Joseph N. Grima

List of Publications by Year
in descending order

133 papers	8,037 citations	41344 49 h-index	51608 86 g-index
135 all docs	135 docs citations	135 times ranked	2878 citing authors

#	Article	IF	Citations
1	Auxetic behavior obtained through the large deformations of variants of the rectangular grid. Mechanics of Advanced Materials and Structures, 2023, 30, 262-271.	2.6	5
2	Auxetic Behavior and Other Negative Thermomechanical Properties from Rotating Rigid Units. Physica Status Solidi - Rapid Research Letters, 2022, 16, .	2.4	27
3	Reconfigurable magneto-mechanical metamaterials guided by magnetic fields. Composite Structures, 2022, 280, 114921.	5.8	17
4	Blisters and Calluses from Rowing: Prevalence, Perceptions and Pain Tolerance. Medicina (Lithuania), 2022, 58, 77.	2.0	5
5	Removing Auxetic Properties in f.c.c. Hard Sphere Crystals by Orthogonal Nanochannels with Hard Spheres of Another Diameter. Materials, 2022, 15, 1134.	2.9	11
6	Controllable Hierarchical Mechanical Metamaterials Guided by the Hinge Design. Materials, 2021, 14, 758.	2.9	12
7	Shearing Deformations of Î²-Cristobalite-Like Boron Arsenate. Symmetry, 2021, 13, 977.	2.2	8
8	Cancellation of Auxetic Properties in F.C.C. Hard Sphere Crystals by Hybrid Layer-Channel Nanoinclusions Filled by Hard Spheres of Another Diameter. Materials, 2021, 14, 3008.	2.9	8
9	The Auxetic Behavior of a General Starâ€4 Structure. Physica Status Solidi (B): Basic Research, 2021, 258, 2100158.	1.5	9
10	The Auxetic Behavior of a General Starâ€4 Structure. Physica Status Solidi (B): Basic Research, 2021, 258, .	1.5	1
11	Self-induced global rotation of chiral and other mechanical metamaterials. International Journal of Solids and Structures, 2020, 191-192, 212-219.	2.7	13
12	3D composite metamaterial with magnetic inclusions exhibiting negative stiffness and auxetic behaviour. Materials and Design, 2020, 187, 108403.	7.0	52
13	On the Design of Multimaterial Honeycombs and Structures with Tâ€Shaped Joints Having Tunable Thermal and Compressibility Properties. Physica Status Solidi (B): Basic Research, 2020, 257, 1900633.	1.5	4
14	The Push Drill Mechanism as a Novel Method to Create 3D Mechanical Metamaterial Structures. Physica Status Solidi - Rapid Research Letters, 2020, 14, 2070032.	2.4	1
15	Tuning the Mechanical Properties of the Antiâ€Tetrachiral System Using Nonuniform Ligament Thickness. Physica Status Solidi (B): Basic Research, 2020, 257, 2070039.	1.5	2
16	Smart Honeycomb â€œMechanical Metamaterialsâ€•with Tunable Poisson's Ratios. Physica Status Solidi (B): Basic Research, 2020, 257, 1900707.	1.5	17
17	Edge Effects of a Hexagonal Honeycomb on the Poisson's Ratio and Young's Modulus. Physica Status Solidi (B): Basic Research, 2020, 257, 1900511.	1.5	6
18	Negative Linear Compressibility and Auxeticity in Boron Arsenate. Annalen Der Physik, 2020, 532, 1900550.	2.4	14

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19	The Push Drill Mechanism as a Novel Method to Create 3D Mechanical Metamaterial Structures. Physica Status Solidi - Rapid Research Letters, 2020, 14, 2000125.	2.4	11
20	Tuning the Mechanical Properties of the Antiâ€Tetrachiral System Using Nonuniform Ligament Thickness. Physica Status Solidi (B): Basic Research, 2020, 257, 1900507.	1.5	8
21	On the Compressibility Properties of the Wineâ€Rackâ€Like Carbon Allotropes and Related Poly(phenylacetylene) Systems. Physica Status Solidi (B): Basic Research, 2019, 256, 1800572.	1.5	20
22	Giant Auxetic Behaviour in Engineered Graphene. Annalen Der Physik, 2018, 530, 1700330.	2.4	24
23	Auxetic metamaterials inspired from wine-racks. Journal of Materials Science, 2018, 53, 5079-5091.	3.7	12
24	Out-of-plane doming behaviour from constrained auxetics. Smart Materials and Structures, 2018, 27, 015020.	3.5	15
25	An analytical and finite element study on the mechanical properties of irregular hexachiral honeycombs. Smart Materials and Structures, 2018, 27, 105016.	3.5	35
26	Negative and positive stiffness in auxetic magneto-mechanical metamaterials. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2018, 474, 20180003.	2.1	43
27	On the Structural and Mechanical Properties of Poly(Phenylacetylene) Trussâ€Like Hexagonal Hierarchical Nanonetworks. Physica Status Solidi (B): Basic Research, 2017, 254, 1700190.	1.5	21
28	Negative linear compressibility from rotating rigid units. Physica Status Solidi (B): Basic Research, 2016, 253, 1410-1418.	1.5	34
29	Nano networks exhibiting negative linear compressibility. Physica Status Solidi (B): Basic Research, 2016, 253, 1419-1427.	1.5	9
30	Blocked Shape Memory Effect in Negative Poissonâ€™s Ratio Polymer Metamaterials. ACS Applied Materials & Interfaces, 2016, 8, 20319-20328.	8.0	37
31	Auxetic Perforated Mechanical Metamaterials with Randomly Oriented Cuts. Advanced Materials, 2016, 28, 385-389.	21.0	153
32	A biomechanical hypothesis for the pathophysiology of apical lung disease. Medical Hypotheses, 2016, 92, 88-93.	1.5	7
33	Planar auxeticity from elliptic inclusions. Composites Part B: Engineering, 2016, 94, 379-388.	12.0	90
34	Auxetics and other systems of â€œnegativeâ€•characteristics. Physica Status Solidi (B): Basic Research, 2016, 253, 1241-1242.	1.5	12
35	A review of the state-of-the-art in air filtration technologies as may be applied to cold storage warehouses. Trends in Food Science and Technology, 2016, 50, 175-185.	15.1	47
36	Unimode metamaterials exhibiting negative linear compressibility and negative thermal expansion. Smart Materials and Structures, 2016, 25, 025009.	3.5	76

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37	A forceâ€field based analysis of the deformation mechanism in Î±â€cristobalite. Physica Status Solidi (B): Basic Research, 2015, 252, 1479-1485.	1.5	11
38	Advances in the study of the deformation mechanism of stishovite. Physica Status Solidi (B): Basic Research, 2015, 252, 1486-1491.	1.5	13
39	Auxetic metamaterials exhibiting giant negative Poisson's ratios. Physica Status Solidi - Rapid Research Letters, 2015, 9, 425-430.	2.4	118
40	Internal rib structure can be predicted using mathematical models: An anatomic study comparing the chest to a shell dome with application to understanding fractures. Clinical Anatomy, 2015, 28, 1008-1016.	2.7	4
41	Nonâ€porous grooved singleâ€material auxetics. Physica Status Solidi (B): Basic Research, 2015, 252, 1559-1564.	1.5	18
42	Carbon allotropes exhibiting negative linear compressibility. Physica Status Solidi (B): Basic Research, 2015, 252, 1656-1663.	1.5	10
43	External rib structure can be predicted using mathematical models: An anatomical study with application to understanding fractures and intercostal muscle function. Clinical Anatomy, 2015, 28, 512-519.	2.7	9
44	Negative Poissonâ€™s ratios in tendons: An unexpected mechanical response. Acta Biomaterialia, 2015, 24, 201-208.	8.3	100
45	Hierarchical Auxetic Mechanical Metamaterials. Scientific Reports, 2015, 5, 8395.	3.3	226
46	A hypothesis for reactivation of pulmonary tuberculosis: How thoracic wall shape affects the epidemiology of tuberculosis. Clinical Anatomy, 2015, 28, 614-620.	2.7	6
47	Auxetics and other systems of â€œnegativeâ€•characteristics. Physica Status Solidi (B): Basic Research, 2015, 252, 1421-1425.	1.5	24
48	Influence of translational disorder on the mechanical properties of hexachiral honeycomb systems. Composites Part B: Engineering, 2015, 80, 84-91.	12.0	72
49	Maximizing negative thermal expansion via rigid unit modes: a geometry-based approach. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2015, 471, 20150188.	2.1	24
50	Colossal magnetocaloric effect in magneto-auxetic systems. Smart Materials and Structures, 2015, 24, 085027.	3.5	18
51	Anomalous elastic properties in stishovite. RSC Advances, 2015, 5, 8974-8980.	3.6	15
52	Tailoring Graphene to Achieve Negative Poisson's Ratio Properties. Advanced Materials, 2015, 27, 1455-1459.	21.0	275
53	On the Effect of the Mode of Connection between the Node and the Ligaments in Antiâ€Tetrachiral Systems. Advanced Engineering Materials, 2015, 17, 189-198.	3.5	25
54	Development of novel poly(phenylacetylene) network polymers and their mechanical behaviour. Physica Status Solidi (B): Basic Research, 2014, 251, 375-382.	1.5	10

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55	Mechanism of sternotomy dehiscence. Interactive Cardiovascular and Thoracic Surgery, 2014, 19, 617-621.	1.1	23
56	Is there a biomechanical cause for spontaneous pneumothorax?. European Journal of Cardio-thoracic Surgery, 2014, 45, 1011-1016.	1.4	20
57	A novel method of personnel cooling in an operating theatre environment. Interactive Cardiovascular and Thoracic Surgery, 2014, 19, 687-689.	1.1	1
58	Space Dependent Mean Field Approximation Modelling. Journal of Statistical Physics, 2014, 154, 1508-1515.	1.2	8
59	Modeling auxetic foams through semi-rigid rotating triangles. Physica Status Solidi (B): Basic Research, 2014, 251, 297-306.	1.5	52
60	Foams as 3D perforated systems: An analysis of their Poisson's ratios under compression. Physica Status Solidi (B): Basic Research, 2014, 251, 2233-2238.	1.5	7
61	Auxetic Materials and Related Systems. Physica Status Solidi (B): Basic Research, 2014, 251, 263-266.	1.5	26
62	On the properties of real finite-sized planar and tubular stent-like auxetic structures. Physica Status Solidi (B): Basic Research, 2014, 251, 321-327.	1.5	58
63	On the suitability of hexagonal honeycombs as stent geometries. Physica Status Solidi (B): Basic Research, 2014, 251, 328-337.	1.5	50
64	Smart metamaterials with tunable auxetic and other properties. Smart Materials and Structures, 2013, 22, 084016.	3.5	111
65	A realistic generic model for antiâ€tetrachiral systems. Physica Status Solidi (B): Basic Research, 2013, 250, 2012-2019.	1.5	85
66	Modeling of thermal expansion coefficients of composites with disc shaped inclusions and related systems. Physica Status Solidi (B): Basic Research, 2013, 250, 2057-2061.	1.5	5
67	Auxetic Materials and Related Systems. Physica Status Solidi (B): Basic Research, 2013, 250, 1959-1962.	1.5	4
68	Giant response. Nature Materials, 2013, 12, 182-183.	27.5	12
69	Negative thermal expansion from disc, cylindrical, and needle shaped inclusions. Physica Status Solidi (B): Basic Research, 2013, 250, 2051-2056.	1.5	13
70	Honeycomb composites with auxetic out-of-plane characteristics. Composite Structures, 2013, 106, 150-159.	5.8	59
71	Smart hexagonal truss systems exhibiting negative compressibility through constrained angle stretching. Smart Materials and Structures, 2013, 22, 084015.	3.5	45
72	On the mechanical properties of centroâ€symmetric honeycombs with Tâ€shaped joints. Physica Status Solidi (B): Basic Research, 2013, 250, 2002-2011.	1.5	13

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73	On the effect of solvent molecules on the structure and mechanical properties of organic polyphenylacetylene auxetic reâ€entrant network polymers. Physica Status Solidi (B): Basic Research, 2013, 250, 2030-2037.	1.5	12
74	On the auxetic properties of generic rotating rigid triangles. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2012, 468, 810-830.	2.1	81
75	Materials that push back. Nature Materials, 2012, 11, 565-566.	27.5	99
76	Placement of trans-sternal wires according to an ellipsoid pressure vessel model of sternal forces. Interactive Cardiovascular and Thoracic Surgery, 2012, 14, 283-287.	1.1	12
77	Three-dimensional cellular structures with negative Poisson's ratio and negative compressibility properties. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2012, 468, 3121-3138.	2.1	85
78	A threeâ€dimensional rotating rigid units network exhibiting negative Poisson's ratios. Physica Status Solidi (B): Basic Research, 2012, 249, 1330-1338.	1.5	85
79	Auxetic Materials and Related Systems. Physica Status Solidi (B): Basic Research, 2012, 249, 1313-1314.	1.5	14
80	Unusual Thermoelastic Properties of Methanol Monohydrate. Science, 2011, 331, 687-688.	12.6	21
81	Negative linear compressibility of hexagonal honeycombs and related systems. Scripta Materialia, 2011, 65, 565-568.	5.2	113
82	Auxetic behaviour from connected different-sized squares and rectangles. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2011, 467, 439-458.	2.1	90
83	A generalised three-dimensional tethered-nodule model for auxetic materials. Journal of Materials Science, 2011, 46, 372-384.	3.7	54
84	On the effect of heat and solvent exposure on the microstructure properties of auxetic foams: A preliminary study. Physica Status Solidi (B): Basic Research, 2011, 248, 39-44.	1.5	26
85	Molecular networks with a near zero Poisson's ratio. Physica Status Solidi (B): Basic Research, 2011, 248, 111-116.	1.5	31
86	Modelling of hexagonal honeycombs exhibiting zero Poisson's ratio. Physica Status Solidi (B): Basic Research, 2011, 248, 52-59.	1.5	59
87	Modelling and testing of a foldable macrostructure exhibiting auxetic behaviour. Physica Status Solidi (B): Basic Research, 2011, 248, 117-122.	1.5	20
88	Adjustable and negative thermal expansion from multilayered systems. Physica Status Solidi - Rapid Research Letters, 2010, 4, 133-135.	2.4	26
89	Molecular-Level Deformations in Auxetic Organic Networked Polymers. ACS Symposium Series, 2010, , 197-214.	0.5	1
90	Perforated Sheets Exhibiting Negative Poisson's Ratios. Advanced Engineering Materials, 2010, 12, 460-464.	3.5	152

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91	Hexagonal Honeycombs with Zero Poisson's Ratios and Enhanced Stiffness. Advanced Engineering Materials, 2010, 12, 855-862.	3.5	140
92	Elastic constants of 3-, 4- and 6-connected chiral and anti-chiral honeycombs subject to uniaxial in-plane loading. Composites Science and Technology, 2010, 70, 1042-1048.	7.8	470
93	Composites with needle-like inclusions exhibiting negative thermal expansion: A preliminary investigation. Composites Science and Technology, 2010, 70, 2248-2252.	7.8	26
94	On the behaviour of natrolite under hydrostatic pressure. Journal of Non-Crystalline Solids, 2010, 356, 1881-1887.	3.1	5
95	Auxetic behaviour in non-crystalline materials having star or triangular shaped perforations. Journal of Non-Crystalline Solids, 2010, 356, 1980-1987.	3.1	62
96	On the behaviour of bi-material strips when subjected to changes in external hydrostatic pressure. Scripta Materialia, 2009, 60, 65-67.	5.2	13
97	A Novel Process for the Manufacture of Auxetic Foams and for Their reâ€Conversion to Conventional Form. Advanced Engineering Materials, 2009, 11, 533-535.	3.5	121
98	On the effect of the Poisson's ratio (positive and negative) on the stability of pressure vessel heads. Physica Status Solidi (B): Basic Research, 2009, 246, 2025-2032.	1.5	34
99	On rotating rigid parallelograms and their potential for exhibiting auxetic behaviour. Physica Status Solidi (B): Basic Research, 2009, 246, 2033-2044.	1.5	62
100	On the properties of auxetic rotating stretching squares. Physica Status Solidi (B): Basic Research, 2009, 246, 2045-2054.	1.5	40
101	On the effect of hydrostatic pressure on the auxetic character of NAT-type silicates. Journal of Non-Crystalline Solids, 2009, 355, 1307-1312.	3.1	22
102	Auxetic behaviour from stretching connected squares. Journal of Materials Science, 2008, 43, 5962-5971.	3.7	55
103	On the atomic level deformations in the auxetic zeolite natrolite. Physica Status Solidi (B): Basic Research, 2008, 245, 502-510.	1.5	30
104	On the properties of auxetic metaâ€tetrachiral structures. Physica Status Solidi (B): Basic Research, 2008, 245, 511-520.	1.5	194
105	On the auxetic properties of rotating rhombi and parallelograms: A preliminary investigation. Physica Status Solidi (B): Basic Research, 2008, 245, 521-529.	1.5	144
106	Trussâ€type systems exhibiting negative compressibility. Physica Status Solidi (B): Basic Research, 2008, 245, 2405-2414.	1.5	51
107	Auxetic behaviour from rotating rhombi. Physica Status Solidi (B): Basic Research, 2008, 245, 2395-2404.	1.5	101
108	Preface: phys. stat. sol. (b) 245/11. Physica Status Solidi (B): Basic Research, 2008, 245, 2369-2372.	1.5	16

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109	Negative compressibility. Physica Status Solidi - Rapid Research Letters, 2008, 2, 236-238.	2.4	94
110	On the mechanical properties and auxetic potential of various organic networked polymers. Molecular Simulation, 2008, 34, 1149-1158.	2.0	22
111	On the role of rotating tetrahedra for generating auxetic behavior in NAT and related systems. Journal of Non-Crystalline Solids, 2008, 354, 4214-4220.	3.1	20
112	Natrolite: A zeolite with negative Poissonâ€™s ratios. Journal of Applied Physics, 2007, 101, 086102.	2.5	107
113	Connected Triangles Exhibiting Negative Poisson's Ratios and Negative Thermal Expansion. Journal of the Physical Society of Japan, 2007, 76, 025001.	1.6	35
114	A system with adjustable positive or negative thermal expansion. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2007, 463, 1585-1596.	2.1	81
115	Auxetic behaviour from rotating semi-rigid units. Physica Status Solidi (B): Basic Research, 2007, 244, 866-882.	1.5	141
116	Negative Poisson's ratios in cellular foam materials. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2006, 423, 214-218.	5.6	109
117	An alternative explanation for the negative Poisson's ratios in Î±-cristobalite. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2006, 423, 219-224.	5.6	61
118	Auxetic behavior from rotating triangles. Journal of Materials Science, 2006, 41, 3193-3196.	3.7	259
119	Novel honeycombs with auxetic behaviour. Acta Materialia, 2005, 53, 2439-2445.	7.9	215
120	Modelling the deformation mechanisms, structure-property relationships and applications of auxetic nanomaterials. Physica Status Solidi (B): Basic Research, 2005, 242, 499-508.	1.5	48
121	Auxetic behaviour from rotating rigid units. Physica Status Solidi (B): Basic Research, 2005, 242, 561-575.	1.5	311
122	Modelling of auxetic networked polymers built from calix[4]arene building blocks. Molecular Simulation, 2005, 31, 907-913.	2.0	11
123	On the potential of connected stars as auxetic systems. Molecular Simulation, 2005, 31, 925-935.	2.0	202
124	Auxetic Cellular Materials and Structures. , 2005, , 489.		8
125	Empirical modelling using dummy atoms (EMUDA): an alternative approach for studying â€œauxeticâ€• structures. Molecular Simulation, 2005, 31, 915-924.	2.0	14
126	Modelling of the mechanical and mass transport properties of auxetic molecular sieves: an idealised inorganic (zeolitic) hostâ€“guest system. Molecular Simulation, 2005, 31, 889-896.	2.0	33

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127	Modelling of the mechanical and mass transport properties of auxetic molecular sieves: an idealised organic (polymeric honeycomb) hostâ€“guest system. Molecular Simulation, 2005, 31, 897-905.	2.0	45
128	Networked calix[4]arene polymers with unusual mechanical properties. Chemical Communications, 2005, , 4065.	4.1	50
129	On the Auxetic Properties of `Rotating Rectangles' with Different Connectivity. Journal of the Physical Society of Japan, 2005, 74, 2866-2867.	1.6	88
130	An Alternative Explanation for the Negative Poisson's Ratios in Auxetic Foams. Journal of the Physical Society of Japan, 2005, 74, 1341-1342.	1.6	62
131	On the origin of auxetic behaviour in the silicate Î±-cristobalite. Journal of Materials Chemistry, 2005, 15, 4003.	6.7	62
132	A novel mechanism for generating auxetic behaviour in reticulated foams: missing rib foam model. Acta Materialia, 2000, 48, 4349-4356.	7.9	343
133	Auxetic behavior from rotating squares. Journal of Materials Science Letters, 2000, 19, 1563-1565.	0.5	613