Nikolay V Vasilyev

List of Publications by Year
in descending order

73 papers	3,856 citations	186265 28 h-index	123424 61 g-index
75 all docs	75 docs citations	75 times ranked	5505 citing authors

#	Article	IF	Citations
1	Tough adhesives for diverse wet surfaces. Science, 2017, 357, 378-381.	12.6	1,068
2	Soft robotic sleeve supports heart function. Science Translational Medicine, 2017, 9, .	12.4	280
3	A Blood-Resistant Surgical Glue for Minimally Invasive Repair of Vessels and Heart Defects. Science Translational Medicine, 2014, 6, 218ra6.	12.4	253
4	A Bioinspired Soft Actuated Material. Advanced Materials, 2014, 26, 1200-1206.	21.0	210
5	Myeloperoxidase-Generated Oxidants Modulate Left Ventricular Remodeling but Not Infarct Size After Myocardial Infarction. Circulation, 2005, 112, 2812-2820.	1.6	163
6	Concentric Tube Robot Design and Optimization Based on Task and Anatomical Constraints. IEEE Transactions on Robotics, 2015, 31, 67-84.	10.3	142
7	Comparison of biomaterial delivery vehicles for improving acute retention of stem cells in the infarcted heart. Biomaterials, 2014, 35, 6850-6858.	11.4	140
8	GPU based real-time instrument tracking with three-dimensional ultrasound. Medical Image Analysis, 2007, 11, 458-464.	11.6	106
9	Management of Systemic Right Ventricular Failure in Patients With Congenitally Corrected Transposition of the Great Arteries. Circulation, 2016, 134, 1293-1302.	1.6	102
10	Percutaneous intracardiac beating-heart surgery using metal MEMS tissue approximation tools. International Journal of Robotics Research, 2012, 31, 1081-1093.	8.5	82
11	Imaging Artifacts of Medical Instruments in Ultrasound-Guided Interventions. Journal of Ultrasound in Medicine, 2007, 26, 1303-1322.	1.7	72
12	In Vitro Characterization of Bicuspid Aortic Valve Hemodynamics Using Particle Image Velocimetry. Annals of Biomedical Engineering, 2012, 40, 1760-1775.	2.5	72
13	Force tracking with feed-forward motion estimation for beating heart surgery. IEEE Transactions on Robotics, 2010, 26, 888-896.	10.3	70
14	Sustained release of targeted cardiac therapy with a replenishable implanted epicardial reservoir. Nature Biomedical Engineering, 2018, 2, 416-428.	22.5	70
15	Mitral Annulus Segmentation From 3D Ultrasound Using Graph Cuts. IEEE Transactions on Medical Imaging, 2010, 29, 1676-1687.	8.9	62
16	An Implantable Extracardiac Soft Robotic Device for the Failing Heart: Mechanical Coupling and Synchronization. Soft Robotics, 2017, 4, 241-250.	8.0	57
17	Soft robotic ventricular assist device with septal bracing for therapy of heart failure. Science Robotics, 2017, 2, .	17.6	46
18	Three-Dimensional Echo and Videocardioscopy-Guided Atrial Septal Defect Closure. Annals of Thoracic Surgery, 2006, 82, 1322-1326.	1.3	45

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19	Real-time image-based rigid registration of three-dimensional ultrasound. Medical Image Analysis, 2012, 16, 402-414.	11.6	41
20	3D Ultrasound-Guided Motion Compensation System for Beating Heart Mitral Valve Repair. Lecture Notes in Computer Science, 2008, 11, 711-719.	1.3	40
21	Temporal Enhancement of 3D Echocardiography by Frame Reordering. JACC: Cardiovascular Imaging, 2012, 5, 300-304.	5.3	37
22	Image Guided Surgical Interventions. Current Problems in Surgery, 2009, 46, 730-766.	1.1	36
23	Variables Influencing the Accuracy of Right Ventricular Volume Assessment by Real-time 3-Dimensional Echocardiography: An In Vitro Validation Study. Journal of the American Society of Echocardiography, 2007, 20, 456-461.	2.8	35
24	Mitral annulus segmentation from four-dimensional ultrasound using a valve state predictor and constrained optical flow. Medical Image Analysis, 2012, 16, 497-504.	11.6	34
25	A light-reflecting balloon catheter for atraumatic tissue defect repair. Science Translational Medicine, 2015, 7, 306ra149.	12.4	34
26	Right ventricular papillary muscle approximation as a novel technique of valve repair for functional tricuspid regurgitation in an exÂvivo porcine model. Journal of Thoracic and Cardiovascular Surgery, 2012, 144, 235-242.	0.8	31
27	Towards Alternative Approaches for Coupling of a Soft Robotic Sleeve to the Heart. Annals of Biomedical Engineering, 2018, 46, 1534-1547.	2.5	31
28	An organosynthetic dynamic heart model with enhanced biomimicry guided by cardiac diffusion tensor imaging. Science Robotics, 2020, 5, .	17.6	30
29	An Active Motion Compensation Instrument for Beating Heart Mitral Valve Surgery. , 2007, , .		28
30	Stereoscopic vision display technology in real-time three-dimensional echocardiography-guided intracardiac beating-heart surgery. Journal of Thoracic and Cardiovascular Surgery, 2008, 135, 1334-1341.	0.8	28
31	An Intracardiac Soft Robotic Device for Augmentation of Blood Ejection from the Failing Right Ventricle. Annals of Biomedical Engineering, 2017, 45, 2222-2233.	2.5	28
32	A growth-accommodating implant for paediatric applications. Nature Biomedical Engineering, 2017, 1, 818-825.	22.5	28
33	Tissue removal inside the beating heart using a robotically delivered metal MEMS tool. International Journal of Robotics Research, 2015, 34, 236-247.	8.5	27
34	Robotic tissue tracking for beating heart mitral valve surgery. Medical Image Analysis, 2013, 17, 1236-1242.	11.6	25
35	Percutaneous Steerable Robotic Tool Delivery Platform and Metal Microelectromechanical Systems Device for Tissue Manipulation and Approximation. Circulation: Cardiovascular Interventions, 2013, 6, 468-475.	3.9	24
36	Statistical Segmentation of Surgical Instruments in 3-D Ultrasound Images. Ultrasound in Medicine and Biology, 2007, 33, 1428-1437.	1.5	21

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37	Beating-heart patch closure of muscular ventricular septal defects under real-time three-dimensional echocardiographic guidance: A preclinical study. Journal of Thoracic and Cardiovascular Surgery, 2008, 135, 603-609.	0.8	21
38	Fast block flow tracking of atrial septal defects in 4D echocardiography. Medical Image Analysis, 2008, 12, 397-412.	11.6	19
39	Cleft closure and undersizing annuloplasty improve mitral repair in atrioventricular canal defects. Journal of Thoracic and Cardiovascular Surgery, 2008, 136, 1243-1249.	0.8	17
40	Robotics and imaging in congenital heart surgery. Future Cardiology, 2012, 8, 285-296.	1.2	17
41	Metal MEMS tools for beating-heart tissue approximation. , 2011, 2011, 411-416.		15
42	Design and Fabrication of a Soft Robotic Direct Cardiac Compression Device. , 2015, , .		14
43	Dynamic Augmentation of Left Ventricle and Mitral Valve Function With an Implantable Soft Robotic Device. JACC Basic To Translational Science, 2020, 5, 229-242.	4.1	14
44	Creation of Nonischemic Functional Mitral Regurgitation by Annular Dilatation and Nonplanar Modification in a Chronic In Vivo Swine Model. Circulation, 2013, 128, S263-70.	1.6	12
45	Magnetically Active Cardiac Patches as an Untethered, Nonâ€Blood Contacting Ventricular Assist Device. Advanced Science, 2021, 8, 2000726.	11.2	10
46	On the design of an interactive, patient-specific surgical simulator for mitral valve repair. , 2011, , .		9
47	An intraoperative test device for aortic valve repair. Journal of Thoracic and Cardiovascular Surgery, 2019, 157, 126-132.	0.8	9
48	Repair of posterior mitral valve prolapse with a novel leaflet plication clip in an animal model. Journal of Thoracic and Cardiovascular Surgery, 2014, 147, 783-791.	0.8	8
49	An Intraventricular Soft Robotic Pulsatile Assist Device for Right Ventricular Heart Failure1. Journal of Medical Devices, Transactions of the ASME, 2014, 8, .	0.7	8
50	Creation of a tricuspid valve regurgitation model from tricuspid annular dilatation using the cardioport video-assisted imaging system. Journal of Heart Valve Disease, 2011, 20, 184-8.	0.5	8
51	Increased expression of vascular endothelial growth factor messenger RNA in lungs of rats after cavopulmonary anastomosis. Journal of Thoracic and Cardiovascular Surgery, 2005, 129, 209-210.	0.8	7
52	Beating-heart mitral valve suture annuloplasty under real-time three-dimensional echocardiography guidance: an ex vivo study. Interactive Cardiovascular and Thoracic Surgery, 2010, 11, 6-9.	1.1	6
53	Cardioscopic Tool-Delivery Instrument for Beating-Heart Surgery. IEEE/ASME Transactions on Mechatronics, 2016, 21, 584-590.	5.8	6
54	Enabling 3D Ultrasound Procedure Guidance through Enhanced Visualization. Lecture Notes in Computer Science, 2012, 7330, 115-124.	1.3	6

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55	Synchronization of a Soft Robotic Ventricular Assist Device to the Native Cardiac Rhythm Using an Epicardial Electrogram. Journal of Medical Devices, Transactions of the ASME, 2020, 14, .	0.7	6
56	On the Design of an Interactive, Patient-Specific Surgical Simulator for Mitral Valve Repair. IEEE International Conference on Intelligent Robots and Systems, 2011, 2011, 1327-1332.	0.6	6
57	A novel cardioport for beating-heart, image-guided intracardiac surgery. Journal of Thoracic and Cardiovascular Surgery, 2011, 142, 1545-1551.	0.8	5
58	Extraskeletal myxoid chondrosarcoma of the vulva: A case report. Oncology Letters, 2015, 10, 2095-2099.	1.8	4
59	Antibody-modified conduits for highly selective cytokine elimination from blood. JCI Insight, 2018, 3, .	5.0	4
60	EWING SARCOMA: FEATURES OF LYMPHOGENOUS METASTASIS AND PROGNOSTIC FACTORS. Siberian Journal of Oncology, 2019, 18, 29-37.	0.3	3
61	Pop-Up-Inspired Design of a Septal Anchor for a Ventricular Assist Device. , 2017, , .		2
62	Design of a Surgical Port for Minimally Invasive Beating-Heart Intracardial Procedures. Journal of Medical Devices, Transactions of the ASME, 2011, 5, .	0.7	1
63	FSI Modeling Approach to Develop Right Ventricle Pulmonary Valve Replacement Surgical Procedures with a Contracting Actuator and Improve Ventricle Ejection Fraction. Procedia Engineering, 2015, 126, 441-445.	1.2	1
64	An Access-Closure Device for Percutaneous Beating Heart Surgery1. Journal of Medical Devices, Transactions of the ASME, 2015, 9, .	0.7	1
65	A leaflet plication clip is an effective surgical template for mitral valve foldoplasty. European Journal of Cardio-thoracic Surgery, 2018, 53, 939-944.	1.4	1
66	Efficient workflow for automatic segmentation of the right heart based on 2D echocardiography. International Journal of Cardiovascular Imaging, 2018, 34, 1041-1055.	1.5	1
67	Importance of Preserved Tricuspid Valve Function for Effective Soft Robotic Augmentation of the Right Ventricle in Cases of Elevated Pulmonary Artery Pressure. Cardiovascular Engineering and Technology, 2021, , 1.	1.6	1
68	Detection and tracking of road networks in rural terrain by fusing vision and LIDAR. , 2011, , .		1
69	Robotic Surgery. , 2014, , 1237-1249.		1
70	On the convergence of Braitenberg vehicle 3a immersed in parabolic stimuli. , 2011, , .		0
71	Functional and mechanical properties of the NiTi alloy as a material for an implantable device for repair of mitral valve prolapse. Materials Today: Proceedings, 2017, 4, 4884-4888.	1.8	0
72	Temporal enhancement of 2D color Doppler echocardiography sequences by fragment-based frame reordering and refinement. International Journal of Computer Assisted Radiology and Surgery, 2019, 14, 577-586.	2.8	0

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73	The feasibility of mitral valve device foldoplasty: an in vivo study to evaluate durable retention. Interactive Cardiovascular and Thoracic Surgery, 2021, , .	1.1	0