

# Richard Evans

## List of Publications by Year in descending order

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108  
papers

5,261  
citations

126907

33  
h-index

88630

70  
g-index

111  
all docs

111  
docs citations

111  
times ranked

4545  
citing authors

#	ARTICLE	IF	CITATIONS
1	Transient ferromagnetic-like state mediating ultrafast reversal of antiferromagnetically coupled spins. <i>Nature</i> , 2011, 472, 205-208.	27.8	828
2	Ultrafast heating as a sufficient stimulus for magnetization reversal in a ferrimagnet. <i>Nature Communications</i> , 2012, 3, 666.	12.8	588
3	Atomistic spin model simulations of magnetic nanomaterials. <i>Journal of Physics Condensed Matter</i> , 2014, 26, 103202.	1.8	542
4	Newtype single-layer magnetic semiconductor in transition-metal dichalcogenides $VX_2$ ( $X = S, Se$ and $Tj$ ) $E_{TQ} = 0.0$ $J_{\text{eff}}/k_B T$ Over	3.3	170
5	Stochastic form of the Landau-Lifshitz-Bloch equation. <i>Physical Review B</i> , 2012, 85, .	3.2	157
6	The Magnetic Genome of Two-Dimensional van der Waals Materials. <i>ACS Nano</i> , 2022, 16, 6960-7079.	14.6	149
7	Constrained Monte Carlo method and calculation of the temperature dependence of magnetic anisotropy. <i>Physical Review B</i> , 2010, 82, .	3.2	130
8	Crystallographically amorphous ferrimagnetic alloys: Comparing a localized atomistic spin model with experiments. <i>Physical Review B</i> , 2011, 84, .	3.2	130
9	Effective anisotropies and energy barriers of magnetic nanoparticles with Néel surface anisotropy. <i>Physical Review B</i> , 2007, 76, .	3.2	122
10	Quantitative simulation of temperature-dependent magnetization dynamics and equilibrium properties of elemental ferromagnets. <i>Physical Review B</i> , 2015, 91, .	3.2	119
11	Origin of reduced magnetization and domain formation in small magnetite nanoparticles. <i>Scientific Reports</i> , 2017, 7, 45997.	3.3	113
12	Multiscale modeling of magnetic materials: Temperature dependence of the exchange stiffness. <i>Physical Review B</i> , 2010, 82, .	3.2	95
13	Spin canting across core/shell $Fe_3O_4/MnFe_3O_4$ nanoparticles. <i>Scientific Reports</i> , 2018, 8, 3425.	3.3	90
14	Temperature-dependent exchange stiffness and domain wall width in Co. <i>Physical Review B</i> , 2016, 94, .	3.2	86
15	Biquadratic exchange interactions in two-dimensional magnets. <i>Npj Computational Materials</i> , 2020, 6, .	8.7	83
16	Ultrafast and Distinct Spin Dynamics in Magnetic Alloys. <i>Spin</i> , 2015, 05, 1550004.	1.3	81
17	The Curie temperature distribution of FePt granular magnetic recording media. <i>Applied Physics Letters</i> , 2012, 101, 052406.	3.3	68
18	Ultrafast thermally induced magnetic switching in synthetic ferrimagnets. <i>Applied Physics Letters</i> , 2014, 104, .	3.3	67

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19	Magnetotransport in metal/insulating-ferromagnet heterostructures: Spin Hall magnetoresistance or magnetic proximity effect. <i>Physical Review B</i> , 2015, 92, .	3.2	60
20	Ultrafast dynamical path for the switching of a ferrimagnet after femtosecond heating. <i>Physical Review B</i> , 2013, 87, .	3.2	57
21	Properties and dynamics of meron topological spin textures in the two-dimensional magnet CrCl <sub>3</sub> . <i>Nature Communications</i> , 2021, 12, 185.	12.8	57
22	Influence of interfacial roughness on exchange bias in core-shell nanoparticles. <i>Physical Review B</i> , 2011, 84, .	3.2	56
23	Thermally induced error: Density limit for magnetic data storage. <i>Applied Physics Letters</i> , 2012, 100, .	3.3	56
24	Spin-current-mediated rapid magnon localisation and coalescence after ultrafast optical pumping of ferrimagnetic alloys. <i>Nature Communications</i> , 2019, 10, 1756.	12.8	54
25	The thermodynamic limits of magnetic recording. <i>Journal of Applied Physics</i> , 2012, 111, .	2.5	53
26	Temperature-dependent properties of CoFeB/MgO thin films: Experiments versus simulations. <i>Physical Review B</i> , 2018, 98, .	3.2	46
27	The Landau-Lifshitz equation in atomistic models. <i>Low Temperature Physics</i> , 2015, 41, 705-712.	0.6	44
28	Energy losses in interacting fine-particle magnetic composites. <i>Journal Physics D: Applied Physics</i> , 2010, 43, 474010.	2.8	40
29	Role of element-specific damping in ultrafast, helicity-independent, all-optical switching dynamics in amorphous (Gd,Tb)Co thin films. <i>Physical Review B</i> , 2021, 103, .	3.2	40
30	Atomistic spin model simulation of magnetic reversal modes near the Curie point. <i>Applied Physics Letters</i> , 2010, 97, .	3.3	39
31	Calculating temperature-dependent properties of $\text{Nd}_2\text{B}$ permanent magnets by atomistic spin model simulations. <i>Physical Review B</i> , 2019, 99, .	3.2	37
32	The role of faceting and elongation on the magnetic anisotropy of magnetite Fe <sub>3</sub> O <sub>4</sub> nanocrystals. <i>Scientific Reports</i> , 2020, 10, 2722.	3.3	36
33	Multiscale model approaches to the design of advanced permanent magnets. <i>Scripta Materialia</i> , 2018, 148, 56-62.	5.2	35
34	Bimeron clusters in chiral antiferromagnets. <i>Npj Computational Materials</i> , 2020, 6, .	8.7	34
35	Quantum Rescaling, Domain Metastability, and Hybrid Domain Walls in 2D CrI <sub>3</sub> Magnets. <i>Advanced Materials</i> , 2021, 33, e2004138.	21.0	34
36	On beating the superparamagnetic limit with exchange bias. <i>Europhysics Letters</i> , 2009, 88, 57004.	2.0	33

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37	Temperature dependence of the effective anisotropies in magnetic nanoparticles with Néel surface anisotropy. Journal Physics D: Applied Physics, 2010, 43, 474009.	2.8	29
38	Thermally nucleated magnetic reversal in CoFeB/MgO nanodots. Scientific Reports, 2017, 7, 16729.	3.3	27
39	Optimal phase space sampling for Monte Carlo simulations of Heisenberg spin systems. Journal of Physics Condensed Matter, 2019, 31, 095802.	1.8	27
40	Surface and interface effects in magnetic core-shell nanoparticles. MRS Bulletin, 2013, 38, 909-914.	3.5	26
41	High energy product in Battenberg structured magnets. Applied Physics Letters, 2014, 105, .	3.3	26
42	Hysteresis features of the transition-metal dichalcogenides $VX_2$ ( $X = S, Se, \text{ and } Te$ ). Materials Research Express, 2018, 5, 046108.	1.6	25
43	Dynamics of domain wall driven by spin-transfer torque. Physical Review B, 2011, 83, .	3.2	24
44	Perpendicular anisotropy L10-FePt based pseudo spin valve with Ag spacer layer. Applied Physics Letters, 2011, 98, 132501.	3.3	24
45	Mapping motion of antiferromagnetic interfacial uncompensated magnetic moment in exchange-biased bilayers. Scientific Reports, 2015, 5, 9183.	3.3	24
46	Temperature scaling of two-ion anisotropy in pure and mixed anisotropy systems. Physical Review B, 2020, 102, .	3.2	24
47	The influence of shape and structure on the Curie temperature of Fe and Co nanoparticles. Journal of Applied Physics, 2006, 99, 08G703.	2.5	23
48	Magnetic stray fields in nanoscale magnetic tunnel junctions. Journal Physics D: Applied Physics, 2020, 53, 044001.	2.8	23
49	Model of Magnetic Damping and Anisotropy at Elevated Temperatures: Application to Granular FePt Films. Physical Review Applied, 2020, 14, .	3.8	23
50	Half-Metallic Ferromagnetism in Double Perovskite $Ca_2CoMoO_6$ Compound: DFT+U Calculations. Spin, 2017, 07, 1750009.	1.3	22
51	Magnetic anisotropy of the noncollinear antiferromagnet IrMn3. Physical Review B, 2019, 100, .	3.2	21
52	Spin-lattice dynamics model with angular momentum transfer for canonical and microcanonical ensembles. Physical Review B, 2021, 103, .	3.2	20
53	Atomistic origin of exchange anisotropy in noncollinear $\text{CoFe}$ bilayers. Physical Review B, 2020, 102, .	3.2	20
54	Relativistic domain-wall dynamics in van der Waals antiferromagnet MnPS3. Npj Computational Materials, 2022, 8, .	8.7	18

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55	Enhancement of intrinsic magnetic damping in defect-free epitaxial Fe <sub>3</sub> O <sub>4</sub> thin films. Applied Physics Letters, 2019, 114, .	3.3	17
56	Rate-dependence of the switching field distribution in nanoscale granular magnetic materials. Applied Physics Letters, 2010, 97, 062504.	3.3	16
57	Domain wall dynamics in two-dimensional van der Waals ferromagnets. Applied Physics Reviews, 2021, 8, .	11.3	16
58	Effects of surface anisotropy on the energy barrier in cobalt-silver core-shell nanoparticles. Journal of Magnetism and Magnetic Materials, 2007, 316, e791-e794.	2.3	15
59	Atomic and electronic structure of twin growth defects in magnetite. Scientific Reports, 2016, 6, 20943.	3.3	15
60	Spin transfer torque switching dynamics in CoFeB/MgO magnetic tunnel junctions. Physical Review B, 2021, 103, .	3.2	15
61	Anisotropic exchange in Nd-Fe-B permanent magnets. Materials Research Letters, 2020, 8, 89-96.	8.7	14
62	Atomistic simulations of $\text{Fe}/\text{Nd}_2\text{Fe}_{14}\text{B}$ magnetic core/shell nanocomposites with enhanced energy product for high temperature permanent magnet applications. Journal of Applied Physics, 2020, 127, 133901.	2.5	14
63	Exchange bias in multigranular noncollinear $\text{IrMn}/\text{Co}$ thin films. Physical Review B, 2021, 103, .	3.4	14
64	Atomistic modeling of magnetization reversal modes in $\text{L}/\text{Mn}$ nanodots with magnetically soft edges. Physical Review B, 2014, 90, .	3.2	14
65	Effect of stacking faults on the magnetocrystalline anisotropy of hcp Co: a first-principles study. Journal of Physics Condensed Matter, 2013, 25, 296006.	1.8	11
66	Temperature and Thickness Dependence of Statistical Fluctuations of the Gilbert Damping in $\text{Co}/\text{Fe}$ Nanodots. Physical Review Applied, 2018, 11, 044002.	3.8	11
67	Atomistic investigation of the temperature and size dependence of the energy barrier of CoFeB/MgO nanodots. Journal of Applied Physics, 2020, 128, .	2.5	11
68	Magnetoresistance Dynamics in Superparamagnetic $\text{Co}/\text{Fe}$ Nanodots. Physical Review Applied, 2020, 13, .	3.1	11
69	Validation of $\hat{H}(M, \hat{M})$ -technique for identification of switching field distributions in the presence of thermal relaxation. Journal of Applied Physics, 2010, 108, 123901.	2.5	10
70	Probability Distribution of Substituted Titanium in RT <sub>12</sub> (R = Nd and Sm; T = Fe and Co) Structures. IEEE Transactions on Magnetics, 2018, 54, 1-5.	2.1	10
71	Influence of uniaxial anisotropy on domain wall motion driven by spin torque. Physical Review B, 2015, 92, .	3.2	9
72	Study of perpendicular anisotropy L10-FePt pseudo spin valves using a micromagnetic trilayer model. Journal of Applied Physics, 2015, 117, 213901.	2.5	9

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73	The antiphase boundary in half-metallic Heusler alloy Co <sub>2</sub> Fe(Al,Si): atomic structure, spin polarization reversal, and domain wall effects. Applied Physics Letters, 2016, 109, .	3.3	9
74	Enhanced finite size and interface mixing effects in iridium manganese ultra thin films. Journal of Applied Physics, 2018, 124, 152105.	2.5	9
75	Atomistic origin of the athermal training effect in granular IrMn/CoFe bilayers. Physical Review B, 2021, 103, .	3.2	9
76	Large magnetoresistance in Heusler alloy-based current perpendicular to plane giant magnetoresistance sensors. Journal Physics D: Applied Physics, 2021, 54, 395004.	2.8	9
77	The Effects of Surface Coating on the Structural and Magnetic Properties of CoAg Core-Shell Nanoparticles. IEEE Transactions on Magnetics, 2007, 43, 3106-3108.	2.1	8
78	First-principles study of the Fe <sub>1-x</sub> MgO(0 0 1) interface: magnetic anisotropy. Journal of Physics Condensed Matter, 2016, 28, 156003.	1.8	8
79	Hybrid Design for Advanced Magnetic Recording Media: Combining Exchange-Coupled Composite Media with Coupled Granular Continuous Media. Physical Review Applied, 2017, 8, .	3.8	8
80	Spontaneous creation and annihilation dynamics of magnetic skyrmions at elevated temperature. Physical Review B, 2021, 104, .	3.2	8
81	Magnetic orientation in advanced recording media. Journal Physics D: Applied Physics, 2011, 44, 455002.	2.8	7
82	Anomalous damping dependence of the switching time in Fe/FePt bilayer recording media. Physical Review B, 2019, 99, .	3.2	7
83	Control of the exchange coupling in granular CoPt/Co recording media. Journal of Applied Physics, 2011, 109, 07B752.	2.5	6
84	Atomistic calculation of the thickness and temperature dependence of exchange coupling through a dilute magnetic oxide. Journal Physics D: Applied Physics, 2014, 47, 502001.	2.8	6
85	Manifestation of higher-order inter-granular exchange in magnetic recording media. Applied Physics Letters, 2017, 111, 082405.	3.3	6
86	Site-Resolved Contributions to the Magnetic-Anisotropy Energy and Complex Spin Structure of $\text{Fe}/\text{MgO}$ Sandwiches. Physical Review Applied, 2018, 9, .	3.8	6
87	Micromagnetic modeling of the heat-assisted switching process in high anisotropy FePt granular thin films. Journal of Applied Physics, 2020, 128, .	2.5	6
88	Phase boundary exchange coupling in the mixed magnetic phase regime of a Pd-doped FeRh epilayer. Physical Review Materials, 2020, 4, .	2.4	6
89	Atomistic simulation of sub-nanosecond non-equilibrium field cooling processes for magnetic data storage applications. Applied Physics Letters, 2014, 105, 192405.	3.3	5
90	Atomistic simulations of the magnetic properties of $\text{Ir}_{x-1}\text{Mn}_x$ alloys. Physical Review Materials, 2021, 5, .	2.4	5

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91	First principles and atomistic calculation of the magnetic anisotropy of Y2Fe14B. Journal of Applied Physics, 2021, 130, .	2.5	5
92	Atomistic Spin Dynamics. , 2020, , 427-448.		5
93	Atomistic Modeling of the Interlayer Coupling Behavior in Perpendicularly Magnetized $L1_{00}$ -FePt/Ag/ $L1_{00}$ -FePt Pseudo Spin Valves. IEEE Transactions on Magnetics, 2011, 47, 2646-2648.	2.1	4
94	Micromagnetic modelling of L10-FePt/Ag/L10-FePt pseudo spin valves. Applied Physics Letters, 2011, 99, 162503.	3.3	4
95	Evidence of Magnetostrictive Effects on STT-MRAM Performance by Atomistic and Spin Modeling. , 2018, , .		4
96	Spin wave excitations in exchange biased IrMn/CoFe bilayers. Journal of Applied Physics, 2020, 128, 033903.	2.5	4
97	Ultrafast magnetism as seen by x-rays. Proceedings of SPIE, 2012, , .	0.8	3
98	A STEM study of twin defects in Fe3O4(111)/YZO(111). Journal of Physics: Conference Series, 2014, 522, 012036.	0.4	3
99	Role of anti-phase boundaries in the formation of magnetic domains in magnetite thin films. Journal of Physics Condensed Matter, 2021, 33, 175802.	1.8	3
100	Antiferromagnets see the rainbow. Nature Photonics, 2016, 10, 622-623.	31.4	2
101	Magnetic Switching in BPM, TEAMR, and Modified TEAMR Using Dielectric Underlayer Media. IEEE Transactions on Magnetics, 2016, 52, 1-5.	2.1	2
102	The indispensable role of the transversal spin fluctuations mechanism in laser-induced demagnetization of Co/Pt multilayers with nanoscale magnetic domains. Nanotechnology, 2018, 29, 275703.	2.6	2
103	The Effect of Interstitial Nitrogen Addition on the Structural Properties of Supercells of NdFe <sub>12</sub> Ti <sub>2</sub> . IEEE Transactions on Magnetics, 2019, 55, 1-5.	2.1	2
104	Defect-correlated skyrmions and controllable generation in perpendicularly magnetized CoFeB ultrathin films. Applied Physics Letters, 2021, 119, .	3.3	2
105	Atomistic study on the pressure dependence of the melting point of NdFe12. AIP Advances, 2020, 10, 025130.	1.3	1
106	Engineering Ultrafast Magnetism. Springer Proceedings in Physics, 2015, , 297-299.	0.2	1
107	Atomistic Spin Dynamics. , 2018, , 1-23.		0
108	Nanomagnets: Quantum Rescaling, Domain Metastability, and Hybrid Domain Walls in 2D CrI <sub>3</sub> Magnets (Adv. Mater. 5/2021). Advanced Materials, 2021, 33, 2170036.	21.0	0