

Ovijit Chaudhuri

List of Publications by Citations

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

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	Highly stretchable and tough hydrogels. <i>Nature</i> , 2012 , 489, 133-6	50.4	3109
60	Hydrogels with tunable stress relaxation regulate stem cell fate and activity. <i>Nature Materials</i> , 2016 , 15, 326-34	27	1153
59	Extracellular matrix stiffness and composition jointly regulate the induction of malignant phenotypes in mammary epithelium. <i>Nature Materials</i> , 2014 , 13, 970-8	27	515
58	Substrate stress relaxation regulates cell spreading. <i>Nature Communications</i> , 2015 , 6, 6364	17.4	485
57	Effects of extracellular matrix viscoelasticity on cellular behaviour. <i>Nature</i> , 2020 , 584, 535-546	50.4	362
56	Matrix elasticity of void-forming hydrogels controls transplanted-stem-cell-mediated bone formation. <i>Nature Materials</i> , 2015 , 14, 1269-77	27	302
55	Reversible stress softening of actin networks. <i>Nature</i> , 2007 , 445, 295-8	50.4	294
54	Stress relaxing hyaluronic acid-collagen hydrogels promote cell spreading, fiber remodeling, and focal adhesion formation in 3D cell culture. <i>Biomaterials</i> , 2018 , 154, 213-222	15.6	240
53	Mechanics and contraction dynamics of single platelets and implications for clot stiffening. <i>Nature Materials</i> , 2011 , 10, 61-6	27	231
52	Maintenance of neural progenitor cell stemness in 3D hydrogels requires matrix remodelling. <i>Nature Materials</i> , 2017 , 16, 1233-1242	27	223
51	Mechanical confinement regulates cartilage matrix formation by chondrocytes. <i>Nature Materials</i> , 2017 , 16, 1243-1251	27	220
50	Influence of the stiffness of three-dimensional alginate/collagen-I interpenetrating networks on fibroblast biology. <i>Biomaterials</i> , 2014 , 35, 8927-36	15.6	184
49	Loading history determines the velocity of actin-network growth. <i>Nature Cell Biology</i> , 2005 , 7, 1219-23	23.4	166
48	Matrix mechanical plasticity regulates cancer cell migration through confining microenvironments. <i>Nature Communications</i> , 2018 , 9, 4144	17.4	152
47	Viscoelastic hydrogels for 3D cell culture. <i>Biomaterials Science</i> , 2017 , 5, 1480-1490	7.4	150
46	Strain-enhanced stress relaxation impacts nonlinear elasticity in collagen gels. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016 , 113, 5492-7	11.5	146
45	Combined atomic force microscopy and side-view optical imaging for mechanical studies of cells. <i>Nature Methods</i> , 2009 , 6, 383-7	21.6	132

44	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
43	Actin filament curvature biases branching direction. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012 , 109, 2913-8	11.5	113
42	Varying PEG density to control stress relaxation in alginate-PEG hydrogels for 3D cell culture studies. <i>Biomaterials</i> , 2019 , 200, 15-24	15.6	100
41	Viscoplasticity Enables Mechanical Remodeling of Matrix by Cells. <i>Biophysical Journal</i> , 2016 , 111, 2296-2308	10.8	99
40	YAP-independent mechanotransduction drives breast cancer progression. <i>Nature Communications</i> , 2019 , 10, 1848	17.4	75
39	Volume expansion and TRPV4 activation regulate stem cell fate in three-dimensional microenvironments. <i>Nature Communications</i> , 2019 , 10, 529	17.4	74
38	Beyond proteases: Basement membrane mechanics and cancer invasion. <i>Journal of Cell Biology</i> , 2019 , 218, 2456-2469	7.3	73
37	Dynamic Hyaluronan Hydrogels with Temporally Modulated High Injectability and Stability Using a Biocompatible Catalyst. <i>Advanced Materials</i> , 2018 , 30, e1705215	24	66
36	Mechanisms of Plastic Deformation in Collagen Networks Induced by Cellular Forces. <i>Biophysical Journal</i> , 2018 , 114, 450-461	2.9	65
35	Oxidized alginate hydrogels for bone morphogenetic protein-2 delivery in long bone defects. <i>Acta Biomaterialia</i> , 2014 , 10, 4390-9	10.8	62
34	Matrix stiffness induces a tumorigenic phenotype in mammary epithelium through changes in chromatin accessibility. <i>Nature Biomedical Engineering</i> , 2019 , 3, 1009-1019	19	60
33	Mitotic cells generate protrusive extracellular forces to divide in three-dimensional microenvironments. <i>Nature Physics</i> , 2018 , 14, 621-628	16.2	51
32	Cell cycle progression in confining microenvironments is regulated by a growth-responsive TRPV4-PI3K/Akt-p27 signaling axis. <i>Science Advances</i> , 2019 , 5, eaaw6171	14.3	50
31	New advances in probing cell-extracellular matrix interactions. <i>Integrative Biology (United Kingdom)</i> , 2017 , 9, 383-405	3.7	40
30	Biological materials and molecular biomimetics - filling up the empty soft materials space for tissue engineering applications. <i>Journal of Materials Chemistry B</i> , 2015 , 3, 13-24	7.3	34
29	CD44 alternative splicing in gastric cancer cells is regulated by culture dimensionality and matrix stiffness. <i>Biomaterials</i> , 2016 , 98, 152-62	15.6	29
28	Regulation of Breast Cancer Progression by Extracellular Matrix Mechanics: Insights from 3D Culture Models. <i>ACS Biomaterials Science and Engineering</i> , 2018 , 4, 302-313	5.5	24
27	Enhanced substrate stress relaxation promotes filopodia-mediated cell migration. <i>Nature Materials</i> , 2021 , 20, 1290-1299	27	22

26	Engineered composite fascia for stem cell therapy in tissue repair applications. <i>Acta Biomaterialia</i> , 2015 , 26, 1-12	10.8	21
25	Differential force microscope for long time-scale biophysical measurements. <i>Review of Scientific Instruments</i> , 2007 , 78, 043711	1.7	16
24	3D Cell Culture in Interpenetrating Networks of Alginate and rBM Matrix. <i>Methods in Molecular Biology</i> , 2017 , 1612, 29-37	1.4	15
23	Covalent cross-linking of basement membrane-like matrices physically restricts invasive protrusions in breast cancer cells. <i>Matrix Biology</i> , 2020 , 85-86, 94-111	11.4	11
22	The nuclear piston activates mechanosensitive ion channels to generate cell migration paths in confining microenvironments. <i>Science Advances</i> , 2021 , 7,	14.3	10
21	Increased Stiffness Inhibits Invadopodia Formation and Cell Migration in 3D. <i>Biophysical Journal</i> , 2020 , 119, 726-736	2.9	9
20	A dysfunctional TRPV4-GSK3 β pathway prevents osteoarthritic chondrocytes from sensing changes in extracellular matrix viscoelasticity. <i>Nature Biomedical Engineering</i> , 2021 ,	19	9
19	Evaluation of a bioengineered construct for tissue engineering applications. <i>Journal of Biomedical Materials Research - Part B Applied Biomaterials</i> , 2018 , 106, 2345-2354	3.5	9
18	Multi-scale cellular engineering: From molecules to organ-on-a-chip. <i>APL Bioengineering</i> , 2020 , 4, 0109066.6		7
17	Viscoelasticity and Adhesion Signaling in Biomaterials Control Human Pluripotent Stem Cell Morphogenesis in 3D Culture. <i>Advanced Materials</i> , 2021 , 33, e2101966	24	7
16	Nonlinear Elastic and Inelastic Properties of Cells. <i>Journal of Biomechanical Engineering</i> , 2020 , 142,	2.1	6
15	Tuning Viscoelasticity in Alginate Hydrogels for 3D Cell Culture Studies. <i>Current Protocols</i> , 2021 , 1, e124		5
14	Identification of cell context-dependent YAP-associated proteins reveals β 1 and β 3 integrin mediate YAP translocation independently of cell spreading. <i>Scientific Reports</i> , 2019 , 9, 17188	4.9	5
13	Modeling the tumor immune microenvironment for drug discovery using 3D culture. <i>APL Bioengineering</i> , 2021 , 5, 010903	6.6	5
12	The living interface between synthetic biology and biomaterial design.. <i>Nature Materials</i> , 2022 , 21, 390-397		4
11	Delivery of CAR-T cells in a transient injectable stimulatory hydrogel niche improves treatment of solid tumors.. <i>Science Advances</i> , 2022 , 8, eabn8264	14.3	4
10	Cells under pressure. <i>ELife</i> , 2021 , 10,	8.9	3
9	Cellular Pushing Forces during Mitosis Drive Mitotic Elongation in Collagen Gels. <i>Advanced Science</i> , 2021 , 8, 2000403	13.6	3

8	The evolution of spindles and their mechanical implications for cancer metastasis. <i>Cell Cycle</i> , 2019 , 18, 1671-1675	4.7	2
7	Protrusive Forces Generated by Dendritic Actin Networks During Cell Crawling 2010 , 359-379		2
6	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
5	Transient mechanical interactions between cells and viscoelastic extracellular matrix. <i>Soft Matter</i> , 2021 , 17, 10274-10285	3.6	2
4	Epigenetic regulation of mechanotransduction. <i>Nature Biomedical Engineering</i> , 2021 , 5, 8-10	19	2
3	Magnetic probe-based microrheology reveals local softening and stiffening of 3D collagen matrices by fibroblasts. <i>Biomedical Microdevices</i> , 2021 , 23, 27	3.7	1
2	Roles of Interactions Between Cells and Extracellular Matrices for Cell Migration and Matrix Remodeling. <i>Studies in Mechanobiology, Tissue Engineering and Biomaterials</i> , 2020 , 247-282	0.5	1
1	Relative strain is a novel predictor of aneurysmal degeneration of the thoracic aorta: An ex vivo mechanical study. <i>JVS Vascular Science</i> , 2021 , 2, 235-246	1.3	