Ruben Gatt

List of Publications by Year
in descending order

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110 papers	5,203 citations	87888 38 h-index	91884 69 g-index
111 all docs	111 docs citations	111 times ranked	3266 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	Reconfigurable magneto-mechanical metamaterials guided by magnetic fields. Composite Structures, 2022, 280, 114921.	5.8	17
3	Unusual mechanical properties of ice VIII: Auxetic potential in a high pressure polymorph of ice. Journal of Physics and Chemistry of Solids, 2022, 169, 110755.	4.0	1
4	Implementation of periodic boundary conditions for loading of mechanical metamaterials and other complex geometric microstructures using finite element analysis. Engineering With Computers, 2021, 37, 1765.	6.1	42
5	Auxetic mechanical metamaterials with diamond and elliptically shaped perforations. Acta Mechanica, 2021, 232, 779-791.	2.1	21
6	The mechanical properties of ice X with particular emphasis on its auxetic potential. Journal of Physics and Chemistry of Solids, 2021, 150, 109717.	4.0	8
7	Controllable Hierarchical Mechanical Metamaterials Guided by the Hinge Design. Materials, 2021, 14, 758.	2.9	12
8	The Auxetic Behavior of a General Starâ€4 Structure. Physica Status Solidi (B): Basic Research, 2021, 258, 2100158.	1.5	9
9	The Auxetic Behavior of a General Starâ€4 Structure. Physica Status Solidi (B): Basic Research, 2021, 258, .	1.5	1
10	Self-induced global rotation of chiral and other mechanical metamaterials. International Journal of Solids and Structures, 2020, 191-192, 212-219.	2.7	13
11	3D composite metamaterial with magnetic inclusions exhibiting negative stiffness and auxetic behaviour. Materials and Design, 2020, 187, 108403.	7.0	52
12	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
13	HPLC Analysis of Phenolic Compounds and Flavonoids with Overlapping Peaks. Food Technology and Biotechnology, 2020, 58, 1-12.	2.1	28
14	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
15	The Multidirectional Auxeticity and Negative Linear Compressibility of a 3D Mechanical Metamaterial. Materials, 2020, 13, 2193.	2.9	24
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	Generation of plasma functionalized water: Antimicrobial assessment and impact on seed germination. Food Control, 2020, 113, 107168.	5.5	33

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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	Analysis of the Deformation Behavior and Mechanical Properties of Slitâ€Perforated Auxetic Metamaterials. Physica Status Solidi (B): Basic Research, 2019, 256, 1800153.	1.5	23
22	A Novel Threeâ€Dimensional Antiâ€Tetrachiral Honeycomb. Physica Status Solidi (B): Basic Research, 2019, 256, 1800473.	1.5	17
23	Impact resistance of composite magnetic metamaterials. Scientific Reports, 2019, 9, 3963.	3.3	32
24	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
25	Metal nanoparticles for controlling fungal proliferation: quantitative analysis and applications. Current Opinion in Food Science, 2019, 30, 49-59.	8.0	12
26	3D Printed Clamps to Study the Mechanical Properties of Tendons at Low Strains. Physica Status Solidi (B): Basic Research, 2019, 256, 1800159.	1.5	9
27	Different Deformation Mechanisms Leading to Auxetic Behavior Exhibited by Missing Rib Square Grid Structures. Physica Status Solidi (B): Basic Research, 2019, 256, 1800186.	1.5	26
28	Mechanical metamaterials with star-shaped pores exhibiting negative and zero Poisson's ratio. Materials and Design, 2018, 146, 28-37.	7.0	133
29	Giant Auxetic Behaviour in Engineered Graphene. Annalen Der Physik, 2018, 530, 1700330.	2.4	24
30	A mathematical model for pressure-based organs behaving as biological pressure vessels. Journal of Theoretical Biology, 2018, 450, 37-42.	1.7	2
31	Cover Image, Volume 42, Issue 10. Journal of Food Processing and Preservation, 2018, 42, e13847.	2.0	0
32	Pathophysiological mechanism of post-lobectomy air leaks. Journal of Thoracic Disease, 2018, 10, 3689-3700.	1.4	8
33	Turbidimetric Assessment of the Growth of Filamentous Fungi and the Antifungal Activity of Zinc Oxide Nanoparticles. Journal of Food Protection, 2018, 81, 934-941.	1.7	6
34	Assessing the air filtration efficacy of compressed and uncompressed polyurethane foams. Journal of Food Processing and Preservation, 2018, 42, e13706.	2.0	0
35	An analytical and finite element study on the mechanical properties of irregular hexachiral honeycombs. Smart Materials and Structures, 2018, 27, 105016.	3.5	35
36	Controlling Density and Modulus in Auxetic Foam Fabricationsâ€"Implications for Impact and Indentation Testing. Proceedings (mdpi), 2018, 2, 250.	0.2	6

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37	Modelling the growth of pear postharvest fungal isolates at different temperatures. Food Microbiology, 2018, 76, 450-456.	4.2	13
38	Plasma activated water (PAW): Chemistry, physico-chemical properties, applications in food and agriculture. Trends in Food Science and Technology, 2018, 77, 21-31.	15.1	508
39	Evaluation of polyurethane foam materials as air filters against fungal contamination. Food Control, 2017, 73, 91-100.	5.5	7
40	Assessing the anti-fungal efficiency of filters coated with zinc oxide nanoparticles. Royal Society Open Science, 2017, 4, 161032.	2.4	20
41	On the dynamics and control of mechanical properties of hierarchical rotating rigid unit auxetics. Scientific Reports, 2017, 7, 46529.	3.3	52
42	Physiological effects and mode of action of ZnO nanoparticles against postharvest fungal contaminants. Food Research International, 2017, 101, 274-279.	6.2	61
43	On the Mechanical Properties of Graphyne, Graphdiyne, and Other Poly(Phenylacetylene) Networks. Physica Status Solidi (B): Basic Research, 2017, 254, 1700380.	1.5	18
44	On the Use of Auxetics in Footwear: Investigating the Effect of Padding and Padding Material on Forefoot Pressure in High Heels. Physica Status Solidi (B): Basic Research, 2017, 254, 1700528.	1.5	15
45	Physiological rules for the heart, lungs and other pressure-based organs. Journal of Thoracic Disease, 2017, 9, 3793-3801.	1.4	6
46	Negative linear compressibility from rotating rigid units. Physica Status Solidi (B): Basic Research, 2016, 253, 1410-1418.	1.5	34
47	Blocked Shape Memory Effect in Negative Poissonâ€™s Ratio Polymer Metamaterials. ACS Applied Materials & Interfaces, 2016, 8, 20319-20328.	8.0	37
48	Auxetic Perforated Mechanical Metamaterials with Randomly Oriented Cuts. Advanced Materials, 2016, 28, 385-389.	21.0	153
49	A biomechanical hypothesis for the pathophysiology of apical lung disease. Medical Hypotheses, 2016, 92, 88-93.	1.5	7
50	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
51	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
52	Advances in the study of the deformation mechanism of stishovite. Physica Status Solidi (B): Basic Research, 2015, 252, 1486-1491.	1.5	13
53	Auxetic metamaterials exhibiting giant negative Poisson's ratios. Physica Status Solidi - Rapid Research Letters, 2015, 9, 425-430.	2.4	118
54	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

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55	Nonâ€porous grooved singleâ€material auxetics. Physica Status Solidi (B): Basic Research, 2015, 252, 1559-1564.	1.5	18
56	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
57	Negative Poissonâ€™s ratios in tendons: An unexpected mechanical response. Acta Biomaterialia, 2015, 24, 201-208.	8.3	100
58	Hierarchical Auxetic Mechanical Metamaterials. Scientific Reports, 2015, 5, 8395.	3.3	226
59	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
60	Influence of translational disorder on the mechanical properties of hexachiral honeycomb systems. Composites Part B: Engineering, 2015, 80, 84-91.	12.0	72
61	Anomalous elastic properties in stishovite. RSC Advances, 2015, 5, 8974-8980.	3.6	15
62	Tailoring Graphene to Achieve Negative Poisson's Ratio Properties. Advanced Materials, 2015, 27, 1455-1459.	21.0	275
63	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
64	Mechanism of sternotomy dehiscence. Interactive Cardiovascular and Thoracic Surgery, 2014, 19, 617-621.	1.1	23
65	Is there a biomechanical cause for spontaneous pneumothorax?. European Journal of Cardio-thoracic Surgery, 2014, 45, 1011-1016.	1.4	20
66	Modeling auxetic foams through semi-rigid rotating triangles. Physica Status Solidi (B): Basic Research, 2014, 251, 297-306.	1.5	52
67	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
68	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
69	On the suitability of hexagonal honeycombs as stent geometries. Physica Status Solidi (B): Basic Research, 2014, 251, 328-337.	1.5	50
70	Smart metamaterials with tunable auxetic and other properties. Smart Materials and Structures, 2013, 22, 084016.	3.5	111
71	A realistic generic model for antiâ€tetrachiral systems. Physica Status Solidi (B): Basic Research, 2013, 250, 2012-2019.	1.5	85
72	Giant response. Nature Materials, 2013, 12, 182-183.	27.5	12

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73	Negative thermal expansion from disc, cylindrical, and needle shaped inclusions. Physica Status Solidi (B): Basic Research, 2013, 250, 2051-2056.	1.5	13
74	Honeycomb composites with auxetic out-of-plane characteristics. Composite Structures, 2013, 106, 150-159.	5.8	59
75	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
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	Auxetic Materials and Related Systems. Physica Status Solidi (B): Basic Research, 2012, 249, 1313-1314.	1.5	14
79	Unusual Thermoelastic Properties of Methanol Monohydrate. Science, 2011, 331, 687-688.	12.6	21
80	An Improved Analytical Model for the Elastic Constants of Auxetic and Conventional Hexagonal Honeycombs. Frontiers in Forests and Global Change, 2011, 30, 287-310.	1.1	38
81	Negative linear compressibility of hexagonal honeycombs and related systems. Scripta Materialia, 2011, 65, 565-568.	5.2	113
82	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
83	Modelling and testing of a foldable macrostructure exhibiting auxetic behaviour. Physica Status Solidi (B): Basic Research, 2011, 248, 117-122.	1.5	20
84	Adjustable and negative thermal expansion from multilayered systems. Physica Status Solidi - Rapid Research Letters, 2010, 4, 133-135.	2.4	26
85	Molecular-Level Deformations in Auxetic Organic Networked Polymers. ACS Symposium Series, 2010, , 197-214.	0.5	1
86	Perforated Sheets Exhibiting Negative Poisson's Ratios. Advanced Engineering Materials, 2010, 12, 460-464.	3.5	152
87	Hexagonal Honeycombs with Zero Poisson's Ratios and Enhanced Stiffness. Advanced Engineering Materials, 2010, 12, 855-862.	3.5	140
88	Composites with needle-like inclusions exhibiting negative thermal expansion: A preliminary investigation. Composites Science and Technology, 2010, 70, 2248-2252.	7.8	26
89	On the behaviour of natrolite under hydrostatic pressure. Journal of Non-Crystalline Solids, 2010, 356, 1881-1887.	3.1	5
90	Auxetic behaviour in non-crystalline materials having star or triangular shaped perforations. Journal of Non-Crystalline Solids, 2010, 356, 1980-1987.	3.1	62

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91	On the behaviour of bi-material strips when subjected to changes in external hydrostatic pressure. Scripta Materialia, 2009, 60, 65-67.	5.2	13
92	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
93	On the properties of auxetic rotating stretching squares. Physica Status Solidi (B): Basic Research, 2009, 246, 2045-2054.	1.5	40
94	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
95	Auxetic behaviour from stretching connected squares. Journal of Materials Science, 2008, 43, 5962-5971.	3.7	55
96	On the atomic level deformations in the auxetic zeolite natrolite. Physica Status Solidi (B): Basic Research, 2008, 245, 502-510.	1.5	30
97	On the properties of auxetic metaâ€tetrachiral structures. Physica Status Solidi (B): Basic Research, 2008, 245, 511-520.	1.5	194
98	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
99	Trussâ€type systems exhibiting negative compressibility. Physica Status Solidi (B): Basic Research, 2008, 245, 2405-2414.	1.5	51
100	Negative compressibility. Physica Status Solidi - Rapid Research Letters, 2008, 2, 236-238.	2.4	94
101	On the mechanical properties and auxetic potential of various organic networked polymers. Molecular Simulation, 2008, 34, 1149-1158.	2.0	22
102	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
103	Natrolite: A zeolite with negative Poissonâ€™s ratios. Journal of Applied Physics, 2007, 101, 086102.	2.5	107
104	Connected Triangles Exhibiting Negative Poisson's Ratios and Negative Thermal Expansion. Journal of the Physical Society of Japan, 2007, 76, 025001.	1.6	35
105	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
106	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
107	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
108	Auxetic Cellular Materials and Structures. , 2005, , 489.		8

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109	On the Auxetic Properties of `Rotating Rectangles' with Different Connectivity. Journal of the Physical Society of Japan, 2005, 74, 2866-2867.	1.6	88
110	On the origin of auxetic behaviour in the silicate Î±-cristobalite. Journal of Materials Chemistry, 2005, 15, 4003.	6.7	62