Ovijit Chaudhuri

List of Publications by Year
in descending order

66 papers	15,408 citations	79946 39 h-index	103101 66 g-index
78 all docs	78 docs citations	78 times ranked	19889 citing authors

#	Article	IF	Citations
1	Cell volume expansion and local contractility drive collective invasion of the basement membrane in breast cancer. Nature Materials, 2024, 23, 711-722.	26.6	4
2	Matrix viscoelasticity promotes liver cancer progression in the pre-cirrhotic liver. Nature, 2024, 626, 635-642.	36.2	26
3	Cellâ€“extracellular matrix mechanotransduction in 3D. Nature Reviews Molecular Cell Biology, 2023, 24, 495-516.	37.3	148
4	The living interface between synthetic biology and biomaterial design. Nature Materials, 2022, 21, 390-397.	26.6	93
5	Delivery of CAR-T cells in a transient injectable stimulatory hydrogel niche improves treatment of solid tumors. Science Advances, 2022, 8, eabn8264.	10.9	112
6	Mechanical regulation of cell-cycle progression and division. Trends in Cell Biology, 2022, 32, 773-785.	8.1	25
7	Transient mechanical interactions between cells and viscoelastic extracellular matrix. Soft Matter, 2021, 17, 10274-10285.	2.8	11
8	The nuclear piston activates mechanosensitive ion channels to generate cell migration paths in confining microenvironments. Science Advances, 2021, 7, .	10.9	55
9	Modeling the tumor immune microenvironment for drug discovery using 3D culture. APL Bioengineering, 2021, 5, 010903.	6.0	16
10	A dysfunctional TRPV4â€“GSK3Î² pathway prevents osteoarthritic chondrocytes from sensing changes in extracellular matrix viscoelasticity. Nature Biomedical Engineering, 2021, 5, 1472-1484.	22.4	52
11	Magnetic probe-based microrheology reveals local softening and stiffening of 3D collagen matrices by fibroblasts. Biomedical Microdevices, 2021, 23, 27.	3.0	17
12	Enhanced substrate stress relaxation promotes filopodia-mediated cell migration. Nature Materials, 2021, 20, 1290-1299.	26.6	138
13	Cells under pressure. ELife, 2021, 10, .	5.9	5
14	Recursive feedback between matrix dissipation and chemo-mechanical signaling drives oscillatory growth of cancer cell invadopodia. Cell Reports, 2021, 35, 109047.	6.3	15
15	The nature of cell division forces in epithelial monolayers. Journal of Cell Biology, 2021, 220, .	5.2	16
16	Viscoelasticity and Adhesion Signaling in Biomaterials Control Human Pluripotent Stem Cell Morphogenesis in 3D Culture. Advanced Materials, 2021, 33, e2101966.	24.3	73
17	Epigenetic regulation of mechanotransduction. Nature Biomedical Engineering, 2021, 5, 8-10.	22.4	10
18	Cellular Pushing Forces during Mitosis Drive Mitotic Elongation in Collagen Gels. Advanced Science, 2021, 8, 2000403.	12.4	11

#	ARTICLE	IF	CITATIONS
19	Relative strain is a novel predictor of aneurysmal degeneration of the thoracic aorta: An ex vivo mechanical study. JVS Vascular Science, 2021, 2, 235-246.	1.8	6
20	Covalent cross-linking of basement membrane-like matrices physically restricts invasive protrusions in breast cancer cells. Matrix Biology, 2020, 85-86, 94-111.	3.7	28
21	Roles of Interactions Between Cells and Extracellular Matrices for Cell Migration and Matrix Remodeling. Studies in Mechanobiology, Tissue Engineering and Biomaterials, 2020, , 247-282.	0.0	2
22	Increased Stiffness Inhibits Invadopodia Formation and Cell Migration in 3D. Biophysical Journal, 2020, 119, 726-736.	0.5	29
23	Effects of extracellular matrix viscoelasticity on cellular behaviour. Nature, 2020, 584, 535-546.	36.2	1,231
24	Introduction to Editorial Board Member: Professor David J. Mooney. Bioengineering and Translational Medicine, 2020, 5, e10162.	7.8	0
25	Multi-scale cellular engineering: From molecules to organ-on-a-chip. APL Bioengineering, 2020, 4, 010906.	6.0	10
26	Nonlinear Elastic and Inelastic Properties of Cells. Journal of Biomechanical Engineering, 2020, 142, .	1.4	17
27	Beyond proteases: Basement membrane mechanics and cancer invasion. Journal of Cell Biology, 2019, 218, 2456-2469.	5.2	177
28	Matrix stiffness induces a tumorigenic phenotype in mammary epithelium through changes in chromatin accessibility. Nature Biomedical Engineering, 2019, 3, 1009-1019.	22.4	152
29	The evolution of spindles and their mechanical implications for cancer metastasis. Cell Cycle, 2019, 18, 1671-1675.	2.8	4
30	Cell cycle progression in confining microenvironments is regulated by a growth-responsive TRPV4-PI3K/Akt-p27 ^{Kip1} signaling axis. Science Advances, 2019, 5, eaaw6171.	10.9	121
31	Volume expansion and TRPV4 activation regulate stem cell fate in three-dimensional microenvironments. Nature Communications, 2019, 10, 529.	13.2	146
32	YAP-independent mechanotransduction drives breast cancer progression. Nature Communications, 2019, 10, 1848.	13.2	142
33	Varying PEG density to control stress relaxation in alginate-PEG hydrogels for 3D cell culture studies. Biomaterials, 2019, 200, 15-24.	11.8	194
34	Identification of cell context-dependent YAP-associated proteins reveals Î²1 and Î²4 integrin mediate YAP translocation independently of cell spreading. Scientific Reports, 2019, 9, 17188.	3.4	14
35	Matching material and cellular timescales maximizes cell spreading on viscoelastic substrates. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E2686-E2695.	7.6	203
36	Dynamic Hyaluronan Hydrogels with Temporally Modulated High Injectability and Stability Using a Biocompatible Catalyst. Advanced Materials, 2018, 30, e1705215.	24.3	107

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37	Mitotic cells generate protrusive extracellular forces to divide in three-dimensional microenvironments. Nature Physics, 2018, 14, 621-628.	11.8	90
38	Mechanisms of Plastic Deformation in Collagen Networks Induced by Cellular Forces. Biophysical Journal, 2018, 114, 450-461.	0.5	118
39	Regulation of Breast Cancer Progression by Extracellular Matrix Mechanics: Insights from 3D Culture Models. ACS Biomaterials Science and Engineering, 2018, 4, 302-313.	5.4	37
40	Stress relaxing hyaluronic acid-collagen hydrogels promote cell spreading, fiber remodeling, and focal adhesion formation in 3D cell culture. Biomaterials, 2018, 154, 213-222.	11.8	401
41	Evaluation of a bioengineered construct for tissue engineering applications. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2018, 106, 2345-2354.	3.7	13
42	Matrix mechanical plasticity regulates cancer cell migration through confining microenvironments. Nature Communications, 2018, 9, 4144.	13.2	296
43	New advances in probing cellâ€"extracellular matrix interactions. Integrative Biology (United) Tj ETQq1 1 0.784314 rgBT /Overlock 10 T	1.3	55
44	Maintenance of neural progenitor cell stemness in 3D hydrogels requires matrix remodelling. Nature Materials, 2017, 16, 1233-1242.	26.6	333
45	Mechanical confinement regulates cartilage matrix formation by chondrocytes. Nature Materials, 2017, 16, 1243-1251.	26.6	379
46	3D Cell Culture in Interpenetrating Networks of Alginate and rBM Matrix. Methods in Molecular Biology, 2017, 1612, 29-37.	0.0	24
47	Viscoelastic hydrogels for 3D cell culture. Biomaterials Science, 2017, 5, 1480-1490.	5.5	257
48	Strain-enhanced stress relaxation impacts nonlinear elasticity in collagen gels. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 5492-5497.	7.6	238
49	CD44 alternative splicing in gastric cancer cells is regulated by culture dimensionality and matrix stiffness. Biomaterials, 2016, 98, 152-162.	11.8	37
50	Viscoplasticity Enables Mechanical Remodeling ofÂMatrix by Cells. Biophysical Journal, 2016, 111, 2296-2308.	0.5	154
51	Hydrogels with tunable stress relaxation regulate stem cell fate and activity. Nature Materials, 2016, 15, 326-334.	26.6	1,775
52	Substrate stress relaxation regulates cell spreading. Nature Communications, 2015, 6, 6364.	13.2	677
53	Engineered composite fascia for stem cell therapy in tissue repair applications. Acta Biomaterialia, 2015, 26, 1-12.	8.8	25
54	Matrix elasticity of void-forming hydrogels controls transplanted-stem-cell-mediated boneÂformation. Nature Materials, 2015, 14, 1269-1277.	26.6	420

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55	Oxidized alginate hydrogels for bone morphogenetic protein-2 delivery in long bone defects. Acta Biomaterialia, 2014, 10, 4390-4399.	8.8	82
56	Influence of the stiffness of three-dimensional alginate/collagen-I interpenetrating networks on fibroblast biology. Biomaterials, 2014, 35, 8927-8936.	11.8	235
57	Extracellular matrix stiffness and composition jointly regulate the induction of malignant phenotypes in mammary epithelium. Nature Materials, 2014, 13, 970-978.	26.6	723
58	Highly stretchable and tough hydrogels. Nature, 2012, 489, 133-136.	36.2	4,297
59	Anchoring cell-fate cues. Nature Materials, 2012, 11, 568-569.	26.6	60
60	Actin filament curvature biases branching direction. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 2913-2918.	7.6	163
61	Mechanics and contraction dynamics of single platelets and implications for clot stiffening. Nature Materials, 2011, 10, 61-66.	26.6	294
62	Protrusive Forces Generated by Dendritic Actin Networks During Cell Crawling. , 2010, , 359-379.		2
63	Combined atomic force microscopy and side-view optical imaging for mechanical studies of cells. Nature Methods, 2009, 6, 383-387.	19.6	148
64	Differential force microscope for long time-scale biophysical measurements. Review of Scientific Instruments, 2007, 78, 043711.	1.4	17
65	Reversible stress softening of actin networks. Nature, 2007, 445, 295-298.	36.2	341
66	Loading history determines the velocity of actin-network growth. Nature Cell Biology, 2005, 7, 1219-1223.	10.0	204