 1991, 44, 3577-3598.	1.1	190
4	Scaling Approach to the Magnetic Phase Diagram of Nanosized Systems. Physical Review Letters, 2002, 88, 237202.	2.9	100
5	Modelling hysteresis of interacting nanowires arrays. Physica B: Condensed Matter, 2004, 343, 395-402.	1.3	98
6	Equilibrium states and vortex domain wall nucleation in ferromagnetic nanotubes. Physical Review B, 2009, 79, .	1.1	96
7	Phase diagrams of magnetic nanotubes. Journal of Magnetism and Magnetic Materials, 2007, 308, 233-237.	1.0	93
8	Arrays of Ni nanowires in alumina membranes: magnetic properties and spatial ordering. European Physical Journal B, 2004, 40, 489-497.	0.6	81
9	Magnetic coupling in metallic granular systems. Physical Review B, 1996, 54, R6823-R6826.	1.1	71
10	Chirality switching and propagation control of a vortex domain wall in ferromagnetic nanotubes. Applied Physics Letters, 2012, 100, .	1.5	69
11	Scaling relations for magnetic nanoparticles. Physical Review B, 2005, 71, .	1.1	65
12	Fast Monte Carlo method for magnetic nanoparticles. Physical Review B, 2006, 73, .	1.1	59
13	Metastable states in the triangular-lattice Ising model studied by Monte Carlo simulations: Application to the spin-chain compound<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>Ca</mml:mtext></mml:mrow><mml:mn>3</mml:mn></mml:msu Physical Review B, 2009, 79, .	1.1	58
14	Charge redistribution and interlayer coupling in twisted bilayer graphene under electric fields. Physical Review B, 2011, 84, .	1.1	55
15	Control of magnetism in bilayer CrI ₃ by an external electric field. 2D Materials, 2019, 6, 025020.	2.0	51
16	Asymmetrical giant magnetoimpedance in exchange-biased NiFe. Applied Physics Letters, 2010, 96, .	1.5	48
17	Chaotic dynamics of a magnetic nanoparticle. Physical Review E, 2011, 84, 037202.	0.8	39
18	Breaking of chiral symmetry in vortex domain wall propagation in ferromagnetic nanotubes. Journal of Magnetism and Magnetic Materials, 2013, 341, 86-92.	1.0	38

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19	Dipolar magnetic interactions among magnetic microwires. Journal of Magnetism and Magnetic Materials, 2002, 249, 60-72.	1.0	37
20	A detailed analysis of dipolar interactions in arrays of bi-stable magnetic nanowires. Nanotechnology, 2007, 18, 415708.	1.3	37
21	MoirÃ© patterns on STM images of graphite induced by rotations of surface and subsurface layers. Chemical Physics, 2013, 423, 49-54.	0.9	37
22	Band-structure calculations for Ni,Ni4H,Ni4H2,Ni4H3, and NiH. Physical Review B, 1987, 35, 1993-2004.	1.1	36
23	Automated discrimination and quantification of idiopathic pulmonary fibrosis from normal lung parenchyma using generalized fractal dimensions in high-resolution computed tomography images. Academic Radiology, 1995, 2, 10-18.	1.3	34
24	Low Temperature Diffusion of Hydrogen Isotopes and the Formation of Diatomic Complexes in Diluted, Ni-, Fe-, and Pd-Alloys*. Zeitschrift Fur Physikalische Chemie, 1985, 143, 161-181.	1.4	32
25	Second virial coefficient for the Lennardâ€“Jones potential. Physica A: Statistical Mechanics and Its Applications, 2001, 290, 92-100.	1.2	32
26	Dipolar effects in multilayers with interface roughness. Physical Review B, 2000, 62, 6337-6342.	1.1	28
27	Hydrogen-Trapping by Substitutional Impurities in Transition Metals*. Zeitschrift Fur Physikalische Chemie, 1985, 143, 229-245.	1.4	26
28	Dynamics of two interacting dipoles. Journal of Magnetism and Magnetic Materials, 2008, 320, 1440-1448.	1.0	26
29	Experimental energy loss of slowH+andH2+in channeling conditions. Physical Review A, 2003, 68, .	1.0	25
30	Magnetostatic interactions between two magnetic wires. Europhysics Letters, 2007, 78, 67004.	0.7	25
31	First-principles insights on the magnetism of cubic SrTi1âˆ’xCoxO3âˆ’Î´. Applied Physics Letters, 2012, 100, 252904.	1.5	25
32	Boosting engine performance with Boseâ€“Einstein condensation. New Journal of Physics, 2022, 24, 025001.	1.2	24
33	Energy loss of slow protons channeled in Au. Physical Review A, 1996, 53, 1638-1643.	1.0	22
34	Electronic density corrugation and crystal azimuthal orientation effects on energy losses of hydrogen ions in grazing scattering on a Ag(110) surface. Physical Review A, 2008, 78, .	1.0	22
35	Convection in a rotating binary ferrofluid. Physica A: Statistical Mechanics and Its Applications, 2006, 371, 46-49.	1.2	21
36	Thermodynamics of two-dimensional magnetic nanoparticles. Europhysics Letters, 2002, 58, 603-609.	0.7	20

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37	Barkhausen-like steps and magnetic frustration in dopedLa0.67â^'xAxCa0.33MnO3(A=Ce,Y). Physical Review B, 2006, 73, .	1.1	20
38	Ordering effects of the dipolar interaction in lattices of small magnetic particles. Journal of Magnetism and Magnetic Materials, 2004, 281, 372-377.	1.0	18
39	Superstructures in arrays of rotated graphene layers: Electronic structure calculations. Physical Review B, 2008, 78, .	1.1	18
40	Optimization of a relativistic quantum mechanical engine. Physical Review E, 2016, 94, 022109.	0.8	18
41	Quasistatic and quantum-adiabatic Otto engine for a two-dimensional material: The case of a graphene quantum dot. Physical Review E, 2020, 101, 012116.	0.8	18
42	Dynamical behavior of two interacting magnetic nanoparticles. Physica B: Condensed Matter, 2006, 372, 332-336.	1.3	17
43	Binding energy of hydrogen-impurity complexes in nickel. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 1985, 51, 59-70.	0.8	16
44	Energy loss of keV fluorine ions scattered off a missing-row reconstructed Au(110) surface under grazing incidence. Physical Review A, 2011, 83, .	1.0	16
45	Edge states of moirÃ© structures in graphite. Physical Review B, 2015, 91, .	1.1	16
46	Magnetism and Faraday Rotation in Oxygen-Deficient Polycrystalline and Single-Crystal Iron-Substituted Strontium Titanate. Physical Review Applied, 2017, 7, .	1.5	16
47	Magnetization Reversal in Radially Distributed Nanowire Arrays. Journal of Physical Chemistry C, 2018, 122, 5124-5130.	1.5	16
48	Magnetic Otto Engine for an Electron in a Quantum Dot: Classical and Quantum Approach. Entropy, 2019, 21, 512.	1.1	16
49	Electronic energy loss of slow protons channeled in metals. Physical Review A, 1997, 56, 4781-4785.	1.0	15
50	Dipolar interaction and magnetic ordering in granular metallic materials. Physical Review B, 1998, 57, 13604-13609.	1.1	15
51	Magnetism of nanosized metallic particles. Physical Review B, 1999, 60, 6541-6544.	1.1	15
52	Quantitation of grey matter, white matter, and cerebrospinal fluid from spin-echo magnetic resonance images using an artificial neural network technique. Medical Physics, 1994, 21, 1933-1942.	1.6	14
53	First-principles calculation and scanning tunneling microscopy study of highly oriented pyrolytic graphite (0001). Physical Review B, 2009, 79, .	1.1	14
54	Energy loss of protons and deuterons at low energies in Pd polycrystalline thin films. Physical Review A, 2013, 88, .	1.0	14

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55	On micromagnetic theory of thin cast amorphous microwires. Physica B: Condensed Matter, 2006, 372, 320-323.	1.3	12
56	Domain structure of Fe-based microwires. Physica B: Condensed Matter, 2006, 372, 324-327.	1.3	12
57	Band structure effects in the energy loss of low-energy protons and deuterons in thin films of Pt. Nuclear Instruments & Methods in Physics Research B, 2015, 360, 103-110.	0.6	12
58	Magnetic Engine for the Single-Particle Landau Problem. Entropy, 2017, 19, 639.	1.1	12
59	Magnetocaloric Effect in an Antidot: The Effect of the Aharonov-Bohm Flux and Antidot Radius. Entropy, 2018, 20, 888.	1.1	12
60	Hysteresis in Â±J Ising square lattices. Physical Review B, 1999, 59, 3325-3328.	1.1	11
61	Energy and force between two magnetic nanotubes. Journal of Magnetism and Magnetic Materials, 2009, 321, 3658-3664.	1.0	11
62	Trigonal distortion of topologically confined channels in bilayer graphene. Applied Physics Letters, 2011, 98, 262107.	1.5	11
63	Magnetic entropy change plateau in a geometrically frustrated layered system: FeCrAs-like iron-pnictide structure as a magnetocaloric prototype. Journal of Physics Condensed Matter, 2013, 25, 226004.	0.7	11
64	Quantum Mechanical Engine for the Quantum Rabi Model. Entropy, 2018, 20, 767.	1.1	11
65	RKKY interaction between metallic clusters. Journal of Magnetism and Magnetic Materials, 1997, 167, 161-165.	1.0	10
66	Role of the alloy structure in the magnetic behavior of granular systems. Physical Review B, 2002, 66, .	1.1	10
67	Thermodynamics of three-dimensional magnetic nanoparticles. Journal of Magnetism and Magnetic Materials, 2004, 272-276, E1345-E1346.	1.0	10
68	Effect of oxygen adsorption on the energy losses in grazing scattering of hydrogen ions on Ag(110). Nuclear Instruments & Methods in Physics Research B, 2007, 256, 81-85.	0.6	10
69	Otto Engine: Classical and Quantum Approach. Entropy, 2020, 22, 755.	1.1	10
70	Differences in the energy loss of protons and positive muons in solids. Nuclear Instruments & Methods in Physics Research B, 2001, 174, 9-15.	0.6	9
71	Energy loss of protons in carbon nanotubes: Experiments and calculations. Nuclear Instruments & Methods in Physics Research B, 2010, 268, 1781-1785.	0.6	9
72	Surface channelling and energy losses of 4 keV hydrogen and fluorine ions in grazing scattering on Au(111) and missing row reconstructed Au(110) surfaces. Journal of Physics Condensed Matter, 2010, 22, 345005.	0.7	9

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73	Effect of the exchange bias coupling strength on the magnetoimpedance of IrMn/NiFe films. Journal of Applied Physics, 2011, 109, 07D735.	1.1	9
74	Energy loss of protons at low velocities in Pd and Au polycrystalline thin films. Nuclear Instruments & Methods in Physics Research B, 2000, 164-165, 268-271.	0.6	8
75	Energy Losses of Muons, Pions, Protons, and Deuterons Channeled in Si. Physical Review Letters, 2000, 85, 4731-4734.	2.9	8
76	Magnetism of nanosized metallic Co-clusters. Journal of Magnetism and Magnetic Materials, 2001, 226-230, 603-605.	1.0	8
77	Study of magnetic properties of La2/3Sr1/3MnO3 nanotubes by Monte Carlo simulation. Journal of Magnetism and Magnetic Materials, 2008, 320, e331-e334.	1.0	8
78	Energy loss distribution of proton beams at normal incidence on multi-walled carbon nanotubes. Carbon, 2013, 52, 137-144.	5.4	8
79	Magnetocaloric Effect in Non-Interactive Electron Systems: â€œThe Landau Problemâ€•and Its Extension to Quantum Dots. Entropy, 2018, 20, 557.	1.1	8
80	Magnetocaloric features of complex molecular magnets: The (Cr7Ni)2Cu molecular magnet and beyond. Journal of Magnetism and Magnetic Materials, 2010, 322, 2810-2818.	1.0	7
81	Bridging the gap between discrete and continuous magnetic models in the scaling approach. Physical Review B, 2015, 91, .	1.1	7
82	Patterning of sub-50 nm perpendicular CoFeB/MgO-based magnetic tunnel junctions. Nanotechnology, 2016, 27, 185302.	1.3	7
83	Magnetic effects of interstitial hydrogen in nickel. Journal of Magnetism and Magnetic Materials, 2017, 421, 7-12.	1.0	7
84	Unoccupied electronic states of Au(113): Theory and experiment. Physical Review B, 2001, 63, .	1.1	6
85	Energy loss straggling of low-velocity protons and deuterons channeled in Au. Nuclear Instruments & Methods in Physics Research B, 2002, 193, 43-48.	0.6	6
86	Entropy and Mutability for the q-State Clock Model in Small Systems. Entropy, 2018, 20, 933.	1.1	6
87	Charge distribution in Ni6H, Ni14H and Ni38H clusters. Journal of Physics F: Metal Physics, 1986, 16, L275-L281.	1.6	5
88	Hydrogen diffusion in tantalum. Physics Letters, Section A: General, Atomic and Solid State Physics, 1988, 131, 445-448.	0.9	5
89	Magnetoresistance in granular metallic systems. Journal of Physics Condensed Matter, 1997, 9, 9931-9938.	0.7	5
90	Quantitation of T2 lesion load in multiple sclerosis with magnetic resonance imaging: A pilot study of a probabilistic neural network approach. Academic Radiology, 1997, 4, 431-437.	1.3	5

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91	Simulation of hysteresis for Â±J triangular lattices. Physica B: Condensed Matter, 2000, 284-288, 1211-1212.	1.3	5
92	Threshold effect in the energy loss of hydrogen and helium ions transmitted in channeling conditions in gold single crystal. Microelectronics Journal, 2008, 39, 1358-1359.	1.1	5
93	Thermal behavior of hard-axis magnetization in noninteracting particles with uniaxial anisotropy. Applied Physics Letters, 2009, 95, 202503.	1.5	5
94	Teaching labs for blind students: equipment to measure the thermal expansion coefficient of a metal. European Journal of Physics, 2020, 41, 035704.	0.3	5
95	Combining dipolar and anisotropic contributions to properly describe the magnetic properties of magnetic nanoparticles real systems. Journal of Magnetism and Magnetic Materials, 2020, 508, 166842.	1.0	5
96	Magnetic behavior of small magnetic particles. Physical Review B, 2001, 64, .	1.1	4
97	Perturbation potential produced by a monolayer of InAs on GaAs(100). Physical Review B, 2003, 68, .	1.1	4
98	Ground state of a hydrogen ion molecule immersed in an inhomogeneous electron gas. Nuclear Instruments & Methods in Physics Research B, 2007, 254, 69-72.	0.6	4
99	On the theory of nucleation in cylindrical magnetic nanoparticles. Physica Status Solidi C: Current Topics in Solid State Physics, 2007, 4, 4170-4173.	0.8	4
100	Factorizing magnetic fields triggered by the Dzyaloshinskiiâ€"Moriya interaction: Application to magnetic trimers. Journal of Magnetism and Magnetic Materials, 2012, 324, 83-89.	1.0	4
101	Electron transfer and energy loss processes in fluorine scattering on oxygen covered Ag(110) â€" Crystal azimuthal dependence. Nuclear Instruments & Methods in Physics Research B, 2013, 315, 36-41.	0.6	4
102	Energy losses of slow ions traveling through crystalline solids and scattered on crystalline surfaces. Radiation Effects and Defects in Solids, 2016, 171, 60-76.	0.4	4
103	Ab initio study of the magnetic behavior of metal hydrides: A comparison with the Slater-Pauling curve. Computational Materials Science, 2018, 141, 122-126.	1.4	4
104	Box model for hysteresis loops of arrays of Ni nanowires. Brazilian Journal of Physics, 2006, 36, 908-909.	0.7	4
105	H₂ Dissociation in Nickel. A Cluster Model. Physica Status Solidi (B): Basic Research, 1987, 144, 305-313.	0.7	3
106	The Electronic Structure of VH, NbH and TaH in the Î²-Phase*. Zeitschrift Fur Physikalische Chemie, 1989, 163, 521-525.	1.4	3
107	Diffusion Coefficient of Hydrogen in Niobium and Tantalum*. Zeitschrift Fur Physikalische Chemie, 1989, 164, 975-983.	1.4	3
108	Extrapolation algorithm for the terminator problem in the recursion method. Solid State Communications, 1990, 74, 703-709.	0.9	3

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109	Hysteresis cycles for Â±J spin glasses. Journal of Magnetism and Magnetic Materials, 2001, 226-230, 1248-1250.	1.0	3
110	Recombination of <mml:math altimg="si4.gif" overflow="scroll" xmlns:xocs="http://www.elsevier.com/xml/xocs/dtd" xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.elsevier.com/xml/ja/dtd" xmlns:ja="http://www.elsevier.com/xml/ja/dtd" xmlns:mml="http://www.w3.org/1998/Math/MathML" xmlns:tb="http://www.elsevier.com/xml/common/table/dtd" xmlns:sb="http://www.elsevier.com/xml/common/struct-bib/dtd" xmlns:ce="http://www.elsevier.com/x	0.6	3
111	Quenching points of dimeric single-molecule magnets: Exchange interaction effects. Journal of Magnetism and Magnetic Materials, 2010, 322, 3623-3630.	1.0	3
112	Thermal observables in coupled Cr7Ni molecular rings: Role and quantification of spin-entanglement. Journal of Applied Physics, 2011, 109, .	1.1	3
113	Geometrically frustrated Fe₂P-like systems: beyond the Fe-trimer approximation. Journal of Physics Condensed Matter, 2015, 27, 286004.	0.7	3
114	Thermodynamics of Small Magnetic Particles. Entropy, 2017, 19, 499.	1.1	3
115	A phenomenological approach to study the effect of uniaxial anisotropy on the magnetization of ferromagnetic nanoparticles. Journal of Magnetism and Magnetic Materials, 2018, 452, 230-242.	1.0	3
116	Oxygen-vacancy tuning of magnetism in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>SrTi</mml:mi><mml:mrow><mml:mn>0.75< mathvariant="normal">O</mml:mi><mml:mrow><mml:mn>3</mml:mn><mml:mo>â^'</mml:mo><mml:mi>Î´</mml:mi></mml:mrow></ Physical Review Materials, 2019, 3, .	0.9	3
117	Proximity-induced spin-polarized magnetocaloric effect in transition metal dichalcogenides. Physical Review B, 2022, 105, .	1.1	3
118	Computation of left ventricular volume curves from gated blood pool studies without explicit use of edge detection algorithms: concise communication. International Journal of Cardiovascular Imaging, 1995, 11, 9-18.	0.2	2
119	Automated determination of left ventricular volume curves from bi-plane digital angiography without explicit use of edge detection algorithms. International Journal of Cardiovascular Imaging, 1996, 12, 31-45.	0.2	2
120	Magnetic relaxation in nanocrystalline systems: linking Monte Carlo steps with time. International Journal of Materials Research, 2002, 93, 974-977.	0.8	2
121	Inverse photoemission spectroscopy of Al(100). Physical Review B, 2005, 71, .	1.1	2
122	Quantum tunneling in nanomagnetic systems with different uniaxial anisotropy order. Nanotechnology, 2009, 20, 465403.	1.3	2
123	Instantons and magnetization tunneling: Beyond the giant-spin approximation. Physica B: Condensed Matter, 2009, 404, 2791-2794.	1.3	2
124	Gate-tunable charge carrier electrocaloric effect in trilayer graphene. Scientific Reports, 2021, 11, 22000.	1.6	2
125	Magnetic phases in Ising square lattices with mixed bonds. Physical Review B, 1989, 40, 4369-4374.	1.1	1
126	Quantum diffusion in transition metals. Journal of the Less Common Metals, 1991, 172-174, 557-571.	0.9	1

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127	Magnetic phase diagram of a nanocone. Journal of Physics: Conference Series, 2008, 134, 012020.	0.3	1
128	Energy losses of H and F ions in grazing scattering on a missing row reconstructed Au(110) surface. Physica Scripta, 2011, T144, 014042.	1.2	1
129	Novel route to synthesize metallic alloys by applying low energy centrifugal field. Physica Status Solidi (B): Basic Research, 2017, 254, 1600641.	0.7	1
130	The Virtuous Interplay of Infrastructure Development and the Complexity of Nations. Entropy, 2018, 20, 761.	1.1	1
131	Hydrogen induced AFM to FM magnetic transition in Îµ-FeHx. Journal of Magnetism and Magnetic Materials, 2020, 498, 166147.	1.0	1
132	Short-Range Berezinskii-Kosterlitz-Thouless Phase Characterization for the q-State Clock Model. Entropy, 2021, 23, 1019.	1.1	1
133	dâ€™Albuquerque e Castroet al.Reply:. Physical Review Letters, 2003, 91, .	2.9	0
134	Arrays of Ni Nanowires in Alumina Membranes: Magnetic Properties and Spatial Ordering. ChemInform, 2005, 36, no.	0.1	0
135	Path integral study of phase transitions for thermons in macroscopic quantum tunneling. Microelectronics Journal, 2008, 39, 1341-1343.	1.1	0
136	Oscillations in the spatial distribution of current in nanotubes and nanowires. Journal of Applied Physics, 2011, 110, .	1.1	0
137	Role of magnetic anisotropy on the magnetic properties of Ni nanoclusters embedded in a ZnO matrix. Journal of Applied Physics, 2014, 116, 033916.	1.1	0
138	Seebeck and Nernst effects in topological insulator: The case of strained HgTe. Physica B: Condensed Matter, 2022, 627, 413521.	1.3	0
139	Otto Engine for the q-State Clock Model. Entropy, 2022, 24, 268.	1.1	0