

# CURRICULUM VITAE



## PERSONAL INFORMATION

Name	Dr. Mohd Azrul Hisham Bin Mohd Adib
Position	Senior Lecturer / Researcher
Nationality	Malaysia
Address	Human Engineering Group, Faculty of Mechanical Engineering, Universiti Malaysia Pahang (UMP), Pekan, Pahang, Malaysia.
Mobile	09-4246246
Email	azrul@ump.edu.my

## EDUCATION

2014 – 2017	Osaka University, Japan.	Biomedical Engineering	PhD
2008 – 2010	Univerisiti Teknologi Malaysia (UTM), Johor, Malaysia.	Biomechanical Engineering	Master
2002 - 2007	Univerisiti Teknologi Malaysia (UTM), Johor, Malaysia.	Mechanical Engineering	Degree

## PROFESSIONAL MEMBERSHIP

2008	Graduate Engineer, Registration No.61283A	Board of Engineers Malaysia (BEM)
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## PRINCIPAL POSITIONS HELD

Apr 2017 - onwards	Senior Lecturer	Faculty of Mechanical Engineering, Universiti Malaysia Pahang, Pekan, Pahang, Malaysia.
Oct 2012 – Oct 2013	Lecturer	Faculty of Mechanical Engineering, Universiti Malaysia Pahang, Pekan, Pahang, Malaysia.

Sept 2008 – Sept 2012	Assistant Lecturer	Faculty of Mechanical Engineering, Universiti Malaysia Pahang, Pekan, Pahang, Malaysia.
Oct 2008 – Aug 2008	R&D Engineer	Panasonic Communication Cooperation, Fukuoka, Japan.
June 2007 – Sept 2007	R&D Engineer	Panasonic Communication Malaysia, Johor, Malaysia.

## RESEARCH INTEREST

Numerical & Bio-simulation, Computational Fluid Dynamics (CFD), Fluid- Structure Interaction (FSI), Bio-fluids, Biomedical engineering, Biomechanics, Neurovascular & Cardiovascular Imaging, Biomedical Device.

## JOURNAL PUBLICATIONS (SELECTED)

1. **Mohd Azrul Hisham Mohd Adib**, Satoshi Ii, Yoshiyuki Watanabe, Shigeo Wada, "Minimizing the blood velocity differences between phase contrast magnetic resonance imaging and computational fluid dynamics simulations in cerebral arteries and aneurysms", *Medical & Biological Engineering & Computing*, vol. 55, no.3, pp.1-15, 2017.
2. Satoshi Ii, **Mohd Azrul Hisham Mohd Adib**, Yoshiyuki Watanabe, Shigeo Wada, "Physically consistent data assimilation method based on feedback control for patient-specific blood flow analysis", *International Journal for Numerical Methods in Biomedical Engineering*, 2017.
3. **Mohd Azrul Hisham Mohd Adib**, Satoshi Ii, Yoshiyuki Watanabe, Shigeo Wada, "Patient-Specific Blood Flows Simulation on Cerebral Aneurysm Based on Physically Consistency Feedback Control", *IEEE 16th International Conference on Bioinformatics and Bioengineering*, 2016.
4. **Mohd Azrul Hisham Mohd Adib**, "Measurement of threshold image intensities on difference vascular model: Effect on computational fluid dynamics for patient-specific cerebral aneurysm", *Journal of Biomimetics, Biomaterials and Biomedical Engineering*, vol. 27, pp. 55-59, 2016.
5. **Mohd Azrul Hisham Mohd Adib**, Nur Hazreen Mohd Hasni, "Degenerative vs. rigidity on mitral valve leaflet using fluid structure interaction (FSI) model", *Journal of Biomimetics, Biomaterials and Biomedical Engineering*, vol. 26, pp. 60-65, 2016.
6. **Mohd Azrul Hisham Mohd Adib**, Nur Hazreen Mohd Hasni, "Effect on the reconstruction of blood vessel geometry to the thresholds image intensity level for patient aneurysm", *Journal of Biomimetics, Biomaterials and Biomedical Engineering*, vol. 22, pp. 89-95, 2015.
7. **Mohd Azrul Hisham Mohd Adib**, Faradila Naim, Nur Hazreen Mohd Hasni, Kahar Osman, "Prediction on Behaviour of Blood Velocity and Mitral Leaflet Displacement in the Different Shapes of Heart Valve during Cardiac Cycle", *Journal of Biomimetics, Biomaterials & Tissue Engineering*, vol. 17, pp. 79-85, 2013.

8. **Mohd Azrul Hisham Mohd Adib**, Norashikin Nor Tuah, Nur Hazreen Mohd Hasni, Kahar Osman, "Prediction of Blood Flow Pattern in S-Shaped Model of Artery under Normal Blood Pressure", *Journal of Mechanical Engineering and Sciences (JMES)*, vol. 4, pp. 496-503, 2013.
9. **Mohd Azrul Hisham Mohd Adib**, Nur Hazreen Mohd Hasni, Kahar Osman, Oteh Maskon, Kumaran Kadirgama "Prediction of Blood Flow Velocity and Leaflet Deformation via 2D Mitral Valve Model", *Journal of Mechanical Engineering and Sciences*, vol. 2, pp. 217-225, 2012.
10. **Mohd Azrul Hisham Mohd Adib**, Mohd Fadhlán Yusof, Zulkifli Ahmad, Nur Hazreen Mohd Hasni, "Detection of Cardiac Geometry via Difference Intensity of Echocardiogram Images", *Journal of Integrative Bioinformatics (JIB)*, vol. 9 (2), pp. 195, 2012.
11. **Mohd Azrul Hisham Mohd Adib**, Nur Hazreen Mohd Hasni, Kahar Osman and Oteh Maskon, "Analysis on Rigidity Mitral Valve Leaflet (MVL) and Backflow Problems during Cardiac Cycle", *Journal of Biomimetics, Biomaterials, and Tissue Engineering*, vol. 13, pp.75-79, 2012.

#### INTERNATIONAL CONFERENCE (SELECTED)

1. **Mohd Azrul Hisham Mohd Adib**, Satoshi Ii, Yoshiyuki Watanabe, Shigeo Wada, "Patient-specific blood flows simulation on cerebral aneurysm based on physically consistency feedback control", 29<sup>th</sup> Bioengineering Conference, Nagoya, Japan, pp. 1-2, 2017.
2. **Mohd Azrul Hisham Mohd Adib**, Satoshi Ii, Yoshiyuki Watanabe, Shigeo Wada, "Patient-specific blood flows simulation on cerebral aneurysm based on physically consistency feedback control", 16<sup>th</sup> IEEE International Conference on Bioinformatics and Bioengineering, (BIBE 2016), Taichung, Taiwan, pp. 334-337, 2016.
3. **Mohd Azrul Hisham Mohd Adib**, Satoshi Ii, Yoshiyuki Watanabe, Shigeo Wada, "Patient-specific blood flows simulation on cerebral aneurysm based on physically consistency feedback control", 16<sup>th</sup> IEEE International Conference on Bioinformatics and Bioengineering, (BIBE 2016), Taichung, Taiwan, pp. 334-337, 2016.
4. **Mohd Azrul Hisham Mohd Adib**, Satoshi Ii, Yoshiyuki Watanabe, Shigeo Wada, "Error estimation of blood flow velocities in the cerebral artery between PC-MRI measurement and CFD simulation: Effect of the extracted geometries and boundary conditions", *International Forum Medical Imaging in Asia (IFMIA)*, Tainan, Taiwan, OS. 1 (462), pp. 1-4, 2015.
5. **Mohd Azrul Hisham Mohd Adib**, Satoshi Ii, Yoshiyuki Watanabe, Shigeo Wada, "Effect of extracted geometries with different threshold image intensities on the patient-specific blood flow analysis with the PC-MRI based data assimilation technique", 27<sup>th</sup> Bioengineering Conference, Niigata, Japan, pp. 1-2, 2015.
6. **Mohd Azrul Hisham Mohd Adib**, Mohd Firdaus Jaafar, "Review: Modelling of Meniscus of knee Joint During Soccer Kicking", 2<sup>nd</sup> International Conference on Mechanical Engineering Research (ICMER 2013), Kuantan, Pahang, Malaysia, vol. 50 (1), pp.1-8, 2013.
7. **Mohd Azrul Hisham Mohd Adib**, Nur Hazreen Mohd Hasni, "Incompressible: Effect of Blood Flow Pattern through Left Ventricle of Mitral Valve and Aortic

- Valve”, International Conference on Life Science & Biological Engineering (ICLSBE 2013), Tokyo, Japan; pp. 320~325, 2013.
8. **Mohd Azrul Hisham Mohd Adib**, Zahari Taha, Kumaran Kadirgama, Zulkifli Ahmad, Nasrul Hadi Johari, Zulfika Anuar, Mohd Hasnun Arif Hassan, “Computational Modeling: Stress/Strain Analysis on Soccer Knee Pad Using Finite Element Method (FEM)”, International of ASEAN University Sport Conference (AUSCIC 2012), Vientiane, Laos, pp. 1~5, 2012.
  9. **Mohd Azrul Hisham Mohd Adib**, Nur Hazreen Mohd Hasni, “Modeling of Blood Flow Velocity into the Main Artery via Left Ventricle of Heart during Steady Condition”, International Conference on Bioinformatics, Computational Biology & Biomedical Engineering (ICBCBBE 2012), Paris, France, vol. 21, pp. 957-961, 2012.
  10. Rudiyanto Philman Jong, Kahar Osman, **Mohd Azrul Hisham Mohd Adib**, “Determination of Correlation between Backflow Volume and Mitral Valve Leaflet Young Modulus from Two Dimensional Echocardiogram Images”, The 4<sup>th</sup> International Meeting of Advances in Thermofluids (IMAT 2011), Melaka, Malaysia, AIP Conference Proceeding, American Institute of Physics, pp. 604~611, 2012.
  11. **Mohd Azrul Hisham Mohd Adib**, Kahar Osman, Nur Hazreen Mohd Hasni, Oteh Maskon, Faradila Naim, Zulkifli Ahmad, Idris Sahat, Ammar Nik Mu’tasim, “Computational Simulation of Heart Valve Leaflet under Systole Condition using Fluid Structure Interaction Model”, International Conference on Environment and BioScience (ICEBS 2011), Cairo, Egypt, vol. 21, pp. 6~10, 2011.
  12. **Mohd Azrul Hisham Mohd Adib**, Kahar Osman, Nur Hazreen Mohd Hasni, Oteh Maskon, Faradila Naim, Zulkifli Ahmad, Idris Sahat, Ammar Nik Mu’tasim, “Computational Simulation of Heart Valve Leaflet under Systole Condition using Fluid Structure Interaction Model”, International Conference on Environment and BioScience (ICEBS 2011), Cairo, Egypt, vol. 21, pp. 6~10, 2011.
  13. **Mohd Azrul Hisham Mohd Adib**, Nur Hazreen Mohd Hasni, Oteh Maskon, “Analysis of Echocardiography Images Using Grid Independent Technique for Patients with Mitral Valve Problems (MVP)”, International Conference Information Science & Application (ICISA 2011), Jeju Island, Korea, pp. 1-5, 2011.
  14. **Mohd Azrul Hisham Mohd Adib**, Kahar Osman, Rudiyanto Philman Jong, “Analysis of Blood Flow into the Main Artery via Mitral Valve: Fluid Structure Interaction Model”, International Science & Social Research (CSSR 2010), Kuala Lumpur, Malaysia, pp. 356-360, 2010.

## LIST OF BOOKS

2012	Blood flow into the main artery via mitral valve: Correlation between backflow volume and mitral valve leaflet young modulus from ECG images using FSI.	ISBN: 9783847372721 Lambert Academic Publishing
2012	Computational analysis of blood flow via mitral valve and aortic valve: Effect of blood flow pattern and effective stress of heart valve leaflet during steady condition.	ISBN: 9783659229312 Lambert Academic Publishing

2012	Numerical analysis on simplified 2D model of heart valve: Effect of blood velocity and leaflet displacement with different shape of heart valve leaflets during cardiac cycle.	ISBN: 9783659218507 Lambert Academic Publishing
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## RESEARCH PROJECT / GRANTS

May 2017 – May 2018	Development of novel heart simulation for monitoring the blood flow circulation measurement of active and passive patient during cardiac cycle period.	RDU171125 (Leader)
Aug 2017 – Aug 2018	Wrist Rehabilitation (WRist-T) device.	UIC171003 (Leader)
Sept 2017 – Sept 2019	Development of brain tissue swelling predictive tools for ischemic stroke patient post treatment.	RDU1703310 (Member)
June 2016 – June 2018	Develop the body balance to prevent the musculoskeletal disorder (MSD) using wearable sensors system.	RDU160389 (Leader)
Dec 2013 – Nov 2015	Three-Dimensional (3D) modelling of human airway using fluid structure interaction (FSI) technique.	RDU1303110 (Member)
Dec 2011 – May 2014	Development of high performance sports shoes and knee pad for Malaysian Athletes.	RDU110702 (Member)
July 2011 – July 2013	Biomechanical analysis and prediction on heart valve behavior by fluid structure interaction approach.	RDU110331 (Leader)

## AWARDS / ACHIEVEMENTS

Malaysian Technology Expo (MTE 2013)	New heart structure equipment for blood circulation measurement ( <i>Medicine and Intervention Category</i> )	Bronze medal
CITREX2013 / i-ENVEX 2013	Development of the archery test rig for Malaysian athlete	Gold medal / Bronze medal

## INTELLECTUAL PROPERTY / PATENT

2013	A heart simulating apparatus	IP 2013700270
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## INTERNATIONAL JOURNAL REVIEWER

Basic and Clinical Neuroscience Journal	ISSN: 2228-7442
The Open Biomedical Engineering Journal	ISSN: 1874-1207