Guang-Kui Xu

List of Publications by Year
in descending order

58 papers	1,485 citations	304743 22 h-index	345221 36 g-index
58 all docs	58 docs citations	58 times ranked	1638 citing authors

#	Article	IF	Citations
1	Mechanical properties and scaling laws of nanoporous gold. Journal of Applied Physics, 2013, 113, .	2.5	171
2	Microencapsulated Phase Change Materials in Solar-Thermal Conversion Systems: Understanding Geometry-Dependent Heating Efficiency and System Reliability. ACS Nano, 2017, 11, 721-729.	14.6	98
3	On the determination of elastic moduli of cells by AFM based indentation. Scientific Reports, 2017, 7, 45575.	3.3	90
4	Highly Stable and Conductive Microcapsules for Enhancement of Joule Heating Performance. ACS Nano, 2016, 10, 4695-4703.	14.6	81
5	A Tensegrity Model of Cell Reorientation on Cyclically Stretched Substrates. Biophysical Journal, 2016, 111, 1478-1486.	0.5	65
6	Dynamic Migration Modes of Collective Cells. Biophysical Journal, 2018, 115, 1826-1835.	0.5	63
7	Binding constants of membrane-anchored receptors and ligands: A general theory corroborated by Monte Carlo simulations. Journal of Chemical Physics, 2015, 143, 243136.	3.0	54
8	Are elastic moduli of biological cells depth dependent or not? Another explanation using a contact mechanics model with surface tension. Soft Matter, 2018, 14, 7534-7541.	2.7	48
9	Thermally assisted peeling of an elastic strip in adhesion with a substrate via molecular bonds. Journal of the Mechanics and Physics of Solids, 2017, 101, 197-208.	4.8	36
10	Orientations of Cells on Compliant Substrates under Biaxial Stretches: A Theoretical Study. Biophysical Journal, 2018, 114, 701-710.	0.5	35
11	Analytical form-finding of tensegrities using determinant of force-density matrix. Composite Structures, 2018, 189, 87-98.	5.8	34
12	A hierarchical cellular structural model to unravel the universal power-law rheological behavior of living cells. Nature Communications, 2021, 12, 6067.	12.8	32
13	Integrin activation and internalization mediated by extracellular matrix elasticity: A biomechanical model. Journal of Biomechanics, 2014, 47, 1479-1484.	2.1	31
14	The glycocalyx promotes cooperative binding and clustering of adhesion receptors. Soft Matter, 2016, 12, 4572-4583.	2.7	31
15	Collective dynamics of cancer cells confined in a confluent monolayer of normal cells. Journal of Biomechanics, 2017, 52, 140-147.	2.1	30
16	Binding equilibrium and kinetics of membrane-anchored receptors and ligands in cell adhesion: Insights from computational model systems and theory. Cell Adhesion and Migration, 2016, 10, 576-589.	2.7	29
17	How do changes at the cell level affect the mechanical properties of epithelial monolayers?. Soft Matter, 2015, 11, 8782-8788.	2.7	28
18	Binding kinetics of membrane-anchored receptors and ligands: Molecular dynamics simulations and theory. Journal of Chemical Physics, 2015, 143, 243137.	3.0	27

#	Article	IF	Citations
19	Negative stiffness behaviors emerging in elastic instabilities of prismatic tensegrities under torsional loading. International Journal of Mechanical Sciences, 2015, 103, 189-198.	6.7	26
20	Truncated regular octahedral tensegrity-based mechanical metamaterial with tunable and programmable Poisson's ratio. International Journal of Mechanical Sciences, 2020, 167, 105285.	6.7	25
21	Self-Assembled Nanostructures of Homopolymer and Diblock Copolymer Blends in a Selective Solvent. Journal of Physical Chemistry B, 2010, 114, 1257-1263.	2.6	24
22	Automatically assembled large-scale tensegrities by truncated regular polyhedral and prismatic elementary cells. Composite Structures, 2018, 184, 30-40.	5.8	24
23	Stochastic fluctuation-induced cell polarization on elastic substrates: A cytoskeleton-based mechanical model. Journal of the Mechanics and Physics of Solids, 2020, 137, 103872.	4.8	23
24	Multilevel structural defects-induced elastic wave tunability and localization of a tensegrity metamaterial. Composites Science and Technology, 2021, 207, 108740.	7.8	22
25	Frequency-dependent transition in power-law rheological behavior of living cells. Science Advances, 2022, 8, eabn6093.	10.3	22
26	Controllable nanostructural transitions in grafted nanoparticle-block copolymer composites. Nano Research, 2010, 3, 356-362.	10.4	21
27	A molecular mechanisms-based biophysical model for two-phase cell spreading. Applied Physics Letters, 2010, 96, 043703.	3.3	21
28	Theoretical study of the competition between cell-cell and cell-matrix adhesions. Physical Review E, 2009, 80, 011921.	2.1	20
29	Oriented cell division affects the global stress and cell packing geometry of a monolayer under stretch. Journal of Biomechanics, 2016, 49, 401-407.	2.1	20
30	Self-assembled lipid nanostructures encapsulating nanoparticles in aqueous solution. Soft Matter, 2009, 5, 3977.	2.7	19
31	Self-assembly of organicâ€“inorganic nanocomposites with nacre-like hierarchical structures. Soft Matter, 2011, 7, 4828.	2.7	19
32	Controlled Release and Assembly of Drug Nanoparticles via pH-Responsive Polymeric Micelles: A Theoretical Study. Journal of Physical Chemistry B, 2012, 116, 6003-6009.	2.6	18
33	A Bionicâ€Homodimerization Strategy for Optimizing Modulators of Proteinâ€“Protein Interactions: From Statistical Mechanics Theory to Potential Clinical Translation. Advanced Science, 2022, 9, e2105179.	11.2	16
34	Surface patterning of soft polymer film-coated cylinders via an electric field. Journal of Physics Condensed Matter, 2009, 21, 445006.	1.8	15
35	A Dynamic Biochemomechanical Model of Geometry-Confined Cell Spreading. Biophysical Journal, 2017, 112, 2377-2386.	0.5	14
36	Bandgap characteristics of a tensegrity metamaterial chain with defects. Extreme Mechanics Letters, 2020, 36, 100668.	4.1	14

#	Article	IF	Citations
37	Non-contact tensile viscoelastic characterization of microscale biological materials. Acta Mechanica Sinica/Lixue Xuebao, 2018, 34, 589-599.	3.4	13
38	Why are isolated and collective cells greatly different in stiffness?. Journal of the Mechanics and Physics of Solids, 2021, 147, 104280.	4.8	13
39	Tissueâ€“Growth Model for the Swelling Analysis of Coreâ€“Shell Hydrogels. Soft Materials, 2013, 11, 117-124.	1.7	10
40	Impact of lipid rafts on the<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>T</mml:mi></mml:mrow></mml:math>-cell-receptor and peptide-major-histocompatibility-complex interactions under different measurement conditions. Physical Review E, 2017, 95, 012403.	2.1	10
41	Stress-driven cell extrusion can maintain homeostatic cell density in response to overcrowding. Soft Matter, 2019, 15, 8441-8449.	2.7	10
42	Analytical Form-Finding for Highly Symmetric and Super-Stable Configurations of Rhombic Truncated Regular Polyhedral Tensegrities. Journal of Applied Mechanics, Transactions ASME, 2019, 86, .	2.2	9
43	Constructing various simple polygonal tensegrities by directly or recursively adding bars. Composite Structures, 2020, 234, 111693.	5.8	8
44	Mesoscopic dynamic model of epithelial cell division with cell-cell junction effects. Physical Review E, 2020, 102, 012405.	2.1	8
45	Three-dimensional collective cell motions in an acinus-like lumen. Journal of Biomechanics, 2019, 84, 234-242.	2.1	7
46	Static and dynamic mechanics of cell monolayers: A multi-scale structural model. Acta Mechanica Sinica/Lixue Xuebao, 2022, 38, .	3.4	6
47	Effects of interface cohesion on mechanical properties of interpenetrating phase nanocomposites. Micro and Nano Letters, 2014, 9, 697-701.	1.3	5
48	Cell chirality regulates coherent angular motion onÂsmall circular substrates. Biophysical Journal, 2022, 121, 1931-1939.	0.5	5
49	A tensegrity-based morphing module for assembling various deployable structures. Mechanism and Machine Theory, 2022, 173, 104870.	4.5	5
50	Tension-compression asymmetry in the binding affinity of membrane-anchored receptors and ligands. Physical Review E, 2016, 93, 032411.	2.1	4
51	Rotational constraint contributes to collective cell durotaxis. Applied Physics Letters, 2020, 117, .	3.3	4
52	A finite-strain micromechanical model for the hyperelasticity of tendons and ligaments with crimped fibers. Mechanics of Materials, 2021, 160, 103955.	3.2	4
53	Self-equilibrium and super-stability of rhombic truncated regular tetrahedral and cubic tensegrities using symmetry-adapted force-density matrix method. International Journal of Solids and Structures, 2021, 233, 111215.	2.7	4
54	Directional snapping instability in a bistable tensegrity under uniaxial loads. Composite Structures, 2022, 283, 115153.	5.8	4

#	Article	IF	Citations
55	Stiffening and softening in the power-law rheological behaviors of cells. Journal of the Mechanics and Physics of Solids, 2022, 167, 104989.	4.8	4
56	Enumerationâ€“screening method for the design of simple polygonal tensegrities. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2019, 475, 20180812.	2.1	2
57	Unusual Sonochemical Assembly between Carbon Allotropes for High Strain-Tolerant Conductive Nanocomposites. ACS Nano, 2019, 13, 12062-12069.	14.6	2
58	Size-Dependent Mechanics of the Adherens Junction Mediated by Cooperative trans and cis Bindings. Journal of Applied Mechanics, Transactions ASME, 2019, 86, .	2.2	2