Nihal E Vrana

List of Publications by Year
in descending order

104 papers	4,765 citations	126907 33 h-index	102487 66 g-index
105 all docs	105 docs citations	105 times ranked	7455 citing authors

#	Article	IF	Citations
1	Direct-write bioprinting of cell-laden methacrylated gelatin hydrogels. Biofabrication, 2014, 6, 024105.	7.1	528
2	Engineering Immunomodulatory Biomaterials To Tune the Inflammatory Response. Trends in Biotechnology, 2016, 34, 470-482.	9.3	387
3	Microfluidic techniques for development of 3D vascularized tissue. Biomaterials, 2014, 35, 7308-7325.	11.4	254
4	Use of Nanoparticles in Tissue Engineering and Regenerative Medicine. Frontiers in Bioengineering and Biotechnology, 2019, 7, 113.	4.1	222
5	Cell Microenvironment Engineering and Monitoring for Tissue Engineering and Regenerative Medicine: The Recent Advances. BioMed Research International, 2014, 2014, 1-18.	1.9	176
6	Integrinâ€Mediated Interactions Control Macrophage Polarization in 3D Hydrogels. Advanced Healthcare Materials, 2017, 6, 1700289.	7.6	169
7	Hyaluronic Acid and Its Derivatives in Coating and Delivery Systems: Applications in Tissue Engineering, Regenerative Medicine and Immunomodulation. Advanced Healthcare Materials, 2016, 5, 2841-2855.	7.6	162
8	Macrophage responses to implants: prospects for personalized medicine. Journal of Leukocyte Biology, 2015, 98, 953-962.	3.3	158
9	Physically crosslinked composite hydrogels of PVA with natural macromolecules: Structure, mechanical properties, and endothelial cell compatibility. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2009, 90B, 492-502.	3.4	149
10	Fiber-reinforced hydrogel scaffolds for heart valve tissue engineering. Journal of Biomaterials Applications, 2014, 29, 399-410.	2.4	102
11	Ionogel-based light-actuated valves for controlling liquid flow in micro-fluidic manifolds. Lab on A Chip, 2010, 10, 195-201.	6.0	94
12	Nanobiomaterials: a review of the existing science and technology, and new approaches. Journal of Biomaterials Science, Polymer Edition, 2006, 17, 1241-1268.	3.5	92
13	Enabling personalized implant and controllable biosystem development through 3D printing. Biotechnology Advances, 2018, 36, 521-533.	11.7	90
14	The impact of surface chemistry modification on macrophage polarisation. Immunobiology, 2016, 221, 1237-1246.	1.9	86
15	Development of a Reconstructed Cornea from Collagenâ€"Chondroitin Sulfate Foams and Human Cell Cultures. , 2008, 49, 5325.		83
16	The Overview of Porous, Bioactive Scaffolds as Instructive Biomaterials for Tissue Regeneration and Their Clinical Translation. Pharmaceutics, 2020, 12, 602.	4.5	81
17	The Expanding World of Tissue Engineering: The Building Blocks and New Applications of Tissue Engineered Constructs. IEEE Reviews in Biomedical Engineering, 2013, 6, 47-62.	18.0	77
18	Impact of surface chemistry and topography on the function of antigen presenting cells. Biomaterials Science, 2015, 3, 424-441.	5.4	71

#	ARTICLE	IF	CITATIONS
19	Collagen-Based Fibrillar Multilayer Films Cross-Linked by a Natural Agent. Biomacromolecules, 2012, 13, 2128-2135.	5.4	69
20	Interaction of cell culture with composition effects on the mechanical properties of polycaprolactone-hydroxyapatite scaffolds fabricated via selective laser sintering (SLS). Materials Science and Engineering C, 2012, 32, 2250-2257.	7.3	66
21	Characterization of Poly(vinyl alcohol)/Chitosan Hydrogels as Vascular Tissue Engineering Scaffolds. Macromolecular Symposia, 2008, 269, 106-110.	0.7	65
22	Engineering Functional Epithelium for Regenerative Medicine and <i>In Vitro</i> Organ Models: A Review. Tissue Engineering - Part B: Reviews, 2013, 19, 529-543.	4.8	57
23	Effect of human corneal keratocytes and retinal pigment epithelial cells on the mechanical properties of micropatterned collagen films. Biomaterials, 2007, 28, 4303-4310.	11.4	55
24	Cell encapsulation within PVA-based hydrogels via freeze-thawing: a one-step scaffold formation and cell storage technique. Journal of Tissue Engineering and Regenerative Medicine, 2009, 3, 567-572.	2.7	55
25	EDC/NHS cross-linked collagen foams as scaffolds for artificial corneal stroma. Journal of Biomaterials Science, Polymer Edition, 2007, 18, 1527-1545.	3.5	52
26	Harnessing the Multifunctionality in Nature: A Bioactive Agent Release System with Selfâ€Antimicrobial and Immunomodulatory Properties. Advanced Healthcare Materials, 2015, 4, 2026-2036.	7.6	52
27	A Foreign Body Responseâ€onâ€aâ€Chip Platform. Advanced Healthcare Materials, 2019, 8, e1801425.	7.6	51
28	Laryngeal replacement with an artificial larynx after total laryngectomy: The possibility of restoring larynx functionality in the future. Head and Neck, 2014, 36, 1669-1673.	2.0	42
29	Biofunctionalization of 3D-printed silicone implants with immunomodulatory hydrogels for controlling the innate immune response: An in vivo model of tracheal defect repair. Biomaterials, 2021, 268, 120549.	11.4	42
30	Controlled implant/soft tissue interaction by nanoscale surface modifications of 3D porous titanium implants. Nanoscale, 2015, 7, 9908-9918.	5.6	39
31	Unbiased Analysis of the Impact of Micropatterned Biomaterials on Macrophage Behavior Provides Insights beyond Predefined Polarization States. ACS Biomaterials Science and Engineering, 2017, 3, 969-978.	5.2	39
32	Dual growth factor delivery using PLGA nanoparticles in silk fibroin/PEGDMA hydrogels for articular cartilage tissue engineering. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2020, 108, 2041-2062.	3.4	39
33	New Smart Antimicrobial Hydrogels, Nanomaterials, and Coatings: Earlier Action, More Specific, Better Dosing?. Advanced Healthcare Materials, 2021, 10, e2001199.	7.6	37
34	The role of biomaterials and scaffolds in immune responses in regenerative medicine: macrophage phenotype modulation by biomaterial properties and scaffold architectures. Biomaterials Science, 2021, 9, 8090-8110.	5.4	37
35	Recent Advances in Antiinflammatory Material Design. Advanced Healthcare Materials, 2021, 10, e2001373.	7.6	35
36	Generation of anti-inflammatory macrophages for implants and regenerative medicine using self-standing release systems with a phenotype-fixing cytokine cocktail formulation. Acta Biomaterialia, 2017, 53, 389-398.	8.3	34

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37	Contact guidance enhances the quality of a tissue engineered corneal stroma. Journal of Biomedical Materials Research - Part A, 2008, 84A, 454-463.	4.0	33
38	Endothelialization of PVA/gelatin cryogels for vascular tissue engineering: Effect of disturbed shear stress conditions. Journal of Biomedical Materials Research - Part A, 2010, 94A, 1080-1090.	4.0	33
39	Unexpected Bactericidal Activity of Poly(arginine)/Hyaluronan Nanolayered Coatings. Chemistry of Materials, 2016, 28, 8700-8709.	6.7	33
40	Implantation of an Artificial Larynx after Total Laryngectomy. New England Journal of Medicine, 2017, 376, 97-98.	27.0	30
41	Polyanionic Hydrogels as Reservoirs for Polycationic Antibiotic Substitutes Providing Prolonged Antibacterial Activity. ACS Applied Materials & Interfaces, 2020, 12, 19258-19267.	8.0	30
42	Immunomodulation with Self-Crosslinked Polyelectrolyte Multilayer-Based Coatings. Biomacromolecules, 2016, 17, 2189-2198.	5.4	29
43	Modulation of Cellular Colonization of Porous Polyurethane Scaffolds via the Control of Pore Interconnection Size and Nanoscale Surface Modifications. ACS Applied Materials & Interfaces, 2019, 11, 19819-19829.	8.0	29
44	Double entrapment of growth factors by nanoparticles loaded into polyelectrolyte multilayer films. Journal of Materials Chemistry B, 2014, 2, 999.	5.8	28
45	Cell encapsulation and cryostorage in PVA-gelatin cryogels: incorporation of carboxylated Îµ-poly-L-lysine as cryoprotectant. Journal of Tissue Engineering and Regenerative Medicine, 2012, 6, 280-290.	2.7	27
46	Immune Assisted Tissue Engineering via Incorporation of Macrophages in Cell-Laden Hydrogels Under Cytokine Stimulation. Frontiers in Bioengineering and Biotechnology, 2018, 6, 108.	4.1	27
47	Novel Alkali Activation of Titanium Substrates To Grow Thick and Covalently Bound PMMA Layers. ACS Applied Materials & Interfaces, 2018, 10, 5967-5977.	8.0	26
48	Incorporation of resident macrophages in engineered tissues: Multiple cell type response to microenvironment controlled macrophageâ€laden gelatine hydrogels. Journal of Tissue Engineering and Regenerative Medicine, 2018, 12, 330-340.	2.7	26
49	Investigation of the mechanical and chemical characteristics of nanotubular and nano-pitted anodic films on grade 2 titanium dental implant materials. Materials Science and Engineering C, 2017, 78, 69-78.	7.3	24
50	Hybrid Titanium/Biodegradable Polymer Implants with an Hierarchical Pore Structure as a Means to Control Selective Cell Movement. PLoS ONE, 2011, 6, e20480.	2.5	23
51	Priming cells for their final destination: microenvironment controlled cell culture by a modular ECM-mimicking feeder film. Biomaterials Science, 2015, 3, 1302-1311.	5.4	22
52	Nature of the Polyanion Governs the Antimicrobial Properties of Poly(arginine)/Polyanion Multilayer Films. Chemistry of Materials, 2017, 29, 3195-3201.	6.7	22
53	Review: the potential impact of surface crystalline states of titanium for biomedical applications. Critical Reviews in Biotechnology, 2018, 38, 423-437.	9.0	21
54	Creating a 3D microenvironment for monocyte cultivation: ECM-mimicking hydrogels based on gelatine and hyaluronic acid derivatives. RSC Advances, 2018, 8, 7606-7614.	3.6	19

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55	Osteogenic nanostructured titanium surfaces with antibacterial properties under conditions that mimic the dynamic situation in the oral cavity. Biomaterials Science, 2018, 6, 1390-1402.	5.4	19
56	Multifunctional polymeric implant coatings based on gelatin, hyaluronic acid derivative and chain length-controlled poly(arginine). Materials Science and Engineering C, 2019, 104, 109898.	7.3	19
57	Modification of macroporous titanium tracheal implants with biodegradable structures: Tracking in vivo integration for determination of optimal in situ epithelialization conditions. Biotechnology and Bioengineering, 2012, 109, 2134-2146.	3.3	18
58	Immunomodulatory biomaterials and regenerative immunology. Future Science OA, 2016, 2, FSO146.	1.9	18
59	A composite Gelatin/hyaluronic acid hydrogel as an ECM mimic for developing mesenchymal stem cellâ€derived epithelial tissue patches. Journal of Tissue Engineering and Regenerative Medicine, 2020, 14, 45-57.	2.7	17
60	Controlling porous titanium/soft tissue interactions with an innovative surface chemical treatment: Responses of macrophages and fibroblasts. Materials Science and Engineering C, 2020, 112, 110845.	7.3	17
61	Nonâ€linear microscopy of smooth muscle cells in artificial extracellular matrices made of cellulose. Journal of Biophotonics, 2012, 5, 404-414.	2.3	16
62	Auxiliary Biomembranes as a Directional Delivery System To Control Biological Events in Cell-Laden Tissue-Engineering Scaffolds. ACS Omega, 2017, 2, 918-929.	3.5	16
63	Glycaemic control in diabetic rats treated with islet transplantation using plasma combined with hydroxypropylmethyl cellulose hydrogel. Acta Biomaterialia, 2020, 102, 259-272.	8.3	16
64	Titanium Microbeadâ€Based Porous Implants: Bead Size Controls Cell Response and Host Integration. Advanced Healthcare Materials, 2014, 3, 79-87.	7.6	14
65	3D Printed Biodegradable Polyurethaneurea Elastomer Recapitulates Skeletal Muscle Structure and Function. ACS Biomaterials Science and Engineering, 2021, 7, 5189-5205.	5.2	14
66	EDC/NHS cross-linked collagen foams as scaffolds for artificial corneal stroma. Journal of Biomaterials Science, Polymer Edition, 2007, 18, 1527-45.	3.5	14
67	From 3D printing to 3D bioprinting: the material properties of polymeric material and its derived bioink for achieving tissue specific architectures. Cell and Tissue Banking, 2022, 23, 417-440.	1.1	13
68	Development of surgical protocol for implantation of tracheal prostheses in sheep. Journal of Rehabilitation Research and Development, 2011, 48, 851.	1.6	12
69	Cell-laden hydrogel/titanium microhybrids: Site-specific cell delivery to metallic implants for improved integration. Acta Biomaterialia, 2016, 33, 301-310.	8.3	12
70	Controlling Incoming Macrophages to Implants: Responsiveness of Macrophages to Gelatin Micropatterns under M1/M2 Phenotype Defining Biochemical Stimulations. Advanced Biology, 2017, 1, 1700041.	3.0	12
71	Mitigating the foreign body response through â€˜immune-instructiveâ€™ biomaterials. Journal of Immunology and Regenerative Medicine, 2021, 12, 100040.	0.4	12
72	Polyarginine Decorated Polydopamine Nanoparticles With Antimicrobial Properties for Functionalization of Hydrogels. Frontiers in Bioengineering and Biotechnology, 2020, 8, 982.	4.1	11

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73	Polyarginine as a Simultaneous Antimicrobial, Immunomodulatory, and miRNA Delivery Agent within Polyanionic Hydrogel. Macromolecular Bioscience, 2022, 22, e2200043.	4.1	11
74	Basement membrane properties and their recapitulation in organ-on-chip applications. Materials Today Bio, 2022, 15, 100301.	5.5	11
75	Swall-E: A robotic in-vitro simulation of human swallowing. PLoS ONE, 2018, 13, e0208193.	2.5	10
76	Establishing contact between cell-laden hydrogels and metallic implants with a biomimetic adhesive for cell therapy supported implants. Biomedical Materials (Bristol), 2018, 13, 015015.	3.3	9
77	The effect of healing phenotype-inducing cytokine formulations within soft hydrogels on encapsulated monocytes and incoming immune cells. RSC Advances, 2019, 9, 21396-21404.	3.6	9
78	Basis of Image Analysis for Evaluating Cell Biomaterial Interaction Using Brightfield Microscopy. Cells Tissues Organs, 2021, 210, 77-104.	2.3	9
79	Editorial: Adverse Reactions to Biomaterials: State of the Art in Biomaterial Risk Assessment, Immunomodulation and in vitro Models for Biomaterial Testing. Frontiers in Bioengineering and Biotechnology, 2019, 7, 15.	4.1	8
80	Reference method for off-line analysis of nitrogen oxides in cell culture media by an ozone-based chemiluminescence detector. Analytical and Bioanalytical Chemistry, 2021, 413, 1383-1393.	3.7	8
81	Characterization of the Impact of Classical Cellâ€culture Media on the Response of Electrochemical Sensors. Electroanalysis, 2022, 34, 1201-1211.	2.9	8
82	Prospects and challenges in engineering functional respiratory epithelium for in vitro and in vivo applications. Microphysiological Systems, 0, 1, 1-1.	2.0	7
83	Adjustment of Cell Adhesion on Polyurethane Structures via Control of the Hard/Soft Segment Ratio. Macromolecular Materials and Engineering, 2020, 305, 2000093.	3.6	7
84	PVA/gelatin-based hydrogel coating of nickel-titanium alloy for improved tissue-implant interface. Applied Physics A: Materials Science and Processing, 2021, 127, 1.	2.3	7
85	Biomechanical and functional comparison of moulded and 3D printed medical silicones. Journal of the Mechanical Behavior of Biomedical Materials, 2021, 122, 104649.	3.1	7
86	Prediction of coating thickness for polyelectrolyte multilayers via machine learning. Scientific Reports, 2021, 11, 18702.	3.3	7
87	More on Implantation of an Artificial Larynx after Total Laryngectomy. New England Journal of Medicine, 2017, 376, e29.	27.0	6
88	How to Predict Adverse Immune Reactions to Implantable Biomaterials?. European Journal of Immunology, 2019, 49, 517-520.	2.9	5
89	Cell/Tissue Microenvironment Engineering and Monitoring in Tissue Engineering, Regenerative Medicine, and In Vitro Tissue Models. BioMed Research International, 2014, 2014, 1-2.	1.9	4
90	Multimodal Chemosensorâ€Based, Realâ€Time Biomaterial/Cell Interface Monitoring. Advanced Biology, 2018, 2, 1700236.	3.0	4

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91	Effect of Preprocessing on Performance of Neural Networks for Microscopy Image Classification. , 2020, , .		4
92	Improving the colonization and functions of Whartonâ€™s Jelly-derived mesenchymal stem cells by a synergetic combination of porous polyurethane scaffold with an albumin-derived hydrogel. Biomedical Materials (Bristol), 2021, 16, 015005.	3.3	4
93	Double thin film-based sandwich-cell carrier design for multicellular tissue engineering. Materials and Design, 2016, 95, 648-655.	7.0	3
94	Polyvinyl Alcohol-Based Cryogels: Tissue Engineering and Regenerative Medicine. , 2016, , 6743-6753.		3
95	Personalization of medical device interfaces: decreasing implant-related complications by modular coatings and immunoprofiling. Future Science OA, 2020, 6, FSO607.	1.9	3
96	Validation of Milner's visco-elastic theory of sintering for the generation of porous polymers with finely tuned morphology. Soft Matter, 2020, 16, 1810-1824.	2.7	3
97	Analysis of cell behavior on micropatterned surfaces by image processing algorithms. , 2017, , .		2
98	Using 3-D Printing and Bioprinting Technologies for Personalized Implants. , 2019, , 269-286.		2
99	In vitro two-step granuloma formation model for testing innate immune response to implants and coatings. , 2022, 138, 212872.		2
100	CARS and SHG microscopy of artificial bioengineered tissues. , 2010, , .		1
101	Multi-Scale Modification of Metallic Implants With Pore Gradients, Polyelectrolytes and Their Indirect Monitoring In vivo. Journal of Visualized Experiments, 2013, , e50533.	0.3	1
102	Electrohydrodynamic printing as a method to micropattern large titanium implant surfaces with photocrosslinkable structures. Biomedical Physics and Engineering Express, 2017, 3, 015002.	1.2	1
103	Discrete Modelling of Liver Cell Aggregation Using Partial Differential Equations. IFMBE Proceedings, 2020, , 379-384.	0.3	0
104	Introduction to biomaterials for tissue/organ regeneration. , 2020, , 3-17.		0