

Vivek B Shenoy

List of Publications by Year in Descending Order

Source: <https://exaly.com/author-pdf/3662185/vivek-b-shenoy-publications-by-year.pdf>

Version: 2024-04-27

This document has been generated based on the publications and citations recorded by exaly.com. For the latest version of this publication list, visit the link given above.

The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

96
papers

7,571
citations

44
h-index

86
g-index

105
ext. papers

10,241
ext. citations

12.3
avg, IF

6.5
L-index

#	Paper	IF	Citations
96	Glycosaminoglycans modulate long-range mechanical communication between cells in collagen networks.. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2022 , 119, e2116718119	11.5	3
95	Programmable and contractile materials through cell encapsulation in fibrous hydrogel assemblies. <i>Science Advances</i> , 2021 , 7, eabi8157	14.3	10
94	Dynamic self-reinforcement of gene expression determines acquisition of cellular mechanical memory. <i>Biophysical Journal</i> , 2021 , 120, 5074-5089	2.9	3
93	Direct Optoelectronic Imaging of 2D Semiconductor-3D Metal Buried Interfaces. <i>ACS Nano</i> , 2021 , 15, 5618-5630	16.7	10
92	Surface-directed engineering of tissue anisotropy in microphysiological models of musculoskeletal tissue. <i>Science Advances</i> , 2021 , 7,	14.3	12
91	Enhanced substrate stress relaxation promotes filopodia-mediated cell migration. <i>Nature Materials</i> , 2021 , 20, 1290-1299	27	22
90	Recursive feedback between matrix dissipation and chemo-mechanical signaling drives oscillatory growth of cancer cell invadopodia. <i>Cell Reports</i> , 2021 , 35, 109047	10.6	2
89	Mechanosensitive smooth muscle cell phenotypic plasticity emerging from a null state and the balance between Rac and Rho. <i>Cell Reports</i> , 2021 , 35, 109019	10.6	3
88	Long-range mechanical signaling in biological systems. <i>Soft Matter</i> , 2021 , 17, 241-253	3.6	7
87	The nuclear piston activates mechanosensitive ion channels to generate cell migration paths in confining microenvironments. <i>Science Advances</i> , 2021 , 7,	14.3	10
86	Soft robotic constrictor for in vitro modeling of dynamic tissue compression. <i>Scientific Reports</i> , 2021 , 11, 16478	4.9	4
85	High-throughput search for magnetic and topological order in transition metal oxides. <i>Science Advances</i> , 2020 , 6,	14.3	14
84	Collagen microarchitecture mechanically controls myofibroblast differentiation. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020 , 117, 11387-11398	11.5	58
83	Nuclear Mechanics: Nuclear Mechanics within Intact Cells Is Regulated by Cytoskeletal Network and Internal Nanostructures (Small 18/2020). <i>Small</i> , 2020 , 16, 2070098	11	
82	Direct visualization of out-of-equilibrium structural transformations in atomically thin chalcogenides. <i>Npj 2D Materials and Applications</i> , 2020 , 4,	8.8	17
81	Nuclear softening expedites interstitial cell migration in fibrous networks and dense connective tissues. <i>Science Advances</i> , 2020 , 6, eaax5083	14.3	17
80	Nuclear Mechanics within Intact Cells Is Regulated by Cytoskeletal Network and Internal Nanostructures. <i>Small</i> , 2020 , 16, e1907688	11	24

79	Tunable strain soliton networks confine electrons in van der Waals materials. <i>Nature Physics</i> , 2020 , 16, 1097-1102	16.2	19
78	Hydrogels: Mechanochemical Adhesion and Plasticity in Multifiber Hydrogel Networks (Adv. Mater. 8/2020). <i>Advanced Materials</i> , 2020 , 32, 2070061	24	
77	Interfacial Electromechanics Predicts Phase Behavior of 2D Hybrid Halide Perovskites. <i>ACS Nano</i> , 2020 , 14, 3353-3364	16.7	5
76	Yielding and bifurcated aging in nanofibrillar networks. <i>Physical Review Materials</i> , 2020 , 4,	3.2	1
75	Mechanochemical Adhesion and Plasticity in Multifiber Hydrogel Networks. <i>Advanced Materials</i> , 2020 , 32, e1905719	24	23
74	Synthesis of MoVAIC MAX Phase and Two-Dimensional MoVC MXene with Five Atomic Layers of Transition Metals. <i>ACS Nano</i> , 2020 , 14, 204-217	16.7	198
73	Mechanisms of Local Stress Amplification in Axons near the Gray-White Matter Interface. <i>Biophysical Journal</i> , 2020 , 119, 1290-1300	2.9	3
72	Gap junctions amplify spatial variations in cell volume in proliferating tumor spheroids. <i>Nature Communications</i> , 2020 , 11, 6148	17.4	10
71	Tailoring Electronic and Optical Properties of MXenes through Forming Solid Solutions. <i>Journal of the American Chemical Society</i> , 2020 , 142, 19110-19118	16.4	58
70	Effects of extracellular matrix viscoelasticity on cellular behaviour. <i>Nature</i> , 2020 , 584, 535-546	50.4	362
69	Machine Learning-Enabled Design of Point Defects in 2D Materials for Quantum and Neuromorphic Information Processing. <i>ACS Nano</i> , 2020 , 14, 13406-13417	16.7	28
68	The Balance between Actomyosin Contractility and Microtubule Polymerization Regulates Hierarchical Protrusions That Govern Efficient Fibroblast-Collagen Interactions. <i>ACS Nano</i> , 2020 , 14, 7868-7879 ¹⁷	16.7	17
67	Emergence of tissue-like mechanics from fibrous networks confined by close-packed cells. <i>Nature</i> , 2019 , 573, 96-101	50.4	63
66	Regulation of nuclear architecture, mechanics, and nucleocytoplasmic shuttling of epigenetic factors by cell geometric constraints. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019 , 116, 13200-13209	11.5	81
65	Engineering Zero-Dimensional Quantum Confinement in Transition-Metal Dichalcogenide Heterostructures. <i>ACS Nano</i> , 2019 , 13, 8303-8311	16.7	19
64	Balance of mechanical forces drives endothelial gap formation and may facilitate cancer and immune-cell extravasation. <i>PLoS Computational Biology</i> , 2019 , 15, e1006395	5	23
63	Dynamic fibroblast contractions attract remote macrophages in fibrillar collagen matrix. <i>Nature Communications</i> , 2019 , 10, 1850	17.4	76
62	Strong triaxial coupling and anomalous Poisson effect in collagen networks. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019 , 116, 6790-6799	11.5	41

61	Prediction of Synthesis of 2D Metal Carbides and Nitrides (MXenes) and Their Precursors with Positive and Unlabeled Machine Learning. <i>ACS Nano</i> , 2019 , 13, 3031-3041	16.7	95
60	Surface Termination Dependent Work Function and Electronic Properties of Ti ₃ C ₂ T _x MXene. <i>Chemistry of Materials</i> , 2019 , 31, 6590-6597	9.6	169
59	Controlled Growth of Large-Area Bilayer Tungsten Diselenides with Lateral P-N Junctions. <i>ACS Nano</i> , 2019 , 13, 10490-10498	16.7	24
58	Multiscale reverse engineering of the human ocular surface. <i>Nature Medicine</i> , 2019 , 25, 1310-1318	50.5	53
57	Tension- and Adhesion-Regulated Retraction of Injured Axons. <i>Biophysical Journal</i> , 2019 , 117, 193-202	2.9	9
56	Engineering Magnetic Phases in Two-Dimensional Non-van der Waals Transition-Metal Oxides. <i>Nano Letters</i> , 2019 , 19, 7793-7800	11.5	26
55	High-Rate and Long Cycle-Life Alloy-Type Magnesium-Ion Battery Anode Enabled Through (De)magnesian-Induced Near-Room-Temperature Solid-Liquid Phase Transformation. <i>Advanced Energy Materials</i> , 2019 , 9, 1902086	21.8	28
54	Magnesium-Ion Batteries: High-Rate and Long Cycle-Life Alloy-Type Magnesium-Ion Battery Anode Enabled Through (De)magnesian-Induced Near-Room-Temperature Solid-Liquid Phase Transformation (Adv. Energy Mater. 45/2019). <i>Advanced Energy Materials</i> , 2019 , 9, 1970180	21.8	2
53	Surface-Engineered MXenes: Electric Field Control of Magnetism and Enhanced Magnetic Anisotropy. <i>ACS Nano</i> , 2019 , 13, 2831-2839	16.7	75
52	Remodeling of the Collagen Matrix in Aging Skin Promotes Melanoma Metastasis and Affects Immune Cell Motility. <i>Cancer Discovery</i> , 2019 , 9, 64-81	24.4	128
51	Maturation State and Matrix Microstructure Regulate Interstitial Cell Migration in Dense Connective Tissues. <i>Scientific Reports</i> , 2018 , 8, 3295	4.9	20
50	Matching material and cellular timescales maximizes cell spreading on viscoelastic substrates. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018 , 115, E2686-E2695	11.5	113
49	Mechanisms of Plastic Deformation in Collagen Networks Induced by Cellular Forces. <i>Biophysical Journal</i> , 2018 , 114, 450-461	2.9	65
48	In Situ Dealloying of Bulk Mg ₂ Sn in Mg-Ion Half Cell as an Effective Route to Nanostructured Sn for High Performance Mg-Ion Battery Anodes. <i>Chemistry of Materials</i> , 2018 , 30, 1815-1824	9.6	60
47	Prediction of optimal structural water concentration for maximized performance in tunnel manganese oxide electrodes. <i>Physical Chemistry Chemical Physics</i> , 2018 , 20, 9480-9487	3.6	4
46	Dynamic Loading and Tendon Healing Affect Multiscale Tendon Properties and ECM Stress Transmission. <i>Scientific Reports</i> , 2018 , 8, 10854	4.9	32
45	Tuning Noncollinear Spin Structure and Anisotropy in Ferromagnetic Nitride MXenes. <i>ACS Nano</i> , 2018 , 12, 6319-6325	16.7	73
44	Newfound sex differences in axonal structure underlie differential outcomes from in vitro traumatic axonal injury. <i>Experimental Neurology</i> , 2018 , 300, 121-134	5.7	66

43	Compressive force induces reversible chromatin condensation and cell geometry-dependent transcriptional response. <i>Molecular Biology of the Cell</i> , 2018 , 29, 3039-3051	3.5	66
42	Enhanced Cycling Stability of Macroporous Bulk Antimony-Based Sodium-Ion Battery Anodes Enabled through Active/Inactive Composites. <i>Advanced Energy Materials</i> , 2018 , 8, 1801781	21.8	39
41	Prediction of Enhanced Catalytic Activity for Hydrogen Evolution Reaction in Janus Transition Metal Dichalcogenides. <i>Nano Letters</i> , 2018 , 18, 3943-3949	11.5	180
40	Interplay of Platelet Contractility and Elasticity of Fibrin/Erythrocytes in Blood Clot Retraction. <i>Biophysical Journal</i> , 2017 , 112, 714-723	2.9	25
39	Modeling the two-way feedback between contractility and matrix realignment reveals a nonlinear mode of cancer cell invasion. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017 , 114, E1617-E1626	11.5	105
38	Multiscale model predicts increasing focal adhesion size with decreasing stiffness in fibrous matrices. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017 , 114, E4549-E4553	11.5	60
37	Tunable Magnetism and Transport Properties in Nitride MXenes. <i>ACS Nano</i> , 2017 , 11, 7648-7655	16.7	190
36	Rational Design of Two-Dimensional Metallic and Semiconducting Spintronic Materials Based on Ordered Double-Transition-Metal MXenes. <i>Journal of Physical Chemistry Letters</i> , 2017 , 8, 422-428	6.4	115
35	Janus Monolayer Transition-Metal Dichalcogenides. <i>ACS Nano</i> , 2017 , 11, 8192-8198	16.7	584
34	Toward a Mechanistic Understanding of Vertical Growth of van der Waals Stacked 2D Materials: A Multiscale Model and Experiments. <i>ACS Nano</i> , 2017 , 11, 12780-12788	16.7	58
33	Integrated Multiscale Biomaterials Experiment and Modeling. <i>ACS Biomaterials Science and Engineering</i> , 2017 , 3, 2628-2632	5.5	5
32	Large In-Plane and Vertical Piezoelectricity in Janus Transition Metal Dichalcogenides. <i>ACS Nano</i> , 2017 , 11, 8242-8248	16.7	348
31	Defective Graphene and Graphene Allotropes as High-Capacity Anode Materials for Mg Ion Batteries. <i>ACS Energy Letters</i> , 2016 , 1, 638-645	20.1	50
30	Fibrous nonlinear elasticity enables positive mechanical feedback between cells and ECMs. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016 , 113, 14043-14048	11.5	181
29	Two-Dimensional Conjugated Covalent-Organic Frameworks as Quantum Anomalous Hall Topological Insulators. <i>Physical Review Letters</i> , 2016 , 116, 096601	7.4	65
28	Elastic interaction of hydrogen atoms on graphene: A multiscale approach from first principles to continuum elasticity. <i>Physical Review B</i> , 2016 , 94,	3.3	1
27	Matrix viscoplasticity and its shielding by active mechanics in microtissue models: experiments and mathematical modeling. <i>Scientific Reports</i> , 2016 , 6, 33919	4.9	29
26	The role of electronic coupling between substrate and 2D MoS2 nanosheets in electrocatalytic production of hydrogen. <i>Nature Materials</i> , 2016 , 15, 1003-9	27	549

25	Harnessing cellular-derived forces in self-assembled microtissues to control the synthesis and alignment of ECM. <i>Biomaterials</i> , 2016 , 77, 120-9	15.6	26
24	A chemo-mechanical free-energy-based approach to model durotaxis and extracellular stiffness-dependent contraction and polarization of cells. <i>Interface Focus</i> , 2016 , 6, 20150067	3.9	41
23	Normal and Fibrotic Rat Livers Demonstrate Shear Strain Softening and Compression Stiffening: A Model for Soft Tissue Mechanics. <i>PLoS ONE</i> , 2016 , 11, e0146588	3.7	68
22	Fundamental Mechanisms of Solvent Decomposition Involved in Solid-Electrolyte Interphase Formation in Sodium Ion Batteries. <i>Chemistry of Materials</i> , 2016 , 28, 8930-8941	9.6	81
21	Limits of Coherency and Strain Transfer in Flexible 2D van der Waals Heterostructures: Formation of Strain Solitons and Interlayer Debonding. <i>Scientific Reports</i> , 2016 , 6, 21516	4.9	37
20	Synthesis of two-dimensional titanium nitride Ti ₄ N ₃ (MXene). <i>Nanoscale</i> , 2016 , 8, 11385-91	7.7	487
19	Detyrosinated microtubules buckle and bear load in contracting cardiomyocytes. <i>Science</i> , 2016 , 352, aaf0659	33.3	172
18	A Chemomechanical Model for Nuclear Morphology and Stresses during Cell Transendothelial Migration. <i>Biophysical Journal</i> , 2016 , 111, 1541-1552	2.9	82
17	Elastic Deformations in 2D van der waals Heterostructures and their Impact on Optoelectronic Properties: Predictions from a Multiscale Computational Approach. <i>Scientific Reports</i> , 2015 , 5, 10872	4.9	65
16	Micromechanical poroelastic finite element and shear-lag models of tendon predict large strain dependent Poisson's ratios and fluid expulsion under tensile loading. <i>Acta Biomaterialia</i> , 2015 , 22, 83-91	10.8	39
15	Cell-mediated fibre recruitment drives extracellular matrix mechanosensing in engineered fibrillar microenvironments. <i>Nature Materials</i> , 2015 , 14, 1262-8	27	356
14	A Chemomechanical Model of Matrix and Nuclear Rigidity Regulation of Focal Adhesion Size. <i>Biophysical Journal</i> , 2015 , 109, 1807-17	2.9	32
13	Phosphorene: Giant Phononic Anisotropy and Unusual Anharmonicity of Phosphorene: Interlayer Coupling and Strain Engineering (Adv. Funct. Mater. 15/2015). <i>Advanced Functional Materials</i> , 2015 , 25, 2343-2343	15.6	8
12	Mechanical Effects of Dynamic Binding between Tau Proteins on Microtubules during Axonal Injury. <i>Biophysical Journal</i> , 2015 , 109, 2328-37	2.9	46
11	Evidence and Model for Strain-Driven Release of Metal Nanocatalysts from Perovskites during Exsolution. <i>Journal of Physical Chemistry Letters</i> , 2015 , 6, 5106-10	6.4	103
10	Giant Phononic Anisotropy and Unusual Anharmonicity of Phosphorene: Interlayer Coupling and Strain Engineering. <i>Advanced Functional Materials</i> , 2015 , 25, 2230-2236	15.6	169
9	Viscoelasticity of tau proteins leads to strain rate-dependent breaking of microtubules during axonal stretch injury: predictions from a mathematical model. <i>Biophysical Journal</i> , 2014 , 106, 1123-33	2.9	103
8	Defect-induced plating of lithium metal within porous graphene networks. <i>Nature Communications</i> , 2014 , 5, 3710	17.4	329

7	Remodeling of fibrous extracellular matrices by contractile cells: predictions from discrete fiber network simulations. <i>Biophysical Journal</i> , 2014 , 107, 1829-1840	2.9	112
6	Spatially-resolved mapping of history-dependent coupled electrochemical and electrical behaviors of electroresistive NiO. <i>Scientific Reports</i> , 2014 , 4, 6725	4.9	10
5	Long-range force transmission in fibrous matrices enabled by tension-driven alignment of fibers. <i>Biophysical Journal</i> , 2014 , 107, 2592-603	2.9	190
4	Necking and failure of constrained 3D microtissues induced by cellular tension. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013 , 110, 20923-8	11.5	38
3	Phase-field modeling of two-dimensional crystal growth with anisotropic diffusion. <i>Physical Review E</i> , 2013 , 88, 052409	2.4	24
2	Equilibrium shape of graphene domains on Ni(111). <i>Physical Review B</i> , 2013 , 88,	3.3	13
1	Programmable and Contractile Materials Through Cell Encapsulation in Fibrous Hydrogel Assemblies		1