Cristiano Nisoli

List of Publications by Year
in descending order

80 papers	3,533 citations	201674 27 h-index	133252 59 g-index
82 all docs	82 docs citations	82 times ranked	2089 citing authors

#	Article	IF	Citations
1	Artificial â€˜spin iceâ€™ in a geometrically frustrated lattice of nanoscale ferromagnetic islands. Nature, 2006, 439, 303-306.	27.8	729
2	<i>Colloquium</i>: Artificial spin ice: Designing and imaging magnetic frustration. Reviews of Modern Physics, 2013, 85, 1473-1490.	45.6	407
3	Crystallites of magnetic charges in artificial spin ice. Nature, 2013, 500, 553-557.	27.8	197
4	Emergent ice rule and magnetic charge screening from vertex frustration in artificial spin ice. Nature Physics, 2014, 10, 670-675.	16.7	141
5	Effective Temperature in an Interacting Vertex System: Theory and Experiment on Artificial Spin Ice. Physical Review Letters, 2010, 105, 047205.	7.8	117
6	Emergent reduced dimensionality by vertex frustration in artificial spin ice. Nature Physics, 2016, 12, 162-165.	16.7	117
7	Chemically Doped Double-Walled Carbon Nanotubes: Cylindrical Molecular Capacitors. Physical Review Letters, 2003, 90, 257403.	7.8	112
8	Energy Minimization and ac Demagnetization in a Nanomagnet Array. Physical Review Letters, 2008, 101, 037205.	7.8	109
9	Ground State Lost but Degeneracy Found: The Effective Thermodynamics of Artificial Spin Ice. Physical Review Letters, 2007, 98, 217203.	7.8	108
10	Unhappy vertices in artificial spin ice: new degeneracies from vertex frustration. New Journal of Physics, 2013, 15, 045009.	2.9	95
11	Demagnetization protocols for frustrated interacting nanomagnet arrays. Journal of Applied Physics, 2007, 101, 09J104.	2.5	66
12	Direct entropy determination and application to artificial spin ice. Nature Physics, 2010, 6, 786-789.	16.7	66
13	Deliberate exotic magnetism via frustration and topology. Nature Physics, 2017, 13, 200-203.	16.7	66
14	Comparing artificial frustrated magnets by tuning the symmetry of nanoscale permalloy arrays. Physical Review B, 2010, 81, .	3.2	62
15	Perpendicular Magnetization and Generic Realization of the Ising Model in Artificial Spin Ice. Physical Review Letters, 2012, 109, 087201.	7.8	58
16	Classical topological order in the kinetics of artificial spin ice. Nature Physics, 2018, 14, 723-727.	16.7	57
17	Frustration by design. Physics Today, 2016, 69, 54-59.	0.3	52
18	Field-induced phase coexistence in an artificial spin ice. Nature Physics, 2019, 15, 191-195.	16.7	49

#	Article	IF	Citations
19	<i>Colloquium</i> : Ice rule and emergent frustration in particle ice and beyond. Reviews of Modern Physics, 2019, 91, .	45.6	46
20	Degeneracy and Criticality from Emergent Frustration in Artificial Spin Ice. Physical Review Letters, 2013, 111, 177201.	7.8	45
21	Realizing three-dimensional artificial spin ice by stacking planar nano-arrays. Applied Physics Letters, 2014, 104, 013101.	3.3	44
22	Direct visualization of memory effects in artificial spin ice. Physical Review B, 2015, 92, .	3.2	44
23	The kinetics of the Ï‰ to Î± phase transformation in Zr, Ti: Analysis of data from shock-recovered samples and atomistic simulations. Acta Materialia, 2014, 77, 191-199.	7.9	40
24	Qubit spin ice. Science, 2021, 373, 576-580.	12.6	36
25	Artificial spin ice: Paths forward. Applied Physics Letters, 2021, 118, .	3.3	35
26	On thermalization of magnetic nano-arrays at fabrication. New Journal of Physics, 2012, 14, 035017.	2.9	32
27	Understanding magnetotransport signatures in networks of connected permalloy nanowires. Physical Review B, 2017, 95, .	3.2	32
28	Understanding thermal annealing of artificial spin ice. APL Materials, 2019, 7, .	5.1	28
29	Curvature-induced D-band Raman scattering in folded graphene. Journal of Physics Condensed Matter, 2010, 22, 334205.	1.8	25
30	Ice rule fragility via topological charge transfer in artificial colloidal ice. Nature Communications, 2018, 9, 4146.	12.8	25
31	Comparing frustrated and unfrustrated clusters of single-domain ferromagnetic islands. Physical Review B, 2010, 82, .	3.2	24
32	Logical gates embedding in artificial spin ice. New Journal of Physics, 2020, 22, 103052.	2.9	24
33	Tuning magnetic frustration of nanomagnets in triangular-lattice geometry. Applied Physics Letters, 2008, 93, 252504.	3.3	23
34	Inner Phases of Colloidal Hexagonal Spin Ice. Physical Review Letters, 2018, 120, 027204.	7.8	22
35	Commensurate states and pattern switching via liquid crystal skyrmions trapped in a square lattice. Soft Matter, 2020, 16, 3338-3343.	2.7	21
36	Static and Dynamical Phyllotaxis in a Magnetic Cactus. Physical Review Letters, 2009, 102, 186103.	7.8	20

#	Article	IF	Citations
37	Dumping topological charges on neighbors: ice manifolds for colloids and vortices. New Journal of Physics, 2014, 16, 113049.	2.9	19
38	Ignoring Your Neighbors: Moment Correlations Dominated by Indirect or Distant Interactions in an Ordered Nanomagnet Array. Physical Review Letters, 2011, 107, 117204.	7.8	18
39	Unexpected Phenomenology in Particle-Based Ice Absent in Magnetic Spin Ice. Physical Review Letters, 2018, 120, 167205.	7.8	17
40	Skyrmion Spin Ice in Liquid Crystals. Physical Review Letters, 2021, 126, 047801.	7.8	17
41	Direct observation of a dynamical glass transition in a nanomagnetic artificial Hopfield network. Nature Physics, 2022, 18, 517-521.	16.7	17
42	Carbon Nanostructures as an Electromechanical Bicontinuum. Physical Review Letters, 2007, 99, 045501.	7.8	16
43	Annealing a magnetic cactus into phyllotaxis. Physical Review E, 2010, 81, 046107.	2.1	15
44	Attractive Inverse Square Potential,<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>U</mml:mi><mml:mo stretchy="false">(</mml:mo><mml:mn>1</mml:mn><mml:mo) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 457 Td (stretchy="false">)</mml: Review Letters, 2014, 112, 070401.	7.8	15
45	Gibbsianizing nonequilibrium dynamics of artificial spin ice and other spin systems. New Journal of Physics, 2012, 14, 045009.	2.9	13
46	Dynamic Control of Topological Defects in Artificial Colloidal Ice. Scientific Reports, 2017, 7, 651.	3.3	12
47	Thermomechanics of DNA: Theory of Thermal Stability under Load. Physical Review Letters, 2011, 107, 068102.	7.8	11
48	Thermal Stability of Strained Nanowires. Physical Review Letters, 2009, 102, 245504.	7.8	10
49	Thermally Induced Local Failures in Quasi-One-Dimensional Systems: Collapse in Carbon Nanotubes, Necking in Nanowires, and Opening of Bubbles in DNA. Physical Review Letters, 2010, 104, 025503.	7.8	10
50	Experimental and theoretical evidences for the ice regime in planar artificial spin ices. Journal of Physics Condensed Matter, 2019, 31, 025301.	1.8	10
51	Topological order of the Rys F-model and its breakdown in realistic square spin ice: Topological sectors of Faraday loops. Europhysics Letters, 2020, 132, 47005.	2.0	10
52	Write it as you like it. Nature Nanotechnology, 2018, 13, 5-6.	31.5	9
53	Field-Induced Magnetic Monopole Plasma in Artificial Spin Ice. Physical Review X, 2021, 11, .	8.9	9
54	String Phase in an Artificial Spin Ice. Nature Communications, 2021, 12, 6514.	12.8	9

#	Article	IF	Citations
55	Spiraling solitons: A continuum model for dynamical phyllotaxis of physical systems. Physical Review E, 2009, 80, 026110.	2.1	8
56	Quenched dynamics of artificial colloidal spin ice. Physical Review Research, 2020, 2, .	3.6	8
57	Artificial spin ice phase-change memory resistors. New Journal of Physics, 2022, 24, 023020.	2.9	8
58	Tension-free Dirac strings and steered magnetic charges in 3D artificial spin ice. Npj Computational Materials, 2021, 7, .	8.7	7
59	Putting a spin on metamaterials: Mechanical incompatibility as magnetic frustration. SciPost Physics, 2021, 10, .	4.9	6
60	Topologically protected steady cycles in an icelike mechanical metamaterial. Physical Review Research, 2021, 3, .	3.6	6
61	The concept of spin ice graphs and a field theory for their charges. AIP Advances, 2020, 10, .	1.3	6
62	Nano-Ising. New Journal of Physics, 2016, 18, 021007.	2.9	5
63	Long-time behavior of the Ï‰â†'Î± transition in shocked zirconium: Interplay of nucleation and plastic deformation. Acta Materialia, 2016, 108, 138-142.	7.9	5
64	Ice, glass, and solid phases in artificial spin systems with quenched disorder. Applied Physics Letters, 2021, 118, 122407.	3.3	5
65	The color of magnetic monopole noise. Europhysics Letters, 2021, 135, 57002.	2.0	5
66	Equilibrium field theory of magnetic monopoles in degenerate square spin ice: Correlations, entropic interactions, and charge screening regimes. Physical Review B, 2020, 102, .	3.2	5
67	Entropy-driven order in an array of nanomagnets. Nature Physics, 2022, 18, 706-712.	16.7	5
68	Frustration(s) and the Ice Rule: From Natural Materials to the Deliberate Design of Exotic Behaviors. Springer Series in Materials Science, 2018, , 57-99.	0.6	4
69	Emergent inequality and self-organized social classes in a network of power and frustration. PLoS ONE, 2017, 12, e0171832.	2.5	4
70	Magnetic field dependent thermodynamic properties of square and quadrupolar artificial spin ice. Physical Review B, 2022, 105, .	3.2	4
71	Polaron-induced deformations in carbon nanotubes studied using the bicontinuum model. Physical Review B, 2009, 80, .	3.2	3
72	Thermomechanical stability and mechanochemical response of DNA: A minimal mesoscale model. Journal of Chemical Physics, 2014, 141, 115101.	3.0	3

#	Article	IF	Citations
73	Topology by Design in Magnetic Nano-materials: Artificial Spin Ice. Springer Series in Solid-state Sciences, 2018, , 85-112.	0.3	3
74	On the degeneracy of spin ice graphs, and its estimate via the Bethe permanent. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2021, 477, 20210108.	2.1	3
75	Directed motion of liquid crystal skyrmions with oscillating fields. New Journal of Physics, 2022, 24, 033033.	2.9	2
76	Topological solitons in helical strings. Physical Review E, 2015, 91, 062601.	2.1	1
77	Gauge-free duality in pure square spin ice: Topological currents and monopoles. AIP Advances, 2021, 11, .	1.3	1
78	Publisherâ€™s Note: Thermally Induced Local Failures in Quasi-One-Dimensional Systems: Collapse in Carbon Nanotubes, Necking in Nanowires, and Opening of Bubbles in DNA [Phys. Rev. Lett.104, 025503 (2010)]. Physical Review Letters, 2010, 104, .	7.8	0
79	Quasi-one-dimensional thermal breakage. Physical Review E, 2013, 88, 042409.	2.1	0
80	Artificial spin ice: from scientific toy to material by design (Presentation Recording). Proceedings of SPIE, 2015, , .	0.8	0