

Paolo Santini

List of Publications by Year in descending order

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141
papers

5,531
citations

71102

41
h-index

88630

70
g-index

144
all docs

144
docs citations

144
times ranked

3323
citing authors

#	ARTICLE	IF	CITATIONS
1	Quantum error correction with molecular spin qubits. <i>Physical Chemistry Chemical Physics</i> , 2022, 24, 20030-20039.	2.8	13
2	Embedded quantum-error correction and controlled-phase gate for molecular spin qubits. <i>AIP Advances</i> , 2021, 11, .	1.3	15
3	Assessing the Nature of Chiral-Induced Spin Selectivity by Magnetic Resonance. <i>Journal of Physical Chemistry Letters</i> , 2021, 12, 6341-6347.	4.6	25
4	Counteracting dephasing in Molecular Nanomagnets by optimized qudit encodings. <i>Npj Quantum Information</i> , 2021, 7, .	6.7	20
5	Simulating Static and Dynamic Properties of Magnetic Molecules with Prototype Quantum Computers. <i>Magnetochemistry</i> , 2021, 7, 117.	2.4	14
6	A Cost-Effective Semi-Ab Initio Approach to Model Relaxation in Rare-Earth Single-Molecule Magnets. <i>Journal of Physical Chemistry Letters</i> , 2021, 12, 8826-8832.	4.6	35
7	Molecular Nanomagnets as Qubits with Embedded Quantum-Error Correction. <i>Journal of Physical Chemistry Letters</i> , 2020, 11, 8610-8615.	4.6	48
8	Understanding magnetic relaxation in single-ion magnets with high blocking temperature. <i>Physical Review B</i> , 2020, 101, .	3.2	94
9	Unveiling phonons in a molecular qubit with four-dimensional inelastic neutron scattering and density functional theory. <i>Nature Communications</i> , 2020, 11, 1751.	12.8	43
10	Constructing clock-transition-based two-qubit gates from dimers of molecular nanomagnets. <i>Physical Review Research</i> , 2020, 2, .	3.6	10
11	First-principles many-body models for electron transport through molecular nanomagnets. <i>Physical Review B</i> , 2019, 99, .	3.2	12
12	Quantum hardware simulating four-dimensional inelastic neutron scattering. <i>Nature Physics</i> , 2019, 15, 455-459.	16.7	89
13	Unravelling the Spin Dynamics of Molecular Nanomagnets with Four-Dimensional Inelastic Neutron Scattering. <i>European Journal of Inorganic Chemistry</i> , 2019, 2019, 1106-1118.	2.0	11
14	Efficient Quantum Simulation of Dynamic Correlations on Superconducting Quantum Computers. , 2019, , .		0
15	Anisotropy of Co ^{II} transferred to the Cr ⁷ Co polymetallic cluster <i>via</i> strong exchange interactions. <i>Chemical Science</i> , 2018, 9, 3555-3562.	7.4	20
16	Portraying entanglement between molecular qubits with four-dimensional inelastic neutron scattering. <i>Nature Communications</i> , 2017, 8, 14543.	12.8	48
17	Superadiabatic driving of a three-level quantum system. <i>Physical Review A</i> , 2017, 96, .	2.5	14
18	Magnetic Exchange Interactions in the Molecular Nanomagnet $\text{Mn}(\text{C}_6\text{H}_5)_2(\text{C}_6\text{H}_4)_2$ Physical Review Letters, 2017, 119, 217202.	7.8	34

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19	Supramolecular Complexes for Quantum Simulation. Magnetochemistry, 2016, 2, 37.	2.4	11
20	[CrF(O ₂)C ^{sup} <i>t</i>/sup>Bu] ₂ : Synthesis and Characterization of a Regular Homometallic Ring with an Odd Number of Metal Centers and Electrons. Angewandte Chemie - International Edition, 2016, 55, 8856-8859.	13.8	26
21	[CrF(O ₂)C ^{sup} <i>t</i>/sup>Bu] ₂ : Synthesis and Characterization of a Regular Homometallic Ring with an Odd Number of Metal Centers and Electrons. Angewandte Chemie, 2016, 128, 9002-9005.	2.0	10
22	A modular design of molecular qubits to implement universal quantum gates. Nature Communications, 2016, 7, 11377.	12.8	196
23	Many-body<i>ab initio</i> study of antiferromagnetic<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mo>{</mml:mo><mml:msub><mml:mi>mathvariant="bold">Cr</mml:mi><mml:mn>7</mml:mn></mml:msub><mml:mi>M</mml:mi><mml:mo>}</mml:mo></mml:mrow></mml:math> rings. Physical Review B, 2016, 94, .	3.2	15
24	Studies of a Large Odd-Numbered Odd-Electron Metal Ring: Inelastic Neutron Scattering and Muon Spin Relaxation Spectroscopy of Cr ₈ Mn. Chemistry - A European Journal, 2016, 22, 1779-1788.	3.3	27
25	Relaxation dynamics in the frustrated<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>Cr</mml:mi><mml:mn>9</mml:mn></mml:msub></mml:math> ring probed by NMR. Physical Review B, 2016, 93, .	3.2	10
26	Long-lasting hybrid quantum information processing in a cavity-protection regime. Physical Review B, 2016, 93, .	3.2	6
27	Switchable Interaction in Molecular Double Qubits. Chem, 2016, 1, 727-752.	11.7	60
28	Digital quantum simulators in a scalable architecture of hybrid spin-photon qubits. Scientific Reports, 2015, 5, 16036.	3.3	25
29	Spin Dynamics in Hybrid Iron Oxide-Gold Nanostructures. Journal of Physical Chemistry C, 2015, 119, 1224-1233.	3.1	9
30	Direct observation of finite size effects in chains of antiferromagnetically coupled spins. Nature Communications, 2015, 6, 7061.	12.8	30
31	Response to "Comment on "Theoretical design of molecular nanomagnets for magnetic refrigeration" [Appl. Phys. Lett. 105, 046101 (2014)]. Applied Physics Letters, 2014, 105, 046102.	3.3	3
32	Robustness of quantum gates with hybrid spin-photon qubits in superconducting resonators. Physical Review A, 2014, 89, .	2.5	11
33	Elementary excitations in uranium dioxide: Unravelling the tangle. Comptes Rendus Physique, 2014, 15, 573-579.	3.2	22
34	A Detailed Study of the Magnetism of Chiral {Cr ₇ M} Rings: An Investigation into Parametrization and Transferability of Parameters. Journal of the American Chemical Society, 2014, 136, 9763-9772.	0.9	0
35	Molecular nanomagnets with switchable coupling for quantum simulation. Scientific Reports, 2014, 4, 7423.	13.7	26
36		3.3	58

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37	Quantum Information Processing with Hybrid Spin-Photon Qubit Encoding. Physical Review Letters, 2013, 111, 110501.	7.8	28
38	Many-Body Models for Molecular Nanomagnets. Physical Review Letters, 2013, 110, 157204.	7.8	41
39	Magnetic properties and chiral states of a trimetallic uranium complex. Journal of Physics Condensed Matter, 2013, 25, 486001.	1.8	12
40	Relaxation dynamics in a Fe ₇ nanomagnet. Physical Review B, 2013, 87, .	3.2	15
41	Detection of entanglement between collective spins. Physical Review B, 2013, 88, .	3.2	6
42	Theoretical design of molecular nanomagnets for magnetic refrigeration. Applied Physics Letters, 2013, 103, .	3.3	24
43	Magnetic properties and relaxation dynamics of a frustrated Ni ₇ molecular nanomagnet. Journal of Physics Condensed Matter, 2012, 24, 104006.	1.8	14
44	Spin dynamics of molecular nanomagnets unravelled at atomic scale by four-dimensional inelastic neutron scattering. Nature Physics, 2012, 8, 906-911.	16.7	108
45	Magnetic Anisotropy of Cr ₇ Ni Spin Clusters on Surfaces. Advanced Functional Materials, 2012, 22, 3706-3713.	14.9	28
46	Varying spin state composition by the choice of capping ligand in a family of molecular chains: detailed analysis of magnetic properties of chromium(iii) horseshoes. Dalton Transactions, 2011, 40, 2725.	3.3	18
47	Multipolar, magnetic, and vibrational lattice dynamics in the low-temperature phase of uranium dioxide. Physical Review B, 2011, 84, .	3.2	44
48	Molecular Nanomagnets as Quantum Simulators. Physical Review Letters, 2011, 107, 230502.	7.8	79
49	Magnetization and spin dynamics of a Cr-based magnetic cluster. Journal of Magnetism and Magnetic Materials, 2010, 322, 1262-1264.	2.3	4
50	Inelastic neutron scattering and frequency-domain magnetic resonance studies of S=4 and S=12 Mn ₆ single-molecule magnets. Physical Review B, 2010, 81, .	3.2	21
51	Entanglement in Supramolecular Spin Systems of Two Weakly Coupled Antiferromagnetic Rings (Purple- T_j ETQq1 1 0.784314 rgBT / Overbo Physical Review Letters, 2010, 104, 037203.	7.8	99
52	Quadrupolar Waves in Uranium Dioxide. Physical Review Letters, 2010, 105, 167201.	7.8	34
53	Probing local magnetization in molecular heterometallic Cr ₂ Physical Review B, 2010, 82, .	3.2	15
54	Relaxation dynamics of the Fe ₈ molecular nanomagnet as probed by nuclear magnetic resonance. Dalton Transactions, 2010, 39, 4869.	3.3	1

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55	Phonon-induced relaxation in the Cr_7Ni_8 molecule probed by NMR. Physical Review B, 2010, 82, .	3.2	47
56	Successful grafting of isolated molecular Cr_7Ni_8 on Au(111) surface. Physical Review B, 2009, 79, .	3.2	49
57	Rotational bands in open antiferromagnetic rings: A neutron spectroscopy study of Cr_8Zn . Physical Review B, 2009, 79, .	3.2	19
58	Evidence of spin singlet ground state in the frustrated antiferromagnetic ring Cr_8Ni_7 . Physical Review B, 2009, 79, .	3.2	39
59	Unconventional Nonequilibrium Dynamics in Ni_{10} Molecules: Evidence from NMR. Physical Review Letters, 2009, 102, 177201.	7.8	8
60	Slow magnetic dynamics in the Ni_{10} family of compounds. Solid State Sciences, 2009, 11, 778-785.	3.2	2
61	Engineering the coupling between molecular spin qubits by coordination chemistry. Nature Nanotechnology, 2009, 4, 173-178.	31.5	374
62	Neutron spectroscopy and magnetic relaxation of the Mn_6 nanomagnets. Polyhedron, 2009, 28, 1940-1944.	2.2	10
63	Multipolar interactions in f -electron systems: The paradigm of actinide dioxides. Reviews of Modern Physics, 2009, 81, 807-863.	45.6	386
64	Inelastic neutron scattering investigations of molecular nanomagnets. Inorganica Chimica Acta, 2008, 361, 3771-3776.	2.4	22
65	Breakdown of the Giant Spin Model in the Magnetic Relaxation of the Mn_6 Nanomagnets. Physical Review Letters, 2008, 100, 157203.	7.8	67
66	X-ray magnetic circular dichroism investigation of spin and orbital moments in Cr_8 and Cr_7Ni_8 antiferromagnetic rings. Physical Review B, 2008, 77, .	3.2	19
67	Inelastic neutron scattering study of the multipolar order parameter in NpO_2 . Physical Review B, 2008, 78, .	3.2	37
68	Spin dynamics of Fe_7M ($\text{M}=\text{Zn}, \text{Mn}$) heterometallic rings probed by neutron spectroscopy. Physical Review B, 2007, 75, .	3.2	7
69	Elementary excitations in antiferromagnetic Heisenberg spin segments. Physical Review B, 2007, 76, .	3.2	22
70	Low-energy spin dynamics in the giant keplerate molecule $\text{Mo}_{72}\text{Fe}_{30}$: A muon spin relaxation and	3.2	14
71	Spin triangles as optimal units for molecule-based quantum gates. Physical Review B, 2007, 76, .	3.2	67
72	Anisotropic magnetic fluctuations in 3- antiferromagnets. Journal of Magnetism and Magnetic Materials, 2007, 310, 1698-1702.	2.3	18

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73	Molecular spin clusters for quantum computation. Journal of Magnetism and Magnetic Materials, 2007, 310, e501-e502.	2.3	8
74	Relaxation of the magnetization in a molecule containing ions. Journal of Magnetism and Magnetic Materials, 2007, 310, 1450-1451.	2.3	3
75	Unified crystal-field picture for actinide dioxides. Journal of Physics and Chemistry of Solids, 2007, 68, 2020-2023.	4.0	6
76	Single molecule magnets for quantum computation. Journal Physics D: Applied Physics, 2007, 40, 2999-3004.	2.8	102
77	Quantum Oscillations of the Total Spin in a Heterometallic Antiferromagnetic Ring: Evidence from Neutron Spectroscopy. Physical Review Letters, 2007, 98, 167401.	7.8	97
78	Molecular routes for spin cluster qubits. Dalton Transactions, 2006, , 2810.	3.3	66
79	High-Temperature Slow Relaxation of the Magnetization in Ni ₁₀ Magnetic Molecules. Physical Review Letters, 2006, 97, 207201.	7.8	54
80	Spin dynamics of molecular nanomagnets. Physica B: Condensed Matter, 2006, 385-386, 301-306.	2.7	3
81	Decay of time-correlations of microscopic observables in magnetic molecules. Physica B: Condensed Matter, 2006, 374-375, 109-113.	2.7	3
82	Relaxation of the magnetization in magnetic molecules. Journal of Applied Physics, 2006, 99, 08D101.	2.5	2
83	Inelastic-neutron-scattering study of excited spin multiplets and low-energy phonons in the Fe ₈ nanomagnet: Implications for relaxation. Physical Review B, 2006, 73, .	3.2	13
84	Hidden Order and Low-Energy Excitations in NpO ₂ . Physical Review Letters, 2006, 97, 207203.	7.8	57
85	Quantum tunneling of the magnetization in molecular nanomagnets: The crucial role of S mixing. Polyhedron, 2005, 24, 2459-2463.	2.2	1
86	AF molecular rings for quantum computation. Polyhedron, 2005, 24, 2562-2567.	2.2	8
87	Octupolar order in : A specific heat investigation. Physica B: Condensed Matter, 2005, 359-361, 1087-1089.	2.7	22
88	NMR as a Probe of the Relaxation of the Magnetization in Magnetic Molecules. Physical Review Letters, 2005, 94, 077203.	7.8	66
89	Spin dynamics of heterometallic Cr ₇ M wheels (M=Mn, Zn, Ni) probed by inelastic neutron scattering. Physical Review B, 2005, 71, .	3.2	89
90	Perturbative approach to mixing in f-electron systems: Application to actinide dioxides. Physical Review B, 2005, 71, .	3.2	48

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91	Spin dynamics and tunneling of the Néel vector in the Fe ₁₀ magnetic wheel. <i>Physical Review B</i> , 2005, 71, .	3.2	41
92	Spherical neutron spin polarimetry of anisotropic magnetic fluctuations in UO ₂ . <i>Physical Review B</i> , 2005, 72, .	3.2	33
93	Topology and spin dynamics in magnetic molecules. <i>Physical Review B</i> , 2005, 72, .	3.2	61
94	Proposal for Quantum Gates in Permanently Coupled Antiferromagnetic Spin Rings without Need of Local Fields. <i>Physical Review Letters</i> , 2005, 94, 190501.	7.8	115
95	Molecular Engineering of Antiferromagnetic Rings for Quantum Computation. <i>Physical Review Letters</i> , 2005, 94, 207208.	7.8	291
96	Quantum Magneto-Oscillations in a Supramolecular Mn(II)-[3Å-3] Grid. <i>Physical Review Letters</i> , 2004, 92, 096403.	7.8	42
97	Quantum fluctuations of the total spin in molecular nanomagnets: Evidence from torque and specific heat. <i>Journal of Applied Physics</i> , 2004, 95, 7348-7350.	2.5	4
98	Inelastic neutron scattering study of the molecular grid nanomagnet Mn-[3Å-3]. <i>Physical Review B</i> , 2004, 69, .	3.2	33
99	SMixing and Quantum Tunneling of the Magnetization in Molecular Nanomagnets. <i>Physical Review Letters</i> , 2004, 92, 207205.	7.8	77
100	Intra- and inter-multiplet magnetic excitations in a tetrairon(III) molecular cluster. <i>Physical Review B</i> , 2004, 70, .	3.2	27
101	Resonant x-ray scattering study of magnetic-dipole and electric-quadrupole order in U _{0.75} Np _{0.25} O ₂ . <i>Physical Review B</i> , 2004, 70, .	3.2	36
102	Macroscopic evidence of quantum coherent oscillations of the total spin in the Mn-[3×3] molecular nanomagnet. <i>European Physical Journal B</i> , 2003, 36, 169-173.	1.5	19
103	Multipolar ordering in NpO ₂ below 25 K. <i>Journal of Physics Condensed Matter</i> , 2003, 15, S2287-S2296.	1.8	48
104	Temperature dependence of single particle excitations in a S=1 chain: Exact diagonalization calculations compared to neutron scattering experiments. <i>Physical Review B</i> , 2002, 66, .	3.2	3
105	Non-Dipolar Degrees of Freedom in Neptunium Dioxide. <i>Journal of the Physical Society of Japan</i> , 2002, 71, 11-16.	1.6	24
106	Triple-q† Octupolar Ordering in NpO ₂ . <i>Physical Review Letters</i> , 2002, 89, 187202.	7.8	168
107	Localized 4f States and Dynamic Jahn-Teller Effect in PrO ₂ . <i>Physical Review Letters</i> , 2001, 86, 2082-2085.	7.8	32
108	Lévy scaling in random walks with fluctuating variance. <i>Physical Review E</i> , 2000, 61, 93-99.	2.1	15

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109	Field-Dependent Energy Scales in URu ₂ Si ₂ . Physical Review Letters, 2000, 85, 654-657.	7.8	25
110	Magnetic-Octupole Order in Neptunium Dioxide?. Physical Review Letters, 2000, 85, 2188-2191.	7.8	115
111	Magnetic excitations and dynamical Jahn-Teller distortions in UO ₂ . Physical Review B, 1999, 59, 13892-13900.	3.2	102
112	Polarized neutron scattering study of the magnetic response across TN in a single crystal of UO ₂ . Journal of Applied Physics, 1999, 85, 4524-4526.	2.5	6
113	Magnetism of actinide compounds. Advances in Physics, 1999, 48, 537-653.	14.4	142
114	Magnetization and susceptibility of the Kondo compounds, $x=0, 1, 1.5, 2$. Journal of Physics Condensed Matter, 1998, 10, 4465-4475.	1.8	11
115	Behavior of URu ₂ Si ₂ in an applied magnetic field. Physical Review B, 1998, 57, 5191-5199.	3.2	50
116	Quantum fluctuations and anisotropy in quasi-one-dimensional antiferromagnets. Physical Review B, 1997, 56, 5373-5379.	3.2	3
117	Competition between Kondo effect and magnetic interaction in Kondo systems. Physica B: Condensed Matter, 1997, 230-232, 523-528.	2.7	4
118	Kondo reduction of magnetic moment under high external field in CeCu ₅ : Theoretical interpretation. Solid State Communications, 1997, 103, 585-589.	1.9	1
119	Molecular-field theory of moment reduction in Kondo systems with crystal-field effects. Zeitschrift für Physik B-Condensed Matter, 1996, 100, 95-104.	1.1	7
120	Correlation effects on electronic and optical properties of a C ₆₀ molecule: A variational Monte Carlo study. Physical Review B, 1996, 54, 13611-13615.	3.2	3
121	Classical fluctuations and anisotropy in quasi-one-dimensional antiferromagnets. Physical Review B, 1996, 54, 6327-6332.	3.2	8
122	Numerical calculation of correlation functions by boundary condition averaging: test on the one-dimensional Hubbard model. Computer Physics Communications, 1995, 92, 16-20.	7.5	0
123	Moment reduction in Kondo systems with crystal field effects: molecular field theory. Physica B: Condensed Matter, 1995, 206-207, 138-140.	2.7	0
124	Quadrupolar model of the 17.5 K phase transition in URu ₂ Si ₂ . Physica B: Condensed Matter, 1995, 206-207, 421-423.	2.7	0
125	Santini and Amoretti Reply. Physical Review Letters, 1995, 74, 4098-4098.	7.8	16
126	Crystal-field potentials of PrFe ₂ Si ₂ and PrFe ₂ Ge ₂ as deduced from inelastic neutron scattering and specific heat measurements. Journal of Physics Condensed Matter, 1995, 7, 8317-8330.	1.8	21

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127	Neutron spectroscopy and anisotropy of the magnetic properties of UOS: Interpretation in a crystal-field and molecular-field model. <i>Journal of Magnetism and Magnetic Materials</i> , 1995, 139, 339-346.	2.3	7
128	Crystal Field Model of the Magnetic Properties of URu ₂ Si ₂ . <i>Physical Review Letters</i> , 1994, 73, 1027-1030.	7.8	206
129	Analysis of the crystal field level splittings for Tm ³⁺ in YBCO-type compounds. <i>Physica B: Condensed Matter</i> , 1994, 193, 221-231.	2.7	7
130	Crystal-field excitations and gap opening in Tm: YBa ₂ Cu ₄ O ₈ by inelastic neutron scattering. <i>Physica C: Superconductivity and Its Applications</i> , 1994, 221, 227-236.	1.2	13
131	Spin correlations in dense Kondo systems. <i>Journal of Applied Physics</i> , 1993, 73, 5403-5405.	2.5	0
132	Magnetic correlations in the Anderson lattice: An exact-diagonalization study. <i>Physical Review B</i> , 1993, 47, 1130-1133.	3.2	15
133	Self-consistent crystal-field description of tetragonal Pr and U compounds with Van Vleck induced magnetism. <i>Journal of Applied Physics</i> , 1993, 73, 6560-6562.	2.5	8
134	Intrinsic and extrinsic effects in surfaces: Acoustic-phonon softening of capped Si(111) surfaces. <i>Physical Review B</i> , 1992, 46, 9865-9868.	3.2	22
135	Finite-size-scaling study of the gap formation in the \tilde{c} -Kondo-necklace \tilde{c} ™™ model. <i>Physical Review B</i> , 1992, 46, 7422-7426.	3.2	24
136	Surface phonon dispersion curves in GaAs(110) and Ge(111)2 \tilde{A} -1: a critical comparison. <i>Surface Science</i> , 1991, 241, 346-352.	1.9	29
137	Lattice dynamics of GaAs(110) and Ge(111): 2 \tilde{A} -1. <i>Vacuum</i> , 1990, 41, 605-607.	3.5	0
138	Dynamics and structural assessment of open semiconductor surfaces: GaAs(110). <i>Physical Review B</i> , 1990, 42, 11942-11945.	3.2	46
139	Dynamics of extensively reconstructed surfaces: Si(111) 2 \tilde{A} -1. <i>Physical Review Letters</i> , 1989, 62, 3070-3073.	7.8	55
140	Surface lattice dynamics of the Pandey-reconstructed Si(111)-2 \tilde{A} -1: No pathologies in the experimental findings. <i>Surface Science</i> , 1989, 211-212, 335-342.	1.9	0
141	Surface Phonons in Si(111) 2 \tilde{A} -1: Folding and Chain Effects of the Reconstruction. <i>Physica Scripta</i> , 1989, T25, 305-308.	2.5	0