Richard D James

List of Publications by Year
in descending order

88 papers	5,301 citations	147801 31 h-index	82547 72 g-index
90 all docs	90 docs citations	90 times ranked	3032 citing authors

#	Article	IF	Citations
1	Inverse design of deployable origami structures that approximate a general surface. International Journal of Solids and Structures, 2022, 234-235, 111224.	2.7	24
2	Investigation of the breakdown of Navier-Stokes equation using Objective Molecular Dynamics. , 2022, , .		3
3	Design of soft magnetic materials. Npj Computational Materials, 2022, 8, .	8.7	10
4	Epitaxial SrTiO ₃ films with dielectric constants exceeding 25,000. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	7.1	6
5	Self-Assembled Periodic Nanostructures Using Martensitic Phase Transformations. Nano Letters, 2021, 21, 1246-1252.	9.1	9
6	Strain Relaxation via Phase Transformation in High-Mobility SrSnO₃ Films. ACS Applied Electronic Materials, 2021, 3, 1127-1132.	4.3	13
7	A tool to predict coercivity in magnetic materials. Acta Materialia, 2021, 208, 116697.	7.9	8
8	Quantitative analysis of compatible microstructure by electron backscatter diffraction. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2021, 379, 20200112.	3.4	2
9	Origami-inspired thin-film shape memory alloy devices. Scientific Reports, 2021, 11, 10988.	3.3	22
10	Origami and materials science. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2021, 379, 20200113.	3.4	11
11	A solution to the permalloy problemâ€"A micromagnetic analysis with magnetostriction. Applied Physics Letters, 2021, 118, .	3.3	7
12	Hybrid molecular beam epitaxy growth of BaTiO3 films. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2021, 39, .	2.1	5
13	Objective molecular dynamics of dissociating nitrogen under high temperature conditions. , 2021, , .		4
14	Exploding and weeping ceramics. Nature, 2021, 599, 416-420.	27.8	13
15	Bounds on the Energy of a Soft Cubic Ferromagnet with Large Magnetostriction. Journal of Nonlinear Science, 2020, 30, 3367-3388.	2.1	3
16	Branching of twins in shape memory alloys revisited. Journal of the Mechanics and Physics of Solids, 2020, 141, 103961.	4.8	15
17	The designs and deformations of rigidly and flat-foldable quadrilateral mesh origami. Journal of the Mechanics and Physics of Solids, 2020, 142, 104018.	4.8	39
18	Long time asymptotics for homoenergetic solutions of the Boltzmann equation. Hyperbolic-dominated case. Nonlinearity, 2020, 33, 3781-3815.	1.4	9

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19	Helical Miura origami. Physical Review E, 2020, 101, 033002.	2.1	31
20	Correlation between phase compatibility and efficient energy conversion in Zr-doped Barium Titanate. Scientific Reports, 2020, 10, 3496.	3.3	18
21	Energy Conversion by Phase Transformation in the Small-Temperature-Difference Regime. Annual Review of Materials Research, 2020, 50, 283-318.	9.3	14
22	Origins of the transformability of nickel-titanium shape memory alloys. Physical Review Materials, 2020, 4, .	2.4	2
23	Materials from mathematics. Bulletin of the American Mathematical Society, 2019, 56, 1-28.	1.5	10
24	Direct Conversion of Heat to Electricity Using First-Order Phase Transformations in Ferroelectrics. Physical Review Applied, 2019, 12, .	3.8	13
25	Phase transformations and compatibility in helical structures. Journal of the Mechanics and Physics of Solids, 2019, 131, 74-95.	4.8	9
26	Self-Similar Profiles for Homoenergetic Solutions of the Boltzmann Equation: Particle Velocity Distribution and Entropy. Archive for Rational Mechanics and Analysis, 2019, 231, 787-843.	2.4	17
27	Long-Time Asymptotics for Homoenergetic Solutions of the Boltzmann Equation: Collision-Dominated Case. Journal of Nonlinear Science, 2019, 29, 1943-1973.	2.1	11
28	Micromagnetics of Galfenol. Journal of Nonlinear Science, 2019, 29, 415-460.	2.1	5
29	Novel TiNiCuNb shape memory alloys with excellent thermal cycling stability. Journal of Alloys and Compounds, 2019, 782, 343-347.	5.5	33
30	Tuning crystallographic compatibility to enhance shape memory in ceramics. Physical Review Materials, 2019, 3, .	2.4	14
31	SYMMETRY, INVARIANCE AND THE STRUCTURE OF MATTER. , 2019, , .		1
32	Phase engineering and supercompatibility of shape memory alloys. Materials Today, 2018, 21, 265-277.	14.2	122
33	Engineering SrSnO₃ Phases and Electron Mobility at Room Temperature Using Epitaxial Strain. ACS Applied Materials & Interfaces, 2018, 10, 43802-43808.	8.0	37
34	In-situ characterization of highly reversible phase transformation by synchrotron X-ray Laue microdiffraction. Applied Physics Letters, 2016, 108, .	3.3	13
35	Determination of the stretch tensor for structural transformations. Journal of the Mechanics and Physics of Solids, 2016, 93, 34-43.	4.8	41
36	Directional-dependent thickness and bending rigidity of phosphorene. Physical Review B, 2016, 94, .	3.2	16

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37	Synthesis of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msup><mml:mrow><mml:mi>Î±</mml:mi></mml:mrow><mml:mrow><mml:mo>â€²</mml:mo><mml:mathvariant="normal">N</mml:mi></mml:mrow><mml:mrow><mml:mn>2</mml:mn></mml:mrow></mml:msub></mml:mrow></mml:Anisotropic Magnet by t. Physical Review Applied, 2016, 6, .	3.8	20
38	Exceptional Resilience of Small-Scale Au₃₀Cu₂₅Zn₄₅ under Cyclic Stress-Induced Phase Transformation. Nano Letters, 2016, 16, 7621-7625.	9.1	34
39	Braggâ€“von Laue diffraction generalized to twisted X-rays. Acta Crystallographica Section A: Foundations and Advances, 2016, 72, 190-196.	0.1	9
40	Zig-zag twins and helical phase transformations. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20150208.	3.4	11
41	Thermodynamics and Energy Conversion in Heusler Alloys. Springer Series in Materials Science, 2016, , 269-291.	0.6	6
42	Magnetic Phase Competition in Off-Stoichiometric Martensitic Heusler Alloys: The Ni $$_{50-x}$$ 50 - x Co $$_{x}$$ x Mn $$_{25+y}$$ 25 + y Sn $$_{25-y}$$ 25 - y System. Springer Series in Materials Science, 2016, , 193-216.	0.6	3
43	Magnetic alloys break the rules. Nature, 2015, 521, 298-299.	27.8	15
44	Taming the temperamental metal transformation. Science, 2015, 348, 968-969.	12.6	17
45	A spectral scheme for Kohnâ€“Sham density functional theory of clusters. Journal of Computational Physics, 2015, 287, 226-253.	3.8	24
46	Incompatible Sets of Gradients and Metastability. Archive for Rational Mechanics and Analysis, 2015, 218, 1363-1416.	2.4	9
47	9 T high magnetic field annealing effects on FeN bulk sample. Journal of Applied Physics, 2014, 115, 17A758.	2.5	9
48	Enhanced reversibility and unusual microstructure of a phase-transforming material. Nature, 2013, 502, 85-88.	27.8	337
49	Thermodynamics of energy conversion via first order phase transformation in low hysteresis magnetic materials. Energy and Environmental Science, 2013, 6, 1315.	30.8	33
50	Study of the cofactor conditions: Conditions of supercompatibility between phases. Journal of the Mechanics and Physics of Solids, 2013, 61, 2566-2587.	4.8	116
51	Ferromagnetic shape memory flapper for remotely actuated propulsion systems. Smart Materials and Structures, 2013, 22, 085030.	3.5	25
52	Energy Conversion by Multiferroic Phase Transformation. , 2012, , .		0
53	Design of viscometers corresponding to a universal molecular simulation method. Journal of Fluid Mechanics, 2012, 691, 461-486.	3.4	17
54	A weak compatibility condition for precipitation with application to the microstructure of PbTeâ€“Sb2Te3 thermoelectrics. Acta Materialia, 2011, 59, 6124-6132.	7.9	11

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55	The Direct Conversion of Heat to Electricity Using Multiferroic Alloys. Advanced Energy Materials, 2011, 1, 97-104.	19.5	162
56	Hysteresis and unusual magnetic properties in the singular Heusler alloy Ni45Co5Mn40Sn10. Applied Physics Letters, 2010, 97, .	3.3	138
57	Identification of Quaternary Shape Memory Alloys with Nearâ€Zero Thermal Hysteresis and Unprecedented Functional Stability. Advanced Functional Materials, 2010, 20, 1917-1923.	14.9	304
58	Nonequilibrium molecular dynamics for bulk materials and nanostructures. Journal of the Mechanics and Physics of Solids, 2010, 58, 145-163.	4.8	38
59	Transmission electron microscopy study of phase compatibility in low hysteresis shape memory alloys. Philosophical Magazine, 2010, 90, 177-195.	1.6	111
60	Energy barriers and hysteresis in martensitic phase transformations. Acta Materialia, 2009, 57, 4332-4352.	7.9	243
61	Ferromagnetic shape memory flapper. Sensors and Actuators A: Physical, 2009, 150, 277-279.	4.1	29
62	Breaching the work output limitation of ferromagnetic shape memory alloys. Applied Physics Letters, 2008, 93, .	3.3	29
63	Objective molecular dynamics. Journal of the Mechanics and Physics of Solids, 2007, 55, 2206-2236.	4.8	95
64	Periodic Inclusionâ€"Matrix Microstructures with Constant Field Inclusions. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2007, 38, 781-787.	2.2	36
65	Combinatorial search of thermoelastic shape-memory alloys with extremely small hysteresis width. Nature Materials, 2006, 5, 286-290.	27.5	551
66	Objective structures. Journal of the Mechanics and Physics of Solids, 2006, 54, 2354-2390.	4.8	83
67	A Hierarchy of Plate Models Derived from Nonlinear Elasticity by Gamma-Convergence. Archive for Rational Mechanics and Analysis, 2006, 180, 183-236.	2.4	316
68	Elasticity theory for self-assembled protein lattices with application to the martensitic phase transition in bacteriophage T4 tail sheath. Physical Review E, 2006, 73, 011917.	2.1	30
69	APPLIED PHYSICS: The Material Is the Machine. Science, 2005, 307, 53-54.	12.6	230
70	A theorem on geometric rigidity and the derivation of nonlinear plate theory from three-dimensional elasticity. Communications on Pure and Applied Mathematics, 2002, 55, 1461-1506.	3.1	493
71	A constrained theory of magnetoelasticity. Journal of the Mechanics and Physics of Solids, 2002, 50, 283-320.	4.8	175
72	New materials from theory: trends in the development of active materials. International Journal of Solids and Structures, 2000, 37, 239-250.	2.7	16

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73	A scheme for the passage from atomic to continuum theory for thin films, nanotubes and nanorods. Journal of the Mechanics and Physics of Solids, 2000, 48, 1519-1540.	4.8	91
74	Pressurized Shape Memory Thin Films. Journal of Elasticity, 2000, 59, 399-436.	1.9	17
75	Occurrence of ferromagnetic shape memory alloys (invited). Journal of Applied Physics, 2000, 87, 4707-4711.	2.5	102
76	A theory of magnetostriction oriented towards applications. Journal of Applied Physics, 1997, 81, 5706-5708.	2.5	61
77	Micromagnetics of very thin films. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 1997, 453, 213-223.	2.1	145
78	Prediction of microstructure in monoclinic LaNbO4 by energy minimization. Acta Materialia, 1997, 45, 4271-4281.	7.9	26
79	Deformation of Shape-Memory Materials. Materials Research Society Symposia Proceedings, 1991, 246, 81.	0.1	6
80	The formation of filamentary voids in solids. Journal of the Mechanics and Physics of Solids, 1991, 39, 783-813.	4.8	48
81	A relation between the jump in temperature across a propagating phase boundary and the stability of solid phases. Journal of Elasticity, 1983, 13, 357-378.	1.9	10
82	The equilibrium and post-buckling behavior of an elastic curve governed by a non-convex energy. Journal of Elasticity, 1981, 11, 239-269.	1.9	35
83	Finite deformation by mechanical twinning. Archive for Rational Mechanics and Analysis, 1981, 77, 143-176.	2.4	138
84	The propagation of phase boundaries in elastic bars. Archive for Rational Mechanics and Analysis, 1980, 73, 125-158.	2.4	149
85	Co-existent phases in the one-dimensional static theory of elastic bars. Archive for Rational Mechanics and Analysis, 1979, 72, 99-140.	2.4	84
86	Special Microstructures and Twin Features in Ti₅₀Ni_{50-X}(Pd,Au)_X at Small Hysteresis. Solid State Phenomena, 0, 172-174, 105-110.	0.3	4
87	3D Microstructures of Sb₂Te₃Precipitates in PbTe Matrix with Prediction by a Weak Compatibility Condition. , 0, , 125-130.		0
88	Tem Investigation of Microstructures in Low-Hysteresis Ti50Ni50-xPdxAlloys with Special Lattice Parameters. , 0, , 145-152.		0