Hwa Liang Leo

List of Publications by Year
in descending order

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128 papers	2,213 citations	218381 26 h-index	288905 40 g-index
131 all docs	131 docs citations	131 times ranked	2863 citing authors

#	Article	IF	Citations
1	Nanoparticles-reinforced poly-l-lactic acid composite materials as bioresorbable scaffold candidates for coronary stents: Insights from mechanical and finite element analysis. Journal of the Mechanical Behavior of Biomedical Materials, 2022, 125, 104977.	1.5	4
2	Shapeâ€Anisotropic Microembolics Generated by Microfluidic Synthesis for Transarterial Embolization Treatment. Advanced Healthcare Materials, 2022, 11, e2102281.	3.9	5
3	Shape memory micro-anchors with magnetic guidance for precision micro-vascular deployment. Biomaterials, 2022, 283, 121426.	5.7	6
4	Using a reducedâ€order model to investigate the effect of the heart rate on the aortic dissection. International Journal for Numerical Methods in Biomedical Engineering, 2022, 38, e3596.	1.0	5
5	A novel coating method to reduce membrane infolding through pre-crimping of covered stents â€“ Computational and experimental evaluation. Computers in Biology and Medicine, 2022, 145, 105524.	3.9	2
6	Shapeâ€Anisotropic Microembolics Generated by Microfluidic Synthesis for Transarterial Embolization Treatment (Adv. Healthcare Mater. 10/2022). Advanced Healthcare Materials, 2022, 11, .	3.9	1
7	How does the Nature of an Excipient and an Atheroma Influence Drug-Coated Balloon Therapy?. Cardiovascular Engineering and Technology, 2022, 13, 915-929.	0.7	4
8	Assessing the influence of atherosclerosis on drug coated balloon therapy using computational modelling. European Journal of Pharmaceutics and Biopharmaceutics, 2021, 158, 72-82.	2.0	9
9	Real-time flow impedance evaluation method for ultra-fast early detection of aneurysmal diseases. Biomedical Signal Processing and Control, 2021, 64, 102256.	3.5	0
10	A modelâ€driven approach towards rational microbial bioprocess optimization. Biotechnology and Bioengineering, 2021, 118, 305-318.	1.7	14
11	Provisional Stenting for the Treatment of Bifurcation Lesions: In Vitro Insights. Journal of Cardiovascular Translational Research, 2021, 14, 595-597.	1.1	3
12	High-throughput functional profiling of single adherent cells via hydrogel drop-screen. Lab on A Chip, 2021, 21, 764-774.	3.1	13
13	Multiscale modeling of a modified <scp>Blalockâ€Taussig</scp> surgery in a <scp>patientâ€specific</scp> tetralogy of Fallot. International Journal for Numerical Methods in Biomedical Engineering, 2021, 37, e3436.	1.0	2
14	Assessment of transient changes in oxygen diffusion of single red blood cells using a microfluidic analytical platform. Communications Biology, 2021, 4, 271.	2.0	10
15	Vortex dynamics of veno-arterial extracorporeal circulation: A computational fluid dynamics study. Physics of Fluids, 2021, 33, .	1.6	11
16	Rapid one-step in situ synthesis of carbon nanoparticles with cellulosic paper for biosensing. Sensors and Actuators B: Chemical, 2021, 339, 129849.	4.0	1
17	Monolithic polymeric porous superhydrophobic material with pneumatic plastron stabilization for functionally durable drag reduction in blood-contacting biomedical applications. NPG Asia Materials, 2021, 13, .	3.8	18
18	Full cardiac cycle asynchronous temporal compounding of 3D echocardiography images. Medical Image Analysis, 2021, 74, 102229.	7.0	2

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19	Visualization and Evaluation of Chemoembolization on a 3D Decellularized Organ Scaffold. ACS Biomaterials Science and Engineering, 2021, 7, 5642-5653.	2.6	6
20	Computational Fluid Dynamics Modeling of Hemodynamic Parameters in the Human Diseased Aorta: A Systematic Review. Annals of Vascular Surgery, 2020, 63, 336-381.	0.4	40
21	Effect of number of crowns on the crush resistance in open-cell stent design. Journal of Mechanics of Materials and Structures, 2020, 15, 75-86.	0.4	3
22	An in vitro investigation into the hemodynamic effects of orifice geometry and position on left ventricular vortex formation and turbulence intensity. Artificial Organs, 2020, 44, e520-e531.	1.0	1
23	Vibration motor-integrated low-cost, miniaturized system for rapid quantification of red blood cell aggregation. Lab on A Chip, 2020, 20, 3930-3937.	3.1	14
24	Functional reservoir microcapsules generated via microfluidic fabrication for long-term cardiovascular therapeutics. Lab on A Chip, 2020, 20, 2756-2764.	3.1	26
25	The effect of the entry and re-entry size in the aortic dissection: a two-way fluidâ€“structure interaction simulation. Biomechanics and Modeling in Mechanobiology, 2020, 19, 2643-2656.	1.4	13
26	Decellularized liver as a translucent ex vivo model for vascular embolization evaluation. Biomaterials, 2020, 240, 119855.	5.7	28
27	Bioresorbable metals in cardiovascular stents: Material insights and progress. Materialia, 2020, 12, 100727.	1.3	29
28	Ventricular vortex loss analysis due to various tricuspid valve repair techniques: an ex vivo study. American Journal of Physiology - Heart and Circulatory Physiology, 2019, 317, H1312-H1327.	1.5	3
29	Sequential drug delivery for liver diseases. Advanced Drug Delivery Reviews, 2019, 149-150, 72-84.	6.6	7
30	Ex vivo assessment of bicuspidization repair in treating severe functional tricuspid regurgitation: a stereo-scopic PIV study. Scientific Reports, 2019, 9, 11504.	1.6	8
31	TCT-174 Overexpansion of Thin-Strut BRS an a Lesion Model: InÂVitro Insights on Recoil and Mechanical Integrity. Journal of the American College of Cardiology, 2019, 74, B173.	1.2	0
32	Optimization of a Novel Preferential Covered Stent through Bench Experiments and in Vitro Platelet Activation Studies. ACS Biomaterials Science and Engineering, 2019, 5, 6216-6230.	2.6	1
33	Hemodynamic analysis of a novel stent graft design with slit perforations in thoracic aortic aneurysm. Journal of Biomechanics, 2019, 85, 210-217.	0.9	18
34	Design and evaluation of the crimping of a hooked self-expandable caval valve stent for the treatment of tricuspid regurgitation. Computer Methods in Biomechanics and Biomedical Engineering, 2019, 22, 533-546.	0.9	1
35	Structural and Hemodynamic Analyses of Different Stent Structures in Curved and Stenotic Coronary Artery. Frontiers in Bioengineering and Biotechnology, 2019, 7, 366.	2.0	27
36	The application of biomimicry to a mechanical valve design for the abatement of flow instabilities. European Journal of Mechanics, B/Fluids, 2019, 74, 19-33.	1.2	1

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37	Hemodynamics Simulation in the Left Anterior Descending Coronary Artery Tree. , 2019, , 257-281.		0
38	Post-operative ventricular flow dynamics following atrioventricular valve surgical and device therapies: A review. Medical Engineering and Physics, 2018, 54, 1-13.	0.8	10
39	Risk of Thrombosis in Downstream Flow of Mechanical Aortic Valves. , 2018, , 433-443.		0
40	Is Multiple Overlapping Uncovered Stents Technique Suitable for Aortic Aneurysm Repair?. Artificial Organs, 2018, 42, 174-183.	1.0	8
41	Design and Development of Novel Transcatheter Bicaval Valves in the Interventional Treatment of Tricuspid Regurgitation. Artificial Organs, 2018, 42, E13-E28.	1.0	2
42	Human fetal hearts with tetralogy of Fallot have altered fluid dynamics and forces. American Journal of Physiology - Heart and Circulatory Physiology, 2018, 315, H1649-H1659.	1.5	26
43	Association of Hemodynamic Behavior in the Thoracic Aortic Aneurysm to the Intraluminal Thrombus Prediction: A Two-Way Fluid Structure Coupling Investigation. International Journal of Applied Mechanics, 2018, 10, 1850035.	1.3	8
44	Sequential venous anastomosis design to enhance patency of arterio-venous grafts for hemodialysis. Computer Methods in Biomechanics and Biomedical Engineering, 2017, 20, 85-93.	0.9	6
45	Simulated Bench Testing to Evaluate the Mechanical Performance of New Carotid Stents. Artificial Organs, 2017, 41, 267-272.	1.0	11
46	A pumpâ€free microfluidic 3D perfusion platform for the efficient differentiation of human hepatocyteâ€like cells. Biotechnology and Bioengineering, 2017, 114, 2360-2370.	1.7	60
47	A 3D printed microfluidic perfusion device for multicellular spheroid cultures. Biofabrication, 2017, 9, 045005.	3.7	85
48	Peristaltic-Like Motion of the Human Fetal Right Ventricle and its Effects on Fluid Dynamics and Energy Dynamics. Annals of Biomedical Engineering, 2017, 45, 2335-2347.	1.3	8
49	Hemodynamic assessment of extra-cardiac tricuspid valves using particle image velocimetry. Medical Engineering and Physics, 2017, 50, 1-11.	0.8	4
50	Numerical investigation on red blood cell dynamics in microflow: Effect of cell deformability. Clinical Hemorheology and Microcirculation, 2017, 65, 105-117.	0.9	5
51	Continuous Separation of White Blood Cells From Whole Blood Using Viscoelastic Effects. IEEE Transactions on Biomedical Circuits and Systems, 2017, 11, 1431-1437.	2.7	21
52	Near-Wall Migration Dynamics of Erythrocytes in Vivo: Effects of Cell Deformability and Arteriolar Bifurcation. Frontiers in Physiology, 2017, 8, 963.	1.3	16
53	Experimental Study of Right Ventricular Hemodynamics After Tricuspid Valve Replacement Therapies to Treat Tricuspid Regurgitation. Cardiovascular Engineering and Technology, 2017, 8, 401-418.	0.7	7
54	Factors Influencing Lamina Cribrosa Microcapillary Hemodynamics and Oxygen Concentrations. , 2016, 57, 6167.		16

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55	Biomimetic Precapillary Flow Patterns for Enhancing Blood Plasma Separation: A Preliminary Study. Sensors, 2016, 16, 1543.	2.1	3
56	Hemodynamic Study of Flow Remodeling Stent Graft for the Treatment of Highly Angulated Abdominal Aortic Aneurysm. Computational and Mathematical Methods in Medicine, 2016, 2016, 1-10.	0.7	13
57	Numerical Assessment of Novel Helical/Spiral Grafts with Improved Hemodynamics for Distal Graft Anastomoses. PLoS ONE, 2016, 11, e0165892.	1.1	29
58	An Experimental and Computational Study on the Effect of Caval Valved Stent Oversizing. Cardiovascular Engineering and Technology, 2016, 7, 254-269.	0.7	7
59	A D-Shaped Bileaflet Bioprosthesis Which Replicates Physiological Left Ventricular Flow Patterns1. Journal of Medical Devices, Transactions of the ASME, 2016, 10, .	0.4	0
60	Fluid mechanics of human fetal right ventricles from image-based computational fluid dynamics using 4D clinical ultrasound scans. American Journal of Physiology - Heart and Circulatory Physiology, 2016, 311, H1498-H1508.	1.5	26
61	Hemodynamics of Coronary Artery Bypass Grafting: Conventional vs. Innovative Anastomotic Configuration Designs for Enhancing Patency. , 2016, , 419-436.		0
62	Aggregation and protein corona formation on gold nanoparticles affect viability and liver functions of primary rat hepatocytes. Nanomedicine, 2016, 11, 2275-2287.	1.7	17
63	Effects of Microporous Stent Graft on the Descending Aortic Aneurysm: A Patientâ€Specific Computational Fluid Dynamics Study. Artificial Organs, 2016, 40, E230-E240.	1.0	9
64	Symmetry recovery of cell-free layer after bifurcations of small arterioles in reduced flow conditions: effect of RBC aggregation. American Journal of Physiology - Heart and Circulatory Physiology, 2016, 311, H487-H497.	1.5	5
65	A biomimetic bi-leaflet mitral prosthesis with enhanced physiological left ventricular swirl restorative capability. Experiments in Fluids, 2016, 57, 1.	1.1	3
66	Erythrocyte aggregation may promote uneven spatial distribution of NO/O in the downstream vessel of arteriolar bifurcations. Journal of Biomechanics, 2016, 49, 2241-2248.	0.9	6
67	Covered Stent Membrane Design for Treatment of Atheroembolic Disease at Carotid Artery Bifurcation and Prevention of Thromboembolic Stroke: An In Vitro Experimental Study. Artificial Organs, 2016, 40, 159-168.	1.0	10
68	A D-Shaped Bileaflet Bioprosthesis which Replicates Physiological Left Ventricular Flow Patterns. PLoS ONE, 2016, 11, e0156580.	1.1	8
69	Hybrid capillary-inserted microfluidic device for sheathless particle focusing and separation in viscoelastic flow. Biomicrofluidics, 2015, 9, 064117.	1.2	41
70	In Vitro Investigation of the Hemodynamics of Transcatheter Heterotopic Valves Implantation in the Cavo-Atrial Junction. Artificial Organs, 2015, 39, 803-814.	1.0	10
71	Comparison of hinge microflow fields of bileaflet mechanical heart valves implanted in different sinus shape and downstream geometry. Computer Methods in Biomechanics and Biomedical Engineering, 2015, 18, 1785-1796.	0.9	10
72	Microfluidic device for sheathless particle focusing and separation using a viscoelastic fluid. Journal of Chromatography A, 2015, 1406, 244-250.	1.8	60

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73	A semi-automated method for patient-specific computational flow modelling of left ventricles. Computer Methods in Biomechanics and Biomedical Engineering, 2015, 18, 401-413.	0.9	15
74	Effect of erythrocyte aggregation at pathological levels on NO/O2 transport in small arterioles. Clinical Hemorheology and Microcirculation, 2015, 59, 163-175.	0.9	7
75	A Patient-Specific Computational Fluid Dynamic Model for Hemodynamic Analysis of Left Ventricle Diastolic Dysfunctions. Cardiovascular Engineering and Technology, 2015, 6, 412-429.	0.7	11
76	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. Medical and Biological Engineering and Computing, 2015, 53, 165-177.	1.6	18
77	A review of numerical methods for red blood cell flow simulation. Computer Methods in Biomechanics and Biomedical Engineering, 2015, 18, 130-140.	0.9	48
78	Numerical Modeling of Intraventricular Flow during Diastole after Implantation of BMHV. PLoS ONE, 2015, 10, e0126315.	1.1	17
79	Alteration of Blood Flow in a Venular Network by Infusion of Dextran 500: Evaluation with a Laser Speckle Contrast Imaging System. PLoS ONE, 2015, 10, e0140038.	1.1	12
80	Computational Hemodynamic Investigation of Bileaflet and Trileaflet Mechanical Heart Valves. Journal of Heart Valve Disease, 2015, 24, 393-403.	0.5	1
81	Editorial (Thematic Issue: Advanced Biomaterial in Clinical Medicine). Current Medicinal Chemistry, 2014, 21, 2467-2468.	1.2	0
82	Perfusion enhanced polydimethylsiloxane based scaffold cell culturing system for multiâ€well drug screening platform. Biotechnology Progress, 2014, 30, 418-428.	1.3	7
83	Enhanced and conventional project-based learning in an engineering design module. International Journal of Technology and Design Education, 2014, 24, 437-458.	1.7	34
84	Computational fluid model incorporating liver metabolic activities in perfusion bioreactor. Biotechnology and Bioengineering, 2014, 111, 885-895.	1.7	16
85	Two-dimensional strain-hardening membrane model for large deformation behavior of multiple red blood cells in high shear conditions. Theoretical Biology and Medical Modelling, 2014, 11, 19.	2.1	12
86	In vitro measurements of velocity and wall shear stress in a novel sequential anastomotic graft design model under pulsatile flow conditions. Medical Engineering and Physics, 2014, 36, 1233-1245.	0.8	16
87	Numerical simulation of patient-specific left ventricular model with both mitral and aortic valves by FSI approach. Computer Methods and Programs in Biomedicine, 2014, 113, 474-482.	2.6	59
88	Numerical investigation of blood flow in three-dimensional porcine left anterior descending artery with various stenoses. Computers in Biology and Medicine, 2014, 47, 130-138.	3.9	22
89	Design considerations and quantitative assessment for the development of percutaneous mitral valve stent. Medical Engineering and Physics, 2014, 36, 882-888.	0.8	17
90	Computational Simulation of NO/O2 Transport in Arterioles: Role of Cell-Free Layer. Lecture Notes in Computational Vision and Biomechanics, 2014, , 89-100.	0.5	1

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91	Current Hydrogel Solutions for Repairing and Regeneration of Complex Tissues. Current Medicinal Chemistry, 2014, 21, 2480-2496.	1.2	11
92	Numerical analysis of the hemodynamic performance of bileaflet mechanical heart valves at different implantation angles. Journal of Heart Valve Disease, 2014, 23, 642-50.	0.5	0
93	A Novel Carotid Covered Stent Design: In Vitro Evaluation of Performance and Influence on the Blood Flow Regime at the Carotid Artery Bifurcation. Annals of Biomedical Engineering, 2013, 41, 1990-2002.	1.3	23
94	Scalable alignment of three-dimensional cellular constructs in a microfluidic chip. Lab on A Chip, 2013, 13, 4124.	3.1	55
95	Design and finite element-based fatigue prediction of a new self-expandable percutaneous mitral valve stent. CAD Computer Aided Design, 2013, 45, 1153-1158.	1.4	27
96	Scalable cell alignment on optical media substrates. Biomaterials, 2013, 34, 5078-5087.	5.7	25
97	Effect of deformability difference between two erythrocytes on their aggregation. Physical Biology, 2013, 10, 036001.	0.8	18
98	A thinâ€walled polydimethylsiloxane bioreactor for highâ€density hepatocyte sandwich culture. Biotechnology and Bioengineering, 2013, 110, 1663-1673.	1.7	27
99	FSI simulation of intra-ventricular flow in patient-specific ventricular model with both mitral and aortic valves. , 2013, 2013, 703-6.		2
100	Computational fluid modeling and performance analysis of a bidirectional rotating perfusion culture system. Biotechnology Progress, 2013, 29, 1002-1012.	1.3	4
101	Effects of Stenosis on the Porcine Left Anterior Descending Arterial Tree. , 2013, 2013, 3869-72.		1
102	Has Percutaneous Aortic Valve Replacement Taken Center Stage in the Treatment of Aortic Valve Disease?. Critical Reviews in Biomedical Engineering, 2013, 41, 405-424.	0.5	0
103	STRESS ANALYSIS OF CAROTID ARTERY STENT UNDER BENDING AND TORSION. Journal of Biomechanics, 2012, 45, S637.	0.9	1
104	Hepatocyte function within a stacked double sandwich culture plate cylindrical bioreactor for bioartificial liver system. Biomaterials, 2012, 33, 7925-7932.	5.7	34
105	Experimentally Validated Hemodynamics Simulations of Mechanical Heart Valves in Three Dimensions. Cardiovascular Engineering and Technology, 2012, 3, 88-100.	0.7	19
106	Recent Advances in Transcatheter Heart Valve Replacement: A Review on Aortic and Mitral Implantation. Recent Patents on Biomedical Engineering, 2012, 5, 235-252.	0.5	1
107	Simulation of Bileaflet Mechanical Heart Valves Flow Dynamics. , 2012, , .		0
108	Recent Advances in Polymeric Heart Valves Research. International Journal of Biomaterials Research and Engineering, 2011, 1, 1-17.	0.0	20

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109	A robust high-throughput sandwich cell-based drug screening platform. Biomaterials, 2011, 32, 1229-1241.	5.7	54
110	LIVER TISSUE MODEL FOR DRUG TOXICITY SCREENING. Journal of Mechanics in Medicine and Biology, 2011, 11, 369-390.	0.3	8
111	Nanoparticle-Based Delivery System for Application of siRNA In Vivo. Current Drug Metabolism, 2010, 11, 182-196.	0.7	85
112	Current development of bioreactors for extracorporeal bioartificial liver (Review). Biointerphases, 2010, 5, FA116-FA131.	0.6	27
113	Laminar-flow immediate-overlay hepatocyte sandwich perfusion system for drug hepatotoxicity testing. Biomaterials, 2009, 30, 5927-5936.	5.7	60
114	Computational Fluid Dynamics Investigation of the Effect of the Fluid-Induced Shear Stress on Hepatocyte Sandwich Perfusion Culture. IFMBE Proceedings, 2009, , 1405-1408.	0.2	2
115	Synthetic sandwich culture of 3D hepatocyte monolayer. Biomaterials, 2008, 29, 290-301.	5.7	74
116	Modified control grid interpolation for the volumetric reconstruction of fluid flows. Experiments in Fluids, 2008, 45, 987-997.	1.1	14
117	Structural simulations of prosthetic tri-leaflet aortic heart valves. Journal of Biomechanics, 2008, 41, 1510-1519.	0.9	49
118	Microfabricated silicon nitride membranes for hepatocyte sandwich culture. Biomaterials, 2008, 29, 3993-4002.	5.7	22
119	Spatio-temporal Flow Analysis in Bileaflet Heart Valve Hinge Regions: Potential Analysis for Blood Element Damage. Annals of Biomedical Engineering, 2007, 35, 1333-1346.	1.3	13
120	Fluid Dynamic Assessment of Three Polymeric Heart Valves Using Particle Image Velocimetry. Annals of Biomedical Engineering, 2006, 34, 936-952.	1.3	80
121	A Comparison of Flow Field Structures of Two Tri-Leaflet Polymeric Heart Valves. Annals of Biomedical Engineering, 2005, 33, 429-443.	1.3	32
122	Flow in a Mechanical Bileaflet Heart Valve at Laminar and Near-Peak Systole Flow Rates: CFD Simulations and Experiments. Journal of Biomechanical Engineering, 2005, 127, 782-797.	0.6	91
123	Comparison of the Hinge Flow Fields of Two Bileaflet Mechanical Heart Valves under Aortic and Mitral Conditions. Annals of Biomedical Engineering, 2004, 32, 1607-1617.	1.3	40
124	An Analysis of Turbulent Shear Stresses in Leakage Flow Through a Bileaflet Mechanical Prostheses. Journal of Biomechanical Engineering, 2002, 124, 155-165.	0.6	25
125	Microflow fields in the hinge region of the CarboMedics bileaflet mechanical heart valve design. Journal of Thoracic and Cardiovascular Surgery, 2002, 124, 561-574.	0.4	34
126	Bileaflet Aortic Valve Prosthesis Pivot Geometry Influences Platelet Secretion and Anionic Phospholipid Exposure. Annals of Biomedical Engineering, 2001, 29, 657-664.	1.3	24

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127	The angle-resolved velocity measurements in the impeller passages of a model biocentrifugal pump. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2001, 215, 547-568.	1.1	7
128	Comparison of flow characteristics of enlarged blood pump models with different impeller design. International Communications in Heat and Mass Transfer, 1999, 26, 369-378.	2.9	3