Igor Efimov

List of Publications by Year in descending order

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316 papers	13,783 citations	16411 64 h-index	31759 101 g-index
344 all docs	344 docs citations	344 times ranked	11266 citing authors

#	Article	IF	Citations
1	3D multifunctional integumentary membranes for spatiotemporal cardiac measurements and stimulation across the entire epicardium. Nature Communications, 2014, 5, 3329.	5.8	485
2	Mechanisms of Cardiac and Renal Dysfunction in Patients Dying of Sepsis. American Journal of Respiratory and Critical Care Medicine, 2013, 187, 509-517.	2.5	392
3	Optical Imaging of the Heart. Circulation Research, 2004, 95, 21-33.	2.0	353
4	Application of blebbistatin as an excitationâ€“contraction uncoupler for electrophysiologic study of rat and rabbit hearts. Heart Rhythm, 2007, 4, 619-626.	0.3	334
5	Virtual Electrodeâ€“Induced Phase Singularity. Circulation Research, 1998, 82, 918-925.	2.0	308
6	Transmural Dispersion of Repolarization in Failing and Nonfailing Human Ventricle. Circulation Research, 2010, 106, 981-991.	2.0	282
7	Capacitively coupled arrays of multiplexed flexible silicon transistors for long-term cardiac electrophysiology. Nature Biomedical Engineering, 2017, 1, .	11.6	210
8	Diabetes increases mortality after myocardial infarction by oxidizing CaMKII. Journal of Clinical Investigation, 2013, 123, 1262-1274.	3.9	203
9	Oxidized CaMKII causes cardiac sinus node dysfunction in mice. Journal of Clinical Investigation, 2011, 121, 3277-3288.	3.9	193
10	Processing and analysis of cardiac optical mapping data obtained with potentiometric dyes. American Journal of Physiology - Heart and Circulatory Physiology, 2012, 303, H753-H765.	1.5	191
11	Optical mapping of repolarization and refractoriness from intact hearts.. Circulation, 1994, 90, 1469-1480.	1.6	180
12	Catheter-integrated soft multilayer electronic arrays for multiplexed sensing and actuation during cardiac surgery. Nature Biomedical Engineering, 2020, 4, 997-1009.	11.6	175
13	Virtual Electrodes and Deexcitation: New Insights into Fibrillation Induction and Defibrillation. Journal of Cardiovascular Electrophysiology, 2000, 11, 339-353.	0.8	173
14	Computer Three-Dimensional Reconstruction of the Sinoatrial Node. Circulation, 2005, 111, 846-854.	1.6	163
15	Fully implantable and bioresorbable cardiac pacemakers without leads or batteries. Nature Biotechnology, 2021, 39, 1228-1238.	9.4	163
16	4D embryonic cardiography using gated optical coherence tomography. Optics Express, 2006, 14, 736.	1.7	153
17	Optical Mapping of the Isolated Coronary-Perfused Human Sinus Node. Journal of the American College of Cardiology, 2010, 56, 1386-1394.	1.2	151
18	Wireless, battery-free, fully implantable multimodal and multisite pacemakers for applications in small animal models. Nature Communications, 2019, 10, 5742.	5.8	146

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19	Site of Origin and Molecular Substrate of Atrioventricular Junctional Rhythm in the Rabbit Heart. Circulation Research, 2003, 93, 1102-1110.	2.0	144
20	The Role of Electroporation in Defibrillation. Circulation Research, 2000, 87, 797-804.	2.0	143
21	Conduction Remodeling in Human End-Stage Nonischemic Left Ventricular Cardiomyopathy. Circulation, 2012, 125, 1835-1847.	1.6	142
22	Materials and Fractal Designs for 3D Multifunctional Integumentary Membranes with Capabilities in Cardiac Electrotherapy. Advanced Materials, 2015, 27, 1731-1737.	11.1	141
23	Transmembrane Voltage Changes Produced by Real and Virtual Electrodes During Monophasic Defibrillation Shock Delivered by an Implantable Electrode. Journal of Cardiovascular Electrophysiology, 1997, 8, 1031-1045.	0.8	137
24	Transmural Heterogeneity and Remodeling of Ventricular Excitation-Contraction Coupling in Human Heart Failure. Circulation, 2011, 123, 1881-1890.	1.6	134
25	Intermittent drivers anchoring to structural heterogeneities as a major pathophysiological mechanism of human persistent atrial fibrillation. Journal of Physiology, 2016, 594, 2387-2398.	1.3	132
26	Differences Between Left and Right Ventricular Chamber Geometry Affect Cardiac Vulnerability to Electric Shocks. Circulation Research, 2005, 97, 168-175.	2.0	130
27	Virtual Electrodeâ€“Induced Reexcitation. Circulation Research, 1999, 85, 1056-1066.	2.0	124
28	Pitx2 modulates a Tbx5 -dependent gene regulatory network to maintain atrial rhythm. Science Translational Medicine, 2016, 8, 354ra115.	5.8	123
29	Connexins in the Sinoatrial and Atrioventricular Nodes. , 2006, 42, 175-197.		117
30	Structural and Functional Evidence for Discrete Exit Pathways That Connect the Canine Sinoatrial Node and Atria. Circulation Research, 2009, 104, 915-923.	2.0	114
31	Photocurable bioresorbable adhesives as functional interfaces between flexible bioelectronic devices and soft biological tissues. Nature Materials, 2021, 20, 1559-1570.	13.3	114
32	Effects of KATP channel openers diazoxide and pinacidil in coronary-perfused atria and ventricles from failing and non-failing human hearts. Journal of Molecular and Cellular Cardiology, 2011, 51, 215-225.	0.9	109
33	3D absolute shape measurement of live rabbit hearts with a superfast two-frequency phase-shifting technique. Optics Express, 2013, 21, 5822.	1.7	107
34	Computer Three-Dimensional Reconstruction of the Atrioventricular Node. Circulation Research, 2008, 102, 975-985.	2.0	106
35	Resolution of Established Cardiac Hypertrophy and Fibrosis and Prevention of Systolic Dysfunction in a Transgenic Rabbit Model of Human Cardiomyopathy Through Thiol-Sensitive Mechanisms. Circulation, 2009, 119, 1398-1407.	1.6	106
36	Stretchable, Multiplexed pH Sensors With Demonstrations on Rabbit and Human Hearts Undergoing Ischemia. Advanced Healthcare Materials, 2014, 3, 59-68.	3.9	105

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37	Subthreshold stimulation of Purkinje fibers interrupts ventricular tachycardia in intact hearts. Experimental study with voltage-sensitive dyes and imaging techniques.. Circulation Research, 1994, 74, 604-619.	2.0	99
38	Human Organotypic Cultured Cardiac Slices: New Platform For High Throughput Preclinical Human Trials. Scientific Reports, 2016, 6, 28798.	1.6	98
39	Dynamics of rotating vortices in the Beeler-Reuter model of cardiac tissue. Chaos, Solitons and Fractals, 1995, 5, 513-526.	2.5	97
40	Molecular architecture of the human specialised atrioventricular conduction axis. Journal of Molecular and Cellular Cardiology, 2011, 50, 642-651.	0.9	97
41	Evidence of Three-Dimensional Scroll Waves with Ribbon-Shaped Filament as a Mechanism of Ventricular Tachycardia in the Isolated Rabbit Heart. Journal of Cardiovascular Electrophysiology, 1999, 10, 1452-1462.	0.8	96
42	Virtual electrode polarization in the far field: implications for external defibrillation. American Journal of Physiology - Heart and Circulatory Physiology, 2000, 279, H1055-H1070.	1.5	94
43	Canonical Wnt Signaling Regulates Atrioventricular Junction Programming and Electrophysiological Properties. Circulation Research, 2015, 116, 398-406.	2.0	90
44	A transient, closed-loop network of wireless, body-integrated devices for autonomous electrotherapy. Science, 2022, 376, 1006-1012.	6.0	90
45	Remodeling of Calcium Handling in Human Heart Failure. Advances in Experimental Medicine and Biology, 2012, 740, 1145-1174.	0.8	88
46	Electroporation of the heart. Europace, 2005, 7, S146-S154.	0.7	86
47	A coupled-clock system drives the automaticity of human sinoatrial nodal pacemaker cells. Science Signaling, 2018, 11, .	1.6	85
48	Anatomy and Electrophysiology of the Human AV Node. PACE - Pacing and Clinical Electrophysiology, 2010, 33, 754-762.	0.5	84
49	Differential KATP channel pharmacology in intact mouse heart. Journal of Molecular and Cellular Cardiology, 2010, 48, 152-160.	0.9	84
50	Functional anatomy of the murine sinus node: high-resolution optical mapping of ankyrin-B heterozygous mice. American Journal of Physiology - Heart and Circulatory Physiology, 2010, 299, H482-H491.	1.5	82
51	High-Resolution, Three-dimensional Fluorescent Imaging Reveals Multilayer Conduction Pattern in the Atrioventricular Node. Circulation, 1998, 98, 54-57.	1.6	81
52	Direct Evidence of the Role of Virtual Electrode-Induced Phase Singularity in Success and Failure of Defibrillation. Journal of Cardiovascular Electrophysiology, 2000, 11, 861-868.	0.8	81
53	Connexin 43 Expression Delineates Two Discrete Pathways in the Human Atrioventricular Junction. Anatomical Record, 2008, 291, 204-215.	0.8	81
54	Mechanisms of unpinning and termination of ventricular tachycardia. American Journal of Physiology - Heart and Circulatory Physiology, 2006, 291, H184-H192.	1.5	78

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55	Virtual Electrode Effects in Transvenous Defibrillation-Modulation by Structure and Interface: Evidence from Bidomain Simulations and Optical Mapping. Journal of Cardiovascular Electrophysiology, 1998, 9, 949-961.	0.8	76
56	Widespread Down-Regulation of Cardiac Mitochondrial and Sarcomeric Genes in Patients With Sepsis*. Critical Care Medicine, 2017, 45, 407-414.	0.4	76
57	Effects of sterile pericarditis on connexins 40 and 43 in the atria: correlation with abnormal conduction and atrial arrhythmias. American Journal of Physiology - Heart and Circulatory Physiology, 2007, 293, H1231-H1241.	1.5	75
58	Minimum Information about a Cardiac Electrophysiology Experiment (MICEE): Standardised reporting for model reproducibility, interoperability, and data sharing. Progress in Biophysics and Molecular Biology, 2011, 107, 4-10.	1.4	75
59	Arrhythmogenic Remodeling of Î² ₂ Versus Î² ₁ Adrenergic Signaling in the Human Failing Heart. Circulation: Arrhythmia and Electrophysiology, 2015, 8, 409-419.	2.1	73
60	The Role of Photon Scattering in Optical Signal Distortion during Arrhythmia and Defibrillation. Biophysical Journal, 2007, 93, 3714-3726.	0.2	71
61	Mitochondrial dysfunction causing cardiac sodium channel downregulation in cardiomyopathy. Journal of Molecular and Cellular Cardiology, 2013, 54, 25-34.	0.9	71
62	Postganglionic nerve stimulation induces temporal inhibition of excitability in rabbit sinoatrial node. American Journal of Physiology - Heart and Circulatory Physiology, 2006, 291, H612-H623.	1.5	68
63	Activation and Repolarization Patterns are Governed by Different Structural Characteristics of Ventricular Myocardium:.. Journal of Cardiovascular Electrophysiology, 1996, 7, 512-530.	0.8	67
64	A technical review of optical mapping of intracellular calcium within myocardial tissue. American Journal of Physiology - Heart and Circulatory Physiology, 2016, 310, H1388-H1401.	1.5	67
65	The role of dynamic instability and wavelength in arrhythmia maintenance as revealed by panoramic imaging with blebbistatin vs. 2,3-butanedione monoxime. American Journal of Physiology - Heart and Circulatory Physiology, 2012, 302, H262-H269.	1.5	66
66	Structure-function relationship in the AV junction. The Anatomical Record, 2004, 280A, 952-965.	2.3	65
67	Localization of Na + Channel Isoforms at the Atrioventricular Junction and Atrioventricular Node in the Rat. Circulation, 2006, 114, 1360-1371.	1.6	65
68	Complex Interactions Between the Sinoatrial Node and Atrium During Reentrant Arrhythmias in the Canine Heart. Circulation, 2010, 122, 782-789.	1.6	64
69	Identification of atrial fibrillation associated genes and functional non-coding variants. Nature Communications, 2019, 10, 4755.	5.8	64
70	Innervation and Neuronal Control of the Mammalian Sinoatrial Node a Comprehensive Atlas. Circulation Research, 2021, 128, 1279-1296.	2.0	64
71	cAMP-dependent regulation of HCN4 controls the tonic entrainment process in sinoatrial node pacemaker cells. Nature Communications, 2020, 11, 5555.	5.8	63
72	Rabbit-specific ventricular model of cardiac electrophysiological function including specialized conduction system. Progress in Biophysics and Molecular Biology, 2011, 107, 90-100.	1.4	62

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73	Cx43 and Dual-Pathway Electrophysiology of the Atrioventricular Node and Atrioventricular Nodal Reentry. Circulation Research, 2003, 92, 469-475.	2.0	61
74	Quantification of cardiac fiber orientation using optical coherence tomography. Journal of Biomedical Optics, 2008, 13, 030505.	1.4	61
75	Panoramic imaging reveals basic mechanisms of induction and termination of ventricular tachycardia in rabbit heart with chronic infarction: Implications for low-voltage cardioversion. Heart Rhythm, 2009, 6, 87-97.	0.3	61
76	mRNA Expression Levels in Failing Human Hearts Predict Cellular Electrophysiological Remodeling: A Population-Based Simulation Study. PLoS ONE, 2013, 8, e56359.	1.1	61
77	Virtual electrode theory explains pacing threshold increase caused by cardiac tissue damage. American Journal of Physiology - Heart and Circulatory Physiology, 2004, 286, H2183-H2194.	1.5	59
78	Transient Local Injury Current in Right Ventricular Electrogram After Implantable Cardioverter-Defibrillator Shock Predicts Heart Failure Progression. Journal of the American College of Cardiology, 2009, 54, 822-828.	1.2	58
79	RHYTHM: An Open Source Imaging Toolkit for Cardiac Panoramic Optical Mapping. Scientific Reports, 2018, 8, 2921.	1.6	58
80	Multiple monophasic shocks improve electrotherapy of ventricular tachycardia in a rabbit model of chronic infarction. Heart Rhythm, 2009, 6, 1020-1027.	0.3	54
81	High-Resolution Fluorescent Imaging Does Not Reveal a Distinct Atrioventricular Nodal Anterior Input Channel (Fast Pathway) in the Rabbit Heart During Sinus Rhythm. Journal of Cardiovascular Electrophysiology, 1997, 8, 295-306.	0.8	52
82	A Novel Low-Energy Electrotherapy That Terminates Ventricular Tachycardia With Lower Energy Than a Biphasic Shock When Antitachycardia Pacing Fails. Journal of the American College of Cardiology, 2012, 60, 2393-2398.	1.2	52
83	Enhanced Transmural Fiber Rotation and Connexin 43 Heterogeneity Are Associated With an Increased Upper Limit of Vulnerability in a Transgenic Rabbit Model of Human Hypertrophic Cardiomyopathy. Circulation Research, 2007, 101, 1049-1057.	2.0	50
84	Optical Mapping of the Human Atrioventricular Junction. Circulation, 2008, 117, 1474-1477.	1.6	50
85	Termination of sustained atrial flutter and fibrillation using low-voltage multiple-shock therapy. Heart Rhythm, 2011, 8, 101-108.	0.3	50
86	Patient-specific flexible and stretchable devices for cardiac diagnostics and therapy. Progress in Biophysics and Molecular Biology, 2014, 115, 244-251.	1.4	50
87	Optical Coherence Tomography as a Tool for Measuring Morphogenetic Deformation of the Looping Heart. Anatomical Record, 2007, 290, 1057-1068.	0.8	49
88	Mapping Cardiac Pacemaker Circuits. Circulation Research, 2010, 106, 255-271.	2.0	49
89	Transmural APD gradient synchronizes repolarization in the human left ventricular wall. Cardiovascular Research, 2015, 108, 188-196.	1.8	49
90	Gender Differences in Electrophysiological Gene Expression in Failing and Non-Failing Human Hearts. PLoS ONE, 2013, 8, e54635.	1.1	48

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91	Optical Mapping of Action Potentials and Calcium Transients in the Mouse Heart. Journal of Visualized Experiments, 2011, , .	0.2	47
92	Ultrathin Injectable Sensors of Temperature, Thermal Conductivity, and Heat Capacity for Cardiac Ablation Monitoring. Advanced Healthcare Materials, 2016, 5, 373-381.	3.9	47
93	Anatomic Localization and Autonomic Modulation of Atrioventricular Junctional Rhythm in Failing Human Hearts. Circulation: Arrhythmia and Electrophysiology, 2011, 4, 515-525.	2.1	46
94	Three-dimensional panoramic imaging of cardiac arrhythmias in rabbit heart. Journal of Biomedical Optics, 2007, 12, 044019.	1.4	45
95	Quantitative Panoramic Imaging of Epicardial Electrical Activity. Annals of Biomedical Engineering, 2008, 36, 1649-1658.	1.3	45
96	Direct reprogramming of mouse fibroblasts to cardiomyocyte-like cells using Yamanaka factors on engineered poly(ethylene glycol) (PEG) hydrogels. Biomaterials, 2013, 34, 6559-6571.	5.7	45
97	c-Src Kinase Inhibition Reduces Arrhythmia Inducibility and Connexin43 Dysregulation After Myocardial Infarction. Journal of the American College of Cardiology, 2014, 63, 928-934.	1.2	45
98	Quantification of the Transmural Dynamics of Atrial Fibrillation by Simultaneous Endocardial and Epicardial Optical Mapping in an Acute Sheep Model. Circulation: Arrhythmia and Electrophysiology, 2015, 8, 456-465.	2.1	44
99	Evidence of Superior and Inferior Sinoatrial Nodes in the Mammalian Heart. JACC: Clinical Electrophysiology, 2020, 6, 1827-1840.	1.3	44
100	Hypoxia and Hypothermia Enhance Spatial Heterogeneities of Repolarization in Guinea Pig Hearts:.. Journal of Cardiovascular Electrophysiology, 1998, 9, 164-183.	0.8	43
101	Tuning the electrical properties of the heart by differential trafficking of KATP ion channel complexes. Journal of Cell Science, 2014, 127, 2106-19.	1.2	43
102	Effects of 2,3-Butanedione Monoxime on Atrial?Atrioventricular Nodal Conduction in Isolated Rabbit Heart. Journal of Cardiovascular Electrophysiology, 1997, 8, 790-802.	0.8	42
103	Effects of electroporation on optically recorded transmembrane potential responses to high-intensity electrical shocks. American Journal of Physiology - Heart and Circulatory Physiology, 2004, 286, H412-H418.	1.5	42
104	Low-Energy Multistage Atrial Defibrillation Therapy Terminates Atrial Fibrillation With Less Energy Than a Single Shock. Circulation: Arrhythmia and Electrophysiology, 2011, 4, 917-925.	2.1	42
105	Threeâ€dimensional mechanisms of increased vulnerability to electric shocks in myocardial infarction: Altered virtual electrode polarizations and conduction delay in the periâ€infarct zone. Journal of Physiology, 2012, 590, 4537-4551.	1.3	42
106	Structureâ€“Function Relationship in the Sinus and Atrioventricular Nodes. Pediatric Cardiology, 2012, 33, 890-899.	0.6	42
107	Hibernator Citellus undulatus maintains safe cardiac conduction and is protected against tachyarrhythmias during extreme hypothermia: Possible role of Cx43 and Cx45 up-regulation. Heart Rhythm, 2005, 2, 966-975.	0.3	41
108	An activation-repolarization time metric to predict localized regions of high susceptibility to reentry. Heart Rhythm, 2015, 12, 1644-1653.	0.3	40

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109	Feasibility of a semi-automated method for cardiac conduction velocity analysis of high-resolution activation maps. Computers in Biology and Medicine, 2015, 65, 177-183.	3.9	40
110	At the Atrioventricular Crossroads: Dual Pathway Electrophysiology in the Atrioventricular Node and its underlying Heterogeneities. Arrhythmia and Electrophysiology Review, 2017, 6, 179.	1.3	40
111	Present Understanding of Shock Polarity for Internal Defibrillation: The Obvious and Non-Obvious Clinical Implications. PACE - Pacing and Clinical Electrophysiology, 2006, 29, 885-891.	0.5	39
112	Electrophysiological mechanisms of antiarrhythmic protection during hypothermia in winter hibernating versus nonhibernating mammals. Heart Rhythm, 2008, 5, 1587-1596.	0.3	39
113	Mapping cardiac surface mechanics with structured light imaging. American Journal of Physiology - Heart and Circulatory Physiology, 2012, 303, H712-H720.	1.5	39
114	Role of angiotensin-converting enzyme 2 and pericytes in cardiac complications of COVID-19 infection. American Journal of Physiology - Heart and Circulatory Physiology, 2020, 319, H1059-H1068.	1.5	39
115	Mechanisms of make and break excitation revisited: paradoxical break excitation during diastolic stimulation. American Journal of Physiology - Heart and Circulatory Physiology, 2002, 282, H565-H575.	1.5	37
116	Mechanisms of shock-induced arrhythmogenesis during acute global ischemia. American Journal of Physiology - Heart and Circulatory Physiology, 2002, 282, H2141-H2151.	1.5	37
117	Reduced response to IKr blockade and altered hERG1a/1b stoichiometry in human heart failure. Journal of Molecular and Cellular Cardiology, 2016, 96, 82-92.	0.9	37
118	Specialized impulse conduction pathway in the alligator heart. ELife, 2018, 7, .	2.8	37
119	Multiparametric Optical Mapping of the Langendorff-perfused Rabbit Heart. Journal of Visualized Experiments, 2011, , .	0.2	36
120	Long-term culture of HL-1 cardiomyocytes in modular poly(ethylene glycol) microsphere-based scaffolds crosslinked in the phase-separated state. Acta Biomaterialia, 2012, 8, 31-40.	4.1	36
121	Cardioversion. Circulation, 2009, 120, 1623-1632.	1.6	35
122	Relation of the Atrial Input Sites to the Dual Atrioventricular Nodal Pathways:.. Journal of Cardiovascular Electrophysiology, 1997, 8, 1133-1144.	0.8	34
123	Atrioventricular conduction with and without AV nodal delay: two pathways to the bundle of His in the rabbit heart. American Journal of Physiology - Heart and Circulatory Physiology, 2007, 293, H1122-H1130.	1.5	34
124	Atria are more susceptible to electroporation than ventricles: Implications for atrial stunning, shock-induced arrhythmia and defibrillation failure. Heart Rhythm, 2008, 5, 593-604.	0.3	34
125	The mechanisms of the vulnerable window: the role of virtual electrodes and shock polarity. Canadian Journal of Physiology and Pharmacology, 2001, 79, 25-33.	0.7	33
126	Hypothermia-induced spatially discordant action potential duration alternans and arrhythmogenesis in nonhibernating versus hibernating mammals. American Journal of Physiology - Heart and Circulatory Physiology, 2012, 303, H1035-H1046.	1.5	33

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127	Pathways to clinical CLARITY: volumetric analysis of irregular, soft, and heterogeneous tissues in development and disease. Scientific Reports, 2017, 7, 5899.	1.6	33
128	Multifunctional Flexible Biointerfaces for Simultaneous Colocalized Optophysiology and Electrophysiology. Advanced Functional Materials, 2020, 30, 1910027.	7.8	33
129	Dynamics of virtual electrode-induced scroll-wave reentry in a 3D bidomain model. American Journal of Physiology - Heart and Circulatory Physiology, 2004, 287, H1570-H1581.	1.5	32
130	Spatiotemporal control of heart rate in a rabbit heart. Journal of Electrocardiology, 2011, 44, 626-634.	0.4	32
131	Quantification of fiber orientation in the canine atrial pacemaker complex using optical coherence tomography. Journal of Biomedical Optics, 2012, 17, 1.	1.4	32
132	Computational assessment of the functional role of sinoatrial node exit pathways in the human heart. PLoS ONE, 2017, 12, e0183727.	1.1	32
133	A Fully Implantable Pacemaker for the Mouse: From Battery to Wireless Power. PLoS ONE, 2013, 8, e76291.	1.1	32
134	Bimodal biophotonic imaging of the structure-function relationship in cardiac tissue. Journal of Biomedical Optics, 2008, 13, 054012.	1.4	31
135	Sudden Heart Rate Reduction Upon Optogenetic Release of Acetylcholine From Cardiac Parasympathetic Neurons in Perfused Hearts. Frontiers in Physiology, 2019, 10, 16.	1.3	31
136	A Century of Optocardiography. IEEE Reviews in Biomedical Engineering, 2014, 7, 115-125.	13.1	30
137	Left Septal Slow Pathway Ablation for Atrioventricular Nodal Reentrant Tachycardia. Circulation: Arrhythmia and Electrophysiology, 2018, 11, e005907.	2.1	30
138	Fluorescent Imaging of a Dual-Pathway Atrioventricular-Nodal Conduction System. Circulation Research, 2001, 88, E23-30.	2.0	29
139	Role of Pyk2 in cardiac arrhythmogenesis. American Journal of Physiology - Heart and Circulatory Physiology, 2011, 301, H975-H983.	1.5	29
140	Flexible and Transparent Metal Nanowire Microelectrode Arrays and Interconnects for Electrophysiology, Optogenetics, and Optical Mapping. Advanced Materials Technologies, 2021, 6, 2100225.	3.0	29
141	Shock-induced arrhythmogenesis is enhanced by 2,3-butanedione monoxime compared with cytochalasin D. American Journal of Physiology - Heart and Circulatory Physiology, 2004, 286, H310-H318.	1.5	28
142	Multiparametric slice culture platform for the investigation of human cardiac tissue physiology. Progress in Biophysics and Molecular Biology, 2019, 144, 139-150.	1.4	28
143	Mechanical alternans and restitution in failing SHHF rat left ventricles. American Journal of Physiology - Heart and Circulatory Physiology, 2002, 282, H1320-H1326.	1.5	27
144	Virtual electrode hypothesis of defibrillation. Heart Rhythm, 2006, 3, 1100-1102.	0.3	27

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145	Molecular remodeling of ion channels, exchangers and pumps in atrial and ventricular myocytes in ischemic cardiomyopathy. Channels, 2010, 4, 101-107.	1.5	27
146	CD36 Protein Influences Myocardial Ca2+ Homeostasis and Phospholipid Metabolism. Journal of Biological Chemistry, 2012, 287, 38901-38912.	1.6	27
147	Effect of Electroporation on Cardiac Electrophysiology. Methods in Molecular Biology, 2008, 423, 433-448.	0.4	27
148	Reversal of Repolarization Gradient Does Not Reverse the Chirality of Shock-Induced Reentry in the Rabbit Heart. Journal of Cardiovascular Electrophysiology, 2000, 11, 998-1007.	0.8	26
149	Multistage Electrotherapy Delivered Through Chronically-Implanted Leads Terminates Atrial Fibrillation With Lower Energy Than a Single Biphasic Shock. Journal of the American College of Cardiology, 2014, 63, 40-48.	1.2	26
150	Imaging of the Atrioventricular Node Using Optical Coherence Tomography. Journal of Cardiovascular Electrophysiology, 2002, 13, 95-95.	0.8	25
151	Gene Printer: Laser-Scanning Targeted Transfection of Cultured Cardiac Neonatal Rat Cells. Cell Communication and Adhesion, 2006, 13, 217-222.	1.0	25
152	Electroporation induced by internal defibrillation shock with and without recovery in intact rabbit hearts. American Journal of Physiology - Heart and Circulatory Physiology, 2012, 303, H439-H449.	1.5	24
153	Î²-adrenergic stimulation augments transmural dispersion of repolarization via modulation of delayed rectifier currents IKs and IKr in the human ventricle. Scientific Reports, 2017, 7, 15922.	1.6	24
154	Optical Mapping Technique Applied to Biventricular Pacing:. Potential Mechanisms of Ventricular Arrhythmias Occurrence. PACE - Pacing and Clinical Electrophysiology, 2003, 26, 197-205.	0.5	23
155	Virtual histology of the human heart using optical coherence tomography. Journal of Biomedical Optics, 2009, 14, 054002.	1.4	23
156	Three-dimensional printing physiology laboratory technology. American Journal of Physiology - Heart and Circulatory Physiology, 2013, 305, H1569-H1573.	1.5	23
157	Transient Notch Activation Induces Long-Term Gene Expression Changes Leading to Sick Sinus Syndrome in Mice. Circulation Research, 2017, 121, 549-563.	2.0	23
158	Flexible and Transparent Metal Oxide/Metal Grid Hybrid Interfaces for Electrophysiology and Optogenetics. Advanced Materials Technologies, 2020, 5, 2000322.	3.0	23
159	Right ventricular arrhythmogenesis in failing human heart: the role of conduction and repolarization remodeling. American Journal of Physiology - Heart and Circulatory Physiology, 2012, 303, H1426-H1434.	1.5	22
160	Focal but reversible diastolic sheet dysfunction reflects regional calcium mishandling in dystrophicmdxmouse hearts. American Journal of Physiology - Heart and Circulatory Physiology, 2012, 303, H559-H568.	1.5	22
161	Three Potential Mechanisms for Failure of High Intensity Focused Ultrasound Ablation in Cardiac Tissue. Circulation: Arrhythmia and Electrophysiology, 2012, 5, 409-416.	2.1	22
162	Adverse Remodeling of the Electrophysiological Response to Ischemiaâ€“Reperfusion in Human Heart Failure Is Associated With Remodeling of Metabolic Gene Expression. Circulation: Arrhythmia and Electrophysiology, 2014, 7, 875-882.	2.1	22

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163	Electrophysiology and anatomy of embryonic rabbit hearts before and after septation. American Journal of Physiology - Heart and Circulatory Physiology, 2005, 288, H344-H351.	1.5	21
164	Finite Element Modeling of Electric Field Effects of TASER Devices on Nerve and Muscle. , 2006, 2006, 1277-9.		21
165	Autonomic control and innervation of the atrioventricular junctional pacemaker. Heart Rhythm, 2007, 4, 1326-1335.	0.3	21
166	Mitochondrial structure and function are not different between nonfailing donor and endâ€stage failing human hearts. FASEB Journal, 2016, 30, 2698-2707.	0.2	21
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