Michael J Higgins

List of Publications by Year
in descending order

101 papers	4,495 citations	87888 38 h-index	110387 64 g-index
108 all docs	108 docs citations	108 times ranked	6162 citing authors

#	Article	IF	Citations
1	NANOSTRUCTURE OF THE DIATOM FRUSTULE AS REVEALED BY ATOMIC FORCE AND SCANNING ELECTRON MICROSCOPY. Journal of Phycology, 2001, 37, 543-554.	2.3	209
2	Skeletal muscle cell proliferation and differentiation on polypyrrole substrates doped with extracellular matrix components. Biomaterials, 2009, 30, 5292-5304.	11.4	207
3	Direct Imaging of Individual Intrinsic Hydration Layers on Lipid Bilayers at Ã…ngstrom Resolution. Biophysical Journal, 2007, 92, 3603-3609.	0.5	182
4	Direct Imaging of Lipid-Ion Network Formation under Physiological Conditions by Frequency Modulation Atomic Force Microscopy. Physical Review Letters, 2007, 98, 106101.	7.8	154
5	Electrical Stimulation Using Conductive Polymer Polypyrrole Promotes Differentiation of Human Neural Stem Cells: A Biocompatible Platform for Translational Neural Tissue Engineering. Tissue Engineering - Part C: Methods, 2015, 21, 385-393.	2.1	146
6	Structured Water Layers Adjacent to Biological Membranes. Biophysical Journal, 2006, 91, 2532-2542.	0.5	145
7	Quantitative force measurements using frequency modulation atomic force microscopy?theoretical foundations. Nanotechnology, 2005, 16, S94-S101.	2.6	137
8	Fibronectin and Bovine Serum Albumin Adsorption and Conformational Dynamics on Inherently Conducting Polymers: A QCM-D Study. Langmuir, 2012, 28, 8433-8445.	3.5	134
9	Physical surface and electromechanical properties of doped polypyrrole biomaterials. Biomaterials, 2010, 31, 1974-1983.	11.4	130
10	A virtual instrument to standardise the calibration of atomic force microscope cantilevers. Review of Scientific Instruments, 2016, 87, 093711.	1.3	114
11	THE STRUCTURE AND NANOMECHANICAL PROPERTIES OF THE ADHESIVE MUCILAGE THAT MEDIATES DIATOM-SUBSTRATUM ADHESION AND MOTILITY1. Journal of Phycology, 2003, 39, 1181-1193.	2.3	110
12	Characterization of the Adhesive Mucilages Secreted by Live Diatom Cells using Atomic Force Microscopy. Protist, 2002, 153, 25-38.	1.5	105
13	Nanoscale Mechanical Characterisation of Amyloid Fibrils Discovered in a Natural Adhesive. Journal of Biological Physics, 2007, 32, 393-401.	1.5	105
14	Conducting polymers with immobilised fibrillar collagen for enhanced neural interfacing. Biomaterials, 2011, 32, 7309-7317.	11.4	105
15	Human skin interactive self-powered wearable piezoelectric bio-e-skin by electrospun poly-<scp>l</scp>-lactic acid nanofibers for non-invasive physiological signal monitoring. Journal of Materials Chemistry B, 2017, 5, 7352-7359.	5.8	104
16	A Multiswitchable Poly(terthiophene) Bearing a Spiropyran Functionality: Understanding Photo- and Electrochemical Control. Journal of the American Chemical Society, 2011, 133, 5453-5462.	13.7	96
17	Silica Nanoparticles Functionalized with Zwitterionic Sulfobetaine Siloxane for Application as a Versatile Antifouling Coating System. ACS Applied Materials & Interfaces, 2017, 9, 18584-18594.	8.0	87
18	PROBING THE SURFACE OF LIVING DIATOMS WITH ATOMIC FORCE MICROSCOPY: THE NANOSTRUCTURE AND NANOMECHANICAL PROPERTIES OF THE MUCILAGE LAYER1. Journal of Phycology, 2003, 39, 722-734.	2.3	81

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19	Organic Conducting Polymerâ€“Protein Interactions. Chemistry of Materials, 2012, 24, 828-839.	6.7	79
20	THE COMPLEX POLYSACCHARIDES OF THE RAPHID DIATOM PINNULARIA VIRIDIS (BACILLARIOPHYCEAE)1. Journal of Phycology, 2003, 39, 543-554.	2.3	78
21	The application of atomic force microscopy to topographical studies and force measurements on the secreted adhesive of the green alga Enteromorpha. Planta, 2000, 211, 641-647.	3.2	75
22	Hydration Layer Structure of Biofouling-Resistant Nanoparticles. ACS Nano, 2018, 12, 11610-11624.	14.6	70
23	Quantitative measurement of solvation shells using frequency modulated atomic force microscopy. Nanotechnology, 2005, 16, S49-S53.	2.6	64
24	Nanobionics: the impact of nanotechnology on implantable medical bionic devices. Nanoscale, 2012, 4, 4327.	5.6	64
25	Creating conductive structures for cell growth: Growth and alignment of myogenic cell types on polythiophenes. Journal of Biomedical Materials Research - Part A, 2010, 95A, 256-268.	4.0	62
26	Fabrication of soft, stimulus-responsive structures with sub-micron resolution via two-photon polymerization of poly(ionic liquid)s. Materials Today, 2018, 21, 807-816.	14.2	57
27	Organic Bionics: A New Dimension in Neural Communications. Advanced Functional Materials, 2012, 22, 2003-2014.	14.9	55
28	Cellulose-based magnetoelectric composites. Nature Communications, 2017, 8, 38.	12.8	53
29	Carbon nanotube biogels. Carbon, 2009, 47, 1282-1291.	10.3	50
30	Domain wall conductivity in oxygen deficient multiferroic YMnO3 single crystals. Applied Physics Letters, 2011, 99, .	3.3	49
31	Influence of Biodopants on PEDOT Biomaterial Polymers: Using QCMâ€Đ to Characterize Polymer Interactions with Proteins and Living Cells. Advanced Materials Interfaces, 2014, 1, 1300122.	3.7	47
32	Liquid Ink Deposition from an Atomic Force Microscope Tip: Deposition Monitoring and Control of Feature Size. Langmuir, 2014, 30, 2712-2721.	3.5	46
33	Liquid Deposition Patterning of Conducting Polymer Ink onto Hard and Soft Flexible Substrates via Dip-Pen Nanolithography. Langmuir, 2012, 28, 804-811.	3.5	45
34	Quantitative force measurements in liquid using frequency modulation atomic force microscopy. Applied Physics Letters, 2004, 85, 3575-3577.	3.3	44
35	Maintaining Cytocompatibility of Biopolymers Through a Graphene Layer for Electrical Stimulation of Nerve Cells. Advanced Functional Materials, 2014, 24, 769-776.	14.9	42
36	Melt electrowriting of electroactive poly(vinylidene difluoride) fibers. Polymer International, 2019, 68, 735-745.	3.1	42

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37	Cell patterning via linker-free protein functionalization of an organic conducting polymer (polypyrrole) electrode. Acta Biomaterialia, 2012, 8, 2538-2548.	8.3	40
38	Guidance of neurite outgrowth on aligned electrospun polypyrrole/poly(styreneâ€Î²â€isobutyleneâ€Î²â€styrene) fiber platforms. Journal of Biomedical Materials Research - Part A, 2010, 94A, 1004-1011.	4.0	39
39	Frequency modulation atomic force microscopy: a dynamic measurement technique for biological systems. Nanotechnology, 2005, 16, S85-S89.	2.6	38
40	Frequency Modulation Atomic Force Microscopy Reveals Individual Intermediates Associated with each Unfolded I27 Titin Domain. Biophysical Journal, 2006, 90, 640-647.	0.5	38
41	Local probing of magnetoelectric properties of PVDF/Fe₃O₄electrospun nanofibers by piezoresponse force microscopy. Nanotechnology, 2017, 28, 065707.	2.6	38
42	Highly stretchable reduced graphene oxide (rGO)/single-walled carbon nanotubes (SWNTs) electrodes for energy storage devices. Electrochimica Acta, 2015, 163, 149-160.	5.2	37
43	The topography of soft, adhesive diatom â€˜trailsâ€™ as observed by Atomic Force Microscopy. Biofouling, 2000, 16, 133-139.	2.2	36
44	Zwitterion Functionalized Silica Nanoparticle Coatings: The Effect of Particle Size on Protein, Bacteria, and Fungal Spore Adhesion. Langmuir, 2019, 35, 1335-1345.	3.5	35
45	Amyloid beta selectively modulates neuronal TrkB alternative transcript expression with implications for Alzheimer's disease. Neuroscience, 2012, 210, 363-374.	2.3	33
46	Construction of 2D lateral pseudoheterostructures by strain engineering. 2D Materials, 2017, 4, 025102.	4.4	31
47	Molecular interactions and forces of adhesion between single human neural stem cells and gelatin methacrylate hydrogels of varying stiffness. Acta Biomaterialia, 2020, 106, 156-169.	8.3	31
48	Surface and Biomolecular Forces of Conducting Polymers. Polymer Reviews, 2013, 53, 506-526.	10.9	30
49	Conductive surfaces with dynamic switching in response to temperature and salt. Journal of Materials Chemistry B, 2015, 3, 9285-9294.	5.8	30
50	Visualizing Dynamic Actuation of Ultrathin Polypyrrole Films. Langmuir, 2009, 25, 3627-3633.	3.5	29
51	Vapor Phase Polymerization of EDOT from Submicrometer Scale Oxidant Patterned by Dip-Pen Nanolithography. Langmuir, 2012, 28, 9953-9960.	3.5	28
52	Resolving Subâ€Molecular Binding and Electrical Switching Mechanisms of Single Proteins at Electroactive Conducting Polymers. Small, 2013, 9, 393-401.	10.0	28
53	Probing the PEDOT:PSS/cell interface with conductive colloidal probe AFM-SECM. Nanoscale, 2016, 8, 4475-4481.	5.6	27
54	Synthesis of highly magnetostrictive nanostructures and their application in a polymer-based magnetoelectric sensing device. European Polymer Journal, 2016, 84, 685-692.	5.4	26

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55	Enhancement of charge separation in ferroelectric heterogeneous photocatalyst Bi₄(SiO₄)₃/Bi₂SiO₅ nanostructures. Dalton Transactions, 2017, 46, 15582-15588.	3.3	25
56	Normal stiffness calibration of microfabricated tri-layer conducting polymer actuators. Smart Materials and Structures, 2009, 18, 065013.	3.5	24
57	Surface Charge-Mediated Cellâ€“Surface Interaction on Piezoelectric Materials. ACS Applied Materials & Interfaces, 2020, 12, 191-199.	8.0	23
58	Inkâ€onâ€Probe Hydrodynamics in Atomic Force Microscope Deposition of Liquid Inks. Small, 2014, 10, 3717-3728.	10.0	22
59	Surface Properties and Interaction Forces of Biopolymer-Doped Conductive Polypyrrole Surfaces by Atomic Force Microscopy. Langmuir, 2013, 29, 6099-6108.	3.5	21
60	Quantifying Molecular-Level Cell Adhesion on Electroactive Conducting Polymers using Electrochemical-Single Cell Force Spectroscopy. Scientific Reports, 2015, 5, 13334.	3.3	20
61	Capacitive behavior of latex/single-wall carbon nanotube stretchable electrodes. Electrochimica Acta, 2014, 137, 372-380.	5.2	19
62	Significant tunability of thin film functionalities enabled by manipulating magnetic and structural nano-domains. Applied Surface Science, 2014, 311, 549-557.	6.1	19
63	Interactions between Liquid Metal Droplets and Bacterial, Fungal, and Mammalian Cells. Advanced Materials Interfaces, 2022, 9, .	3.7	19
64	Fabrication and Characterization of Cytocompatible Polypyrrole Films Inkjet Printed from Nanoformulations Cytocompatible, Inkjetâ€Printed Polypyrrole Films. Small, 2011, 7, 3434-3438.	10.0	18
65	Nanoscopic polypyrrole AFMâ€“SECM probes enabling force measurements under potential control. Nanoscale, 2014, 6, 2255.	5.6	16
66	Reversible Shape Memory of Nanoscale Deformations in Inherently Conducting Polymers without Reprogramming. Journal of Physical Chemistry B, 2011, 115, 3371-3378.	2.6	15
67	Electro-mechano responsive properties of gelatin methacrylate (GelMA) hydrogel on conducting polymer electrodes quantified using atomic force microscopy. Soft Matter, 2017, 13, 4761-4772.	2.7	15
68	Nanoscale piezoelectric effect of biodegradable PLA-based composite fibers by piezoresponse force microscopy. Nanotechnology, 2020, 31, 375708.	2.6	15
69	In vitro growth and differentiation of primary myoblasts on thiophene based conducting polymers. Biomaterials Science, 2013, 1, 983.	5.4	14
70	Effect of heat treatment on fouling resistance and the rejection of small and neutral solutes by reverse osmosis membranes. Water Science and Technology: Water Supply, 2015, 15, 510-516.	2.1	14
71	Dynamics of Inter-Molecular Interactions Between Single Aî²42 Oligomeric and Aggregate Species by High-Speed Atomic Force Microscopy. Journal of Molecular Biology, 2019, 431, 2687-2699.	4.2	14
72	The effect of nanoscale surface electrical properties of partially biodegradable PEDOT-co-PDLLA conducting polymers on protein adhesion investigated by atomic force microscopy. Materials Science and Engineering C, 2019, 99, 468-478.	7.3	13

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73	Quantifying fibronectin adhesion with nanoscale spatial resolution on glycosaminoglycan doped polypyrrole using Atomic Force Microscopy. Biochimica Et Biophysica Acta - General Subjects, 2013, 1830, 4305-4313.	2.4	12
74	Influence of biopolymer loading on the physiochemical and electrochemical properties of inherently conducting polymer biomaterials. Synthetic Metals, 2015, 200, 40-47.	3.9	11
75	Protein nanorings organized by poly(styrene-block-ethylene oxide) self-assembled thin films. Nanoscale, 2015, 7, 19940-19948.	5.6	11
76	Structural Analysis and Protein Functionalization of Electroconductive Polypyrrole Films Modified by Plasma Immersion Ion Implantation. ACS Biomaterials Science and Engineering, 2017, 3, 2247-2258.	5.2	10
77	Nanocrystalline Cellulose for Anisotropic Magnetoelectric Composites. Macromolecular Materials and Engineering, 2018, 303, 1800099.	3.6	10
78	Attractive and Repulsive Interactions Originating from Lateral Nanometer Variations in Surface Charge/Energy of Hyaluronic Acid and Chondroitin Sulfate Doped Polypyrrole Observed Using Atomic Force Microscopy. Journal of Physical Chemistry B, 2012, 116, 13498-13505.	2.6	9
79	Synthesis and optimization of PEDOT:PSS based ink for printing nanoarrays using Dip-Pen Nanolithography. Synthetic Metals, 2013, 181, 64-71.	3.9	9
80	Optical switching of protein interactions on photosensitiveâ€“electroactive polymers measured by atomic force microscopy. Journal of Materials Chemistry B, 2013, 1, 2162.	5.8	9
81	Patterning and process parameter effects in 3D suspension near-field electrospinning of nanoarrays. Nanotechnology, 2019, 30, 495301.	2.6	9
82	Surface Diffusion of Dendronized Polymers Correlates with Their Transfection Potential. Langmuir, 2020, 36, 9074-9080.	3.5	9
83	Nanoscale platinum printing on insulating substrates. Nanotechnology, 2013, 24, 505301.	2.6	8
84	Magnetoelectric coupling in nanoscale 0â€“1 connectivity. Nanoscale, 2018, 10, 17370-17377.	5.6	8
85	A direct 3D suspension near-field electrospinning technique for the fabrication of polymer nanoarrays. Nanotechnology, 2019, 30, 195301.	2.6	7
86	Diatom Adhesives: Molecular and Mechanical Properties. , 2016, , 57-86.		6
87	Modified silica nanoparticle coatings: Dual antifouling effects of self-assembled quaternary ammonium and zwitterionic silanes. Biointerphases, 2020, 15, 021009.	1.6	6
88	The study of deposition of wood extractives and model compound colloids onto chromium and cellulose surfaces using quartz crystal microbalance with dissipation (QCM-D). Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2016, 491, 1-11.	4.7	5
89	Effect of electrochemical oxidation and reduction on cell de-adhesion at the conducting polymerâ€“live cell interface as revealed by single cell force spectroscopy. Biointerphases, 2018, 13, 041004.	1.6	5
90	Carboxybetaine functionalized nanosilicas as protein resistant surface coatings. Biointerphases, 2020, 15, 011001.	1.6	5

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91	Dynamic Electrochemical Properties of Extremely Stretchable Electrochemical Capacitor Using Reduced Graphene Oxide/Single-Wall Carbon Nanotubes Composite. Journal of the Electrochemical Society, 2015, 162, A2351-A2355.	2.9	4
92	Effect of monophasic pulsed stimulation on live single cell de-adhesion on conducting polymers with adsorbed fibronectin as revealed by single cell force spectroscopy. Biointerphases, 2019, 14, 021003.	1.6	4
93	Public Health Risks Associated with Heavy Metal and Microbial Contamination of Drinking Water in Australia. International Journal of Environmental Research and Public Health, 2019, 16, 3982.	2.6	3
94	Fungal spore adhesion on glycidoxypropyltrimethoxy silane modified silica nanoparticle surfaces as revealed by single cell force spectroscopy. Biointerphases, 2020, 15, 031012.	1.6	3
95	AFM in Liquid. Imaging & Microscopy, 2006, 8, 47-49.	0.1	2
96	Electrochemical AFM. Imaging & Microscopy, 2009, 11, 40-43.	0.1	2
97	Stiffness characterisation of microcantilevers based on conducting polymers. , 2008, , .		1
98	Cellsnake: A new active contour technique for cell/fibre segmentation. , 2011, , .		1
99	Development of in situ soft colloidal probe atomic force microscopy for probing the adhesion between wood extractives and model surfaces. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2016, 500, 203-213.	4.7	1
100	The Role of Atomic Force Microscopy in Advancing Diatom Research into the Nanotechnology Era. , 2011, , 405-420.		0
101	Electroactive Anti-microbial Surfaces. , 2015, , 41-60.		0