Jeffrey R Capadona

List of Publications by Year
in descending order

73 papers	5,622 citations	117571 34 h-index	98753 67 g-index
74 all docs	74 docs citations	74 times ranked	5947 citing authors

#	Article	IF	Citations
1	Stimuli-Responsive Polymer Nanocomposites Inspired by the Sea Cucumber Dermis. Science, 2008, 319, 1370-1374.	6.0	881
2	A versatile approach for the processing of polymer nanocomposites with self-assembled nanofibre templates. Nature Nanotechnology, 2007, 2, 765-769.	15.6	393
3	Progress towards biocompatible intracortical microelectrodes for neural interfacing applications. Journal of Neural Engineering, 2015, 12, 011001.	1.8	309
4	Preparation of Homogeneous Dispersions of Tunicate Cellulose Whiskers in Organic Solvents. Biomacromolecules, 2007, 8, 1353-1357.	2.6	248
5	Polymer Nanocomposites with Nanowhiskers Isolated from Microcrystalline Cellulose. Biomacromolecules, 2009, 10, 712-716.	2.6	235
6	Integrin specificity and enhanced cellular activities associated with surfaces presenting a recombinant fibronectin fragment compared to RGD supports. Biomaterials, 2006, 27, 5459-5470.	5.7	221
7	Mechanically-compliant intracortical implants reduce the neuroinflammatory response. Journal of Neural Engineering, 2014, 11, 056014.	1.8	219
8	Stab injury and device implantation within the brain results in inversely multiphasic neuroinflammatory and neurodegenerative responses. Journal of Neural Engineering, 2012, 9, 046020.	1.8	209
9	Biomimetic mechanically adaptive nanocomposites. Progress in Polymer Science, 2010, 35, 212-222.	11.8	196
10	Polymer brushes and self-assembled monolayers: Versatile platforms to control cell adhesion to biomaterials (Review). Biointerphases, 2009, 4, FA3-FA16.	0.6	174
11	Natural Biopolymers: Novel Templates for the Synthesis of Nanostructures. Langmuir, 2010, 26, 8497-8502.	1.6	167
12	Bio-inspired mechanically-adaptive nanocomposites derived from cotton cellulose whiskers. Journal of Materials Chemistry, 2010, 20, 180-186.	6.7	156
13	Stimuli-Responsive Mechanically Adaptive Polymer Nanocomposites. ACS Applied Materials & Interfaces, 2010, 2, 165-174.	4.0	146
14	The effect of resveratrol on neurodegeneration and blood brain barrier stability surrounding intracortical microelectrodes. Biomaterials, 2013, 34, 7001-7015.	5.7	118
15	Curcumin-releasing mechanically adaptive intracortical implants improve the proximal neuronal density and bloodâ€“brain barrier stability. Acta Biomaterialia, 2014, 10, 2209-2222.	4.1	113
16	Bioinspired Water-Enhanced Mechanical Gradient Nanocomposite Films That Mimic the Architecture and Properties of the Squid Beak. Journal of the American Chemical Society, 2013, 135, 5167-5174.	6.6	112
17	Nanocomposites based on cellulose whiskers and (semi)conducting conjugated polymers. Journal of Materials Chemistry, 2007, 17, 2746.	6.7	98
18	Micropatterned Surfaces to Engineer Focal Adhesions for Analysis of Cell Adhesion Strengthening. Langmuir, 2002, 18, 5579-5584.	1.6	93

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19	Mechanically adaptive nanocomposites for neural interfacing. MRS Bulletin, 2012, 37, 581-589.	1.7	91
20	Compliant intracortical implants reduce strains and strain rates in brain tissue<i>in vivo</i>. Journal of Neural Engineering, 2015, 12, 036002.	1.8	85
21	The roles of blood-derived macrophages and resident microglia in the neuroinflammatory response to implanted Intracortical microelectrodes. Biomaterials, 2014, 35, 8049-8064.	5.7	77
22	Fibronectin Adsorption and Cell Adhesion to Mixed Monolayers of Tri(ethylene glycol)- and Methyl-Terminated Alkanethiolsâ€. Langmuir, 2003, 19, 1847-1852.	1.6	74
23	Implantation of Neural Probes in the Brain Elicits Oxidative Stress. Frontiers in Bioengineering and Biotechnology, 2018, 6, 9.	2.0	74
24	A Mosquito Inspired Strategy to Implant Microprobes into the Brain. Scientific Reports, 2018, 8, 122.	1.6	67
25	Reduction of autofluorescence at the microelectrodeâ€"cortical tissue interface improves antibody detection. Journal of Neuroscience Methods, 2012, 203, 96-105.	1.3	61
26	Influence of resveratrol release on the tissue response to mechanically adaptive cortical implants. Acta Biomaterialia, 2016, 29, 81-93.	4.1	57
27	Microelectrode implantation in motor cortex causes fine motor deficit: Implications on potential considerations to Brain Computer Interfacing and Human Augmentation. Scientific Reports, 2017, 7, 15254.	1.6	55
28	Potential for thermal damage to the bloodâ€"brain barrier during craniotomy: implications for intracortical recording microelectrodes. Journal of Neural Engineering, 2018, 15, 034001.	1.8	48
29	Targeting CD14 on blood derived cells improves intracortical microelectrode performance. Biomaterials, 2018, 163, 163-173.	5.7	47
30	The effects of PEG-based surface modification of PDMS microchannels on long-term hemocompatibility. Journal of Biomedical Materials Research - Part A, 2014, 102, n/a-n/a.	2.1	45
31	Development of superoxide dismutase mimetic surfaces to reduce accumulation of reactive oxygen species for neural interfacing applications. Journal of Materials Chemistry B, 2014, 2, 2248-2258.	2.9	43
32	In vitro evaluation and in vivo demonstration of a biomimetic, hemocompatible, microfluidic artificial lung. Lab on A Chip, 2015, 15, 1366-1375.	3.1	42
33	The Neuroinflammatory Response to Nanopatterning Parallel Grooves into the Surface Structure of Intracortical Microelectrodes. Advanced Functional Materials, 2018, 28, 1704420.	7.8	39
34	A comparison of neuroinflammation to implanted microelectrodes in rat and mouse models. Biomaterials, 2014, 35, 5637-5646.	5.7	38
35	Implications of chronic daily anti-oxidant administration on the inflammatory response to intracortical microelectrodes. Journal of Neural Engineering, 2015, 12, 046002.	1.8	38
36	The effect of residual endotoxin contamination on the neuroinflammatory response to sterilized intracortical microelectrodes. Journal of Materials Chemistry B, 2014, 2, 2517-2529.	2.9	36

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37	Platelet-mimicking procoagulant nanoparticles augment hemostasis in animal models of bleeding. Science Translational Medicine, 2022, 14, eabb8975.	5.8	35
38	Engineering and commercialization of human-device interfaces, from bone to brain. Biomaterials, 2016, 95, 35-46.	5.7	34
39	Differential expression of genes involved in the acute innate immune response to intracortical microelectrodes. Acta Biomaterialia, 2020, 102, 205-219.	4.1	33
40	An organotypic spinal cord slice culture model to quantify neurodegeneration. Journal of Neuroscience Methods, 2012, 211, 280-288.	1.3	31
41	Reducing the â€œStressâ€: Antioxidative Therapeutic and Material Approaches May Prevent Intracortical Microelectrode Failure. ACS Macro Letters, 2015, 4, 275-279.	2.3	31
42	Inhibition of the cluster of differentiation 14 innate immunity pathway with IAXO-101 improves chronic microelectrode performance. Journal of Neural Engineering, 2018, 15, 025002.	1.8	31
43	Sterilization of Thiol-ene/Acrylate Based Shape Memory Polymers for Biomedical Applications. Macromolecular Materials and Engineering, 2017, 302, 1600331.	1.7	30
44	Characterization of the Neuroinflammatory Response to Thiol-ene Shape Memory Polymer Coated Intracortical Microelectrodes. Micromachines, 2018, 9, 486.	1.4	30
45	Bioinspired materials and systems for neural interfacing. Current Opinion in Biomedical Engineering, 2018, 6, 110-119.	1.8	27
46	Surface-Nucleated Assembly of Fibrillar Extracellular Matrices. Advanced Materials, 2005, 17, 2604-2608.	11.1	25
47	Sonic Hedgehog is expressed by hilar mossy cells and regulates cellular survival and neurogenesis in the adult hippocampus. Scientific Reports, 2019, 9, 17402.	1.6	25
48	Understanding the Role of Innate Immunity in the Response to Intracortical Microelectrodes. Critical Reviews in Biomedical Engineering, 2018, 46, 341-367.	0.5	18
49	The Role of Toll-Like Receptor 2 and 4 Innate Immunity Pathways in Intracortical Microelectrode-Induced Neuroinflammation. Frontiers in Bioengineering and Biotechnology, 2018, 6, 113.	2.0	18
50	Understanding the Effects of Both CD14-Mediated Innate Immunity and Device/Tissue Mechanical Mismatch in the Neuroinflammatory Response to Intracortical Microelectrodes. Frontiers in Neuroscience, 2018, 12, 772.	1.4	17
51	Intracortical Microelectrode Array Unit Yield under Chronic Conditions: A Comparative Evaluation. Micromachines, 2021, 12, 972.	1.4	16
52	High-throughput in vitro assay to evaluate the cytotoxicity of liberated platinum compounds for stimulating neural electrodes. Journal of Neuroscience Methods, 2016, 273, 1-9.	1.3	15
53	Second Harmonic Generation Imaging of Collagen in Chronically Implantable Electrodes in Brain Tissue. Frontiers in Neuroscience, 2020, 14, 95.	1.4	14
54	Toward Standardization of Electrophysiology and Computational Tissue Strain in Rodent Intracortical Microelectrode Models. Frontiers in Bioengineering and Biotechnology, 2020, 8, 416.	2.0	12

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55	Microscale Characterization of a Mechanically Adaptive Polymer Nanocomposite With Cotton-Derived Cellulose Nanocrystals for Implantable BioMEMS. Journal of Microelectromechanical Systems, 2014, 23, 774-784.	1.7	9
56	Anti-inflammatory Approaches to Mitigate the Neuroinflammatory Response to Brain-Dwelling Intracortical Microelectrodes. Journal of Immunological Sciences, 2018, 2, 15-21.	0.5	9
57	Neuron-like neural probes. Nature Materials, 2019, 18, 429-431.	13.3	8
58	Environmentally-controlled Microtensile Testing of Mechanically-adaptive Polymer Nanocomposites for ex vivo Characterization. Journal of Visualized Experiments, 2013, , e50078.	0.2	7
59	Mechanically adaptive implants fabricated with poly(2-hydroxyethyl methacrylate)-based negative photoresists. Journal of Materials Chemistry B, 2020, 8, 6357-6365.	2.9	7
60	Investigation of the Feasibility of Ventricular Delivery of Resveratrol to the Microelectrode Tissue Interface. Micromachines, 2021, 12, 1446.	1.4	6
61	Characterization of Active Electrode Yield for Intracortical Arrays: Awake versus Anesthesia. Micromachines, 2022, 13, 480.	1.4	6
62	Rodent Behavioral Testing to Assess Functional Deficits Caused by Microelectrode Implantation in the Rat Motor Cortex. Journal of Visualized Experiments, 2018, , .	0.2	5
63	Mechanically adaptive materials for intracortical implants. , 2015, , .		4
64	A graphical user interface to assess the neuroinflammatory response to intracortical microelectrodes. Journal of Neuroscience Methods, 2019, 317, 141-148.	1.3	4
65	Status Epilepticus due to Intraperitoneal Injection of Vehicle Containing Propylene Glycol in Sprague Dawley Rats. Veterinary Medicine International, 2017, 2017, 1-6.	0.6	2
66	Evaluation of an in vivo model for ventricular shunt infection: a pilot study using a novel antimicrobial-loaded polymer. Journal of Neurosurgery, 2019, 131, 587-595.	0.9	2
67	Hybrid Fabrication Method for Microfluidic Channels Within a Polymer Nanocomposite for Neural Interfacing Applications. , 2021, , .		2
68	Brain responses to neural prostheses. , 0, , 554-564.		1
69	Prospects for a Robust Cortical Recording Interface. , 2018, , 393-413.		1
70	A Novel Single Animal Motor Function Tracking System Using Simple, Readily Available Software. Journal of Visualized Experiments, 2018, , .	0.2	1
71	Investigating the Association between Motor Function, Neuroinflammation, and Recording Metrics in the Performance of Intracortical Microelectrode Implanted in Motor Cortex. Micromachines, 2020, 11, 838.	1.4	1
72	Bioelectronic Neural Implants. , 2020, , 1153-1168.		0

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73	Editorial: Bridging the Gap in Neuroelectronic Interfaces. Frontiers in Neuroscience, 2020, 14, 457.	1.4	0