

Ts. Dr. Mohamad Zairi Baharom

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Biography

Mohamad Zairi Baharom received his Bachelor in Mechanical Engineering (Industry) from Universiti Teknologi Malaysia (UTM), Malaysia in 2007. He worked as Research and Development (R&D) Mechanical engineer at Panasonic Communications Malaysia. He then obtained his M.Sc in Mechanical Engineering in 2013 from Universiti Kebangsaan Malaysia (UKM), Malaysia. He joined Universiti Malaysia Pahang, Malaysia as lecturer at Faculty of Mechanical and Automotive Engineering Technology. He obtained his Ph.D. from the Department of Industrial Design, Eindhoven University of Technology (TU/e), Netherlands. He is a member of the Board of Engineers Malaysia (BEM), Science and Engineering Institute (SCIEI), and a certified Apple teacher. His research interests are in product design, wearables design, and industrial design. He won several best presentation awards at several conferences held in Malaysia (2016), Japan and Thailand (2018), and London (2019). His work at TU/e has been exhibited at the Dutch Design Week 2018 (Mind the Step exhibition) and the Dubai Design Week 2018 (Global Grad Show exhibition).

Education Background

2015 - 2020	Doctor of Philosophy <i>Department of Industrial Design, Eindhoven University of Technology, Netherlands (TUe)</i>
2010 - 2013	M.Sc. in Mechanical Engineering <i>Faculty of Engineering and Build Environment, Universiti Kebangsaan Malaysia (UKM)</i>
2003 - 2007	B. Eng. Mechanical Engineering (Industry) <i>Faculty of Mechanical Engineering, Universiti Teknologi Malaysia (UTM)</i>

Career/Academic Appointments

2021 - present	Head of Programme Bachelor of Mechanical Engineering Technology (Design & Analysis) <i>Faculty of Mechanical & Automotive Engineering Technology, Universiti Malaysia Pahang</i>
2019 - present	Lecturer <i>Faculty of Mechanical & Automotive Engineering Technology, Universiti Malaysia Pahang</i>
2019	Head of Diploma Programme <i>Faculty of Mechanical & Manufacturing Engineering, Universiti Malaysia Pahang</i>
2013 - 2019	Lecturer <i>Faculty of Mechanical Engineering, Universiti Malaysia Pahang</i>

2008 - 2013	Tutor <i>Faculty of Mechanical Engineering, Universiti Malaysia Pahang</i>
2007 - 2008	R&D Mechanical Engineer (Design) <i>Panasonic Communications Malaysia</i>

Courses Taught

MME6174	Design for Manufacturing & Assembly
BMM2623	Advanced Computer Aided Design
BMM2612	Computer Aided Design
BTD1212	Product Development 1
BTD2213	Product Development 3
DMM2632	Industrial Design
DMM1413	Engineering Drawing & CAD

Professional Affiliation

Board of Engineers Malaysia (BEM)	Graduate Engineer (GE97196)
Malaysia Board of Technology (MBOT)	Professional Technologist (PT21040230)
Science and Engineering Institute (SCIEI)	Life-member

Research Interests

Product Design, Wearables, Industrial Design, and Computer Aided Design.

Research Grants

Title	Type of Grant	Role	Amount (RM)	Status
The Design and Development of Zb200 Light Support Bridge (LSB) For Rapid Bridging Solution	INDUSTRY GRANT – STARE Resources Sdn Bhd	Leader	17,000	Active
Rapid Bridging Solution for Disaster Relief Operation	INDUSTRY GRANT – STARE Resources Sdn Bhd	Leader	43,000	Completed
The Development of a Virtual Reality Training Application for Routine Activity in KANEKA Malaysia	INDUSTRY GRANT – KANEKA Malaysia	3D Modeller	52,400	Active
Design and Development of a Driving Simulator for the Road Safety Research	PROTOTYPE DEVELOPMENT GRANT - PDU	Leader	39,800	Active
Malaysian Driver's Response During Obstacle Avoidance Task Using Driving Simulation Study	INTERNATIONAL GRANT – ASEAN NCAP	Leader	19,800	Active
Virtual Exhibition Space for Mining Historical Objects	PROTOTYPE DEVELOPMENT GRANT - PDU	Member	40,000	Completed
Design and Development of An Automatized Zipper for the Dust Barrier System	RDU	Leader	5,500	Completed
Test Setup Dummy Positioning / Overall Setup Reflecting ASEAN driving behaviour	INTERNATIONAL GRANT	Leader	15,100	Completed

Development of Smart Infant-Wrap (InfaWrap) Device for Neonates	PROTOTYPE DEVELOPMENT GRANT - PDU	Member	36,000	Completed
Prediction of Muscle Fatigue on Archers Based on Physiological Measurement Using the Machine Learning Method	RDU	Member	23,000	Active

Design Consultation

- [1] SleekPump retrofit design – UMP Technology Sdn Bhd
- [2] SleekPump Dual Pump design – UMP Technology Sdn Bhd
- [3] SleekDryer design – UMP Technology Sdn Bhd
- [4] Water Purification System (WPS) model – STARE Resources Sdn Bhd
- [5] Virtual Reality solution for LSB assembly training – STARE Resources Sdn Bhd
- [6] Virtual Reality solution for chemical loading facility – KANEKA Malaysia Sdn Bhd
- [7] Driving simulator & driving simulation game – ASEAN NCAP & MIROS
- [8] Tail gate assembly jig reverse engineering design – MERCEDES Benz Malaysia
- [9] Waste Processing System design – TIGASFERA Sdn Bhd

Professional Certification

- [10] Certified Apple Teacher
- [11] Certified Associate CATIA V5 – Part Design (Dassault System)
- [12] Certified Associate CATIA V5 – Assembly Design (Dassault System)
- [13] Certified Associate CATIA V5 – Mechanical Design Specialist
- [14] Certified TRIZ Level 2 (Practitioner)

Professional Talk / Training

- [1] Keynote Speaker at Human Engineering Symposium 2023
- [2] The Secret of Outstanding Presentation – Trainer for Akademi ADAB UMP
- [3] Presenting a Quality Presentation – Speaker for MARA London
- [4] The Secret of an Outstanding Presentation: Revealed – Speaker for IIC UIAM
- [5] Product Design – Between Reality and Design Limitation – Speaker for INTI International University
- [6] The Secret of an Outstanding Presentation – Speaker for Institute of Postgraduate Studies UMP
- [7] Effective Presentation Tips & Techniques – Speaker for Perlis & Kedah Matriculation College

Journal Publications

- [1] **M.Z. Baharom**, Z. Ahmad, M.H. Arif Hassan, J. Karjanto, K.A. Abu Kassim, N.M.A. Ismail, Pedal Error Among Car Drivers: a Review on the Research Approach and Setup, *Journal of the Society of Automotive Engineers Malaysia*, Vo. 5(1) pp: 28-40, 2021.
- [2] **Mohamad Zairi Baharom**, Zulkifli Ahmad@Manap, Nursya Mimie Ayuny Ismail, Mohd Hasnun Arif Hassan, Jufriзал Karjanto, Khairil Anwar Abu Kassim, Pedal Error Naturalistic Driving Study Among Malaysian Drivers, *Lecture Notes in Mechanical Engineering*, 2021.
- [3] **Mohamad Zairi Baharom**, Frank Delbressine, Loe Feijs. Kinematics Analysis of a Robotic Zipper Prototype for Miniaturization. *International Journal of Mechanical Engineering and Robotics Research*. Vol.5, No. 4, pp 305-310, 2016.
- [4] **Mohamad Zairi Baharom**, Frank Delbressine, Marina Toeters, Loe Feijs. The Development and the Wearability Assessment of Cliff: an Automatized Zipper. *International Journal of Mechanical Engineering and Robotics Research*. Vol. 7, No. 5, pp 448-457, 2018.
- [5] **Mohamad Zairi Baharom**, Frank Delbressine, Loe Feijs, and Marina Toeters. Wearability and Usability Assessment of Cliff: an Automatized Zipper. *Journal of Industrial and Intelligent Information*. (accepted).

- [6] Gigih Priyandoko, **Mohamad Zairi Baharom**. PSO-optimised Adaptive Neuro-Fuzzy System for Magneto-rheological Damper Modelling. *International Journal of Applied Electromagnetics and Mechanics*. 41(3), pp 301-312, 2013.
- [7] **MZ Baharom**, Mohd Zaki Nuawi, G Priyandoko, Sallehuddin Mohamed Haris. Electromagnetic Braking System Using Eddy Current for Brake Disc of Al6061 and Al7075. *International Review of Mechanical Engineering*. 6(3), pp 588-594, 2012.
- [8] MSM Sani, MM Rahman, **MZ Baharom**, I Zaman. Sound Intensity Mapping of an Engineer Dynamometer. *International Journal of Automotive & Mechanical Engineering*. Vol. 11, 2015.
- [9] **MZ Baharom**, MZ Nuawi, SM Harris, G Priyandoko. Braking Torque Analysis on Electromagnetic Braking Study Using Eddy Current for Brake Disc of Al6061 and Al7075. *Applied Mechanics and Materials*. 2011.
- [10] **MZ Baharom**, Wan Nazdah Wan Hussin. Scheduling Analysis for Job Sequencing in Veneer Lamination Line. *Journal of Industrial and Intelligent Information*. 3(3), 2015.
- [11] **Mohamad Zairi Baharom**, Mohd Zaki Nuawi, Gigih Priyandoko. Parameter Analysis of Electromagnetic Braking Using Fully Nested and Two way ANOVA. *Applied Mechanics and Materials*. Vol.663, pp 193-197, 2014.
- [12] **MZ Baharom**, Mohd Zaki Nuawi, G Priyandoko, SM Harris, Mohd Zaidi Omar. Electromagnetic Braking Using Eddy Current for Stationary Exercise Bike. *Advanced Science Letters*. 19(11), pp 3143-3147, 2013.
- [13] **Mohamad Zairi Baharom**, Mohd Zaki Nuawi, Mohammad Syuhaimi Ab Rahman, Gigih Priyandoko, Che Ku Eddy Nizwan, Mohd Sazali Salleh. Air-gap Effect on Single Axis Vibration of Electromagnetic Braking Using Eddy Current on Bearing Cage. *Applied Mechanics and Materials*. Vol.663, pp 400-405, 2014.
- [14] **M.Z. Baharom**, G. Priyandoko, M.F.M. Romlay, M.S.M. Sani, M.S. Salleh, M.H.M. Yusof. Voltage Induced Effect for Vibration Suppression Using Eddy Current on Power Steering System. *ARNP Journal of Engineering and Applied Sciences*. 10(17), 2015.

Conference Proceedings

- [1] Nursya Mimie Ayuny Ismail, Aidisyahrul Hanif Zulkifli, **Mohamad Zairi Baharom**, Zulkifli Ahmad, Mohd Hasnun Arif Hassan, Juffrizal Karjanto & Zulhaidi Mohd Jawi. The Development of a Driving Simulator for Driver's Response During Obstacle Avoidance Task. 5th International Conference on Automotive Innovation and Green Energy Vehicle (AiGEV 2022).
- [2] **Mohamad Zairi Baharom**, Zulkifli Ahmad, Nursya Mimie Ayuny Ismail, Mohd Hasnun Arif Hassan, Juffrizal Karjanto & Khairil Anwar Abu Kassim. Pedal Error Naturalistic Driving Study Among Malaysian Driver, 2022. DOI: https://doi.org/10.1007/978-981-19-4425-3_7
- [3] **Mohamad Zairi Baharom**, Zulkifli Ahmad@Manap, Nursya Mimie Ayuny Ismail, Mohd Hasnun Arif Hassan, Juffrizal Karjanto, Khairil Anwar Abu Kassim, Factors Contributing to the Pedal Error or Pedal Misplacement Among Malaysian Car Drivers: a Survey, *International Conference on Mechanical Engineering Research*, 2021.
- [4] M.H.A. Rahim, M.A.H.M. Adib, **M.Z. Baharom**, N.H.M. Hasni, Improving the Infant-Wrap (InfaWrap) Device for Neonates Using Myl-Wrap Mobile Application. *The 3rd Symposium on Intelligent Manufacturing & Mechatronics (SIMM 2020), The Lecture Notes in Mechanical Engineering*, 2020.
- [5] M.H.A. Rahim, M.A.H.M. Adib, **M.Z. Baharom**, I.M. Sahat, N.H.M. Hasni, Non-Invasive Study: Monitoring the Heart Rate and SpO₂ of the Newborn Using InfaWrap Device, *IEEE-EMBS Conference on Biomedical Engineering and Sciences (IECBES)*, pp 212-217, 2020.
- [6] **Mohamad Zairi Baharom**, Marina Toeters, Frank Delbressine, Loe Feijs. Cliff: the Automated Zipper. In *proceedings of the Global Fashion Conference, 2016*, ISBN: 978-989-20-7053-7.
- [7] **Mohamad Zairi Baharom**, Frank Delbressine, Marina Toeters, Loe Feijs. The Identification of Contradictions in Cliff: an Automated Zipper Prototype Using the TRIZ Method with Root Conflict Analysis (RCA+). IN *proceedings of the 13th International MATRIZ TRIZfest 2017 Conference*, pp 407-418, 2017.

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- [8] **Mohamad Zairi Baharom**, Frank Delbressine, Marina Toeters, Loe Feijs. The Design Evolution of the Zipper: a Patent Review. In proceedings of the 4th International Conference on Industrial and Business Engineering. ISBN: 978-1-4503-6557-4, ACM, 2018.
- [9] CKE Nizwan, SA Ong, MFM Yusof, **MZ Baharom**. A Wavelet Decomposition Analysis of Vibration Signal for Bearing Fault Detection. IOP Conference Series: Materials Science and Engineering. 50(1), 2013..
- [10] **MZ Baharom**, Mohd Zaki Nuawi, Gigih Priyandoko, SM Harris, LM Siow. Eddy Current Braking Study for Brake Disc of Aluminium, Copper, and Zinc. In proceedings of Regional Engineering Postgraduate Conference, 2011.
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