

Xiaoming Mao

List of Publications by Year in descending order

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55
papers

2,305
citations

236925

25
h-index

214800

47
g-index

56
all docs

56
docs citations

56
times ranked

1990
citing authors

#	ARTICLE	IF	CITATIONS
1	Criticality and isostaticity in fibre networks. <i>Nature Physics</i> , 2011, 7, 983-988.	16.7	266
2	Phonons and elasticity in critically coordinated lattices. <i>Reports on Progress in Physics</i> , 2015, 78, 073901.	20.1	173
3	Entropy favours open colloidal lattices. <i>Nature Materials</i> , 2013, 12, 217-222.	27.5	166
4	Surface phonons, elastic response, and conformal invariance in twisted kagome lattices. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, 12369-12374.	7.1	154
5	Transformable topological mechanical metamaterials. <i>Nature Communications</i> , 2017, 8, 14201.	12.8	137
6	Stress-induced plasticity of dynamic collagen networks. <i>Nature Communications</i> , 2017, 8, 842.	12.8	121
7	Maxwell Lattices and Topological Mechanics. <i>Annual Review of Condensed Matter Physics</i> , 2018, 9, 413-433.	14.5	108
8	Aluminum nanoscale order in amorphous Al ₉₂ Sm ₈ measured by fluctuation electron microscopy. <i>Applied Physics Letters</i> , 2005, 86, 141910.	3.3	96
9	Self-Assembly of Chiral Nanoparticles into Semiconductor Helices with Tunable near-Infrared Optical Activity. <i>Chemistry of Materials</i> , 2020, 32, 476-488.	6.7	79
10	Nonaffine Displacements in Flexible Polymer Networks. <i>Macromolecules</i> , 2011, 44, 1671-1679.	4.8	77
11	Soft Modes and Elasticity of Nearly Isostatic Lattices: Randomness and Dissipation. <i>Physical Review Letters</i> , 2010, 104, 085504.	7.8	68
12	Nonlinear elasticity of disordered fiber networks. <i>Soft Matter</i> , 2016, 12, 1419-1424.	2.7	59
13	Correlated Rigidity Percolation and Colloidal Gels. <i>Physical Review Letters</i> , 2019, 123, 058001.	7.8	56
14	Alignment and nonlinear elasticity in biopolymer gels. <i>Physical Review E</i> , 2015, 91, 042710.	2.1	45
15	Elasticity of a filamentous kagome lattice. <i>Physical Review E</i> , 2013, 87, 042602.	2.1	44
16	Effective-medium theory of a filamentous triangular lattice. <i>Physical Review E</i> , 2013, 87, 042601.	2.1	41
17	Topological Edge Floppy Modes in Disordered Fiber Networks. <i>Physical Review Letters</i> , 2018, 120, 068003.	7.8	39
18	Coherent potential approximation of random nearly isostatic kagome lattice. <i>Physical Review E</i> , 2011, 83, 011111.	2.1	38

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19	Edge Modes and Asymmetric Wave Transport in Topological Lattices: Experimental Characterization at Finite Frequencies. <i>Physical Review Letters</i> , 2018, 121, 094301.	7.8	38
20	Fracturing of topological Maxwell lattices. <i>New Journal of Physics</i> , 2018, 20, 063034.	2.9	37
21	Mechanical instability at finite temperature. <i>Nature Communications</i> , 2015, 6, 5968.	12.8	34
22	Self-assembly of three-dimensional open structures using patchy colloidal particles. <i>Soft Matter</i> , 2014, 10, 7569-7576.	2.7	32
23	Rigidity percolation on the square lattice. <i>Europhysics Letters</i> , 2011, 96, 54002.	2.0	27
24	Entropic effects in the self-assembly of open lattices from patchy particles. <i>Physical Review E</i> , 2013, 87, 062319.	2.1	26
25	Rigidity percolation by next-nearest-neighbor bonds on generic and regular isostatic lattices. <i>Physical Review E</i> , 2015, 91, 032124.	2.1	25
26	Topological Boundary Floppy Modes in Quasicrystals. <i>Physical Review X</i> , 2019, 9, .	8.9	25
27	Switchable phonon diodes using nonlinear topological Maxwell lattices. <i>Physical Review B</i> , 2020, 101, .	3.2	25
28	Fiber networks below the isostatic point: Fracture without stress concentration. <i>Physical Review Materials</i> , 2017, 1, .	2.4	24
29	Cell motility, contact guidance, and durotaxis. <i>Soft Matter</i> , 2019, 15, 4856-4864.	2.7	22
30	Continuum Theory for Topological Edge Soft Modes. <i>Physical Review Letters</i> , 2020, 124, 207601.	7.8	21
31	Elasticity of highly cross-linked random networks. <i>Europhysics Letters</i> , 2006, 76, 677-682.	2.0	19
32	Stochastic resonance in a financial model. <i>Chinese Physics B</i> , 2002, 11, 1106-1110.	1.3	18
33	Elasticity of colloidal gels: structural heterogeneity, floppy modes, and rigidity. <i>Soft Matter</i> , 2021, 17, 6929-6934.	2.7	17
34	Soft random solids and their heterogeneous elasticity. <i>Physical Review E</i> , 2009, 80, 031140.	2.1	14
35	Random walker models for durotaxis. <i>Physical Biology</i> , 2018, 15, 066009.	1.8	13
36	Rheological implications of embedded active matter in colloidal gels. <i>Soft Matter</i> , 2019, 15, 8012-8021.	2.7	13

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37	Finite-temperature mechanical instability in disordered lattices. <i>Physical Review E</i> , 2016, 93, 022110.	2.1	12
38	Frustrated self-assembly of non-Euclidean crystals of nanoparticles. <i>Nature Communications</i> , 2021, 12, 4925.	12.8	12
39	Jamming as a Multicritical Point. <i>Physical Review Letters</i> , 2019, 122, 128006.	7.8	11
40	Elastic heterogeneity of soft random solids. <i>Europhysics Letters</i> , 2007, 80, 26004.	2.0	9
41	Social influence in small-world networks. <i>Chinese Physics B</i> , 2002, 11, 1280-1285.	1.3	8
42	Topological Flexural Modes in Polarized Bilayer Lattices. <i>Physical Review Applied</i> , 2021, 16, .	3.8	8
43	Elasticity of randomly diluted honeycomb and diamond lattices with bending forces. <i>Journal of Physics Condensed Matter</i> , 2016, 28, 165402.	1.8	6
44	Introduction to force transmission by nonlinear biomaterials. <i>Soft Matter</i> , 2021, 17, 10172-10176.	2.7	6
45	Capillary-driven binding of thin triangular prisms at fluid interfaces. <i>Soft Matter</i> , 2018, 14, 3902-3918.	2.7	5
46	Topological floppy modes in models of epithelial tissues. <i>Soft Matter</i> , 2021, 17, 8624-8641.	2.7	5
47	Fractional Excitations in Non-Euclidean Elastic Plates. <i>Physical Review Letters</i> , 2021, 127, 098001.	7.8	5
48	Finite-temperature buckling of an extensible rod. <i>Physical Review E</i> , 2015, 92, 062141.	2.1	4
49	Collective motility and mechanical waves in cell clusters. <i>European Physical Journal E</i> , 2021, 44, 137.	1.6	4
50	Mechanics of Disordered Fiber Networks. <i>ACS Symposium Series</i> , 2018, , 199-210.	0.5	3
51	Cavity Approach to the Random Solid State. <i>Physical Review Letters</i> , 2005, 95, 148302.	7.8	2
52	Physical limits to sensing material properties. <i>Nature Communications</i> , 2020, 11, 5170.	12.8	2
53	Correlated rigidity percolation in fractal lattices. <i>Physical Review E</i> , 2021, 103, 012104.	2.1	2
54	A Non-invasive Method of Tracing Spiral Tips. <i>Chinese Physics Letters</i> , 2001, 18, 834-836.	3.3	1

#	ARTICLE	IF	CITATIONS
55	Influence of hinge stiffness on the asymmetric wave transport in topological lattices: a parametric study. , 2019, , .		1