Ovijit Chaudhuri

List of Publications by Year in Descending Order

61 papers	9,506 citations	34 h-index	68 g-index
68 ext. papers	11,929 ext. citations	14.6 avg, IF	6.69 L-index

#	Paper	IF	Citations
61	The living interface between synthetic biology and biomaterial design.. *Nature Materials*, **2022**, 21, 390-397	27	4
60	Delivery of CAR-T cells in a transient injectable stimulatory hydrogel niche improves treatment of solid tumors.. *Science Advances*, **2022**, 8, eabn8264	14.3	4
59	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	1.3	
58	A dysfunctional TRPV4-GSK3 pathway prevents osteoarthritic chondrocytes from sensing changes in extracellular matrix viscoelasticity. *Nature Biomedical Engineering*, **2021**,	19	9
57	Magnetic probe-based microrheology reveals local softening and stiffening of 3D collagen matrices by fibroblasts. *Biomedical Microdevices*, **2021**, 23, 27	3.7	1
56	Enhanced substrate stress relaxation promotes filopodia-mediated cell migration. *Nature Materials*, **2021**, 20, 1290-1299	27	22
55	Cells under pressure. *ELife*, **2021**, 10,	8.9	3
54	Recursive feedback between matrix dissipation and chemo-mechanical signaling drives oscillatory growth of cancer cell invadopodia. *Cell Reports*, **2021**, 35, 109047	10.6	2
53	Tuning Viscoelasticity in Alginate Hydrogels for 3D Cell Culture Studies. *Current Protocols*, **2021**, 1, e124		5
52	Transient mechanical interactions between cells and viscoelastic extracellular matrix. *Soft Matter*, **2021**, 17, 10274-10285	3.6	2
51	The nuclear piston activates mechanosensitive ion channels to generate cell migration paths in confining microenvironments. *Science Advances*, **2021**, 7,	14.3	10
50	Modeling the tumor immune microenvironment for drug discovery using 3D culture. *APL Bioengineering*, **2021**, 5, 010903	6.6	5
49	Viscoelasticity and Adhesion Signaling in Biomaterials Control Human Pluripotent Stem Cell Morphogenesis in 3D Culture. *Advanced Materials*, **2021**, 33, e2101966	24	7
48	Epigenetic regulation of mechanotransduction. *Nature Biomedical Engineering*, **2021**, 5, 8-10	19	2
47	Cellular Pushing Forces during Mitosis Drive Mitotic Elongation in Collagen Gels. *Advanced Science*, **2021**, 8, 2000403	13.6	3
46	Multi-scale cellular engineering: From molecules to organ-on-a-chip. *APL Bioengineering*, **2020**, 4, 010906	6.6	7
45	Nonlinear Elastic and Inelastic Properties of Cells. *Journal of Biomechanical Engineering*, **2020**, 142,	2.1	6

44	Increased Stiffness Inhibits Invadopodia Formation and Cell Migration in 3D. *Biophysical Journal*, **2020**, 119, 726-736	2.9	9
43	Effects of extracellular matrix viscoelasticity on cellular behaviour. *Nature*, **2020**, 584, 535-546	50.4	362
42	Covalent cross-linking of basement membrane-like matrices physically restricts invasive protrusions in breast cancer cells. *Matrix Biology*, **2020**, 85-86, 94-111	11.4	11
41	Roles of Interactions Between Cells and Extracellular Matrices for Cell Migration and Matrix Remodeling. *Studies in Mechanobiology, Tissue Engineering and Biomaterials*, **2020**, 247-282	0.5	1
40	Cell cycle progression in confining microenvironments is regulated by a growth-responsive TRPV4-PI3K/Akt-p27 signaling axis. *Science Advances*, **2019**, 5, eaaw6171	14.3	50
39	Volume expansion and TRPV4 activation regulate stem cell fate in three-dimensional microenvironments. *Nature Communications*, **2019**, 10, 529	17.4	74
38	YAP-independent mechanotransduction drives breast cancer progression. *Nature Communications*, **2019**, 10, 1848	17.4	75
37	Varying PEG density to control stress relaxation in alginate-PEG hydrogels for 3D cell culture studies. *Biomaterials*, **2019**, 200, 15-24	15.6	100
36	Beyond proteases: Basement membrane mechanics and cancer invasion. *Journal of Cell Biology*, **2019**, 218, 2456-2469	7.3	73
35	Matrix stiffness induces a tumorigenic phenotype in mammary epithelium through changes in chromatin accessibility. *Nature Biomedical Engineering*, **2019**, 3, 1009-1019	19	60
34	The evolution of spindles and their mechanical implications for cancer metastasis. *Cell Cycle*, **2019**, 18, 1671-1675	4.7	2
33	Identification of cell context-dependent YAP-associated proteins reveals and integrin mediate YAP translocation independently of cell spreading. *Scientific Reports*, **2019**, 9, 17188	4.9	5
32	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	11.5	113
31	Dynamic Hyaluronan Hydrogels with Temporally Modulated High Injectability and Stability Using a Biocompatible Catalyst. *Advanced Materials*, **2018**, 30, e1705215	24	66
30	Mitotic cells generate protrusive extracellular forces to divide in three-dimensional microenvironments. *Nature Physics*, **2018**, 14, 621-628	16.2	51
29	Mechanisms of Plastic Deformation in Collagen Networks Induced by Cellular Forces. *Biophysical Journal*, **2018**, 114, 450-461	2.9	65
28	Regulation of Breast Cancer Progression by Extracellular Matrix Mechanics: Insights from 3D Culture Models. *ACS Biomaterials Science and Engineering*, **2018**, 4, 302-313	5.5	24
27	Stress relaxing hyaluronic acid-collagen hydrogels promote cell spreading, fiber remodeling, and focal adhesion formation in 3D cell culture. *Biomaterials*, **2018**, 154, 213-222	15.6	240

26	Evaluation of a bioengineered construct for tissue engineering applications. *Journal of Biomedical Materials Research - Part B Applied Biomaterials*, **2018**, 106, 2345-2354	3.5	9
25	Matrix mechanical plasticity regulates cancer cell migration through confining microenvironments. *Nature Communications*, **2018**, 9, 4144	17.4	152
24	New advances in probing cell-extracellular matrix interactions. *Integrative Biology (United Kingdom)*, **2017**, 9, 383-405	3.7	40
23	Maintenance of neural progenitor cell stemness in 3D hydrogels requires matrix remodelling. *Nature Materials*, **2017**, 16, 1233-1242	27	223
22	Mechanical confinement regulates cartilage matrix formation by chondrocytes. *Nature Materials*, **2017**, 16, 1243-1251	27	220
21	3D Cell Culture in Interpenetrating Networks of Alginate and rBM Matrix. *Methods in Molecular Biology*, **2017**, 1612, 29-37	1.4	15
20	Viscoelastic hydrogels for 3D cell culture. *Biomaterials Science*, **2017**, 5, 1480-1490	7.4	150
19	Viscoplasticity Enables Mechanical Remodeling of Matrix by Cells. *Biophysical Journal*, **2016**, 111, 2296-2308	3.9	99
18	Hydrogels with tunable stress relaxation regulate stem cell fate and activity. *Nature Materials*, **2016**, 15, 326-34	27	1153
17	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, 5492-7	11.5	146
16	CD44 alternative splicing in gastric cancer cells is regulated by culture dimensionality and matrix stiffness. *Biomaterials*, **2016**, 98, 152-62	15.6	29
15	Engineered composite fascia for stem cell therapy in tissue repair applications. *Acta Biomaterialia*, **2015**, 26, 1-12	10.8	21
14	Matrix elasticity of void-forming hydrogels controls transplanted-stem-cell-mediated bone formation. *Nature Materials*, **2015**, 14, 1269-77	27	302
13	Biological materials and molecular biomimetics - filling up the empty soft materials space for tissue engineering applications. *Journal of Materials Chemistry B*, **2015**, 3, 13-24	7.3	34
12	Substrate stress relaxation regulates cell spreading. *Nature Communications*, **2015**, 6, 6364	17.4	485
11	Oxidized alginate hydrogels for bone morphogenetic protein-2 delivery in long bone defects. *Acta Biomaterialia*, **2014**, 10, 4390-9	10.8	62
10	Influence of the stiffness of three-dimensional alginate/collagen-I interpenetrating networks on fibroblast biology. *Biomaterials*, **2014**, 35, 8927-36	15.6	184
9	Extracellular matrix stiffness and composition jointly regulate the induction of malignant phenotypes in mammary epithelium. *Nature Materials*, **2014**, 13, 970-8	27	515

8	Highly stretchable and tough hydrogels. *Nature*, **2012**, 489, 133-6	50.4	3109
7	Actin filament curvature biases branching direction. *Proceedings of the National Academy of Sciences of the United States of America*, **2012**, 109, 2913-8	11.5	113
6	Mechanics and contraction dynamics of single platelets and implications for clot stiffening. *Nature Materials*, **2011**, 10, 61-6	27	231
5	Protrusive Forces Generated by Dendritic Actin Networks During Cell Crawling **2010**, 359-379		2
4	Combined atomic force microscopy and side-view optical imaging for mechanical studies of cells. *Nature Methods*, **2009**, 6, 383-7	21.6	132
3	Reversible stress softening of actin networks. *Nature*, **2007**, 445, 295-8	50.4	294
2	Differential force microscope for long time-scale biophysical measurements. *Review of Scientific Instruments*, **2007**, 78, 043711	1.7	16
1	Loading history determines the velocity of actin-network growth. *Nature Cell Biology*, **2005**, 7, 1219-23	23.4	166