Joyce Y Wong

List of Publications by Year
in descending order

126 papers	8,382 citations	47006 47 h-index	46799 89 g-index
128 all docs	128 docs citations	128 times ranked	10884 citing authors

#	Article	IF	Citations
1	Electrically conducting polymers can noninvasively control the shape and growth of mammalian cells.. Proceedings of the National Academy of Sciences of the United States of America, 1994, 91, 3201-3204.	7.1	483
2	Directed Movement of Vascular Smooth Muscle Cells on Gradient-Compliant Hydrogelsâ€. Langmuir, 2003, 19, 1908-1913.	3.5	413
3	Vascular Smooth Muscle Cell Durotaxis Depends on Substrate Stiffness Gradient Strength. Biophysical Journal, 2009, 97, 1313-1322.	0.5	348
4	Evaluation of polydimethylsiloxane scaffolds with physiologically-relevant elastic moduli: interplay of substrate mechanics and surface chemistry effects on vascular smooth muscle cell response. Biomaterials, 2005, 26, 3123-3129.	11.4	310
5	Surface probe measurements of the elasticity of sectioned tissue, thin gels and polyelectrolyte multilayer films: Correlations between substrate stiffness and cell adhesion. Surface Science, 2004, 570, 142-154.	1.9	305
6	Balance of chemistry, topography, and mechanics at the cellâ€"biomaterial interface: Issues and challenges for assessing the role of substrate mechanics on cell response. Surface Science, 2004, 570, 119-133.	1.9	276
7	Photopolymerization in Microfluidic Gradient Generators: Microscale Control of Substrate Compliance to Manipulate Cell Response. Advanced Materials, 2004, 16, 2133-2137.	21.0	248
8	Direct Measurement of a Tethered Ligand-Receptor Interaction Potential. Science, 1997, 275, 820-822.	12.6	246
9	Impact of Polymer Tether Length on Multiple Ligand-Receptor Bond Formation. Science, 2001, 293, 465-468.	12.6	216
10	Rheological Monitoring of Polyacrylamide Gelation:Â Importance of Cross-Link Density and Temperature. Macromolecules, 2004, 37, 7762-7771.	4.8	206
11	Structureâ€"functionâ€"propertyâ€"design interplay in biopolymers: Spider silk. Acta Biomaterialia, 2014, 10, 1612-1626.	8.3	206
12	Surface Functionalization of Single Superparamagnetic Iron Oxide Nanoparticles for Targeted Magnetic Resonance Imaging. Small, 2009, 5, 1334-1342.	10.0	203
13	Influence of Type I Collagen Surface Density on Fibroblast Spreading, Motility, and Contractility. Biophysical Journal, 2003, 85, 3329-3335.	0.5	202
14	Polymer-Cushioned Bilayers. I. A Structural Study of Various Preparation Methods Using Neutron Reflectometry. Biophysical Journal, 1999, 77, 1445-1457.	0.5	187
15	Neurite outgrowth and branching of PC12 cells on very soft substrates sharply decreases below a threshold of substrate rigidity. Journal of Neural Engineering, 2007, 4, 26-34.	3.5	183
16	Development and characterization of a porous micro-patterned scaffold for vascular tissue engineering applications. Biomaterials, 2006, 27, 4775-4782.	11.4	167
17	Direct force measurements of the streptavidinâ€"biotin interaction. New Biotechnology, 1999, 16, 45-55.	2.7	163
18	Tunable Silk: Using Microfluidics to Fabricate Silk Fibers with Controllable Properties. Biomacromolecules, 2011, 12, 1504-1511.	5.4	154

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19	Altered structural and mechanical properties in decellularized rabbit carotid arteries. Acta Biomaterialia, 2009, 5, 993-1005.	8.3	128
20	A thermoresponsive, microtextured substrate for cell sheet engineering with defined structural organization. Biomaterials, 2008, 29, 2565-2572.	11.4	127
21	Structural Studies of Polymer-Cushioned Lipid Bilayers. Biophysical Journal, 1998, 75, 2363-2367.	0.5	119
22	Predictive modelling-based design and experiments for synthesis and spinning of bioinspired silk fibres. Nature Communications, 2015, 6, 6892.	12.8	118
23	Vascular tissue engineering: microtextured scaffold templates to control organization of vascular smooth muscle cells and extracellular matrix. Acta Biomaterialia, 2005, 1, 93-100.	8.3	116
24	Vascular smooth muscle cell durotaxis depends on extracellular matrix composition. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 11190-11195.	7.1	113
25	Direct Comparison of the Spread Area, Contractility, and Migration of balb/c 3T3 Fibroblasts Adhered to Fibronectin- and RGD-Modified Substrata. Biophysical Journal, 2004, 87, 2818-2827.	0.5	112
26	Crosslinked Î±-elastin biomaterials: towards a processable elastin mimetic scaffold. Acta Biomaterialia, 2005, 1, 155-164.	8.3	111
27	Polymer-Cushioned Bilayers. II. An Investigation of Interaction Forces and Fusion Using the Surface Forces Apparatus. Biophysical Journal, 1999, 77, 1458-1468.	0.5	107
28	Fund Black scientists. Cell, 2021, 184, 561-565.	28.9	107
29	Silkâ€"Its Mysteries, How It Is Made, and How It Is Used. ACS Biomaterials Science and Engineering, 2015, 1, 864-876.	5.2	85
30	Design of Multistimuli Responsive Hydrogels Using Integrated Modeling and Genetically Engineered Silkâ€"Elastinâ€Like Proteins. Advanced Functional Materials, 2016, 26, 4113-4123.	14.9	83
31	Effect of substrate stiffness and PDGF on the behavior of vascular smooth muscle cells: Implications for atherosclerosis. Journal of Cellular Physiology, 2010, 225, 115-122.	4.1	82
32	Building structure into engineered tissues. Materials Today, 2006, 9, 54-60.	14.2	81
33	A Neutron Reflectivity Study of Polymer-Modified Phospholipid Monolayers at the Solid-Solution Interface: Polyethylene Glycol-Lipids on Silane-Modified Substrates. Biophysical Journal, 1998, 75, 2352-2362.	0.5	77
34	Cell-Cell Interactions Mediate the Response of Vascular Smooth Muscle Cells to Substrate Stiffness. Biophysical Journal, 2011, 101, 622-630.	0.5	77
35	A review of combined experimental and computational procedures for assessing biopolymer structureâ€"processâ€"property relationships. Biomaterials, 2012, 33, 8240-8255.	11.4	76
36	Aligned Cell Sheets Grown on Thermoâ€Responsive Substrates with Microcontact Printed Protein Patterns. Advanced Materials, 2009, 21, 2161-2164.	21.0	75

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37	A simple microindentation technique for mapping the microscale compliance of soft hydrated materials and tissues. Journal of Biomedical Materials Research - Part A, 2006, 79A, 485-494.	4.0	71
38	Targeted binding of PLA microparticles with lipid-PEG-tethered ligands. Biomaterials, 2007, 28, 4991-4999.	11.4	70
39	Extracellular matrix presentation modulates vascular smooth muscle cell mechanotransduction. Matrix Biology, 2015, 41, 36-43.	3.6	68
40	Stacking of aligned cell sheets for layer-by-layer control of complex tissue structure. Biomaterials, 2011, 32, 5625-5632.	11.4	65
41	Effect of PEG molecular weight on stability, T2 contrast, cytotoxicity, and cellular uptake of superparamagnetic iron oxide nanoparticles (SPIONs). Colloids and Surfaces B: Biointerfaces, 2014, 119, 106-114.	5.0	64
42	Sequenceâ€“Structureâ€“Property Relationships of Recombinant Spider Silk Proteins: Integration of Biopolymer Design, Processing, and Modeling. Advanced Functional Materials, 2013, 23, 241-253.	14.9	61
43	An In Situ Study of Collagen Self-Assembly Processes. Biomacromolecules, 2008, 9, 199-207.	5.4	56
44	Visualization of Flow-Aligned Type I Collagen Self-Assembly in Tunable pH Gradients. Langmuir, 2007, 23, 357-359.	3.5	54
45	Extracellular matrix type modulates cell migration on mechanical gradients. Experimental Cell Research, 2017, 359, 361-366.	2.6	54
46	Increasing gender diversity in the STEM research workforce. Science, 2019, 366, 692-695.	12.6	52
47	Combined effects of microtopography and cyclic strain on vascular smooth muscle cell orientation. Journal of Biomechanics, 2008, 41, 762-769.	2.1	51
48	Stability of Superparamagnetic Iron Oxide Nanoparticles at Different pH Values: Experimental and Theoretical Analysis. Langmuir, 2012, 28, 6246-6255.	3.5	51
49	How to Collect Segmentations for Biomedical Images? A Benchmark Evaluating the Performance of Experts, Crowdsourced Non-experts, and Algorithms. , 2015, , .		47
50	The effect of stromal components on the modulation of the phenotype of human bronchial epithelial cells in 3D culture. Biomaterials, 2011, 32, 7169-7180.	11.4	46
51	Micropatterned cell sheets with defined cell and extracellular matrix orientation exhibit anisotropic mechanical properties. Journal of Biomechanics, 2012, 45, 756-761.	2.1	45
52	Synergistic Integration of Experimental and Simulation Approaches for the <i>de Novo</i> Design of Silk-Based Materials. Accounts of Chemical Research, 2017, 50, 866-876.	15.6	45
53	Micropatterned cell sheets as structural building blocks for biomimetic vascular patches. Biomaterials, 2018, 181, 126-139.	11.4	42
54	Thermo-responsive poly(N-isopropylacrylamide) grafted onto microtextured poly(dimethylsiloxane) for aligned cell sheet engineering. Colloids and Surfaces B: Biointerfaces, 2012, 99, 108-115.	5.0	41

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55	Patterning Adjacent Supported Lipid Bilayers of Desired Composition To Investigate Receptorâ^'Ligand Binding under Shear Flow. Langmuir, 2004, 20, 10252-10259.	3.5	39
56	Materials by design: Merging proteins and music. Nano Today, 2012, 7, 488-495.	11.9	38
57	Programmed trapping of individual bacteria using micrometre-size sieves. Lab on A Chip, 2011, 11, 1089.	6.0	37
58	What's Inside the Box? â€" Lengthâ€Scales that Govern Fracture Processes of Polymer Fibers. Advanced Materials, 2014, 26, 412-417.	21.0	36
59	Formation of tethered supported bilayers via membrane-inserting reactive lipids. Thin Solid Films, 1998, 327-329, 767-771.	1.8	34
60	Identification and validation of a novel cell-recognition site (KNEED) on the 8th type III domain of fibronectin. Biomaterials, 2002, 23, 3865-3870.	11.4	33
61	The use of micropatterning to control smooth muscle myosin heavy chain expression and limit the response to transforming growth factor Î²1 in vascular smooth muscle cells. Biomaterials, 2011, 32, 410-418.	11.4	32
62	Predicting Silk Fiber Mechanical Properties through Multiscale Simulation and Protein Design. ACS Biomaterials Science and Engineering, 2017, 3, 1542-1556.	5.2	32
63	Silk-fibronectin protein alloy fibres support cell adhesion and viability as a high strength, matrix fibre analogue. Scientific Reports, 2017, 7, 45653.	3.3	30
64	Design Approaches to Myocardial and Vascular Tissue Engineering. Annual Review of Biomedical Engineering, 2017, 19, 389-414.	12.3	30
65	Long-Range Interaction Forces between Polymer-Supported Lipid Bilayer Membranes. Langmuir, 2001, 17, 4616-4626.	3.5	29
66	X-ray and neutron surface scattering for studying lipid/polymer assemblies at the airâ€"liquid and solidâ€"liquid interfaces. Reviews in Molecular Biotechnology, 2000, 74, 207-231.	2.8	28
67	Cell morphology classification and clutter mitigation in phase-contrast microscopy images using machine learning. Machine Vision and Applications, 2012, 23, 659-673.	2.7	28
68	Fabrication of a layered microstructured polycaprolactone construct for 3-D tissue engineering. Journal of Biomaterials Science, Polymer Edition, 2008, 19, 1347-1362.	3.5	27
69	Effect of sequence features on assembly of spider silk block copolymers. Journal of Structural Biology, 2014, 186, 412-419.	2.8	27
70	A Robust Method to Generate Mechanically Anisotropic Vascular Smooth Muscle Cell Sheets for Vascular Tissue Engineering. Macromolecular Bioscience, 2017, 17, 1600434.	4.1	26
71	Fabrication and Characterization of Recombinant Silkâ€Elastinâ€Likeâ€Protein (SELP) Fiber. Macromolecular Bioscience, 2018, 18, e1800265.	4.1	26
72	Design of a New Stretching Apparatus and the Effects of Cyclic Strain and Substratum on Mouse Lung Epithelial-12 Cells. Annals of Biomedical Engineering, 2007, 35, 1156-1164.	2.5	25

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73	A Comparison of Human Smooth Muscle and Mesenchymal Stem Cells as Potential Cell Sources for Tissue-Engineered Vascular Patches. Tissue Engineering - Part A, 2012, 18, 986-998.	3.1	24
74	Adsorption of Superparamagnetic Iron Oxide Nanoparticles on Silica and Calcium Carbonate Sand. Langmuir, 2014, 30, 784-792.	3.5	24
75	Tracking of cell populations to understand their spatio-temporal behavior in response to physical stimuli. , 2009, , .		23
76	Tunable Diacetylene Polymerized Shell Microbubbles as Ultrasound Contrast Agents. Langmuir, 2012, 28, 3766-3772.	3.5	23
77	Microvessels-on-a-Chip to Assess Targeted Ultrasound-Assisted Drug Delivery. ACS Applied Materials & Interfaces, 2016, 8, 31541-31549.	8.0	23
78	A microfluidic platform for modeling metastatic cancer cell matrix invasion. Biofabrication, 2017, 9, 045001.	7.1	23
79	A microfluidic Transwell to study chemotaxis. Experimental Cell Research, 2016, 342, 159-165.	2.6	21
80	Conformation Transitions of Recombinant Spidroins via Integration of Time-Resolved FTIR Spectroscopy and Molecular Dynamic Simulation. ACS Biomaterials Science and Engineering, 2016, 2, 1298-1308.	5.2	21
81	Engineering Myocardial Tissue Patches with Hierarchical Structureâ€"Function. Annals of Biomedical Engineering, 2015, 43, 762-773.	2.5	20
82	Introducing biomimetic shear and ion gradients to microfluidic spinning improves silk fiber strength. Biofabrication, 2017, 9, 025025.	7.1	20
83	Endothelial Injury Induces Vascular Smooth Muscle Cell Proliferation in Highly Localized Regions of a Direct Contact Co-culture System. Cell Biochemistry and Biophysics, 2008, 52, 37-46.	1.8	17
84	Generation of a Purified iPSC-Derived Smooth Muscle-like Population forÂCell Sheet Engineering. Stem Cell Reports, 2019, 13, 499-514.	4.8	17
85	Hierarchical Partial Matching and Segmentation of Interacting Cells. Lecture Notes in Computer Science, 2012, 15, 389-396.	1.3	15
86	Versatile and inexpensive Hall-Effect force sensor for mechanical characterization of soft biological materials. Journal of Biomechanics, 2017, 51, 118-122.	2.1	13
87	Evaluation of Placental Mesenchymal Stem Cell Sheets for Myocardial Repair and Regeneration. Tissue Engineering - Part A, 2019, 25, 867-877.	3.1	13
88	Monodisperse Micro-Oil Droplets Stabilized by Polymerizable Phospholipid Coatings as Potential Drug Carriers. Langmuir, 2015, 31, 9762-9770.	3.5	12
89	On Force and Form: Mechano-Biochemical Regulation of Extracellular Matrix. Biochemistry, 2019, 58, 4710-4720.	2.5	12
90	Biomaterials and Contraception: Promises and Pitfalls. Annals of Biomedical Engineering, 2020, 48, 2113-2131.	2.5	12

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91	The Effects of Mechanical Stimulation on Controlling and Maintaining Marrow Stromal Cell Differentiation Into Vascular Smooth Muscle Cells. Journal of Biomechanical Engineering, 2015, 137, 020907.	1.3	11
92	Fibrin-Targeted Polymerized Shell Microbubbles as Potential Theranostic Agents for Surgical Adhesions. Langmuir, 2019, 35, 10061-10067.	3.5	11
93	Dynamics of Membrane Adhesion:â€‰ The Role of Polyethylene Glycol Spacers, Ligandâˆ'Receptor Bond Strength, and Rupture Pathway. Langmuir, 2008, 24, 1225-1231.	3.5	10
94	Targeted binding of PEGâ€lipid modified polymer ultrasound contrast agents with tiered surface architecture. Biotechnology and Bioengineering, 2010, 106, 501-506.	3.3	10
95	Effect of Terminal Modification on the Molecular Assembly and Mechanical Properties of Proteinâ€Based Block Copolymers. Macromolecular Bioscience, 2017, 17, 1700095.	4.1	10
96	Pediatric cardiovascular grafts: historical perspective and future directions. Current Opinion in Biotechnology, 2016, 40, 119-124.	6.6	9
97	Mechanisms of aortic carboxypeptidase-like protein secretion and identification of an intracellularly retained variant associated with Ehlersâ€"Danlos syndrome. Journal of Biological Chemistry, 2020, 295, 9725-9735.	3.4	9
98	Development of a bioâ€MEMS device for electrical and mechanical conditioning and characterization of cell sheets for myocardial repair. Biotechnology and Bioengineering, 2019, 116, 3098-3111.	3.3	8
99	Study of the Fusion Process between Solidand Soft-Supported Phospholipid Bilayers with the Surface Forces Apparatus. ACS Symposium Series, 1999, , 215-230.	0.5	7
100	Adsorption of Acid and Polymer Coated Nanoparticles: A Statistical Thermodynamics Approach. Langmuir, 2013, 29, 14482-14493.	3.5	7
101	Targeted Nanoparticle Binding to Hydroxyapatite in a High Serum Environment for Early Detection of Heart Disease. ACS Applied Nano Materials, 2018, 1, 4927-4939.	5.0	7
102	Fibronectin fiber creep under constant force loading. Acta Biomaterialia, 2019, 88, 78-85.	8.3	5
103	Determinants of Hemodialysis Performance:Modeling Fluid and Solute Transport in Hollow-Fiber Dialyzers. Regenerative Engineering and Translational Medicine, 2019, 7, 291-300.	2.9	5
104	Assessment of Superparamagnetic Iron Oxide Nanoparticle Poly(Ethylene Glycol) Coatings on Magnetic Resonance Relaxation for Early Disease Detection. IEEE Open Journal of Engineering in Medicine and Biology, 2020, 1, 116-122.	2.3	5
105	Tracking of cell populations to understand their spatio-temporal behavior in response to physical stimuli. , 2009, , .		5
106	A simple engineered platform reveals different modes of tumor-microenvironmental cell interaction. Biofabrication, 2016, 8, 015001.	7.1	4
107	SAGE: An approach and implementation empowering quick and reliable quantitative analysis of segmentation quality. , 2013, , .		3
108	Effect of Polymer Surface Modification of Superparamagnetic Iron Oxide Nanoparticle Dispersions in High Salinity Environments. Langmuir, 2019, 35, 15864-15871.	3.5	3

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109	Cell Interactions With Fibronectin-Coated Electrically Conducting Polypyrrole Thin Films. Materials Research Society Symposia Proceedings, 1993, 331, 141.	0.1	2
110	Surface modification of uniaxial cyclic strain cell culture platform with temperature-responsive polymer for cell sheet detachment. Journal of Materials Chemistry B, 2015, 3, 7899-7902.	5.8	2
111	Microbubbles as Theranostics Agents. Advances in Delivery Science and Technology, 2014, , 329-350.	0.4	2
112	Cell Attachment and Protein Adsorption to Polypyrrole thin Films. Materials Research Society Symposia Proceedings, 1992, 293, 179.	0.1	1
113	Traction Stresses and Morphology of 3T3 Fibroblast Cells on Fibronectin-versus RGD- Modified Elastic Substrata. Materials Research Society Symposia Proceedings, 2001, 711, 1.	0.1	1
114	Ultrasound-assisted drug delivery with targeted-microbubbles in blood vessels on a chip. , 2014, , .		1
115	Materials for biological modulation, sensing, and imaging. MRS Bulletin, 2014, 39, 12-14.	3.5	1
116	Abstract B11: A microfluidic platform to evaluate soluble signaling in the metastasis microenvironment. Cancer Research, 2015, 75, B11-B11.	0.9	1
117	Traction stresses and motility of fibroblasts are different on RGD- and fibronectin-modified elastic substrata. , 0, , .		0
118	Bioengineered polymeric substrata to probe cell behavior during vascular remodeling. , 0, , .		0
119	Microaligned collagen matrices by hydrodynamic focusing: controlling the pH-induced self-assembly. Materials Research Society Symposia Proceedings, 2005, 898, 1.	0.1	0
120	Controlling and Assessing Cellâ€"Biomaterial Interactions at the Micro- and Nanoscale. , 2007, , 10-1-10-14.		0
121	In VSMCs, Beta-1 Integrin but not Syndecan-4 Gene Expression is Dependent on Matrix Stiffness. Biophysical Journal, 2009, 96, 673a.	0.5	0
122	Using Automated Cell Tracking Software to Quantifying Durokinesis and Durotaxis in Real Time. Biophysical Journal, 2009, 96, 633a.	0.5	0
123	Extracellular Matrix Presentation Modulates Vascular Smooth Muscle Cell Mechanotransduction. Biophysical Journal, 2012, 102, 564a.	0.5	0
124	Modulating alignment and contractile protein expression in vascular smooth muscle cell sheets: Using microcontact printing and mechanical conditioning. , 2014, , .		0
125	Methods for investigating integrinâ€matrix interactions as a function of matrix mechanics and composition. FASEB Journal, 2008, 22, 1122.1.	0.5	0
126	Mutational analysis verifies that "kneed" sequence of fibronectin participates in cell-substrate interactions. , 0, , .		0