Neil D Mathur

List of Publications by Year
in descending order

103	17,029	87401 40	39744 98
papers	citations	h-index	g-index

106	106	106	14079
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Multiferroic and magnetoelectric materials. Nature, 2006, 442, 759-765.	13.7	7,032
2	Magnetically mediated superconductivity in heavy fermion compounds. Nature, 1998, 394, 39-43.	13.7	1,543
3	Giant Electrocaloric Effect in Thin-Film PbZr0.95Ti0.05O3. Science, 2006, 311, 1270-1271.	6.0	1,424
4	Caloric materials near ferroic phase transitions. Nature Materials, 2014, 13, 439-450.	13.3	1,129
5	Giant sharp and persistent converse magnetoelectric effects in multiferroic epitaxial heterostructures. Nature Materials, 2007, 6, 348-351.	13.3	678
6	Large low-field magnetoresistance in La0.7Ca0.3MnO3 induced by artificial grain boundaries. Nature, 1997, 387, 266-268.	13.7	433
7	Giant Electrocaloric Strength in Singleâ€Crystal BaTiO₃. Advanced Materials, 2013, 25, 1360-1365.	11.1	430
8	Giant and reversible extrinsic magnetocaloric effects in La0.7Ca0.3MnO3 films due to strain. Nature Materials, 2013, 12, 52-58.	13.3	226
9	Too cool to work. Nature Physics, 2015, 11, 202-205.	6.5	221
10	Investigation of the electrocaloric effect in a PbMg2/3Nb1/3O3-PbTiO3 relaxor thin film. Applied Physics Letters, 2009, 95, .	1.5	194
11	Direct and indirect electrocaloric measurements using multilayer capacitors. Journal Physics D: Applied Physics, 2010, 43, 032002.	1.3	180
12	Large electrocaloric effects in oxide multilayer capacitors over a wide temperature range. Nature, 2019, 575, 468-472.	13.7	171
13	Giant barocaloric effects at low pressure in ferrielectric ammonium sulphate. Nature Communications, 2015, 6, 8801.	5.8	160
14	Caloric materials for cooling and heating. Science, 2020, 370, 797-803.	6.0	159
15	Defect-induced spin disorder and magnetoresistance in single-crystal and polycrystal rare-earth manganite thin films. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 1998, 356, 1593-1615.	1.6	152
16	Colossal barocaloric effects near room temperature in plastic crystals of neopentylglycol. Nature Communications, 2019, 10, 1803.	5.8	144
17	Magnetoresistance of artificial La0.7Sr0.3MnO3 grain boundaries as a function of misorientation angle. Applied Physics Letters, 1998, 72, 2038-2040.	1.5	126
18	The Electrocaloric Efficiency of Ceramic and Polymer Films. Advanced Materials, 2013, 25, 3337-3342.	11.1	123

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19	Negative magnetocaloric effect from highly sensitive metamagnetism inCoMnSi1â^'xGex. Physical Review B, 2006, 74, .	1.1	121
20	New developments in caloric materials for cooling applications. AIP Advances, 2015, 5, .	0.6	112
21	Non-volatile electrically-driven repeatable magnetization reversal with no applied magnetic field. Nature Communications, 2013, 4, 1453.	5.8	111
22	Predicted cooling powers for multilayer capacitors based on various electrocaloric and electrode materials. Applied Physics Letters, 2009, 95, .	1.5	105
23	Giant barocaloric effects over a wide temperature range in superionic conductor AgI. Nature Communications, 2017, 8, 1851.	5.8	95
24	Enhanced electrocaloric efficiency via energy recovery. Nature Communications, 2018, 9, 1827.	5.8	87
25	Reversible and irreversible colossal barocaloric effects in plastic crystals. Journal of Materials Chemistry A, 2020, 8, 639-647.	5.2	85
26	Growth of highly resistive BiMnO3 films. Applied Physics Letters, 2005, 87, 101906.	1.5	80
27	Multicaloric materials and effects. MRS Bulletin, 2018, 43, 295-299.	1.7	76
28	Direct electrocaloric measurements of a multilayer capacitor using scanning thermal microscopy and infra-red imaging. Applied Physics Letters, 2013, 102, .	1.5	73
29	The Materials Science of Functional Oxide Thin Films. Advanced Materials, 2009, 21, 3827-3839.	11.1	66
30	Resistance of a domain wall in La0.7Ca0.3MnO3. Journal of Applied Physics, 1999, 86, 6287-6290.	1.1	65
31	Perpendicular Local Magnetization Under Voltage Control in Ni Films on Ferroelectric BaTiO₃ Substrates. Advanced Materials, 2015, 27, 1460-1465.	11.1	64
32	Inverse barocaloric effects in ferroelectric BaTiO3 ceramics. APL Materials, 2016, 4, .	2.2	64
33	Giant and Reversible Inverse Barocaloric Effects near Room Temperature in Ferromagnetic MnCoGeB_{0.03}. Advanced Materials, 2019, 31, e1903577.	11.1	60
34	Currentâ€"voltage characteristics and electrical transport properties of grain boundaries in La1â^'x(Sr/Ca)xMnO3. Journal of Applied Physics, 1999, 85, 7263-7266.	1.1	50
35	Large magnetoelectric coupling in multiferroic oxide heterostructures assembled via epitaxial lift-off. Nature Communications, 2020, 11, 3190.	5.8	48
36	Direct electrocaloric measurement of 0.9Pb(Mg1/3Nb2/3)O3-0.1PbTiO3 films using scanning thermal microscopy. Applied Physics Letters, 2016, 108, .	1.5	46

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37	Shear-strain-mediated magnetoelectric effects revealed by imaging. Nature Materials, 2019, 18, 840-845.	13.3	46
38	Mesoscale magnetism at the grain boundaries in colossal magnetoresistive films. Physical Review B, 2000, 63, .	1.1	45
39	Ferroelectric precursor behavior in PbSc<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mrow><mml:mn>0.5</mml:mn></mml:mrow></mml:msub></mml:math>Ta<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mrow><mml:mn>0.5</mml:mn></mml:mrow></mml:msub></mml:math>O<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mrow /></mml:msub></mml:	1.1	45
40	Evidence of high rate visible light photochemical decolourisation of Rhodamine B with BiFeO3 nanoparticles associated with BiFeO3 photocorrosion. RSC Advances, 2012, 2, 11843.	1.7	44
41	Magnetic anisotropy of thin film La0.7Ca0.3MnO3 on untwinned paramagnetic NdGaO3 (001). Journal of Applied Physics, 2001, 89, 3388-3392.	1.1	40
42	Restoration of the third law in spin ice thin films. Nature Communications, 2014, 5, 3439.	5.8	40
43	Experimental difficulties and artefacts in multiferroic and magnetoelectric thin films of BiFeO3, Bi0.6Tb0.3La0.1FeO3and BiMnO3. Philosophical Magazine Letters, 2007, 87, 249-257.	0.5	38
44	Long Spin Diffusion Length in Few-Layer Graphene Flakes. Physical Review Letters, 2016, 117, 147201.	2.9	37
45	Magnetically tuned mechanical resonances in magnetoelectric multilayer capacitors. Applied Physics Letters, 2009, 95, .	1.5	36
46	Progress on electrocaloric multilayer ceramic capacitor development. APL Materials, 2016, 4, .	2.2	35
47	Transmission electron microscopy and x-ray structural investigation of La_{0.7}Ca_{0.3}MnO₃ thin films. Journal of Materials Research, 1998, 13, 2161-2169.	1.2	34
48	Coherent magnetic reversal in half-metallic manganite tunnel junctions. Applied Physics Letters, 2000, 77, 3803-3805.	1.5	33
49	Electrocaloric effects in multilayer capacitors for cooling applications. MRS Bulletin, 2018, 43, 291-294.	1.7	31
50	Equivalence of direct and converse magnetoelectric coefficients in strain-coupled two-phase systems. Applied Physics Letters, 2012, 100, .	1.5	30
51	Converse magnetoelectric coupling in multilayer capacitors. Applied Physics Letters, 2008, 93, .	1.5	28
52	Temperature dependent phenomena in La1â^'xSrxMnO3 films studied by magnetic force microscopy. Journal of Applied Physics, 2000, 87, 6743-6745.	1.1	27
53	Nonlinear effects of current on transport in manganite films. Physical Review B, 2005, 71, .	1.1	27
54	Large linear anhysteretic magnetoelectric voltage coefficients in CoFe2O4/polyvinylidene fluoride 0â€“3 nanocomposites. Journal of Nanoparticle Research, 2013, 15, 1.	0.8	27

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55	Strain control of superlattice implies weak charge-lattice coupling inLa0.5Ca0.5MnO3. Physical Review B, 2006, 73, .	1.1	26
56	Giant non-volatile magnetoelectric effects via growth anisotropy in Co40Fe40B20 films on PMN-PT substrates. Applied Physics Letters, 2019, 114, .	1.5	26
57	Effect of inactive volume on thermocouple measurements of electrocaloric temperature change in multilayer capacitors of 0.9Pb(Mg_{1/3}Nb_{2/3})O₃â€“0.1PbTiO₃. Journal Physics D: Applied Physics, 2017, 50, 424002.	1.3	24
58	Voltage control of magnetic single domains in Ni discs on ferroelectric BaTiO₃. Journal Physics D: Applied Physics, 2018, 51, 224007.	1.3	23
59	Eliminating the Temperature Dependence of the Response of Magnetoelectric Magnetic-Field Sensors. IEEE Sensors Journal, 2010, 10, 914-917.	2.4	21
60	Magnetic domain structure and lattice distortions in manganite films under tensile strain. Journal of Applied Physics, 2003, 93, 8322-8324.	1.1	20
61	Single ferroelectric-domain photovoltaic switch based on lateral BiFeO3 cells. NPG Asia Materials, 2013, 5, e38-e38.	3.8	20
62	Not just a load of bolometers. Nature, 1997, 390, 229-231.	13.7	17
63	Low field magnetotransport in La0.7Sr0.3MnO3 films. Journal of Applied Physics, 1998, 83, 7157-7159.	1.1	17
64	Structural, Magnetic, and Electrical Properties of Bi_{1â€“x}La_xMnO₃(x = 0.0, 0.1, and 0.2) Solid Solutions. Chemistry of Materials, 2012, 24, 199-208.	3.2	17
65	Magnetic phases to order. Nature, 1999, 400, 405-406.	13.7	15
66	Very weak electron-phonon coupling and strong strain coupling in manganites. Physical Review B, 2008, 78, .	1.1	15
67	Magnetization reversal probed by spin-polarized tunneling. Applied Physics Letters, 2002, 80, 2722-2724.	1.5	13
68	Electrical transport between epitaxial manganites and carbon nanotubes. Applied Physics Letters, 2006, 88, 083120.	1.5	13
69	Translating reproducible phase-separated texture in manganites into reproducible two-state low-field magnetoresistance: An imaging and transport study. Physical Review B, 2008, 78, .	1.1	13
70	Magnetoresistive dynamics and noise in low-strain manganite films. Physical Review B, 2005, 71, .	1.1	12
71	Electrocaloric Materials for Cooling Applications. Ferroelectrics, 2012, 433, 107-110.	0.3	12
72	Elastic and anelastic relaxation behaviour of perovskite multiferroics II: PbZr0.53Ti0.47O3 (PZT)â€“PbFe0.5Ta0.5O3 (PFT). Journal of Materials Science, 2017, 52, 285-304.	1.7	11

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73	Voltage-driven annihilation and creation of magnetic vortices in Ni discs. Nanoscale, 2020, 12, 5652-5657.	2.8	10
74	Role of disorder in phase coexistence in manganites: Noise in layered films. Physical Review B, 2005, 72, .	1.1	9
75	Ground state and constrained domain walls in Gdâˆ•Fe multilayers. Journal of Applied Physics, 2005, 97, 063904.	1.1	9
76	Magnetotransport of manganite superlattices: Investigating the role of a magnetic insulating spacer. Applied Physics Letters, 2008, 93, .	1.5	9
77	Turn your phonon. Nature Materials, 2017, 16, 784-785.	13.3	9
78	Spintronic investigation of the phase separated manganite (La,Ca)MnO3. Journal of Applied Physics, 2006, 100, 023903.	1.1	8
79	Limited local electron-lattice coupling in manganites: An electron diffraction study. Physical Review B, 2008, 77, .	1.1	8
80	Magnetoelectric phenomena and devices. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2014, 372, 20120453.	1.6	8
81	Large electrocaloric effects in single-crystal ammonium sulfate. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20150313.	1.6	8
82	Dependence on film thickness of grain boundary low-field magnetoresistance in thin films of La0.7Ca0.3MnO3. Journal of Applied Physics, 2001, 89, 6970-6972.	1.1	7
83	Effect of ferromagnetic/antiferromagnetic interfaces on the magnetic properties of La2â^•3Sr1â^•3MnO3â^•Pr2â^•3Ca1â^•3MnO3 superlattices. Journal of Applied Physics, 2006, 99, 08C903.	1.1	6
84	Quasi-indirect measurement of electrocaloric temperature change in PbSc0.5Ta0.5O3 via comparison of adiabatic and isothermal electrical polarization data. APL Materials, 2021, 9, .	2.2	6
85	Voltage-driven displacement of magnetic vortex cores. Journal Physics D: Applied Physics, 2020, 53, 434003.	1.3	6
86	Preface to Special Topic: Caloric Materials. APL Materials, 2016, 4, .	2.2	5
87	Non-volatile voltage control of in-plane and out-of-plane magnetization in polycrystalline Ni films on ferroelectric PMNâ€“PT (001)pc substrates. Journal of Applied Physics, 2021, 129, 154101.	1.1	5
88	Absence of spin scattering of in-plane spring domain walls. Physical Review B, 2005, 71, .	1.1	4
89	Itâ€™s not about the mass. Nature Energy, 2020, 5, 941-942.	19.8	4
90	Double bond with a licence to chill. Joule, 2022, 6, 289-290.	11.7	3

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91	XPEEM and MFM Imaging of Ferroic Materials. Advanced Electronic Materials, 2022, 8, .	2.6	3
92	Magnetotransport and Interface Magnetism in Manganite Heterostructures: Implications for Spin Polarized Tunneling. Materials Research Society Symposia Proceedings, 1999, 602, 3.	0.1	2
93	Giant magnetic domain-wall resistance in phase-separated manganite films. Applied Physics Letters, 2010, 97, 253501.	1.5	2
94	Exploiting phase separation in monolithic La0.6Ca0.4MnO3 devices. Applied Physics Letters, 2013, 103, 062404.	1.5	2
95	Another brick in the wall. Nature Physics, 2006, 2, 307-308.	6.5	1
96	Advances in Ferroelectric and Multiferroic Materials. Advanced Electronic Materials, 2022, 8, .	2.6	1
97	A scanning tunneling microscopy and potentiometry study of epitaxial thin films of La0.7Ca0.3MnO3. Materials Research Society Symposia Proceedings, 2002, 738, 7211.	0.1	0
98	Biaxial strain induced electrical inhomogenities and phase separation in the ferromagnetic metallic phase in thin films of La0.7Ca0.3MnO3: A scanning tunneling potentiometry/spectroscopy study.. Materials Research Society Symposia Proceedings, 2004, 838, 145.	0.1	0
99	SchrÃ¶dinger's mousetrap. Nature, 2005, 433, 363-363.	13.7	0
100	Don't mention the â€˜Fâ€™ word. Nature, 2005, 436, 440-440.	13.7	0
101	A New Approach to Interconversion of Thermal and Electrical Energy. , 2006, , .		0
102	Photodetection: Spatially Resolved Photodetection in Leaky Ferroelectric BiFeO3 (Adv. Mater. 10/2012). Advanced Materials, 2012, 24, OP48-OP48.	11.1	0
103	Taking the temperature of phase transitions in cool materials. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20150314.	1.6	0