Kerem Pekkan

List of Publications by Year in Descending Order

117 papers	2,668 citations	29 h-index	48 g-index
152 ext. papers	3,018 ext. citations	3.5 avg, IF	4.75 L-index

#	Paper	IF	Citations
117	A novel Fontan Y-graft for interrupted inferior vena cava and azygos continuation.. *Interactive Cardiovascular and Thoracic Surgery*, **2022**,	1.8	1
116	Polymeric hollow fiber membrane oxygenators as artificial lungs: A review. *Biochemical Engineering Journal*, **2022**, 180, 108340	4.2	1
115	In vitro measurement of hepatic flow distribution in Fontan vascular conduits: Towards rapid validation techniques.. *Journal of Biomechanics*, **2022**, 137, 111092	2.9	
114	Shaping the field of Cardiovascular Fluid Mechanics: The 40th Anniversary of Ajit Yoganathan's Research Laboratory. *Cardiovascular Engineering and Technology*, **2021**, 1	2.2	1
113	Computational modeling of vascular growth in patient-specific pulmonary arterial patch reconstructions. *Journal of Biomechanics*, **2021**, 117, 110274	2.9	2
112	Hemodynamic performance limits of the neonatal Double-Lumen cannula. *Journal of Biomechanics*, **2021**, 121, 110382	2.9	0
111	Single-center experience with routine clinical use of 3D technologies in surgical planning for pediatric patients with complex congenital heart disease. *Diagnostic and Interventional Radiology*, **2021**, 27, 488-496	3.2	3
110	Estimation of pulsatile energy dissipation in intersecting pipe junctions using inflow pulsatility indices. *AIP Advances*, **2021**, 11, 015342	1.5	1
109	The impact of plaque type on strut embedment/protrusion and shear stress distribution in bioresorbable scaffold. *European Heart Journal Cardiovascular Imaging*, **2020**, 21, 454-462	4.1	5
108	Spatiotemporal remodeling of embryonic aortic arch: stress distribution, microstructure, and vascular growth in silico. *Biomechanics and Modeling in Mechanobiology*, **2020**, 19, 1897-1915	3.8	4
107	Infusion Jet Flow Control in Neonatal Double Lumen Cannulae. *Journal of Biomechanical Engineering*, **2020**, 142,	2.1	3
106	Endothelial shear stress and vascular remodeling in bioresorbable scaffold and metallic stent. *Atherosclerosis*, **2020**, 312, 79-89	3.1	
105	Patient-Specific Hemodynamics of New Coronary Artery Bypass Configurations. *Cardiovascular Engineering and Technology*, **2020**, 11, 663-678	2.2	1
104	Hemodynamics of neonatal double lumen cannula malposition. *Perfusion (United Kingdom)*, **2020**, 35, 306-315	1.9	4
103	Applications of Micro-CT in Cardiovascular Engineering and Bio-inspired Design **2020**, 171-181		
102	Microstructure of early embryonic aortic arch and its reversibility following mechanically altered hemodynamic load release. *American Journal of Physiology - Heart and Circulatory Physiology*, **2020**, 318, H1208-H1218	5.2	8
101	Transitional fetal hemodynamics and gas exchange in premature postpartum adaptation: immediate vs. delayed cord clamping. *Maternal Health, Neonatology and Perinatology*, **2019**, 5, 5	3.4	1

100	Heart valve inspired and multi-stream aortic cannula: Novel designs for cardiopulmonary bypass improvement in neonates. *Artificial Organs*, **2019**, 43, E233-E248	2.6	3
99	Thrust and Hydrodynamic Efficiency of the Bundled Flagella. *Micromachines*, **2019**, 10,	3.3	6
98	Post-implantation shear stress assessment: an emerging tool for differentiation of bioresorbable scaffolds. *International Journal of Cardiovascular Imaging*, **2019**, 35, 409-418	2.5	4
97	Patient-Specific Atrial Hemodynamics of a Double Lumen Neonatal Cannula in Correct Caval Position. *Artificial Organs*, **2018**, 42, 401-409	2.6	7
96	In vitro validation of a self-driving aortic-turbine venous-assist device for Fontan patients. *Journal of Thoracic and Cardiovascular Surgery*, **2018**, 156, 292-301.e7	1.5	7
95	Effect of modified Blalock-Taussig shunt anastomosis angle and pulmonary artery diameter on pulmonary flow. *Anatolian Journal of Cardiology*, **2018**, 20, 2-8	0.8	4
94	Asymmetry in Mechanosensitive Gene Expression during Aortic Arch Morphogenesis. *Scientific Reports*, **2018**, 8, 16948	4.9	8
93	Real-World Variability in the Prediction of Intracranial Aneurysm Wall Shear Stress: The 2015 International Aneurysm CFD Challenge. *Cardiovascular Engineering and Technology*, **2018**, 9, 544-564	2.2	47
92	Computational Pre-surgical Planning of Arterial Patch Reconstruction: Parametric Limits and In Vitro Validation. *Annals of Biomedical Engineering*, **2018**, 46, 1292-1308	4.7	10
91	Increased Energy Loss Due to Twist and Offset Buckling of the Total Cavopulmonary Connection. *Journal of Medical Devices, Transactions of the ASME*, **2017**, 11,	1.3	3
90	Hemodynamics of patient-specific aorta-pulmonary shunt configurations. *Journal of Biomechanics*, **2017**, 50, 166-171	2.9	19
89	Tetralogy of Fallot Surgical Repair: Shunt Configurations, Ductus Arteriosus and the Circle of Willis. *Cardiovascular Engineering and Technology*, **2017**, 8, 107-119	2.2	14
88	Motile-Cilia-Mediated Flow Improves Sensitivity and Temporal Resolution of Olfactory Computations. *Current Biology*, **2017**, 27, 166-174	6.3	46
87	Haemodynamic Recovery Properties of the Torsioned Testicular Artery Lumen. *Scientific Reports*, **2017**, 7, 15570	4.9	5
86	Characterization of zebrafish larvae suction feeding flow using PIV and optical coherence tomography. *Experiments in Fluids*, **2016**, 57, 1	2.5	18
85	Non-dimensional physics of pulsatile cardiovascular networks and energy efficiency. *Journal of the Royal Society Interface*, **2016**, 13, 20151019	4.1	7
84	Mytilus galloprovincialis as a smart micro-pump. *Biology Open*, **2016**, 5, 1493-1499	2.2	3
83	Time-Series Interactions of Gene Expression, Vascular Growth and Hemodynamics during Early Embryonic Arterial Development. *PLoS ONE*, **2016**, 11, e0161611	3.7	7

82	Transition from fetal to neonatal circulation: Modeling the effect of umbilical cord clamping. *Journal of Biomechanics*, **2015**, 48, 1662-70	2.9	18
81	Experimental and computational investigation of the patient-specific abdominal aortic aneurysm pressure field. *Computer Methods in Biomechanics and Biomedical Engineering*, **2015**, 18, 981-992	2.1	21
80	Growth and hemodynamics after early embryonic aortic arch occlusion. *Biomechanics and Modeling in Mechanobiology*, **2015**, 14, 735-51	3.8	23
79	Computational Modeling of Neonatal Cardiopulmonary Bypass Hemodynamics With Full Circle of Willis Anatomy. *Artificial Organs*, **2015**, 39, E164-75	2.6	12
78	Noninvasive in vivo determination of residual strains and stresses. *Journal of Biomechanical Engineering*, **2015**, 137, 061011	2.1	3
77	The Computational Fluid Dynamics Rupture Challenge 2013--Phase II: Variability of Hemodynamic Simulations in Two Intracranial Aneurysms. *Journal of Biomechanical Engineering*, **2015**, 137, 121008	2.1	61
76	Hemodynamic flow visualization of early embryonic great vessels using PIV. *Methods in Molecular Biology*, **2015**, 1189, 17-30	1.4	2
75	Left atrial ligation alters intracardiac flow patterns and the biomechanical landscape in the chick embryo. *Developmental Dynamics*, **2014**, 243, 652-62	2.9	29
74	Effects of intraluminal thrombus on patient-specific abdominal aortic aneurysm hemodynamics via stereoscopic particle image velocity and computational fluid dynamics modeling. *Journal of Biomechanical Engineering*, **2014**, 136, 031001	2.1	22
73	Investigating developmental cardiovascular biomechanics and the origins of congenital heart defects. *Frontiers in Physiology*, **2014**, 5, 408	4.6	27
72	Simultaneous real-time quantification of blood flow and vascular growth in the chick embryo using optical coherence tomography **2014**,		3
71	Characterization of the vessel geometry, flow mechanics and wall shear stress in the great arteries of wildtype prenatal mouse. *PLoS ONE*, **2014**, 9, e86878	3.7	20
70	Fontan conversion templates: patient-specific hemodynamic performance of the lateral tunnel versus the intraatrial conduit with fenestration. *Pediatric Cardiology*, **2013**, 34, 1447-54	2.1	8
69	Quantitative Hemodynamic Evaluation in Children with Coarctation of Aorta: Phase Contrast Cardiovascular MRI versus Computational Fluid Dynamics. *Lecture Notes in Computer Science*, **2013**, 9-16	0.9	3
68	Time-resolved OCT-PIV: a new microscopic PIV technique for noninvasive depth-resolved pulsatile flow profile acquisition. *Experiments in Fluids*, **2013**, 54, 1	2.5	12
67	High-speed three-dimensional characterization of fluid flows induced by micro-objects in deep microchannels. *Biochip Journal*, **2013**, 7, 95-103	4	5
66	Characterization of neonatal aortic cannula jet flow regimes for improved cardiopulmonary bypass. *Journal of Biomechanics*, **2013**, 46, 362-72	2.9	23
65	Aortic outflow cannula tip design and orientation impacts cerebral perfusion during pediatric cardiopulmonary bypass procedures. *Annals of Biomedical Engineering*, **2013**, 41, 2588-602	4.7	21

64	Novel fenestration designs for controlled venous flow shunting in failing Fontans with systemic venous hypertension. *Artificial Organs*, **2013**, 37, 66-75	2.6	5
63	Computer modeling for the prediction of thoracic aortic stent graft collapse. *Journal of Vascular Surgery*, **2013**, 57, 1353-61	3.5	41
62	Presurgical evaluation of Fontan connection options for patients with apicocaval juxtaposition using computational fluid dynamics. *Artificial Organs*, **2013**, 37, E1-8	2.6	8
61	Variability of computational fluid dynamics solutions for pressure and flow in a giant aneurysm: the ASME 2012 Summer Bioengineering Conference CFD Challenge. *Journal of Biomechanical Engineering*, **2013**, 135, 021016	2.1	92
60	Total cavopulmonary connection in patients with apicocaval juxtaposition: optimal conduit route using preoperative angiogram and flow simulation. *European Journal of Cardio-thoracic Surgery*, **2013**, 44, e46-52	3	15
59	Critical transitions in early embryonic aortic arch patterning and hemodynamics. *PLoS ONE*, **2013**, 8, e60274	3.7	35
58	Visualization of flow structures in Fontan patients using 3-dimensional phase contrast magnetic resonance imaging. *Journal of Thoracic and Cardiovascular Surgery*, **2012**, 143, 1108-16	1.5	38
57	Computational hemodynamic optimization predicts dominant aortic arch selection is driven by embryonic outflow tract orientation in the chick embryo. *Biomechanics and Modeling in Mechanobiology*, **2012**, 11, 1057-73	3.8	19
56	Mechanotransduction in embryonic vascular development. *Biomechanics and Modeling in Mechanobiology*, **2012**, 11, 1149-68	3.8	39
55	Cannulation strategy for aortic arch reconstruction using deep hypothermic circulatory arrest. *Annals of Thoracic Surgery*, **2012**, 94, 614-20	2.7	11
54	Pulsatile venous waveform quality in Fontan circulation-clinical implications, venous assists options and the future. *Anatolian Journal of Cardiology*, **2012**, 12, 420-6		5
53	Pulsatile venous waveform quality affects the conduit performance in functional and "failing" Fontan circulations. *Cardiology in the Young*, **2012**, 22, 251-62	1	8
52	Device Specific Aortic Outflow Cannula Jets Studied Using 2D PIV and High-Performance 3D CFD Simulation **2012**,		1
51	Analysis of early embryonic great-vessel microcirculation in zebrafish using high-speed confocal PIV. *Biorheology*, **2011**, 48, 305-21	1.7	25
50	Pulmonary hepatic flow distribution in total cavopulmonary connections: extracardiac versus intracardiac. *Journal of Thoracic and Cardiovascular Surgery*, **2011**, 141, 207-14	1.5	45
49	Right ventricular outflow tract reconstruction with bicuspid valved polytetrafluoroethylene conduit. *Annals of Thoracic Surgery*, **2011**, 91, 1235-8; discussion 1239	2.7	27
48	Hemodynamics of the hepatic venous three-vessel confluences using particle image velocimetry. *Annals of Biomedical Engineering*, **2011**, 39, 2398-416	4.7	10
47	Cellular-level near-wall unsteadiness of high-hematocrit erythrocyte flow using confocal PIV. *Experiments in Fluids*, **2011**, 50, 887-904	2.5	29

46	Computer-Aided Patient-Specific Coronary Artery Graft Design Improvements Using CFD Coupled Shape Optimizer. *Cardiovascular Engineering and Technology*, **2011**, 2, 35-47	2.2	41
45	Bicuspid-valved PTFE conduit optimization for pediatric RVOT reconstruction **2011**,		2
44	Interaction between alk1 and blood flow in the development of arteriovenous malformations. *Development (Cambridge)*, **2011**, 138, 1573-82	6.6	148
43	Mechanobiology and the microcirculation: cellular, nuclear and fluid mechanics. *Microcirculation*, **2010**, 17, 179-91	2.9	43
42	Optimization of inflow waveform phase-difference for minimized total cavopulmonary power loss. *Journal of Biomechanical Engineering*, **2010**, 132, 031012	2.1	21
41	In Vivo Hemodynamic Performance of Wild-Type vs. Mutant Zebrafish Embryos Using High-Speed Confocal Micro-PIV **2010**,		1
40	Three-dimensional chemical profile manipulation using two-dimensional autonomous microfluidic control. *Journal of the American Chemical Society*, **2010**, 132, 1339-47	16.4	13
39	In vitro evaluation of right ventricular outflow tract reconstruction with bicuspid valved polytetrafluoroethylene conduit. *Artificial Organs*, **2010**, 34, 1010-6	2.6	12
38	Effect of Caval Waveform on Energy Dissipation of Failing Fontan Patients **2009**,		2
37	Fontan hemodynamics: importance of pulmonary artery diameter. *Journal of Thoracic and Cardiovascular Surgery*, **2009**, 137, 560-4	1.5	82
36	Hemodynamic performance of stage-2 univentricular reconstruction: Glenn vs. hemi-Fontan templates. *Annals of Biomedical Engineering*, **2009**, 37, 50-63	4.7	38
35	Hemodynamic energy dissipation in the cardiovascular system: generalized theoretical analysis on disease states. *Annals of Biomedical Engineering*, **2009**, 37, 661-73	4.7	27
34	Aortic arch morphogenesis and flow modeling in the chick embryo. *Annals of Biomedical Engineering*, **2009**, 37, 1069-81	4.7	67
33	Pulsatile in vitro simulation of the pediatric univentricular circulation for evaluation of cardiopulmonary assist scenarios. *Artificial Organs*, **2009**, 33, 967-76	2.6	13
32	Mitral web--a new concept for mitral valve repair: improved engineering design and in-vitro studies. *Journal of Heart Valve Disease*, **2009**, 18, 300-6		6
31	A new method for registration-based medical image interpolation. *IEEE Transactions on Medical Imaging*, **2008**, 27, 370-7	11.7	59
30	Quantitative analysis of extracardiac versus intraatrial Fontan anatomic geometries. *Annals of Thoracic Surgery*, **2008**, 85, 810-7	2.7	27
29	Neonatal aortic arch hemodynamics and perfusion during cardiopulmonary bypass. *Journal of Biomechanical Engineering*, **2008**, 130, 061012	2.1	39

28	The total cavopulmonary connection resistance: a significant impact on single ventricle hemodynamics at rest and exercise. *American Journal of Physiology - Heart and Circulatory Physiology*, **2008**, 295, H2427-35	5.2	94
27	Functional analysis of Fontan energy dissipation. *Journal of Biomechanics*, **2008**, 41, 2246-52	2.9	57
26	Modified control grid interpolation for the volumetric reconstruction of fluid flows. *Experiments in Fluids*, **2008**, 45, 987-997	2.5	12
25	Patient-specific surgical planning and hemodynamic computational fluid dynamics optimization through free-form haptic anatomy editing tool (SURGEM). *Medical and Biological Engineering and Computing*, **2008**, 46, 1139-52	3.1	77
24	In vitro hemodynamic investigation of the embryonic aortic arch at late gestation. *Journal of Biomechanics*, **2008**, 41, 1697-706	2.9	18
23	Anatomically realistic patient-specific surgical planning of complex congenital heart defects using MRI and CFD. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, **2007**, 2007, 202-5		7
22	Progress in the CFD modeling of flow instabilities in anatomical total cavopulmonary connections. *Annals of Biomedical Engineering*, **2007**, 35, 1840-56	4.7	46
21	Nonlinear power loss during exercise in single-ventricle patients after the Fontan: insights from computational fluid dynamics. *Circulation*, **2007**, 116, I165-71	16.7	140
20	Introduction of a new optimized total cavopulmonary connection. *Annals of Thoracic Surgery*, **2007**, 83, 2182-90	2.7	85
19	Hepatic Venous Blood Flow Distribution in the Total Cavopulmonary Connection: Patient-Specific Anatomical Models **2007**,		2
18	A Skeletalized Representation of the Total Cavopulmonary Connection **2007**,		3
17	Abstract 2207: Significant Impact of the Total Cavopulmonary Connection Resistance on Cardiac Output and Exercise Performance in Single Ventricles. *Circulation*, **2007**, 116,	16.7	3
16	Abstract 2212: Computational Model of Exercise Effects on Fontan Hemodynamics Demonstrates Favorable Energetics In Extracardiac Fontans When Compared to Lateral Tunnel. *Circulation*, **2007**, 116,	16.7	1
15	Flow study of an extracardiac connection with persistent left superior vena cava. *Journal of Thoracic and Cardiovascular Surgery*, **2006**, 131, 785-91	1.5	60
14	3-D Stereo-particle image velocimetry in the total cavopulmonary connection. *Journal of Biomechanics*, **2006**, 39, S304	2.9	
13	Single-step stereolithography of complex anatomical models for optical flow measurements. *Journal of Biomechanical Engineering*, **2005**, 127, 204-7	2.1	43
12	In vitro flow analysis of a patient-specific intraatrial total cavopulmonary connection. *Annals of Thoracic Surgery*, **2005**, 79, 2094-102	2.7	59
11	Coupling pediatric ventricle assist devices to the Fontan circulation: simulations with a lumped-parameter model. *ASAIO Journal*, **2005**, 51, 618-28	3.6	61

10	Physics-driven CFD modeling of complex anatomical cardiovascular flows-a TCPC case study. *Annals of Biomedical Engineering*, **2005**, 33, 284-300	4.7	97
9	Total cavopulmonary connection flow with functional left pulmonary artery stenosis: angioplasty and fenestration in vitro. *Circulation*, **2005**, 112, 3264-71	16.7	58
8	The effects of different mesh generation methods on computational fluid dynamic analysis and power loss assessment in total cavopulmonary connection. *Journal of Biomechanical Engineering*, **2004**, 126, 594-603	2.1	27
7	Three-dimensional velocity field reconstruction. *Journal of Biomechanical Engineering*, **2004**, 126, 727-35	2.1	21
6	Oscillating Couette flow for in vitro cell loading. *Journal of Biomechanics*, **2004**, 37, 939-42	2.9	8
5	Computed Synovial Fluid Flow in a Simple Knee Joint Model **2003**, 2085		2
4	A Review of Rotary Pressure-Gain Combustion Systems for Gas Turbine Applications **2003**, 241		4
3	Two-Dimensional Flow and NOx Emissions in Deflagrative Internal Combustion Wave Rotor Configurations. *Journal of Engineering for Gas Turbines and Power*, **2003**, 125, 720-733	1.7	7
2	One-Dimensional Combustion Instability Studies with Moving Boundaries in an End-Burning Test Motor **2002**,		1
1	Control of Fuel and Hot-Gas Leakage in a Stratified Internal Combustion Wave Rotor **2002**,		3