

# Nathaniel S Hwang

## 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.

84 papers	3,635 citations	34 h-index	59 g-index
88 ext. papers	4,469 ext. citations	7.7 avg, IF	5.58 L-index

#	Paper	IF	Citations
84	Chondroitin sulfate based niches for chondrogenic differentiation of mesenchymal stem cells. <i>Matrix Biology</i> , <b>2008</b> , 27, 12-21	11.4	289
83	Controlled differentiation of stem cells. <i>Advanced Drug Delivery Reviews</i> , <b>2008</b> , 60, 199-214	18.5	261
82	Bioactive calcium phosphate materials and applications in bone regeneration. <i>Biomaterials Research</i> , <b>2019</b> , 23, 4	16.8	253
81	Calcium phosphate-bearing matrices induce osteogenic differentiation of stem cells through adenosine signaling. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2014</b> , 111, 990-5	11.5	250
80	Chondrogenic differentiation of human embryonic stem cell-derived cells in arginine-glycine-aspartate-modified hydrogels. <i>Tissue Engineering</i> , <b>2006</b> , 12, 2695-706		238
79	Effects of three-dimensional culture and growth factors on the chondrogenic differentiation of murine embryonic stem cells. <i>Stem Cells</i> , <b>2006</b> , 24, 284-91	5.8	211
78	Biomimetic Materials and Fabrication Approaches for Bone Tissue Engineering. <i>Advanced Healthcare Materials</i> , <b>2017</b> , 6, 1700612	10.1	113
77	Derivation of chondrogenically-committed cells from human embryonic cells for cartilage tissue regeneration. <i>PLoS ONE</i> , <b>2008</b> , 3, e2498	3.7	104
76	Regulation of osteogenic and chondrogenic differentiation of mesenchymal stem cells in PEG-ECM hydrogels. <i>Cell and Tissue Research</i> , <b>2011</b> , 344, 499-509	4.2	98
75	Biomimetic whitlockite inorganic nanoparticles-mediated in situ remodeling and rapid bone regeneration. <i>Biomaterials</i> , <b>2017</b> , 112, 31-43	15.6	82
74	Chondroitin Sulfate-Based Biomineralizing Surface Hydrogels for Bone Tissue Engineering. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2017</b> , 9, 21639-21650	9.5	78
73	In Vitro and In Vivo Evaluation of Whitlockite Biocompatibility: Comparative Study with Hydroxyapatite and Tricalcium Phosphate. <i>Advanced Healthcare Materials</i> , <b>2016</b> , 5, 128-36	10.1	78
72	Hydrogel-laden paper scaffold system for origami-based tissue engineering. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2015</b> , 112, 15426-31	11.5	74
71	Injectable multifunctional microgel encapsulating outgrowth endothelial cells and growth factors for enhanced neovascularization. <i>Journal of Controlled Release</i> , <b>2014</b> , 187, 1-13	11.7	73
70	Response of zonal chondrocytes to extracellular matrix-hydrogels. <i>FEBS Letters</i> , <b>2007</b> , 581, 4172-8	3.8	73
69	Tissue adhesive, rapid forming, and sprayable ECM hydrogel via recombinant tyrosinase crosslinking. <i>Biomaterials</i> , <b>2018</b> , 178, 401-412	15.6	69
68	Enhanced osteogenic commitment of murine mesenchymal stem cells on graphene oxide substrate. <i>Biomaterials Research</i> , <b>2018</b> , 22, 1	16.8	64

67	Umbilical-cord-blood-derived mesenchymal stem cells seeded onto fibronectin-immobilized polycaprolactone nanofiber improve cardiac function. <i>Acta Biomaterialia</i> , <b>2014</b> , 10, 3007-17	10.8	61
66	Application of magnetic nanoparticle for controlled tissue assembly and tissue engineering. <i>Archives of Pharmacal Research</i> , <b>2014</b> , 37, 120-8	6.1	47
65	Size of the embryoid body influences chondrogenesis of mouse embryonic stem cells. <i>Journal of Tissue Engineering and Regenerative Medicine</i> , <b>2008</b> , 2, 499-506	4.4	46
64	Fabrication of polyphenol-incorporated anti-inflammatory hydrogel via high-affinity enzymatic crosslinking for wet tissue adhesion. <i>Biomaterials</i> , <b>2020</b> , 242, 119905	15.6	44
63	Heparin Functionalized Injectable Cryogel with Rapid Shape-Recovery Property for Neovascularization. <i>Biomacromolecules</i> , <b>2018</b> , 19, 2257-2269	6.9	43
62	General and Facile Coating of Single Cells via Mild Reduction. <i>Journal of the American Chemical Society</i> , <b>2018</b> , 140, 1199-1202	16.4	43
61	Extracellular matrix-based cryogels for cartilage tissue engineering. <i>International Journal of Biological Macromolecules</i> , <b>2016</b> , 93, 1410-1419	7.9	43
60	Facilitated Transdermal Drug Delivery Using Nanocarriers-Embedded Electroconductive Hydrogel Coupled with Reverse Electrodialysis-Driven Iontophoresis. <i>ACS Nano</i> , <b>2020</b> , 14, 4523-4535	16.7	41
59	Biomaterials directed in vivo osteogenic differentiation of mesenchymal cells derived from human embryonic stem cells. <i>Tissue Engineering - Part A</i> , <b>2013</b> , 19, 1723-32	3.9	41
58	Chondrogenically primed tonsil-derived mesenchymal stem cells encapsulated in riboflavin-induced photocrosslinking collagen-hyaluronic acid hydrogel for meniscus tissue repairs. <i>Acta Biomaterialia</i> , <b>2017</b> , 53, 318-328	10.8	40
57	Injectable osteogenic and angiogenic nanocomposite hydrogels for irregular bone defects. <i>Biomedical Materials (Bristol)</i> , <b>2016</b> , 11, 035017	3.5	39
56	Gelatin-based extracellular matrix cryogels for cartilage tissue engineering. <i>Journal of Industrial and Engineering Chemistry</i> , <b>2017</b> , 45, 421-429	6.3	39
55	Physical Stimuli-Induced Chondrogenic Differentiation of Mesenchymal Stem Cells Using Magnetic Nanoparticles. <i>Advanced Healthcare Materials</i> , <b>2015</b> , 4, 1339-47	10.1	37
54	Engineering musculoskeletal tissues with human embryonic germ cell derivatives. <i>Stem Cells</i> , <b>2010</b> , 28, 765-74	5.8	37
53	Application of stem cells for articular cartilage regeneration. <i>Journal of Knee Surgery</i> , <b>2009</b> , 22, 60-71	2.4	36
52	Bioglass-Incorporated Methacrylated Gelatin Cryogel for Regeneration of Bone Defects. <i>Polymers</i> , <b>2018</b> , 10,	4.5	36
51	Sequential growth factor releasing double cryogel system for enhanced bone regeneration. <i>Biomaterials</i> , <b>2020</b> , 257, 120223	15.6	35
50	Extracellular-matrix-based and Arg-Gly-Asp-modified photopolymerizing hydrogels for cartilage tissue engineering. <i>Tissue Engineering - Part A</i> , <b>2015</b> , 21, 757-66	3.9	33

49	Hydrogel Functionalized Janus Membrane for Skin Regeneration. <i>Advanced Healthcare Materials</i> , <b>2017</b> , 6, 1600795	10.1	32
48	Injectable anti-inflammatory hyaluronic acid hydrogel for osteoarthritic cartilage repair. <i>Materials Science and Engineering C</i> , <b>2020</b> , 115, 111096	8.3	30
47	Enzyme-mediated tissue adhesive hydrogels for meniscus repair. <i>International Journal of Biological Macromolecules</i> , <b>2018</b> , 110, 479-487	7.9	30
46	Inflammation-Modulating Hydrogels for Osteoarthritis Cartilage Tissue Engineering. <i>Cells</i> , <b>2020</b> , 9,	7.9	27
45	Graphene oxide reinforced hydrogels for osteogenic differentiation of human adipose-derived stem cells. <i>RSC Advances</i> , <b>2017</b> , 7, 20779-20788	3.7	26
44	Gelatin-based micro-hydrogel carrying genetically engineered human endothelial cells for neovascularization. <i>Acta Biomaterialia</i> , <b>2019</b> , 95, 285-296	10.8	22
43	Biomimetically Reinforced Polyvinyl Alcohol-Based Hybrid Scaffolds for Cartilage Tissue Engineering. <i>Polymers</i> , <b>2017</b> , 9,	4.5	20
42	Dual-Channel Fluorescence Imaging of Hydrogel Degradation and Tissue Regeneration in the Brain. <i>Theranostics</i> , <b>2019</b> , 9, 4255-4264	12.1	18
41	Osteogenic Effects of VEGF-Overexpressed Human Adipose-Derived Stem Cells with Whitlockite Reinforced Cryogel for Bone Regeneration. <i>Macromolecular Bioscience</i> , <b>2019</b> , 19, e1800460	5.5	17
40	Magnetic Nanoparticle-Embedded Hydrogel Sheet with a Groove Pattern for Wound Healing Application. <i>ACS Biomaterials Science and Engineering</i> , <b>2019</b> , 5, 3909-3921	5.5	16
39	Injectable PLGA microspheres encapsulating WKYMVM peptide for neovascularization. <i>Acta Biomaterialia</i> , <b>2015</b> , 25, 76-85	10.8	16
38	Injectable in Situ Shape-Forming Osteogenic Nanocomposite Hydrogel for Regenerating Irregular Bone Defects.. <i>ACS Applied Bio Materials</i> , <b>2018</b> , 1, 1037-1046	4.1	16
37	Self-Healing and Adhesive Artificial Tissue Implant for Voice Recovery.. <i>ACS Applied Bio Materials</i> , <b>2018</b> , 1, 1134-1146	4.1	16
36	Recent Advances in the Transdermal Delivery of Protein Therapeutics with a Combinatorial System of Chemical Adjuvants and Physical Penetration Enhancements. <i>Advanced Therapeutics</i> , <b>2020</b> , 3, 1900116	4.9	14
35	Mild Reduction of the Cancer Cell Surface as an Anti-invasion Treatment. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2018</b> , 10, 35676-35680	9.5	13
34	Transdermal iontophoresis patch with reverse electrodialysis. <i>Drug Delivery</i> , <b>2017</b> , 24, 701-706	7	12
33	High throughput approaches for controlled stem cell differentiation. <i>Acta Biomaterialia</i> , <b>2016</b> , 34, 21-29	10.8	12
32	Efficient myogenic commitment of human mesenchymal stem cells on biomimetic materials replicating myoblast topography. <i>Biotechnology Journal</i> , <b>2014</b> , 9, 1604-12	5.6	12

31	Enzyme-mediated one-pot synthesis of hydrogel with the polyphenol cross-linker for skin regeneration. <i>Materials Today Bio</i> , <b>2020</b> , 8, 100079	9.9	11
30	One Step Further in the Elucidation of the Crystallographic Structure of Whitlockite. <i>Crystal Growth and Design</i> , <b>2020</b> , 20, 2553-2561	3.5	10
29	Enhanced Osteogenic Commitment of Human Mesenchymal Stem Cells on Polyethylene Glycol-Based Cryogel with Graphene Oxide Substrate. <i>ACS Biomaterials Science and Engineering</i> , <b>2017</b> , 3, 2470-2479	5.5	9
28	Extracellular matrix-immobilized nanotopographical substrates for enhanced myogenic differentiation. <i>Journal of Biomedical Materials Research - Part B Applied Biomaterials</i> , <b>2015</b> , 103, 1258-66	3.5	9
27	Recent advancements in enzyme-mediated crosslinkable hydrogels: -mimicking strategies. <i>APL Bioengineering</i> , <b>2021</b> , 5, 021502	6.6	9
26	Combinatorial effect of nano whitlockite/nano bioglass with FGF-18 in an injectable hydrogel for craniofacial bone regeneration. <i>Biomaterials Science</i> , <b>2021</b> , 9, 2439-2453	7.4	9
25	Biomedical therapy using synthetic WKYMVm hexapeptide. <i>Organogenesis</i> , <b>2016</b> , 12, 53-60	1.7	7
24	Ectopic transient overexpression of facilitates BMP4-induced osteogenic transdifferentiation of human umbilical vein endothelial cells. <i>Journal of Tissue Engineering</i> , <b>2020</b> , 11, 2041731420909208	7.5	6
23	Induced myogenic commitment of human chondrocytes via non-viral delivery of minicircle DNA. <i>Journal of Controlled Release</i> , <b>2015</b> , 200, 212-21	11.7	6
22	Novel enzymatic cross-linking-based hydrogel nanofilm caging system on pancreatic cell spheroid for long-term blood glucose regulation. <i>Science Advances</i> , <b>2021</b> , 7,	14.3	6
21	Non-viral approaches for direct conversion into mesenchymal cell types: Potential application in tissue engineering. <i>Journal of Biomedical Materials Research - Part B Applied Biomaterials</i> , <b>2016</b> , 104, 686-97	3.5	6
20	Intracellular Delivery of Recombinant RUNX2 Facilitated by Cell-Penetrating Protein for the Osteogenic Differentiation of hMSCs. <i>ACS Biomaterials Science and Engineering</i> , <b>2020</b> , 6, 5202-5214	5.5	5
19	Injectable Fibrin/Polyethylene Oxide Semi-IPN Hydrogel for a Segmental Meniscal Defect Regeneration. <i>American Journal of Sports Medicine</i> , <b>2021</b> , 49, 1538-1550	6.8	5
18	Whitlockite structures in kidney stones indicate infectious origin: a scanning electron microscopy and Synchrotron Radiation investigation. <i>Comptes Rendus Chimie</i> , <b>2021</b> , 24, 1-12	2.7	5
17	Osteogenic priming of mesenchymal stem cells by chondrocyte-conditioned factors and mineralized matrix. <i>Cell and Tissue Research</i> , <b>2015</b> , 362, 115-26	4.2	4
16	Protein-based direct reprogramming of fibroblasts to neuronal cells using 30Kc19 protein and transcription factor Ascl1. <i>International Journal of Biochemistry and Cell Biology</i> , <b>2020</b> , 121, 105717	5.6	3
15	Meniscus regeneration with injectable Pluronic/PMMA-reinforced fibrin hydrogels in a rabbit segmental meniscectomy model. <i>Journal of Tissue Engineering</i> , <b>2021</b> , 12, 20417314211050141	7.5	3
14	High-Efficient Production of Adipose-Derived Stem Cell (ADSC) Secretome Through Maturation Process and Its Non-scarring Wound Healing Applications. <i>Frontiers in Bioengineering and Biotechnology</i> , <b>2021</b> , 9, 681501	5.8	3

13	Supercritical Fluid-Based Decellularization Technologies for Regenerative Medicine Applications. <i>Macromolecular Bioscience</i> , <b>2021</b> , 21, e2100160	5.5	3
12	Partially Digested Osteoblast Cell Line-Derived Extracellular Matrix Induces Rapid Mineralization and Osteogenesis. <i>ACS Biomaterials Science and Engineering</i> , <b>2021</b> , 7, 1134-1146	5.5	3
11	Addition of lactoferrin and substance P in a chitin/PLGA-CaSO hydrogel for regeneration of calvarial bone defects. <i>Materials Science and Engineering C</i> , <b>2021</b> , 126, 112172	8.3	3
10	Bioinspired inorganic nanoparticles and vascular factor microenvironment directed neo-bone formation. <i>Biomaterials Science</i> , <b>2020</b> , 8, 2627-2637	7.4	2
9	Osteogenic commitment of human induced pluripotent stem cell-derived mesenchymal progenitor-like cells on biomimetic scaffolds. <i>Journal of Industrial and Engineering Chemistry</i> , <b>2016</b> , 37, 147-155	6.3	2
8	Lineage Specific Differentiation of Magnetic Nanoparticle-Based Size Controlled Human Embryoid Body. <i>ACS Biomaterials Science and Engineering</i> , <b>2017</b> , 3, 1719-1729	5.5	2
7	Light-Triggered In Situ Biosynthesis of Artificial Melanin for Skin Protection.. <i>Advanced Science</i> , <b>2022</b> , e2103503	13.6	2
6	A Biphasic Osteovascular Biomimetic Scaffold for Rapid and Self-Sustained Endochondral Ossification. <i>Advanced Healthcare Materials</i> , <b>2021</b> , 10, e2100070	10.1	2
5	A cell surface-reducing microenvironment induces early osteogenic commitment. <i>FEBS Letters</i> , <b>2021</b> , 595, 2147-2159	3.8	1
4	A brief review of mRNA therapeutics and delivery for bone tissue engineering.. <i>RSC Advances</i> , <b>2022</b> , 12, 8889-8900	3.7	1
3	Enhancement of Wound Healing Efficacy by Increasing the Stability and Skin-Penetrating Property of bFGF Using 30Kc19E-Based Fusion Protein. <i>Advanced Biology</i> , <b>2021</b> , 5, e2000176		0
2	Enhanced Neovascularization Using Injectable and rhVEGF-Releasing Cryogel Microparticles. <i>Macromolecular Bioscience</i> , <b>2021</b> , 21, e2100234	5.5	0
1	VEGF-overexpressed Human Tonsil-derived Mesenchymal Stem Cells with PEG/HA-based Cryogels for Therapeutic Angiogenesis. <i>Biotechnology and Bioprocess Engineering</i> , <b>2022</b> , 27, 17-29	3.1	0