

Hwa Liang Leo

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

122
papers

1,679
citations

22
h-index

35
g-index

131
ext. papers

1,975
ext. citations

4.6
avg, IF

4.63
L-index

#	Paper	IF	Citations
122	Nanoparticle-based delivery system for application of siRNA in vivo. <i>Current Drug Metabolism</i> , 2010 , 11, 182-96	3.5	78
121	Flow in a mechanical bileaflet heart valve at laminar and near-peak systole flow rates: CFD simulations and experiments. <i>Journal of Biomechanical Engineering</i> , 2005 , 127, 782-97	2.1	76
120	Fluid dynamic assessment of three polymeric heart valves using particle image velocimetry. <i>Annals of Biomedical Engineering</i> , 2006 , 34, 936-52	4.7	71
119	Synthetic sandwich culture of 3D hepatocyte monolayer. <i>Biomaterials</i> , 2008 , 29, 290-301	15.6	67
118	A 3D printed microfluidic perfusion device for multicellular spheroid cultures. <i>Biofabrication</i> , 2017 , 9, 045005	10.5	66
117	Laminar-flow immediate-overlay hepatocyte sandwich perfusion system for drug hepatotoxicity testing. <i>Biomaterials</i> , 2009 , 30, 5927-36	15.6	58
116	A robust high-throughput sandwich cell-based drug screening platform. <i>Biomaterials</i> , 2011 , 32, 1229-41	15.6	48
115	Microfluidic device for sheathless particle focusing and separation using a viscoelastic fluid. <i>Journal of Chromatography A</i> , 2015 , 1406, 244-50	4.5	47
114	Scalable alignment of three-dimensional cellular constructs in a microfluidic chip. <i>Lab on A Chip</i> , 2013 , 13, 4124-33	7.2	46
113	A pump-free microfluidic 3D perfusion platform for the efficient differentiation of human hepatocyte-like cells. <i>Biotechnology and Bioengineering</i> , 2017 , 114, 2360-2370	4.9	44
112	A review of numerical methods for red blood cell flow simulation. <i>Computer Methods in Biomechanics and Biomedical Engineering</i> , 2015 , 18, 130-40	2.1	40
111	Numerical simulation of patient-specific left ventricular model with both mitral and aortic valves by FSI approach. <i>Computer Methods and Programs in Biomedicine</i> , 2014 , 113, 474-82	6.9	40
110	Structural simulations of prosthetic tri-leaflet aortic heart valves. <i>Journal of Biomechanics</i> , 2008 , 41, 1510-9	10.9	40
109	Comparison of the hinge flow fields of two bileaflet mechanical heart valves under aortic and mitral conditions. <i>Annals of Biomedical Engineering</i> , 2004 , 32, 1607-17	4.7	38
108	Hybrid capillary-inserted microfluidic device for sheathless particle focusing and separation in viscoelastic flow. <i>Biomicrofluidics</i> , 2015 , 9, 064117	3.2	35
107	Microflow fields in the hinge region of the CarboMedics bileaflet mechanical heart valve design. <i>Journal of Thoracic and Cardiovascular Surgery</i> , 2002 , 124, 561-74	1.5	32
106	A comparison of flow field structures of two tri-leaflet polymeric heart valves. <i>Annals of Biomedical Engineering</i> , 2005 , 33, 429-43	4.7	30

105	Hepatocyte function within a stacked double sandwich culture plate cylindrical bioreactor for bioartificial liver system. <i>Biomaterials</i> , 2012 , 33, 7925-32	15.6	27
104	A thin-walled polydimethylsiloxane bioreactor for high-density hepatocyte sandwich culture. <i>Biotechnology and Bioengineering</i> , 2013 , 110, 1663-73	4.9	25
103	Current development of bioreactors for extracorporeal bioartificial liver (Review). <i>Biointerphases</i> , 2010 , 5, FA116-31	1.8	25
102	Numerical Assessment of Novel Helical/Spiral Grafts with Improved Hemodynamics for Distal Graft Anastomoses. <i>PLoS ONE</i> , 2016 , 11, e0165892	3.7	23
101	Enhanced and conventional project-based learning in an engineering design module. <i>International Journal of Technology and Design Education</i> , 2014 , 24, 437-458	1.1	22
100	Bileaflet aortic valve prosthesis pivot geometry influences platelet secretion and anionic phospholipid exposure. <i>Annals of Biomedical Engineering</i> , 2001 , 29, 657-64	4.7	22
99	An analysis of turbulent shear stresses in leakage flow through a bileaflet mechanical prostheses. <i>Journal of Biomechanical Engineering</i> , 2002 , 124, 155-65	2.1	22
98	A novel carotid covered stent design: in vitro evaluation of performance and influence on the blood flow regime at the carotid artery bifurcation. <i>Annals of Biomedical Engineering</i> , 2013 , 41, 1990-2002	4.7	21
97	Design and finite element-based fatigue prediction of a new self-expandable percutaneous mitral valve stent. <i>CAD Computer Aided Design</i> , 2013 , 45, 1153-1158	2.9	21
96	Microfabricated silicon nitride membranes for hepatocyte sandwich culture. <i>Biomaterials</i> , 2008 , 29, 3993-4002	15.6	21
95	Recent Advances in Polymeric Heart Valves Research. <i>International Journal of Biomaterials Research and Engineering</i> , 2011 , 1, 1-17		18
94	Fluid mechanics of human fetal right ventricles from image-based computational fluid dynamics using 4D clinical ultrasound scans. <i>American Journal of Physiology - Heart and Circulatory Physiology</i> , 2016 , 311, H1498-H1508	5.2	18
93	Scalable cell alignment on optical media substrates. <i>Biomaterials</i> , 2013 , 34, 5078-87	15.6	17
92	Aggregation and protein corona formation on gold nanoparticles affect viability and liver functions of primary rat hepatocytes. <i>Nanomedicine</i> , 2016 , 11, 2275-87	5.6	16
91	Experimentally Validated Hemodynamics Simulations of Mechanical Heart Valves in Three Dimensions. <i>Cardiovascular Engineering and Technology</i> , 2012 , 3, 88-100	2.2	16
90	Numerical Modeling of Intraventricular Flow during Diastole after Implantation of BMHV. <i>PLoS ONE</i> , 2015 , 10, e0126315	3.7	16
89	Effects of a carotid covered stent with a novel membrane design on the blood flow regime and hemodynamic parameters distribution at the carotid artery bifurcation. <i>Medical and Biological Engineering and Computing</i> , 2015 , 53, 165-77	3.1	15
88	Decellularized liver as a translucent ex vivo model for vascular embolization evaluation. <i>Biomaterials</i> , 2020 , 240, 119855	15.6	15

87	Numerical investigation of blood flow in three-dimensional porcine left anterior descending artery with various stenoses. <i>Computers in Biology and Medicine</i> , 2014 , 47, 130-8	7	15
86	Design considerations and quantitative assessment for the development of percutaneous mitral valve stent. <i>Medical Engineering and Physics</i> , 2014 , 36, 882-8	2.4	15
85	Effect of deformability difference between two erythrocytes on their aggregation. <i>Physical Biology</i> , 2013 , 10, 036001	3	15
84	Computational Fluid Dynamics Modeling of Hemodynamic Parameters in the Human Diseased Aorta: A Systematic Review. <i>Annals of Vascular Surgery</i> , 2020 , 63, 336-381	1.7	15
83	Computational fluid model incorporating liver metabolic activities in perfusion bioreactor. <i>Biotechnology and Bioengineering</i> , 2014 , 111, 885-95	4.9	14
82	Structural and Hemodynamic Analyses of Different Stent Structures in Curved and Stenotic Coronary Artery. <i>Frontiers in Bioengineering and Biotechnology</i> , 2019 , 7, 366	5.8	14
81	Functional reservoir microcapsules generated via microfluidic fabrication for long-term cardiovascular therapeutics. <i>Lab on A Chip</i> , 2020 , 20, 2756-2764	7.2	13
80	Continuous Separation of White Blood Cells From Whole Blood Using Viscoelastic Effects. <i>IEEE Transactions on Biomedical Circuits and Systems</i> , 2017 , 11, 1431-1437	5.1	13
79	In vitro measurements of velocity and wall shear stress in a novel sequential anastomotic graft design model under pulsatile flow conditions. <i>Medical Engineering and Physics</i> , 2014 , 36, 1233-45	2.4	12
78	Modified control grid interpolation for the volumetric reconstruction of fluid flows. <i>Experiments in Fluids</i> , 2008 , 45, 987-997	2.5	12
77	Human fetal hearts with tetralogy of Fallot have altered fluid dynamics and forces. <i>American Journal of Physiology - Heart and Circulatory Physiology</i> , 2018 , 315, H1649-H1659	5.2	12
76	A Patient-Specific Computational Fluid Dynamic Model for Hemodynamic Analysis of Left Ventricle Diastolic Dysfunctions. <i>Cardiovascular Engineering and Technology</i> , 2015 , 6, 412-29	2.2	11
75	Two-dimensional strain-hardening membrane model for large deformation behavior of multiple red blood cells in high shear conditions. <i>Theoretical Biology and Medical Modelling</i> , 2014 , 11, 19	2.3	11
74	Spatio-temporal flow analysis in bileaflet heart valve hinge regions: potential analysis for blood element damage. <i>Annals of Biomedical Engineering</i> , 2007 , 35, 1333-46	4.7	11
73	Alteration of Blood Flow in a Venular Network by Infusion of Dextran 500: Evaluation with a Laser Speckle Contrast Imaging System. <i>PLoS ONE</i> , 2015 , 10, e0140038	3.7	11
72	Bioresorbable metals in cardiovascular stents: Material insights and progress. <i>Materialia</i> , 2020 , 12, 100727	3.7	11
71	A semi-automated method for patient-specific computational flow modelling of left ventricles. <i>Computer Methods in Biomechanics and Biomedical Engineering</i> , 2015 , 18, 401-13	2.1	10
70	Near-Wall Migration Dynamics of Erythrocytes : Effects of Cell Deformability and Arteriolar Bifurcation. <i>Frontiers in Physiology</i> , 2017 , 8, 963	4.6	10

69	In Vitro Investigation of the Hemodynamics of Transcatheter Heterotopic Valves Implantation in the Cavo-Atrial Junction. <i>Artificial Organs</i> , 2015 , 39, 803-14	2.6	10
68	Factors Influencing Lamina Cribrosa Microcapillary Hemodynamics and Oxygen Concentrations 2016 , 57, 6167-6179		10
67	Hemodynamic Study of Flow Remodeling Stent Graft for the Treatment of Highly Angulated Abdominal Aortic Aneurysm. <i>Computational and Mathematical Methods in Medicine</i> , 2016 , 2016, 3830123 ^{2.8}		10
66	Simulated Bench Testing to Evaluate the Mechanical Performance of New Carotid Stents. <i>Artificial Organs</i> , 2017 , 41, 267-272	2.6	9
65	Hemodynamic analysis of a novel stent graft design with slit perforations in thoracic aortic aneurysm. <i>Journal of Biomechanics</i> , 2019 , 85, 210-217	2.9	8
64	Post-operative ventricular flow dynamics following atrioventricular valve surgical and device therapies: A review. <i>Medical Engineering and Physics</i> , 2018 , 54, 1-13	2.4	8
63	Comparison of hinge microflow fields of bileaflet mechanical heart valves implanted in different sinus shape and downstream geometry. <i>Computer Methods in Biomechanics and Biomedical Engineering</i> , 2015 , 18, 1785-96	2.1	8
62	A D-Shaped Bileaflet Bioprosthesis which Replicates Physiological Left Ventricular Flow Patterns. <i>PLoS ONE</i> , 2016 , 11, e0156580	3.7	8
61	Covered Stent Membrane Design for Treatment of Atheroembolic Disease at Carotid Artery Bifurcation and Prevention of Thromboembolic Stroke: An In Vitro Experimental Study. <i>Artificial Organs</i> , 2016 , 40, 159-68	2.6	7
60	Effect of erythrocyte aggregation at pathological levels on NO/O ₂ transport in small arterioles. <i>Clinical Hemorheology and Microcirculation</i> , 2015 , 59, 163-75	2.5	7
59	Effects of Microporous Stent Graft on the Descending Aortic Aneurysm: A Patient-Specific Computational Fluid Dynamics Study. <i>Artificial Organs</i> , 2016 , 40, E230-E240	2.6	7
58	Peristaltic-Like Motion of the Human Fetal Right Ventricle and its Effects on Fluid Dynamics and Energy Dynamics. <i>Annals of Biomedical Engineering</i> , 2017 , 45, 2335-2347	4.7	7
57	Perfusion enhanced polydimethylsiloxane based scaffold cell culturing system for multi-well drug screening platform. <i>Biotechnology Progress</i> , 2014 , 30, 418-28	2.8	7
56	LIVER TISSUE MODEL FOR DRUG TOXICITY SCREENING. <i>Journal of Mechanics in Medicine and Biology</i> , 2011 , 11, 369-390	0.7	7
55	Current hydrogel solutions for repairing and regeneration of complex tissues. <i>Current Medicinal Chemistry</i> , 2014 , 21, 2480-96	4.3	7
54	An Experimental and Computational Study on the Effect of Caval Valved Stent Oversizing. <i>Cardiovascular Engineering and Technology</i> , 2016 , 7, 254-69	2.2	7
53	The angle-resolved velocity measurements in the impeller passages of a model biocentrifugal pump. <i>Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science</i> , 2001 , 215, 547-568	1.3	6
52	Monolithic polymeric porous superhydrophobic material with pneumatic plastron stabilization for functionally durable drag reduction in blood-contacting biomedical applications. <i>NPG Asia Materials</i> , 2021 , 13,	10.3	6

51	Ex vivo assessment of bicuspidization repair in treating severe functional tricuspid regurgitation: a stereo-scopic PIV study. <i>Scientific Reports</i> , 2019 , 9, 11504	4.9	5
50	Is Multiple Overlapping Uncovered Stents Technique Suitable for Aortic Aneurysm Repair?. <i>Artificial Organs</i> , 2018 , 42, 174-183	2.6	5
49	Erythrocyte aggregation may promote uneven spatial distribution of NO/O ₂ in the downstream vessel of arteriolar bifurcations. <i>Journal of Biomechanics</i> , 2016 , 49, 2241-2248	2.9	5
48	Assessment of transient changes in oxygen diffusion of single red blood cells using a microfluidic analytical platform. <i>Communications Biology</i> , 2021 , 4, 271	6.7	5
47	The effect of the entry and re-entry size in the aortic dissection: a two-way fluid-structure interaction simulation. <i>Biomechanics and Modeling in Mechanobiology</i> , 2020 , 19, 2643-2656	3.8	4
46	Symmetry recovery of cell-free layer after bifurcations of small arterioles in reduced flow conditions: effect of RBC aggregation. <i>American Journal of Physiology - Heart and Circulatory Physiology</i> , 2016 , 311, H487-97	5.2	4
45	Association of Hemodynamic Behavior in the Thoracic Aortic Aneurysm to the Intraluminal Thrombus Prediction: A Two-Way Fluid Structure Coupling Investigation. <i>International Journal of Applied Mechanics</i> , 2018 , 10, 1850035	2.4	4
44	Sequential drug delivery for liver diseases. <i>Advanced Drug Delivery Reviews</i> , 2019 , 149-150, 72-84	18.5	4
43	Vibration motor-integrated low-cost, miniaturized system for rapid quantification of red blood cell aggregation. <i>Lab on A Chip</i> , 2020 , 20, 3930-3937	7.2	4
42	Vortex dynamics of veno-arterial extracorporeal circulation: A computational fluid dynamics study. <i>Physics of Fluids</i> , 2021 , 33, 061908	4.4	4
41	Assessing the influence of atherosclerosis on drug coated balloon therapy using computational modelling. <i>European Journal of Pharmaceutics and Biopharmaceutics</i> , 2021 , 158, 72-82	5.7	4
40	A model-driven approach towards rational microbial bioprocess optimization. <i>Biotechnology and Bioengineering</i> , 2021 , 118, 305-318	4.9	4
39	Sequential venous anastomosis design to enhance patency of arterio-venous grafts for hemodialysis. <i>Computer Methods in Biomechanics and Biomedical Engineering</i> , 2017 , 20, 85-93	2.1	3
38	A biomimetic bi-leaflet mitral prosthesis with enhanced physiological left ventricular swirl restorative capability. <i>Experiments in Fluids</i> , 2016 , 57, 1	2.5	3
37	Numerical investigation on red blood cell dynamics in microflow: Effect of cell deformability. <i>Clinical Hemorheology and Microcirculation</i> , 2017 , 65, 105-117	2.5	3
36	Computational fluid modeling and performance analysis of a bidirectional rotating perfusion culture system. <i>Biotechnology Progress</i> , 2013 , 29, 1002-12	2.8	3
35	Comparison of flow characteristics of enlarged blood pump models with different impeller design. <i>International Communications in Heat and Mass Transfer</i> , 1999 , 26, 369-378	5.8	3
34	Visualization and Evaluation of Chemoembolization on a 3D Decellularized Organ Scaffold. <i>ACS Biomaterials Science and Engineering</i> , 2021 ,	5.5	3

33	Experimental Study of Right Ventricular Hemodynamics After Tricuspid Valve Replacement Therapies to Treat Tricuspid Regurgitation. <i>Cardiovascular Engineering and Technology</i> , 2017 , 8, 401-418	2.2	3
32	High-throughput functional profiling of single adherent cells hydrogel drop-screen. <i>Lab on A Chip</i> , 2021 , 21, 764-774	7.2	3
31	Design and Development of Novel Transcatheter Bicaval Valves in the Interventional Treatment of Tricuspid Regurgitation. <i>Artificial Organs</i> , 2018 , 42, E13-E28	2.6	2
30	Ventricular vortex loss analysis due to various tricuspid valve repair techniques: an ex vivo study. <i>American Journal of Physiology - Heart and Circulatory Physiology</i> , 2019 , 317, H1312-H1327	5.2	2
29	Biomimetic Precapillary Flow Patterns for Enhancing Blood Plasma Separation: A Preliminary Study. <i>Sensors</i> , 2016 , 16,	3.8	2
28	Optimization of a Novel Preferential Covered Stent through Bench Experiments and in Vitro Platelet Activation Studies. <i>ACS Biomaterials Science and Engineering</i> , 2019 , 5, 6216-6230	5.5	1
27	Recent Progress on Preferential Covered Stent Development. <i>IFMBE Proceedings</i> , 2019 , 709-712	0.2	1
26	Hemodynamic assessment of extra-cardiac tricuspid valves using particle image velocimetry. <i>Medical Engineering and Physics</i> , 2017 , 50, 1-11	2.4	1
25	STRESS ANALYSIS OF CAROTID ARTERY STENT UNDER BENDING AND TORSION. <i>Journal of Biomechanics</i> , 2012 , 45, S637	2.9	1
24	FSI simulation of intra-ventricular flow in patient-specific ventricular model with both mitral and aortic valves. <i>Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference</i> , 2013 , 2013, 703-6	0.9	1
23	Effects of stenosis on the porcine left anterior descending arterial tree. <i>Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference</i> , 2013 , 2013, 3869-72	0.9	1
22	Shape-Anisotropic Microembolics Generated by Microfluidic Synthesis for Transarterial Embolization Treatment.. <i>Advanced Healthcare Materials</i> , 2022 , e2102281	10.1	1
21	Nanoparticles-reinforced poly-l-lactic acid composite materials as bioresorbable scaffold candidates for coronary stents: Insights from mechanical and finite element analysis. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2022 , 125, 104977	4.1	1
20	Computational Fluid Dynamics Investigation of the Effect of the Fluid-Induced Shear Stress on Hepatocyte Sandwich Perfusion Culture. <i>IFMBE Proceedings</i> , 2009 , 1405-1408	0.2	1
19	Computational Simulation of NO/O ₂ Transport in Arterioles: Role of Cell-Free Layer. <i>Lecture Notes in Computational Vision and Biomechanics</i> , 2014 , 89-100	0.3	1
18	Effect of number of crowns on the crush resistance in open-cell stent design. <i>Journal of Mechanics of Materials and Structures</i> , 2020 , 15, 75-86	1.2	1
17	An in vitro investigation into the hemodynamic effects of orifice geometry and position on left ventricular vortex formation and turbulence intensity. <i>Artificial Organs</i> , 2020 , 44, e520-e531	2.6	1
16	The application of biomimicry to a mechanical valve design for the abatement of flow instabilities. <i>European Journal of Mechanics, B/Fluids</i> , 2019 , 74, 19-33	2.4	1

15	Multiscale modeling of a modified Blalock-Taussig surgery in a patient-specific tetralogy of Fallot. <i>International Journal for Numerical Methods in Biomedical Engineering</i> , 2021 , 37, e3436	2.6	1
14	Shape memory micro-anchors with magnetic guidance for precision micro-vascular deployment.. <i>Biomaterials</i> , 2022 , 283, 121426	15.6	1
13	Bileaflet Mechanical Heart Valves: In Vitro Study Based on Hemodynamic 3D Simulation 2019 , 373-423		0
12	Provisional Stenting for the Treatment of Bifurcation Lesions: In Vitro Insights. <i>Journal of Cardiovascular Translational Research</i> , 2021 , 14, 595-597	3.3	0
11	Full cardiac cycle asynchronous temporal compounding of 3D echocardiography images. <i>Medical Image Analysis</i> , 2021 , 74, 102229	15.4	0
10	Using a reduced-order model to investigate the effect of the heart rate on the aortic dissection.. <i>International Journal for Numerical Methods in Biomedical Engineering</i> , 2022 , e3596	2.6	0
9	A novel coating method to reduce membrane infolding through pre-crimping of covered stents - Computational and experimental evaluation.. <i>Computers in Biology and Medicine</i> , 2022 , 145, 105524	7	0
8	Shape-Anisotropic Microembolics Generated by Microfluidic Synthesis for Transarterial Embolization Treatment (Adv. Healthcare Mater. 10/2022). <i>Advanced Healthcare Materials</i> , 2022 , 11, 2270054	10.1	0
7	Risk of Thrombosis in Downstream Flow of Mechanical Aortic Valves: A Computational Approach 2018 , 433-443		
6	Hemodynamics Simulation in the Left Anterior Descending Coronary Artery Tree 2019 , 257-281		
5	Has percutaneous aortic valve replacement taken center stage in the treatment of aortic valve disease?. <i>Critical Reviews in Biomedical Engineering</i> , 2013 , 41, 405-24	1.1	
4	Rapid one-step in situ synthesis of carbon nanoparticles with cellulosic paper for biosensing. <i>Sensors and Actuators B: Chemical</i> , 2021 , 339, 129849	8.5	
3	Hemodynamics of Coronary Artery Bypass Grafting: Conventional vs. Innovative Anastomotic Configuration Designs for Enhancing Patency 2016 , 419-436		
2	Design and evaluation of the crimping of a hooked self-expandable caval valve stent for the treatment of tricuspid regurgitation. <i>Computer Methods in Biomechanics and Biomedical Engineering</i> , 2019 , 22, 533-546	2.1	
1	Real-time flow impedance evaluation method for ultra-fast early detection of aneurysmal diseases. <i>Biomedical Signal Processing and Control</i> , 2021 , 64, 102256	4.9	