Catherine Picart

List of Publications by Year
in descending order

120 papers	10,230 citations	28274 55 h-index	33894 99 g-index
129 all docs	129 docs citations	129 times ranked	10472 citing authors

#	Article	IF	Citations
1	Multiple Functionalities of Polyelectrolyte Multilayer Films: New Biomedical Applications. Advanced Materials, 2010, 22, 441-467.	21.0	656
2	Bone regeneration strategies: Engineered scaffolds, bioactive molecules and stem cells current stage and future perspectives. Biomaterials, 2018, 180, 143-162.	11.4	605
3	Layer by Layer Buildup of Polysaccharide Films: Physical Chemistry and Cellular Adhesion Aspects. Langmuir, 2004, 20, 448-458.	3.5	482
4	Improvement of Stability and Cell Adhesion Properties of Polyelectrolyte Multilayer Films by Chemical Cross-Linking. Biomacromolecules, 2004, 5, 284-294.	5.4	408
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	Polyelectrolyte Multilayers with a Tunable Young's Modulus:â€‰ Influence of Film Stiffness on Cell Adhesion. Langmuir, 2006, 22, 1193-1200.	3.5	297
7	Polyelectrolyte Multilayer Assemblies on Materials Surfaces: From Cell Adhesion to Tissue Engineering. Chemistry of Materials, 2012, 24, 854-869.	6.7	290
8	Modeling the Buildup of Polyelectrolyte Multilayer Films Having Exponential Growthâœ—. Journal of Physical Chemistry B, 2004, 108, 635-648.	2.6	261
9	Layerâ€Byâ€Layer Films as a Biomimetic Reservoir for rhBMPâ€2 Delivery: Controlled Differentiation of Myoblasts to Osteoblasts. Small, 2009, 5, 598-608.	10.0	239
10	Polyelectrolyte Multilayer Films of Controlled Stiffness Modulate Myoblast Cell Differentiation. Advanced Functional Materials, 2008, 18, 1378-1389.	14.9	238
11	Elasticity of Native and Cross-Linked Polyelectrolyte Multilayer Films. Biomacromolecules, 2004, 5, 1908-1916.	5.4	223
12	Natural polyelectrolyte films based on layer-by layer deposition of collagen and hyaluronic acid. Biomaterials, 2005, 26, 3353-3361.	11.4	202
13	Cytotoxicity of polyethyleneimine (PEI), precursor base layer of polyelectrolyte multilayer films. Biomaterials, 2007, 28, 632-640.	11.4	184
14	Polyelectrolyte Multilayer Films: From Physico-Chemical Properties to the Control of Cellular Processes. Current Medicinal Chemistry, 2008, 15, 685-697.	2.4	184
15	Polysaccharide-based polyelectrolyte multilayers. Current Opinion in Colloid and Interface Science, 2010, 15, 417-426.	7.4	164
16	Nanostructured Polymeric Coatings Based on Chitosan and Dopamineâ€Modified Hyaluronic Acid for Biomedical Applications. Small, 2014, 10, 2459-2469.	10.0	163
17	pH dependent growth of poly(L-lysine)/poly(L-glutamic) acid multilayer films and their cell adhesion properties. Surface Science, 2004, 570, 13-29.	1.9	152
18	Ion Pairing and Hydration in Polyelectrolyte Multilayer Films Containing Polysaccharides. Biomacromolecules, 2009, 10, 433-442.	5.4	136

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19	The performance of BMP-2 loaded TCP/HAP porous ceramics with a polyelectrolyte multilayer film coating. Biomaterials, 2011, 32, 7543-7554.	11.4	133
20	Free-Standing Polyelectrolyte Membranes Made of Chitosan and Alginate. Biomacromolecules, 2013, 14, 1653-1660.	5.4	131
21	Asymmetric Free-Standing Film with Multifunctional Anti-Bacterial and Self-Cleaning Properties. ACS Applied Materials & Interfaces, 2012, 4, 4476-4483.	8.0	129
22	Multifunctional Polyelectrolyte Multilayer Films:Â Combining Mechanical Resistance, Biodegradability, and Bioactivity. Biomacromolecules, 2007, 8, 139-145.	5.4	127
23	Surface delivery of tunable doses of BMP-2 from an adaptable polymeric scaffold induces volumetric bone regeneration. Biomaterials, 2016, 104, 168-181.	11.4	124
24	Degradability of Polysaccharides Multilayer Films in the Oral Environment:Â an in Vitro and in Vivo Study. Biomacromolecules, 2005, 6, 726-733.	5.4	123
25	Designing Hyaluronic Acid-Based Layer-by-Layer Capsules as a Carrier for Intracellular Drug Delivery. Biomacromolecules, 2010, 11, 713-720.	5.4	118
26	Self Assembling and Crosslinking of Polyelectrolyte Multilayer Films of Chitosan and Alginate Studied by QCM and IR Spectroscopy. Macromolecular Bioscience, 2009, 9, 776-785.	4.1	117
27	Presentation of BMPâ€2 from a Soft Biopolymeric Film Unveils its Activity on Cell Adhesion and Migration. Advanced Materials, 2011, 23, H111-8.	21.0	116
28	Human blood shear yield stress and its hematocrit dependence. Journal of Rheology, 1998, 42, 1-12.	2.6	111
29	Surface functionalization of hyaluronic acid hydrogels by polyelectrolyte multilayer films. Biomaterials, 2011, 32, 5590-5599.	11.4	108
30	Additive Manufacturing of Material Scaffolds for Bone Regeneration: Toward Application in the Clinics. Advanced Functional Materials, 2021, 31, 2006967.	14.9	108
31	The stability of BMP loaded polyelectrolyte multilayer coatings on titanium. Biomaterials, 2013, 34, 5737-5746.	11.4	100
32	Giant Unilamellar Vesicles Containing Phosphatidylinositol(4,5)bisphosphate: Characterization and Functionality. Biophysical Journal, 2008, 95, 4348-4360.	0.5	95
33	Effect of crosslinking on the elasticity of polyelectrolyte multilayer films measured by colloidal probe AFM. Microscopy Research and Technique, 2006, 69, 84-92.	2.2	88
34	Elasticity, biodegradability and cell adhesive properties of chitosan/hyaluronan multilayer films. Biomedical Materials (Bristol), 2007, 2, S45-S51.	3.3	88
35	Tailored Freestanding Multilayered Membranes Based on Chitosan and Alginate. Biomacromolecules, 2014, 15, 3817-3826.	5.4	88
36	Internal Composition versus the Mechanical Properties of Polyelectrolyte Multilayer Films: The Influence of Chemical Cross-Linking. Langmuir, 2009, 25, 13809-13819.	3.5	80

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37	Micropore-induced capillarity enhances bone distribution in vivo in biphasic calcium phosphate scaffolds. Acta Biomaterialia, 2016, 44, 144-154.	8.3	80
38	Variation of Polyelectrolyte Film Stiffness by Photo-Cross-Linking: A New Way To Control Cell Adhesion. Langmuir, 2009, 25, 3556-3563.	3.5	77
39	Layerâ€byâ€Layer Assemblies for Cancer Treatment and Diagnosis. Advanced Materials, 2016, 28, 1295-1301.	21.0	77
40	Tuning cellular responses to BMP-2 with material surfaces. Cytokine and Growth Factor Reviews, 2016, 27, 43-54.	7.2	74
41	An extended modeling of the micropipette aspiration experiment for the characterization of the Young's modulus and Poisson's ratio of adherent thin biological samples: Numerical and experimental studies. Journal of Biomechanics, 2006, 39, 1677-1685.	2.1	73
42	Dynamics of Poly(<scp>l</scp>-lysine) in Hyaluronic Acid/Poly(<scp>l</scp>-lysine) Multilayer Films Studied by Fluorescence Recovery after Pattern Photobleaching. Langmuir, 2008, 24, 7842-7847.	3.5	72
43	Spatial patterning of BMP-2 and BMP-7 on biopolymeric films and the guidance of muscle cell fate. Biomaterials, 2014, 35, 3975-3985.	11.4	69
44	Spatioâ€Temporal Control of LbL Films for Biomedical Applications: From 2D to 3D. Advanced Healthcare Materials, 2015, 4, 811-830.	7.6	69
45	Assessment of a polyelectrolyte multilayer film coating loaded with BMP-2 on titanium and PEEK implants in the rabbit femoral condyle. Acta Biomaterialia, 2016, 36, 310-322.	8.3	66
46	Influence of Polyelectrolyte Film Stiffness on Bacterial Growth. Biomacromolecules, 2013, 14, 520-528.	5.4	65
47	pH-Amplified Multilayer Films Based on Hyaluronan: Influence of HA Molecular Weight and Concentration on Film Growth and Stability. Biomacromolecules, 2011, 12, 1322-1331.	5.4	64
48	Î²3 integrinâ€“mediated spreading induced by matrix-bound BMP-2 controls Smad signaling in a stiffness-independent manner. Journal of Cell Biology, 2016, 212, 693-706.	5.2	64
49	Cyclodextrin/Paclitaxel Complex in Biodegradable Capsules for Breast Cancer Treatment. Chemistry of Materials, 2013, 25, 3867-3873.	6.7	62
50	Manipulation of the adhesive behaviour of skeletal muscle cells on soft and stiff polyelectrolyte multilayers. Acta Biomaterialia, 2010, 6, 4238-4248.	8.3	60
51	Polysaccharideâ€Blend Multilayers Containing Hyaluronan and Heparin as a Delivery System for rhBMPâ€2. Small, 2010, 6, 651-662.	10.0	60
52	Self assembly of HIV-1 Gag protein on lipid membranes generates PI(4,5)P2/Cholesterol nanoclusters. Scientific Reports, 2016, 6, 39332.	3.3	60
53	Stiffening of Soft Polyelectrolyte Architectures by Multilayer Capping Evidenced by Viscoelastic Analysis of AFM Indentation Measurements. Journal of Physical Chemistry C, 2007, 111, 8299-8306.	3.1	58
54	Effect of RGD functionalization and stiffness modulation of polyelectrolyte multilayer films on muscle cell differentiation. Acta Biomaterialia, 2013, 9, 6468-6480.	8.3	58

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55	Gradients of physical and biochemical cues on polyelectrolyte multilayer films generated via microfluidics. Lab on A Chip, 2013, 13, 1562.	6.0	58
56	Quantitative Analysis of the Binding of Ezrin to Large Unilamellar Vesicles Containing Phosphatidylinositol 4,5 Bisphosphate. Biophysical Journal, 2008, 94, 1021-1033.	0.5	57
57	Myoconductive and osteoinductive free-standing polysaccharide membranes. Acta Biomaterialia, 2015, 15, 139-149.	8.3	57
58	Layer-by-Layer Films from Hyaluronan and Amine-Modified Hyaluronan. Langmuir, 2007, 23, 2655-2662.	3.5	55
59	Measurement of film thickness up to several hundreds of nanometers using optical waveguide lightmode spectroscopy. Biosensors and Bioelectronics, 2004, 20, 553-561.	10.1	54
60	Imaging Cell Interactions With Native and Crosslinked Polyelectrolyte Multilayers. Cell Biochemistry and Biophysics, 2006, 44, 273-286.	1.8	53
61	Measuring mechanical properties of polyelectrolyte multilayer thin films: Novel methods based on AFM and optical techniques. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2007, 303, 30-36.	4.7	53
62	Activation of Moesin, a Protein That Links Actin Cytoskeleton to the Plasma Membrane, Occurs by Phosphatidylinositol 4,5-bisphosphate (PIP2) Binding Sequentially to Two Sites and Releasing an Autoinhibitory Linker. Journal of Biological Chemistry, 2012, 287, 16311-16323.	3.4	53
63	Nano-scale control of cellular environment to drive embryonic stem cells selfrenewal and fate. Biomaterials, 2010, 31, 1742-1750.	11.4	52
64	Multilayer Assembly of Hyaluronic Acid/Poly(allylamine): Control of the Buildup for the Production of Hollow Capsules. Langmuir, 2008, 24, 9767-9774.	3.5	51
65	Contactâ€Killing Polyelectrolyte Microcapsules Based on Chitosan Derivatives. Advanced Functional Materials, 2010, 20, 3303-3312.	14.9	50
66	A material's point of view on recent developments of polymeric biomaterials: control of mechanical and biochemical properties. Journal of Materials Chemistry, 2011, 21, 14354.	6.7	50
67	Application of fluorescence recovery after photobleaching to diffusion of a polyelectrolyte in a multilayer film. Microscopy Research and Technique, 2005, 66, 43-57.	2.2	46
68	Practical guide to characterize biomolecule adsorption on solid surfaces (Review). Biointerphases, 2018, 13, 06D303.	1.6	45
69	Geometrical confinement controls the asymmetric patterning of Brachyury in cultures of pluripotent cells. Development (Cambridge), 2018, 145, .	2.5	44
70	Polyelectrolyte Multilayer Nanofilms Used as Thin Materials for Cell Mechanoâ€Sensitivity Studies. Macromolecular Bioscience, 2011, 11, 77-89.	4.1	42
71	The effect of delivering the chemokine SDF-1Î± in a matrix-bound manner on myogenesis. Biomaterials, 2014, 35, 4525-4535.	11.4	41
72	Microinterferometric Study of the Structure, Interfacial Potential, and Viscoelastic Properties of Polyelectrolyte Multilayer Films on a Planar Substrate. Journal of Physical Chemistry B, 2004, 108, 7196-7205.	2.6	38

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73	Humidity Responsive Asymmetric Free-Standing Multilayered Film. Langmuir, 2010, 26, 16634-16637.	3.5	38
74	Engineering Muscle Tissues on Microstructured Polyelectrolyte Multilayer Films. Tissue Engineering - Part A, 2012, 18, 1664-1676.	3.1	36
75	Polyelectrolyte multilayer nanoshells with hydrophobic nanodomains for delivery of Paclitaxel. Journal of Controlled Release, 2012, 159, 403-412.	9.9	36
76	Substrate Stiffness Combined with Hepatocyte Growth Factor Modulates Endothelial Cell Behavior. Biomacromolecules, 2016, 17, 2767-2776.	5.4	36
77	Automated Buildup of Biomimetic Films in Cell Culture Microplates for Highâ€Throughput Screening of Cellular Behaviors. Advanced Materials, 2018, 30, e1801097.	21.0	36
78	Hydrophobic Shell Loading of Biopolyelectrolyte Capsules. Advanced Materials, 2011, 23, H200-4.	21.0	35
79	Actin Protofilament Orientation in Deformation of the Erythrocyte Membrane Skeleton. Biophysical Journal, 2000, 79, 2987-3000.	0.5	34
80	Secondary Structure of rhBMP-2 in a Protective Biopolymeric Carrier Material. Biomacromolecules, 2012, 13, 3620-3626.	5.4	34
81	Tunable Structural and Mechanical Properties of Cellulose Nanofiber Substrates in Aqueous Conditions for Stem Cell Culture. Biomacromolecules, 2017, 18, 2034-2044.	5.4	33
82	Multiscale Porosity Directs Bone Regeneration in Biphasic Calcium Phosphate Scaffolds. ACS Biomaterials Science and Engineering, 2017, 3, 2768-2778.	5.2	33
83	Actin Protofilament Orientation at the Erythrocyte Membrane. Biophysical Journal, 1999, 77, 865-878.	0.5	31
84	Glycated Polyelectrolyte Multilayer Films:â€‰ Differential Adhesion of Primary versus Tumor Cells. Biomacromolecules, 2006, 7, 2882-2889.	5.4	30
85	3-D surface charges modulate protrusive and contractile contacts of chondrosarcoma cells. Cytoskeleton, 2003, 56, 147-158.	4.4	29
86	Rigidityâ€Patterned Polyelectrolyte Films to Control Myoblast Cell Adhesion and Spatial Organization. Advanced Functional Materials, 2013, 23, 3432-3442.	14.9	29
87	Stiffness-dependent cellular internalization of matrix-bound BMP-2 and its relation to Smad and non-Smad signaling. Acta Biomaterialia, 2016, 46, 55-67.	8.3	29
88	Microfabrication of a Platform to Measure and Manipulate the Mechanics of Engineered Microtissues. Methods in Cell Biology, 2014, 121, 191-211.	1.1	28
89	Construction and myogenic differentiation of 3D myoblast tissues fabricated by fibronectin-gelatin nanofilm coating. Biochemical and Biophysical Research Communications, 2016, 474, 515-521.	2.1	27
90	Signal mingle: Micropatterns of BMP-2 and fibronectin on soft biopolymeric films regulate myoblast shape and SMAD signaling. Scientific Reports, 2017, 7, 41479.	3.3	26

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91	The effect of hydration on the material and mechanical properties of cellulose nanocrystal-alginate composites. Carbohydrate Polymers, 2018, 179, 186-195.	10.2	23
92	Solvent-free preparation of porous poly(l-lactide) microcarriers for cell culture. Acta Biomaterialia, 2018, 75, 300-311.	8.3	23
93	Design of experiments to assess the effect of culture parameters on the osteogenic differentiation of human adipose stromal cells. Stem Cell Research and Therapy, 2019, 10, 256.	5.5	23
94	Biomaterial-enabled delivery of SDF-1Î± at the ventral side of breast cancer cells reveals a crosstalk between cell receptors to promote the invasive phenotype. Biomaterials, 2017, 127, 61-74.	11.4	22
95	Quiescence of human muscle stem cells is favored by culture on natural biopolymeric films. Stem Cell Research and Therapy, 2017, 8, 104.	5.5	22
96	Learning from BMPs and their biophysical extracellular matrix microenvironment for biomaterial design. Bone, 2020, 141, 115540.	2.9	22
97	Alkylamino Hydrazide Derivatives of Hyaluronic Acid: Synthesis, Characterization in Semidilute Aqueous Solutions, and Assembly into Thin Multilayer Films. Biomacromolecules, 2009, 10, 2875-2884.	5.4	20
98	Heparan sulfate co-immobilized with cRGD ligands and BMP2 on biomimetic platforms promotes BMP2-mediated osteogenic differentiation. Acta Biomaterialia, 2020, 114, 90-103.	8.3	20
99	In situ synthesis of gold nanoparticles in exponentially-growing layer-by-layer films. Journal of Colloid and Interface Science, 2012, 388, 56-66.	9.4	17
100	Binding of moesin and ezrin to membranes containing phosphatidylinositol (4,5) bisphosphate: A comparative study of the affinity constants and conformational changes. Biochimica Et Biophysica Acta - Biomembranes, 2012, 1818, 2839-2849.	2.6	16
101	Differential bioactivity of four BMP-family members as function of biomaterial stiffness. Biomaterials, 2022, 281, 121363.	11.4	16
102	Phosphatidylinositol 4,5-Bisphosphate-Induced Conformational Change of Ezrin and Formation of Ezrin Oligomers. Biochemistry, 2010, 49, 9318-9327.	2.5	15
103	Binding of the chemokine CXCL12Î± to its natural extracellular matrix ligand heparan sulfate enables myoblast adhesion and facilitates cell motility. Biomaterials, 2017, 123, 24-38.	11.4	15
104	Blood yield stress in systemic sclerosis. American Journal of Physiology - Heart and Circulatory Physiology, 1999, 276, H771-H777.	3.2	12
105	Model membranes to shed light on the biochemical and physical properties of ezrin/radixin/moesin. Biochimie, 2013, 95, 3-11.	2.6	12
106	Embedded shells decalcified. Nature, 2007, 448, 879-880.	27.8	10
107	Quick and easy microfabrication of T-shaped cantilevers to generate arrays of microtissues. Biomedical Microdevices, 2016, 18, 43.	2.8	10
108	Role of Phosphorylation in Moesin Interactions with PIP2-Containing Biomimetic Membranes. Biophysical Journal, 2018, 114, 98-112.	0.5	10

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109	Functional characterization of p7 viroporin from hepatitis C virus produced in a cell-free expression system. Protein Expression and Purification, 2016, 118, 83-91.	1.3	9
110	Age-dependent migratory behavior of human endothelial cells revealed by substrate microtopography. Experimental Cell Research, 2019, 374, 1-11.	2.6	8
111	Engineering of a Microscale Niche for Pancreatic Tumor Cells Using Bioactive Film Coatings Combined with 3D-Architectured Scaffolds. ACS Applied Materials & Interfaces, 2022, 14, 13107-13121.	8.0	7
112	Osteogenic Differentiation of Adipose-Derived Stromal Cells: From Bench to Clinics. Tissue Engineering - Part B: Reviews, 2020, 26, 461-474.	4.8	6
113	High-throughput measurements of bone morphogenetic protein/bone morphogenetic protein receptor interactions using biolayer interferometry. Biointerphases, 2021, 16, 031001.	1.6	5
114	Automated Fabrication of Streptavidin-Based Self-assembled Materials for High-Content Analysis of Cellular Response to Growth Factors. ACS Applied Materials & Interfaces, 2022, 14, 34113-34125.	8.0	4
115	Control of the Proliferation/Differentiation Balance in Skeletal Myoblasts by Integrin and Syndecan Targeting Peptides. ACS Biomaterials Science and Engineering, 2016, 2, 415-425.	5.2	3
116	DRUG DELIVERY: Presentation of BMP-2 from a Soft Biopolymeric Film Unveils its Activity on Cell Adhesion and Migration (Adv. Mater. 12/2011). Advanced Materials, 2011, 23, H110-H110.	21.0	2
117	Combining Fluorescence Fluctuations and Photobleaching to Quantify Surface Density. Analytical Chemistry, 2022, 94, 6521-6528.	6.5	2
118	Primary osteoblasts adhesion onto RGD-functionalized and cross-linked polyelectrolyte multilayer films. Materials Research Society Symposia Proceedings, 2004, 823, W12.1.1.	0.1	1
119	Drug Delivery: Hydrophobic Shell Loading of Biopolyelectrolyte Capsules (Adv. Mater. 24/2011). Advanced Materials, 2011, 23, H130-H130.	21.0	0
120	Polyelectrolyte Multilayer Nanoshells With Hydrophobic Nanodomains for Delivery of Paclitaxel. , 2012, , .		0