# Ruben Gatt

List of Publications by Year
in descending order

Source: https://exaly.com/author-pdf/3329639/publications.pdf

Version: 2024-02-01

| | | | |
|---|---|---|---|
| 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 | 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 |
| 2 | Tailoring Graphene to Achieve Negative Poisson's Ratio Properties. Advanced Materials, 2015, 27, 1455-1459. | 21.0 | 275 |
| 3 | Hierarchical Auxetic Mechanical Metamaterials. Scientific Reports, 2015, 5, 8395. | 3.3 | 226 |
| 4 | On the properties of auxetic metaâ€tetrachiral structures. Physica Status Solidi (B): Basic Research, 2008, 245, 511-520. | 1.5 | 194 |
| 5 | Auxetic Perforated Mechanical Metamaterials with Randomly Oriented Cuts. Advanced Materials, 2016, 28, 385-389. | 21.0 | 153 |
| 6 | Perforated Sheets Exhibiting Negative Poisson's Ratios. Advanced Engineering Materials, 2010, 12, 460-464. | 3.5 | 152 |
| 7 | 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 |
| 8 | Hexagonal Honeycombs with Zero Poisson's Ratios and Enhanced Stiffness. Advanced Engineering Materials, 2010, 12, 855-862. | 3.5 | 140 |
| 9 | Mechanical metamaterials with star-shaped pores exhibiting negative and zero Poisson's ratio. Materials and Design, 2018, 146, 28-37. | 7.0 | 133 |
| 10 | 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 |
| 11 | Auxetic metamaterials exhibiting giant negative Poisson's ratios. Physica Status Solidi - Rapid Research Letters, 2015, 9, 425-430. | 2.4 | 118 |
| 12 | Negative linear compressibility of hexagonal honeycombs and related systems. Scripta Materialia, 2011, 65, 565-568. | 5.2 | 113 |
| 13 | Smart metamaterials with tunable auxetic and other properties. Smart Materials and Structures, 2013, 22, 084016. | 3.5 | 111 |
| 14 | 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 |
| 15 | Natrolite: A zeolite with negative Poissonâ€™s ratios. Journal of Applied Physics, 2007, 101, 086102. | 2.5 | 107 |
| 16 | Negative Poissonâ€™s ratios in tendons: An unexpected mechanical response. Acta Biomaterialia, 2015, 24, 201-208. | 8.3 | 100 |
| 17 | Negative compressibility. Physica Status Solidi - Rapid Research Letters, 2008, 2, 236-238. | 2.4 | 94 |
| 18 | On the Auxetic Properties of `Rotating Rectangles' with Different Connectivity. Journal of the Physical Society of Japan, 2005, 74, 2866-2867. | 1.6 | 88 |

| # | Article | IF | Citations |
|---|---|---|---|
| 19 | 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 |
| 20 | A realistic generic model for antiâ€tetrachiral systems. Physica Status Solidi (B): Basic Research, 2013, 250, 2012-2019. | 1.5 | 85 |
| 21 | 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 |
| 22 | 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 |
| 23 | Influence of translational disorder on the mechanical properties of hexachiral honeycomb systems. Composites Part B: Engineering, 2015, 80, 84-91. | 12.0 | 72 |
| 24 | On the origin of auxetic behaviour in the silicate Î±-cristobalite. Journal of Materials Chemistry, 2005, 15, 4003. | 6.7 | 62 |
| 25 | Auxetic behaviour in non-crystalline materials having star or triangular shaped perforations. Journal of Non-Crystalline Solids, 2010, 356, 1980-1987. | 3.1 | 62 |
| 26 | 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 |
| 27 | Physiological effects and mode of action of ZnO nanoparticles against postharvest fungal contaminants. Food Research International, 2017, 101, 274-279. | 6.2 | 61 |
| 28 | Honeycomb composites with auxetic out-of-plane characteristics. Composite Structures, 2013, 106, 150-159. | 5.8 | 59 |
| 29 | 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 |
| 30 | Auxetic behaviour from stretching connected squares. Journal of Materials Science, 2008, 43, 5962-5971. | 3.7 | 55 |
| 31 | Modeling auxetic foams through semi-rigid rotating triangles. Physica Status Solidi (B): Basic Research, 2014, 251, 297-306. | 1.5 | 52 |
| 32 | On the dynamics and control of mechanical properties of hierarchical rotating rigid unit auxetics. Scientific Reports, 2017, 7, 46529. | 3.3 | 52 |
| 33 | 3D composite metamaterial with magnetic inclusions exhibiting negative stiffness and auxetic behaviour. Materials and Design, 2020, 187, 108403. | 7.0 | 52 |
| 34 | Trussâ€type systems exhibiting negative compressibility. Physica Status Solidi (B): Basic Research, 2008, 245, 2405-2414. | 1.5 | 51 |
| 35 | On the suitability of hexagonal honeycombs as stent geometries. Physica Status Solidi (B): Basic Research, 2014, 251, 328-337. | 1.5 | 50 |
| 36 | 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 |

| # | Article | IF | Citations |
|---|---|---|---|
| 37 | 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 |
| 38 | On the properties of auxetic rotating stretching squares. Physica Status Solidi (B): Basic Research, 2009, 246, 2045-2054. | 1.5 | 40 |
| 39 | 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 |
| 40 | Blocked Shape Memory Effect in Negative Poissonâ€™s Ratio Polymer Metamaterials. ACS Applied Materials & Interfaces, 2016, 8, 20319-20328. | 8.0 | 37 |
| 41 | Connected Triangles Exhibiting Negative Poisson's Ratios and Negative Thermal Expansion. Journal of the Physical Society of Japan, 2007, 76, 025001. | 1.6 | 35 |
| 42 | An analytical and finite element study on the mechanical properties of irregular hexachiral honeycombs. Smart Materials and Structures, 2018, 27, 105016. | 3.5 | 35 |
| 43 | Negative linear compressibility from rotating rigid units. Physica Status Solidi (B): Basic Research, 2016, 253, 1410-1418. | 1.5 | 34 |
| 44 | Generation of plasma functionalized water: Antimicrobial assessment and impact on seed germination. Food Control, 2020, 113, 107168. | 5.5 | 33 |
| 45 | Impact resistance of composite magnetic metamaterials. Scientific Reports, 2019, 9, 3963. | 3.3 | 32 |
| 46 | On the atomic level deformations in the auxetic zeolite natrolite. Physica Status Solidi (B): Basic Research, 2008, 245, 502-510. | 1.5 | 30 |
| 47 | HPLC Analysis of Phenolic Compounds and Flavonoids with Overlapping Peaks. Food Technology and Biotechnology, 2020, 58, 1-12. | 2.1 | 28 |
| 48 | Adjustable and negative thermal expansion from multilayered systems. Physica Status Solidi - Rapid Research Letters, 2010, 4, 133-135. | 2.4 | 26 |
| 49 | Composites with needle-like inclusions exhibiting negative thermal expansion: A preliminary investigation. Composites Science and Technology, 2010, 70, 2248-2252. | 7.8 | 26 |
| 50 | 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 |
| 51 | 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 |
| 52 | 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 |
| 53 | Giant Auxetic Behaviour in Engineered Graphene. Annalen Der Physik, 2018, 530, 1700330. | 2.4 | 24 |
| 54 | The Multidirectional Auxeticity and Negative Linear Compressibility of a 3D Mechanical Metamaterial. Materials, 2020, 13, 2193. | 2.9 | 24 |

| # | Article | IF | Citations |
|---|---|---|---|
| 55 | Mechanism of sternotomy dehiscence. Interactive Cardiovascular and Thoracic Surgery, 2014, 19, 617-621. | 1.1 | 23 |
| 56 | 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 |
| 57 | On the mechanical properties and auxetic potential of various organic networked polymers. Molecular Simulation, 2008, 34, 1149-1158. | 2.0 | 22 |
| 58 | 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 |
| 59 | Unusual Thermoelastic Properties of Methanol Monohydrate. Science, 2011, 331, 687-688. | 12.6 | 21 |
| 60 | Auxetic mechanical metamaterials with diamond and elliptically shaped perforations. Acta Mechanica, 2021, 232, 779-791. | 2.1 | 21 |
| 61 | 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 |
| 62 | Modelling and testing of a foldable macrostructure exhibiting auxetic behaviour. Physica Status Solidi (B): Basic Research, 2011, 248, 117-122. | 1.5 | 20 |
| 63 | Is there a biomechanical cause for spontaneous pneumothorax?. European Journal of Cardio-thoracic Surgery, 2014, 45, 1011-1016. | 1.4 | 20 |
| 64 | Assessing the anti-fungal efficiency of filters coated with zinc oxide nanoparticles. Royal Society Open Science, 2017, 4, 161032. | 2.4 | 20 |
| 65 | 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 |
| 66 | Nonâ€porous grooved singleâ€material auxetics. Physica Status Solidi (B): Basic Research, 2015, 252, 1559-1564. | 1.5 | 18 |
| 67 | On the Mechanical Properties of Graphyne, Graphdiyne, and Other Poly(Phenylacetylene) Networks. Physica Status Solidi (B): Basic Research, 2017, 254, 1700380. | 1.5 | 18 |
| 68 | A Novel Threeâ€Dimensional Antiâ€Tetrachiral Honeycomb. Physica Status Solidi (B): Basic Research, 2019, 256, 1800473. | 1.5 | 17 |
| 69 | Smart Honeycomb â€œMechanical Metamaterialsâ€•with Tunable Poisson's Ratios. Physica Status Solidi (B): Basic Research, 2020, 257, 1900707. | 1.5 | 17 |
| 70 | Reconfigurable magneto-mechanical metamaterials guided by magnetic fields. Composite Structures, 2022, 280, 114921. | 5.8 | 17 |
| 71 | Anomalous elastic properties in stishovite. RSC Advances, 2015, 5, 8974-8980. | 3.6 | 15 |
| 72 | 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 |

| # | Article | IF | Citations |
|---|---|---|---|
| 73 | Auxetic Materials and Related Systems. Physica Status Solidi (B): Basic Research, 2012, 249, 1313-1314. | 1.5 | 14 |
| 74 | On the behaviour of bi-material strips when subjected to changes in external hydrostatic pressure. Scripta Materialia, 2009, 60, 65-67. | 5.2 | 13 |
| 75 | Negative thermal expansion from disc, cylindrical, and needle shaped inclusions. Physica Status Solidi (B): Basic Research, 2013, 250, 2051-2056. | 1.5 | 13 |
| 76 | Advances in the study of the deformation mechanism of stishovite. Physica Status Solidi (B): Basic Research, 2015, 252, 1486-1491. | 1.5 | 13 |
| 77 | Modelling the growth of pear postharvest fungal isolates at different temperatures. Food Microbiology, 2018, 76, 450-456. | 4.2 | 13 |
| 78 | Self-induced global rotation of chiral and other mechanical metamaterials. International Journal of Solids and Structures, 2020, 191-192, 212-219. | 2.7 | 13 |
| 79 | 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 |
| 80 | Giant response. Nature Materials, 2013, 12, 182-183. | 27.5 | 12 |
| 81 | Metal nanoparticles for controlling fungal proliferation: quantitative analysis and applications. Current Opinion in Food Science, 2019, 30, 49-59. | 8.0 | 12 |
| 82 | Controllable Hierarchical Mechanical Metamaterials Guided by the Hinge Design. Materials, 2021, 14, 758. | 2.9 | 12 |
| 83 | 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 |
| 84 | 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 |
| 85 | 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 |
| 86 | 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 |
| 87 | The Auxetic Behavior of a General Starâ€4 Structure. Physica Status Solidi (B): Basic Research, 2021, 258, 2100158. | 1.5 | 9 |
| 88 | Auxetic Cellular Materials and Structures. , 2005, , 489. | | 8 |
| 89 | Pathophysiological mechanism of post-lobectomy air leaks. Journal of Thoracic Disease, 2018, 10, 3689-3700. | 1.4 | 8 |
| 90 | 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 |

| # | Article | IF | Citations |
|---|---|---|---|
| 91 | 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 |
| 92 | 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 |
| 93 | A biomechanical hypothesis for the pathophysiology of apical lung disease. Medical Hypotheses, 2016, 92, 88-93. | 1.5 | 7 |
| 94 | Evaluation of polyurethane foam materials as air filters against fungal contamination. Food Control, 2017, 73, 91-100. | 5.5 | 7 |
| 95 | 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 |
| 96 | Physiological rules for the heart, lungs and other pressure-based organs. Journal of Thoracic Disease, 2017, 9, 3793-3801. | 1.4 | 6 |
| 97 | 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 |
| 98 | Controlling Density and Modulus in Auxetic Foam Fabricationsâ€"Implications for Impact and Indentation Testing. Proceedings (mdpi), 2018, 2, 250. | 0.2 | 6 |
| 99 | 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 |
| 100 | On the behaviour of natrolite under hydrostatic pressure. Journal of Non-Crystalline Solids, 2010, 356, 1881-1887. | 3.1 | 5 |
| 101 | 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 |
| 102 | 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 |
| 103 | A mathematical model for pressure-based organs behaving as biological pressure vessels. Journal of Theoretical Biology, 2018, 450, 37-42. | 1.7 | 2 |
| 104 | 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 |
| 105 | Molecular-Level Deformations in Auxetic Organic Networked Polymers. ACS Symposium Series, 2010, , 197-214. | 0.5 | 1 |
| 106 | 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 |
| 107 | The Auxetic Behavior of a General Starâ€4 Structure. Physica Status Solidi (B): Basic Research, 2021, 258, . | 1.5 | 1 |
| 108 | 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 |

| # | Article | IF | Citations |
|---|---|---|---|
| 109 | Cover Image, Volume 42, Issue 10. Journal of Food Processing and Preservation, 2018, 42, e13847. | 2.0 | 0 |
| 110 | Assessing the air filtration efficacy of compressed and uncompressed polyurethane foams. Journal of Food Processing and Preservation, 2018, 42, e13706. | 2.0 | 0 |