

Mark S Humayun

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117
papers

7,936
citations

42
h-index

88
g-index

138
ext. papers

9,453
ext. citations

5.9
avg, IF

5.7
L-index

#	Paper	IF	Citations
117	Visual perception in a blind subject with a chronic microelectronic retinal prosthesis. <i>Vision Research</i> , 2003 , 43, 2573-81	2.1	676
116	Interim results from the international trial of Second Sight [®] visual prosthesis. <i>Ophthalmology</i> , 2012 , 119, 779-88	7.3	524
115	Pattern electrical stimulation of the human retina. <i>Vision Research</i> , 1999 , 39, 2569-76	2.1	486
114	Visual perception elicited by electrical stimulation of retina in blind humans. <i>JAMA Ophthalmology</i> , 1996 , 114, 40-6		452
113	Retinal prosthesis. <i>Annual Review of Biomedical Engineering</i> , 2005 , 7, 361-401	12	359
112	Retinal prosthesis for the blind. <i>Survey of Ophthalmology</i> , 2002 , 47, 335-56	6.1	323
111	In vitro electrical properties for iridium oxide versus titanium nitride stimulating electrodes. <i>IEEE Transactions on Biomedical Engineering</i> , 2002 , 49, 1574-9	5	287
110	The Argus II epiretinal prosthesis system allows letter and word reading and long-term function in patients with profound vision loss. <i>British Journal of Ophthalmology</i> , 2013 , 97, 632-6	5.5	252
109	Repopulated microglia are solely derived from the proliferation of residual microglia after acute depletion. <i>Nature Neuroscience</i> , 2018 , 21, 530-540	25.5	223
108	Five-Year Safety and Performance Results from the Argus II Retinal Prosthesis System Clinical Trial. <i>Ophthalmology</i> , 2016 , 123, 2248-54	7.3	209
107	Visual performance using a retinal prosthesis in three subjects with retinitis pigmentosa. <i>American Journal of Ophthalmology</i> , 2007 , 143, 820-827	4.9	204
106	Microfabricated Implantable Parylene-Based Wireless Passive Intraocular Pressure Sensors. <i>Journal of Microelectromechanical Systems</i> , 2008 , 17, 1342-1351	2.5	190
105	Long-Term Results from an Epiretinal Prosthesis to Restore Sight to the Blind. <i>Ophthalmology</i> , 2015 , 122, 1547-54	7.3	183
104	Factors affecting perceptual thresholds in epiretinal prostheses. <i>Investigative Ophthalmology and Visual Science</i> , 2008 , 49, 2303-14		174
103	Subretinal implantation of retinal pigment epithelial cells derived from human embryonic stem cells: improved survival when implanted as a monolayer 2013 , 54, 5087-96		173
102	A bioengineered retinal pigment epithelial monolayer for advanced, dry age-related macular degeneration. <i>Science Translational Medicine</i> , 2018 , 10,	17.5	170
101	Perceptual thresholds and electrode impedance in three retinal prosthesis subjects. <i>IEEE Transactions on Neural Systems and Rehabilitation Engineering</i> , 2005 , 13, 201-6	4.8	156

100	Retinal prostheses: current clinical results and future needs. <i>Ophthalmology</i> , 2011 , 118, 2227-37	7.3	151
99	Retinal stimulation strategies to restore vision: Fundamentals and systems. <i>Progress in Retinal and Eye Research</i> , 2016 , 53, 21-47	20.5	147
98	Stem cell based therapies for age-related macular degeneration: The promises and the challenges. <i>Progress in Retinal and Eye Research</i> , 2015 , 48, 1-39	20.5	133
97	Feasibility study of a retinal prosthesis: spatial vision with a 16-electrode implant. <i>JAMA Ophthalmology</i> , 2009 , 127, 398-401		130
96	Retinal prosthesis. <i>IEEE Transactions on Biomedical Engineering</i> , 2014 , 61, 1412-24	5	129
95	Visually guided performance of simple tasks using simulated prosthetic vision. <i>Artificial Organs</i> , 2003 , 27, 1016-28	2.6	122
94	Visual Prosthesis. <i>Proceedings of the IEEE</i> , 2008 , 96, 1076-1084	14.3	115
93	Frequency and amplitude modulation have different effects on the percepts elicited by retinal stimulation 2012 , 53, 205-14		103
92	Mesh-supported submicron parylene-C membranes for culturing retinal pigment epithelial cells. <i>Biomedical Microdevices</i> , 2012 , 14, 659-67	3.7	101
91	A novel approach for subretinal implantation of ultrathin substrates containing stem cell-derived retinal pigment epithelium monolayer. <i>Ophthalmic Research</i> , 2012 , 48, 186-91	2.9	99
90	Improving the spatial resolution of epiretinal implants by increasing stimulus pulse duration. <i>Science Translational Medicine</i> , 2015 , 7, 318ra203	17.5	98
89	Real and virtual mobility performance in simulated prosthetic vision. <i>Journal of Neural Engineering</i> , 2007 , 4, S92-101	5	90
88	Predicting visual sensitivity in retinal prosthesis patients 2009 , 50, 1483-91		83
87	An in vitro model of a retinal prosthesis. <i>IEEE Transactions on Biomedical Engineering</i> , 2008 , 55, 1744-53	5	81
86	Limited inferior macular translocation for the treatment of subfoveal choroidal neovascularization secondary to age-related macular degeneration. <i>American Journal of Ophthalmology</i> , 2000 , 130, 419-28	4.9	76
85	Resolution of the epiretinal prosthesis is not limited by electrode size. <i>IEEE Transactions on Neural Systems and Rehabilitation Engineering</i> , 2011 , 19, 436-42	4.8	67
84	Wafer-Level Parylene Packaging With Integrated RF Electronics for Wireless Retinal Prostheses. <i>Journal of Microelectromechanical Systems</i> , 2010 , 19, 735-742	2.5	62
83	Photothermally Triggered Shape-Adaptable 3D Flexible Electronics. <i>Advanced Materials Technologies</i> , 2017 , 2, 1700120	6.8	56

82	Subretinal implantation of a monolayer of human embryonic stem cell-derived retinal pigment epithelium: a feasibility and safety study in Yucatán minipigs. <i>Graefes Archive for Clinical and Experimental Ophthalmology</i> , 2016 , 254, 1553-1565	3.8	55
81	Electrical stimulation in normal and retinal degeneration (rd1) isolated mouse retina. <i>Vision Research</i> , 2006 , 46, 3198-204	2.1	54
80	Flexible piezoelectric ultrasonic energy harvester array for bio-implantable wireless generator. <i>Nano Energy</i> , 2019 , 56, 216-224	17.1	54
79	Comparison of electrical stimulation thresholds in normal and retinal degenerated mouse retina. <i>Japanese Journal of Ophthalmology</i> , 2004 , 48, 345-9	2.6	53
78	Ten-Year Follow-up of a Blind Patient Chronically Implanted with Epiretinal Prosthesis Argus I. <i>Ophthalmology</i> , 2015 , 122, 2545-52.e1	7.3	47
77	Survival and Functionality of hESC-Derived Retinal Pigment Epithelium Cells Cultured as a Monolayer on Polymer Substrates Transplanted in RCS Rats 2016 , 57, 2877-87		46
76	Both electrical stimulation thresholds and SMI-32-immunoreactive retinal ganglion cell density correlate with age in S334ter line 3 rat retina. <i>Journal of Neurophysiology</i> , 2011 , 105, 2687-97	3.2	42
75	Electrical Stimulation of the Retina to Produce Artificial Vision. <i>Annual Review of Vision Science</i> , 2016 , 2, 273-294	8.2	40
74	The Bionic Eye: A Quarter Century of Retinal Prosthesis Research and Development. <i>Ophthalmology</i> , 2016 , 123, S89-S97	7.3	36
73	A reversible thermoresponsive sealant for temporary closure of ocular trauma. <i>Science Translational Medicine</i> , 2017 , 9,	17.5	34
72	Surface-Micromachined Parylene Dual Valves for On-Chip Unpowered Microflow Regulation. <i>Journal of Microelectromechanical Systems</i> , 2007 , 16, 223-231	2.5	32
71	Electrodeposited Iridium Oxide on Platinum Nanocones for Improving Neural Stimulation Microelectrodes. <i>Electrochimica Acta</i> , 2017 , 237, 152-159	6.7	30
70	The dependence of spectral impedance on disc microelectrode radius. <i>IEEE Transactions on Biomedical Engineering</i> , 2008 , 55, 1457-60	5	30
69	Interphase gap as a means to reduce electrical stimulation thresholds for epiretinal prostheses. <i>Journal of Neural Engineering</i> , 2014 , 11, 016007	5	29
68	Toward a wide-field retinal prosthesis. <i>Journal of Neural Engineering</i> , 2009 , 6, 035002	5	28
67	Ultrasound-Induced Wireless Energy Harvesting for Potential Retinal Electrical Stimulation Application. <i>Advanced Functional Materials</i> , 2019 , 29, 1902522	15.6	27
66	Surgical Method for Implantation of a Biosynthetic Retinal Pigment Epithelium Monolayer for Geographic Atrophy: Experience from a Phase 1/2a Study. <i>Ophthalmology Retina</i> , 2020 , 4, 264-273	3.8	23
65	Preservation of retinotopic map in retinal degeneration. <i>Experimental Eye Research</i> , 2012 , 98, 88-96	3.7	22

64	Microdevice-based cell therapy for age-related macular degeneration. <i>Developments in Ophthalmology</i> , 2014 , 53, 155-66		21
63	An Innovative Surgical Technique for Subretinal Transplantation of Human Embryonic Stem Cell-Derived Retinal Pigmented Epithelium in Yucatan Mini Pigs: Preliminary Results. <i>Ophthalmic Surgery Lasers and Imaging Retina</i> , 2016 , 47, 342-51	1.4	20
62	Development of a new tissue injector for subretinal transplantation of human embryonic stem cell derived retinal pigmented epithelium. <i>International Journal of Retina and Vitreous</i> , 2017 , 3, 41	2.9	19
61	Reversible Bioadhesives Using Tannic Acid Primed Thermally-Responsive Polymers. <i>Advanced Functional Materials</i> , 2020 , 30, 1907478	15.6	19
60	Flexible Parylene-based Microelectrode Technology for Intraocular Retinal Prostheses 2006 ,		18
59	One-Year Feasibility Study of Replenish MicroPump for Intravitreal Drug Delivery: A Pilot Study. <i>Translational Vision Science and Technology</i> , 2014 , 3, 8	3.3	17
58	Comparison of reaction response time between hand and foot controlled devices in simulated microsurgical testing. <i>BioMed Research International</i> , 2014 , 2014, 769296	3	17
57	Enhanced Depth Navigation Through Augmented Reality Depth Mapping in Patients with Low Vision. <i>Scientific Reports</i> , 2019 , 9, 11230	4.9	15
56	In Vivo Visualization of Eye Vasculature Using Super-Resolution Ultrasound Microvessel Imaging. <i>IEEE Transactions on Biomedical Engineering</i> , 2020 , 67, 2870-2880	5	13
55	Temporal Neuromodulation of Retinal Ganglion Cells by Low-Frequency Focused Ultrasound Stimulation. <i>IEEE Transactions on Neural Systems and Rehabilitation Engineering</i> , 2018 , 26, 969-976	4.8	12
54	Light-triggered modulation of cellular electrical activity by ruthenium diimine nanoswitches. <i>ACS Chemical Neuroscience</i> , 2013 , 4, 585-93	5.7	12
53	Blood velocity measurement in the posterior segment of the rabbit eye using combined spectral Doppler and power Doppler ultrasound. <i>Graefes Archive for Clinical and Experimental Ophthalmology</i> , 2010 , 248, 93-101	3.8	12
52	Limited macular translocation: current concepts. <i>Ophthalmology Clinics of North America</i> , 2002 , 15, 425-36		10
51	Retina-electrode interface properties and vision restoration by two generations of retinal prostheses in one patient-one in each eye. <i>Journal of Neural Engineering</i> , 2020 , 17, 026020	5	9
50	Assessment of Safety and Functional Efficacy of Stem Cell-Based Therapeutic Approaches Using Retinal Degenerative Animal Models. <i>Stem Cells International</i> , 2017 , 2017, 9428176	5	8
49	In vivo detection of hESC-RPE cells via confocal near-infrared fundus reflectance. <i>Ophthalmic Surgery Lasers and Imaging Retina</i> , 2013 , 44, 380-4	1.4	8
48	NorLeu3A(1-7) Accelerates Clear Corneal Full Thickness Wound Healing 2016 , 57, 2187-94		8
47	evaluation of posterior eye elasticity using shaker-based optical coherence elastography. <i>Experimental Biology and Medicine</i> , 2020 , 245, 282-288	3.7	7

46	Spatial Variations in Vitreous Oxygen Consumption. <i>PLoS ONE</i> , 2016 , 11, e0149961	3.7	7
45	Photoacoustic and piezo-ultrasound hybrid-induced energy transfer for 3D twining wireless multifunctional implants. <i>Energy and Environmental Science</i> , 2021 , 14, 1490-1505	35.4	7
44	A new immunodeficient retinal dystrophic rat model for transplantation studies using human-derived cells. <i>Graefes Archive for Clinical and Experimental Ophthalmology</i> , 2018 , 256, 2113-2125	3.8	7
43	Co-grafts of Human Embryonic Stem Cell Derived Retina Organoids and Retinal Pigment Epithelium for Retinal Reconstruction in Immunodeficient Retinal Degenerate Royal College of Surgeons Rats. <i>Frontiers in Neuroscience</i> , 2021 , 15, 752958	5.1	6
42	Subretinal Implantation of a Human Embryonic Stem Cell-Derived Retinal Pigment Epithelium Monolayer in a Porcine Model. <i>Advances in Experimental Medicine and Biology</i> , 2019 , 1185, 569-574	3.6	6
41	Histopathologic Assessment of Optic Nerves and Retina From a Patient With Chronically Implanted Argus II Retinal Prosthesis System. <i>Translational Vision Science and Technology</i> , 2019 , 8, 31	3.3	5
40	Implantable Unpowered Parylene MEMS Intraocular Pressure Sensor 2006 ,		5
39	AN INTRAOCULAR CAMERA FOR RETINAL PROSTHESES: RESTORING SIGHT TO THE BLIND. <i>Advanced Series in Applied Physics</i> , 2010 , 385-429		5
38	Parylene scaffold for cartilage lesion. <i>Biomedical Microdevices</i> , 2017 , 19, 26	3.7	4
37	Systems design of a high resolution retinal prosthesis 2008 ,		4
36	Architecture Tradeoffs in High Density Microstimulators for Retinal Prosthesis 2005 ,		4
35	One-Year Follow-Up in a Phase 1/2a Clinical Trial of an Allogeneic RPE Cell Bioengineered Implant for Advanced Dry Age-Related Macular Degeneration. <i>Translational Vision Science and Technology</i> , 2021 , 10, 13	3.3	4
34	Xeno-free cryopreservation of adherent retinal pigmented epithelium yields viable and functional cells in vitro and in vivo. <i>Scientific Reports</i> , 2021 , 11, 6286	4.9	4
33	A Novel Racing Array Transducer for Noninvasive Ultrasonic Retinal Stimulation: A Simulation Study. <i>Sensors</i> , 2019 , 19,	3.8	3
32	A Passive Refillable Intraocular MEMS Drug Delivery Device 2006 ,		3
31	Survival of an HLA-mismatched, bioengineered RPE implant in dry age-related macular degeneration.. <i>Stem Cell Reports</i> , 2022 ,	8	3
30	MEASUREMENT OF THE HYDRAULIC CONDUCTIVITY OF THE VITREOUS HUMOR. <i>Journal of Porous Media</i> , 2020 , 23, 195-206	2.9	3
29	Super-resolution Ultrasound Localization Microscopy for Visualization of the Ocular Blood Flow. <i>IEEE Transactions on Biomedical Engineering</i> , 2021 , PP,	5	3

28	High resolution optical coherence elastography of retina under prosthetic electrode. <i>Quantitative Imaging in Medicine and Surgery</i> , 2021 , 11, 918-927	3.6	3
27	Argus [®] II Retinal Prosthesis System 2017 , 49-63		3
26	Ultrasonic elastography to assess biomechanical properties of the optic nerve head and peripapillary sclera of the eye. <i>Ultrasonics</i> , 2021 , 110, 106263	3.5	3
25	Tissue Engineering Strategies for Retina Regeneration.. <i>Applied Sciences (Switzerland)</i> , 2021 , 11,	2.6	3
24	Retinal Prostheses: The Argus System. <i>Technology and Innovation</i> , 2018 , 19, 605-611	0.7	3
23	Retinal Prostheses: A Clinical Perspective. <i>Journal of Vitreoretinal Diseases</i> , 2017 , 1, 204-213	0.7	2
22	Implantation of multiple suprachoroidal electrode arrays in rabbits. <i>Journal of Current Ophthalmology</i> , 2018 , 30, 68-73	2	2
21	Wireless Implantable Intraocular Pressure Sensor with Parylene-Oil-Encapsulation and Forward-Angled RF Coil 2019 ,		2
20	Noninvasive Ultrasound Retinal Stimulation for Vision Restoration at High Spatiotemporal Resolution. <i>BME Frontiers</i> , 2022 , 2022, 1-13	4.4	2
19	Retinal Prostheses: Bioengineering Considerations. <i>Essentials in Ophthalmology</i> , 2018 , 23-40	0.2	1
18	Retinal Prostheses: A Brief History. <i>Essentials in Ophthalmology</i> , 2018 , 1-22	0.2	1
17	Towards a Modular 32 x 32 Pixel Stimulator for Retinal Prosthesis 2006 ,		1
16	Blocking Ocular Sympathetic Activity Inhibits Choroidal Neovascularization.. <i>Frontiers in Neuroscience</i> , 2021 , 15, 780841	5.1	1
15	NAP1051, a Lipoxin A4 Biomimetic Analogue, Demonstrates Antitumor Activity Against the Tumor Microenvironment. <i>Molecular Cancer Therapeutics</i> , 2021 , 20, 2384-2397	6.1	1
14	First Human Results With the 256 Channel Intelligent Micro Implant Eye (IMIE 256). <i>Translational Vision Science and Technology</i> , 2021 , 10, 14	3.3	1
13	Thomas A. Swift [®] Electric Rifle Injuries to the Eye and Ocular Adnexa: The Management of Complex Trauma. <i>Ophthalmology Retina</i> , 2019 , 3, 258-269	3.8	1
12	Restoring Color Perception to the Blind: An Electrical Stimulation Strategy of Retina in Patients with End-stage Retinitis Pigmentosa. <i>Ophthalmology</i> , 2021 , 128, 453-462	7.3	1
11	Advanced Retina Implants.. <i>Ophthalmology Retina</i> , 2022 ,	3.8	1

- 10 Argus II Prosthetic Vision **2020**, 463-486 0
- 9 In Vivo Experimental and Analytical Studies for Bevacizumab Diffusion Coefficient Measurement in the Rabbit Vitreous Humor. *Journal of Heat Transfer*, **2021**, 143, 032101 1.8 0
- 8 Scaffolds for Cell Transplantation **2017**, 45-54
- 7 Biomedical Applications: Ultrasound-Induced Wireless Energy Harvesting for Potential Retinal Electrical Stimulation Application (Adv. Funct. Mater. 33/2019). *Advanced Functional Materials*, **2019**, 29, 1970231 15.6
- 6 Biomaterials and Scaffolds for Cell Replacement Therapy. *Pancreatic Islet Biology*, **2019**, 109-140 0.4
- 5 Whole vitreous humor dissection for vitreodynamic analysis. *Journal of Visualized Experiments*, **2015**, e52759 1.6
- 4 Focused ultrasound stimulation on meibomian glands for the treatment of evaporative dry eye. *Experimental Biology and Medicine*, **2021**, 15353702211052035 3.7
- 3 Stem Cell-Derived Retinal Cells for Transplantation **2020**, 423-437
- 2 Retinal Prosthesis **2020**, 567-580
- 1 The Development of Visual Prosthetic Devices to Restore Vision to the Blind **2018**, 1223-1234