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### Research Interest

1. Computational and experimental biofluid mechanics
2. Heart valve engineering
3. Artificial liver device
4. In vitro drug screening platform

### Selected Journal Publications

1. N. Foin, R. Lee, Bourantas C, Mattesini A, Soh N, Lim JE, Torii R, Ng J, **H. L. Leo.**, G. Caiazzo, Fabris E, Kilic D, Onuma Y, Low AF, Nijjer S, Sen S, Petraco R, Al Lamee R, Davies JE, Di Mario C, Wong P, Serruys PW. ‘Bioresorbable vascular scaffold radial expansion and conformation compared to a metallic platform: insights from in vitro expansion in a coronary artery lesion model’, EuroIntervention, 18;12(7):834-44, Sept 2016
2. Y. C. Ng, B. Namgung, S. L. Tien, **H. L. Leo**, and S. H. Kim “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 311(2):H487-H497 01 Aug 2016
3. Y. C. Ng, B. Namgung, **H. L. Leo**, S. Kim, ‘Erythrocyte aggregation may promote uneven spatial distribution of NO/O2 in the downstream vessel of arteriolar bifurcations’, Journal of Biomechanics 49(11):2241-2248 26 Jul 2016
4. G. D. Tan, Jimmy Hon, S. H. Kim and **H. L. Leo**, “A D-Shaped Bileaflet Bioprosthesis which Replicates Physiological Left Ventricular Flow Patterns ”, PLoS ONE 11(6):01 Jun 2016
5. S. L. Yeow and **H. L. Leo**, “ Hemodynamic study of flow remodeling stent graft for the treatment of highly angulated abdominal aortic aneurysm”, Computational and Mathematical Methods in Medicine , Computational and Mathematical Methods in Medicine 2016:01 Jan 2016
6. F. Kabinejadian, B. Su, D. N. Ghista, M. Ismail, S. H. Kim and **H. L. Leo**, Sequential Venous Anastomosis Design to Enhance Patency of Arterio-Venous Grafts for Hemodialysis’, Computer Methods in Biomechanics and Biomedical Engineering 20(1):85-93 02 Jan 2017
7. F. Kabinejadian, A. Danpinid, F. S. Cui, P. Ho Jackie, **H. L. Leo**, “Covered stent membrane design for treatment of atheroembolic disease at carotid artery bifurcation and prevention of thromboembolic stroke”, Artificial Organs 40(2):159-168 01 Feb 2016
8. . T. Nguyen, S. N. Wibowo, Y. A. Leow, H. H Nguyen, L. Zhong and **H. L. Leo**, ‘A patient-specific computational fluid dynamic model for hemodynamic analysis of left ventricle diastolic dysfunctions’, Cardiovascular Engineering and Technology 6(4):412-429 01 Dec 2015
9. V B. Y. Su, L. Zhong, F. Kabinejadian, H. Q. Phang, G. P.  Kumar, F. S. Cui, Sangho Kim, R. S. Tan, **H. L. Leo**, Jimmy K. F. Hon, ‘Numerical modeling of intraventricular flow during diastole after implantation of BMHV’, PLoS ONE 10(5):11 May 2015
10. G. D. Sean Tan, S. H. Kim, **H. L. Leo**, ‘A biomimetic bi-leaflet mitral prosthesis with enhanced physiological left ventricular swirl restorative capability’, Experiments in Fluids 57(6):01 Jun 2016
11. M. Ismail, F. Kabinejadian, Y. N. Nguyen, Edgar L. W. Tay, S.H. Kim, **H. L. Leo**, ‘In vitro investigation of the hemodynamics of transcatheter heterotopic valves implantation in the Cavo-atrial junction’, Artificial Organs 39(9):803-814 01 Sep 2015
12. Kabinejadian, F., D.N. Ghista, B. Su, M. Kaabi Nezhadian, L.P. Chua, J.H. Yeo, and H.L. Leo, ‘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. 36(10):1233-1245, Aug 2014
13. M. Tania, G. D. Tan, M. N. Hsu, S. N. Png, G. Y. Toh, K. E. Birgersson, **H. L. Leo**, ‘Perfusion enhanced polydimethylsiloxane based scaffold cell culturing system for multi-well drug screening platform’, Biotechnology Progress, 30(2):418-28, Mar-Apr 2014
14. M. N. Hsu,  G. D. Tan,  M. Tania, K. E. Birgersson, **H. L. Leo**, ‘Computational fluid model incorporating liver metabolic activities in perfusion bioreactor’, Biotech and Bioengin, 111(5):885-95, May 2014
15. Anene-Nzelu C.G, K. Y. Peh, Fraiszudeen A, Ng S.H.G, Toh Y.C, **H. L. Leo**, Hanry Yu ‘Scalable alignment of three-dimensional cellular constructs in a microfluidic chip’, Lab on Chip, 13(20):4124-33 Oct 2013.
16. Anene-Nzelu C.G. Choudhury D, Huipeng L, Fraiszudeen A, Yim P.K, Toh Y.C, Ng S.H.G, **H. L. Leo**, Yu H., ‘Scalable cell alignment on optical media substrates, Biomaterials, 34(21):5078-87, 2013
17. X. Lei, S. F. Zhang, **H. L. Leo**, and Hanry Yu, ‘Hepatocyte function within a stacked double sandwich culture plate cylindrical bioreactor for bioartificial liver system’, Biomaterials, Nov;33(32):7925-32, 2012