



**PERSONAL DETAILS**

**Name** : Zainab Binti Asus  
**Gender** : Female  
**Date of Birth** : 14/04/1984  
**Nationality** : Malaysia  
**Marital Status** : Married  
**Permanent Address** : Kg. Tarap, 89700 Bongawan, Sabah.  
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**Website** : [people.utm.my/zainab](http://people.utm.my/zainab)  
**ID Staff** : 10267  
**Expertise** : Dynamic Systems and Control, Energetics

**ACADEMIC QUALIFICATIONS**

2014 : PhD. Diplôme de Docteur en Mécanique et Energétique  
Institut Supérieur de l'Automobile et des Transports (ISAT),  
Université de Dijon, Bourgogne, France  
2011 : MSc. Diplôme d'Ingénieur Grade de Master  
Institut Supérieur de l'Automobile et des Transports (ISAT),  
Université de Dijon, Bourgogne, France  
2007 : BSc. in Mechanical Engineering  
Faculty of Mechanical Engineering, Universiti Teknologi Malaysia,  
Skudai, Johor, Malaysia

## PROFESSIONAL MEMBERSHIP / QUALIFICATIONS / RECOGNITION

### Positions/Employer

- i) 1 Julai 2007 – 30 September 2007 – R&D Engineer, Shimano Component Malaysia Sdn. Bhd.

### Professional Membership

- i) Member (GE55146A), Board of Engineers Malaysia, since 2007.
- ii) Member (92576472), IEEE, since 2012.

## RESEARCH ACTIVITIES

### RESEARCH PROJECT UNDERTAKEN

1. 2011-2014, Project Member, Racing Series Hybrid Car, NOAO. Drive Laboratory, ISAT. Pole de la Performance Nevers Magny Cours. Budget approved EUR 500,000.
2. 2016, Project Leader, Optimisation of internal combustion engine used for series electric hybrid vehicle application. Vot No. PY/2016/06070, PAS, UTM. Budget approved RM 20,000.
3. 2016, Project Member, Thermal behaviour study of lithium-ion battery for electric and hybrid electric vehicle, Vot No. PY/2016/05932, PAS, UTM. Budget approved RM 20,000.
4. 2016, Project Member, Bottom tank monitoring using acoustic emission, Vot No. PY/2016/07068, HICOE. Budget approved RM 220,000.
5. 2017, Project Leader, Modelling of Hybrid Electric Vehicle System to Develop Rule Based Control Method in Matlab Simulink for Energy Management Strategy, Vot No. PY/2016/00864, Tier 2, UTM. Budget approved RM 20,000.

## TEACHING ACTIVITIES

Semester	Sem	Subject Code	Subject	Credit Hour	Total
2008/2009	1	SMM 1113	Statics (Tutorial)	3	3
		SME 1912	Laboratory 1	2	2
2014/2015	2	SKMM 1213	Dynamics	3	6
		SKMM 1013	Programming for Engineers	3	3
2015/2016	1	SKMM 1203	Statics	3	3
		SKMM 1213	Dynamics	3	3
	2	SKMM 1213	Dynamics	3	3

2016/2017	1	SKMM 1203	Statics	3	3
		SKMM 2223	Mechanics of Machines & Vibration	3	3
	2	SKMM 1213	Dynamics	3	6
2017/2018	1	SKMM 1213	Dynamics	3	3
		SKMM 2223	Mechanics of Machines & Vibration	3	6

## **PUBLICATIONS**

### **JOURNAL**

1. Nour Haidar, Sidi-Mohammed Senouci, Ali Kribeche, Mohamed Attia, El-Hassane Aglzim, Zainab Asus, *“New Consumer-Dependent Energy Management System to Reduce Cost and Carbon Impact in Smart Buildings”*, Journal of Sustainable Cities and Society, DOI: 10.1016/j.scs.2017.11.033, Vol. 39, p. 740-750, Q2, IF 1.777, 2017.
2. Zainab Asus, El-Hassane Aglzim, Daniela Chrenko, Zul-Hilmi Che-Daud, and Luis Le-Moyne, *“Fuel Consumption Evaluation of a Hybrid Electric Car over Aggressive Cycles for Thermal Engine Optimisation”*, International Journal of Advanced and Applied Sciences, Vol. 5, Issue No.2: 37-43, 2018.
3. Amirul Haniff Mahmud, Zul-Hilmi Che-Daud, and Zainab Asus, *“The Impact of Battery Operating Temperature and State of Charge on the Lithium-Ion Battery Internal Resistance”*, Jurnal Mekanikal, Vol. 40, Issue No.1:1-7, 2017.
4. Zainab Asus, El-Hassane Aglzim, Daniela Chrenko, Zul-Hilmi Che-Daud, and Luis Le-Moyne, *“Optimization Of Racing Series Hybrid Electric Vehicle Using Dynamic Programming”*, Jurnal Mekanikal, Vol. 38, Issue No.1: 106-121, 2015.
5. Zainab Asus, El-Hassane Aglzim, Daniela Chrenko, Zul Hilmi Che Daud, Luis Le Moyne, *“Dynamic Modeling and Driving Cycle Prediction for a Racing Series Hybrid Car”*, IEEE Journal of Emerging and Selected Topics in Power Electronics (JESTPE), 2: 541-551, Q1, IF 0.879, 2014.

### **PROCEEDINGS/CONFERENCE**

1. Zul Hilmi Che Daud, Zainab Asus, Saiful Anuar Abu Bakar, Nurulakmar Abu Husain, Pakharuddin Mohd Samin, and Daniela Chrenko, *“Model Temperature Prediction of Lithium-ion Battery used in Realistic Driving Cycles”*, in IEEE Vehicle Power and Propulsion Conference (VPPC), November 2017, Belfort, France.

2. Khairul Anwar Shahordin, Mohamad Hamizan Hassan, and Zainab Asus, "*Simulation of Vehicle Powertrain Using Energetic Macroscopic Representation Method*", in 2<sup>nd</sup> Multidisciplinary Conference on Mechanical Engineering (McME), October 2017, Johor, Malaysia.
3. Siti Sarah Mohd Puzi, Zul Hilmi Che Daud, Zainab Asus, Saiful Anuar Abu Bakar, Nurulakmar Abu Husain, Mohd Kameil Abdul Hamid, "*Contribution of Heat Generation During Charging on Thermal Behaviour of Lithium Ion Battery for HEVs Application*", in 2<sup>nd</sup> International Conference on Engineering Mechanics and Applied Sciences (ICEMAS), July 2017, Langkawi, Malaysia.
4. Zainab Asus, Daniela Chrenko, El-Hassane Aglzim, Athmane Kebairi, Alan Keromnes, Luis Le Moyne, "*Model and Control Strategy Simulation of Racing Series Hybrid Car*", in IEEE Vehicle Power and Propulsion Conference (VPPC), October 2014, Coimbra, Portugal.
5. Zainab Asus, El-Hassane Aglzim, Daniela Chrenko, Zul Hilmi Che Daud, Luis Le Moyne, "*Optimization of Racing Series Hybrid Electric Vehicle Using Dynamic Programming*", Simulation for Energy, Sustainable Development & Environment (SESDE), September 2013, Athens, Greece.
6. Daniela Chrenko, Zul Hilmi Che Daud, Zainab Asus, El-Hassane Aglzim, Luis Le Moyne, "*Sizing of ICE and Lithium-ion Battery for Series Hybrid Vehicle over Life Cycle with Battery Aging*", in IEEE Transportation Electrification Conference and Expo (iTEC), June 2013, Michigan, USA.
7. Zainab Asus, El-Hassane Aglzim, Daniela Chrenko, Luis Le Moyne, "*Parametric Design and Sizing of a Fuel Cell Hybrid Electric Racing Car*", in 5<sup>th</sup> International Conference on Fundamentals & Development of Fuel Cells (FDFC), April 2013, Karlsruhe, Germany.
8. Zainab Asus, Daniela Chrenko, El-Hassane Aglzim, Alan Keromnes, Luis Le Moyne, "*Simple Method of Estimating Consumption of Internal Combustion Engine for Hybrid Application*", in IEEE Transportation Electrification Conference and Expo (iTEC), June 2012, Michigan, USA.
9. Zainab Asus, El-Hassane Aglzim, Daniela Chrenko, Luis Le Moyne, "*Modeling of Control Strategy of a Series HEV to Optimize Fuel Consumption and Sustain Battery Charge*", Jeunes Chercheurs en Génie Electrique (JCGE) Conférence, December 2011, Belfort, France.

## **THESIS**

1. Zainab ASUS, Effective Simulation Model and New Control Strategy for Hybrid Electric Land Vehicle, PhD. Thesis, University of Burgundy, Bourgogne, FRANCE (2014).

## **BOOK / BOOK CHAPTER**

1. Tam Jia Tern, Abdul Rahman Musa, and Zainab Asus, "Mechanism to Simulate Wave Form on an Object Towed Underwater", *Experimental and Simulation Approach in Mechanical Engineering Design*, Ed. Zainab Asus, Johor Bahru: Penerbit UTM Press, 2017. 1-33. Print.
2. Mohammad Zulqarnain Alan Zamirza, Zair Asrar Ahmad, and Zainab Asus, "Developing Software for Experimental Modal Analysis", *Experimental and Simulation Approach in Mechanical Engineering Design*, Ed. Zainab Asus, Johor Bahru: Penerbit UTM Press, 2017. 107-123. Print.