



Dr. Fatimah Dzaharudin  
Senior Lecturer  
Faculty of Mechanical Engineering,  
Universiti Malaysia Pahang,  
26600 Pekan, Pahang,  
MALAYSIA.  
Tel: 609-424 6037, Fax: 609-424 6222  
Email: [fatimahd@ump.edu.my](mailto:fatimahd@ump.edu.my)  
Google Scholar : Fatimah Dzaharudin

## Academic Qualification

<b>Doctor of Philosophy (PhD) in Mechanical Engineering</b> The University of Melbourne, Australia <i>Thesis: Numerical modelling of microbubbles subjected to ultrasound</i>	<b>November 2014</b>
<b>Bachelor of Engineering (Mechanical Engineering) (Hons)</b> The University of Melbourne, Australia	<b>2005 – 2008</b>
<b>South Australian Matriculation</b> International Education Center, UiTM, Malaysia <i>TER: 96.15/100</i>	<b>2003 – 2004</b>

## Brief Profile

A PhD graduate from the Mechanical Engineering Department at The University of Melbourne, Australia with 10 years of research experience in various fields including bubble acoustics, computational methods, dynamical modelling, cloud computing and parallel programming. Among the awards received during studies is the prestigious Research Studentship Award from the University of Melbourne given to the top 4 students in the penultimate year. This award opened the pathway to collaborate with Australia's national science agency, CSIRO (Commonwealth Scientific and Industrial Research Organisation) in developing microbubbles particularly for drug/gene delivery and site-targeted imaging. The outcome of the collaboration was the successful development of a theoretical model that accurately predicts the behavior of encapsulated microbubble behavior in pre-clinical trials. This study was later extended and developed during postgraduate studies where findings have been published in several journals. The best part of the collaboration, aside from the achievements, was that it opened avenues to work with highly competitive and passionate groups of people. I am currently working as a lecturer in Universiti Malaysia Pahang and exploring areas beyond my previous research including software development, data analytics, machine learning and big data. I am passionate about learning and love to surround myself with highly productive people.

## Working Experiences / Appointment

### Senior Lecturer

Universiti Malaysia Pahang

*Subjects include Computer Programming, Software Engineering, Technical Informatics 1, Technical Informatics 2, Statics, Occupational Safety and Health, Mechanical and Manufacturing Processes Laboratories.*

### Researcher

CSIRO

*Studied microfluidics and microbubble oscillation in ultrasonic fields.*

### Tutor/lecturer

The University of Melbourne, Australia

*Subjects include Programming in C, algorithms, robotics, circuits, matlab, engineering mathematics, statics, thermodynamics, computational methods, design, fluid dynamics and human resources and management*

### Teacher

Flemington Primary School, Australia

## Areas of Expertise

Ultrasonics, Microbubbles, Applied Mathematics, Chaos Physics, Dynamical systems, Nonlinear systems and Computational methods, Bubble Acoustics, Cloud computing, Parallel Programming, Mathematical modelling, Data Analytics in healthcare, Software Development

## Research Interest

Chaotic dynamics of microbubbles systems subjected to ultrasound.  
Cloud computing solutions in public healthcare  
Big data and Data analytics in healthcare  
Insulin control protocols in critical care units in local public hospitals critical care  
Software development

## Awards / Achievements

Anugerah Perkhidmatan Cemerlang (APC)	2016
Best Poster Presentation (2 <sup>nd</sup> Prize) at the Malaysia Society of Anaesthesiologists & College of Anaesthesiologists, AMM	2017
Research studentship awards (awarded to the 4 top penultimate students in the Department of Mechanical Engineering)	2007
Summer research (chosen for a joint research venture between The University of Melbourne and Commonwealth Scientific and Industrial Research Organisation (CSIRO))	2008
Ministry of Higher Education Scholarship, PhD at University of Melbourne, Australia	2009-2011
Public Service Department Scholarship, BEng at University of Melbourne, Australia	2005-2008
Public Service Department Scholarship, South Australian Matriculation, International Education Centre, UiTM	2003-2004

## Professional Qualification / Membership / Affiliation / Experience

### A) Professional Qualification

1. Microsoft Professional Program for Data Science, Awarded on 2 November 2017, (Certificate Number: 728f6758-18b8-4973-ab0f-74885e8e0e79)

### B) Membership of Professional Body

1. Member, Institute of Acoustics (IOA) (Membership Number: 50304)
2. Graduate engineer, Board of Engineers Malaysia (BEM) since 20 August 2015 (Membership Number: GE102426A)
3. Member, Student membership of Institution of Engineers Australia
4. Member, Graduate membership of Institution of Engineers Australia

### C) Technical Editor, Journals and Papers Reviewer

1. International Conference on Applied Computing, Mathematical Sciences and Engineering (ACME 2016), 30-31 May 2016, Johor Bahru, Johor
2. 3<sup>rd</sup> International Conference on Mechanical Engineering Research (ICMER 2015), 18-19 August 2015, Kuantan, Pahang
3. 2<sup>nd</sup> International Conference on Automotive Innovation and Green Energy Vehicle (AIGEV), 2-3 August 2016

### D) Conference & Other Professional Experience

1. Organising Committee & Presenter, International Medical Device & Technology Conference (iMEDITEC 2017), 6-7 September 2017
2. Reviewer & Organising Committee, The 4<sup>th</sup> International Conference on Mechanical Engineering Research (ICMER 2017), 1-2 August 2017

3. Session Chairperson, Presenter & Reviewer, IEEE-EMBS 2016 Conference on Biomedical Engineering and Sciences, 4-9 December 2016, Kuala Lumpur, Malaysia
4. Session Chairperson, Presenter & Reviewer, Malaysian Technical Universities Conference on Engineering and Technology (MUCET 2015), 11-13 October 2015
5. Session Chairperson & Reviewer, 3<sup>rd</sup> International Conference on Mechanical Engineering Research (ICMER 2015), 18-19 August 2015, Kuantan, Pahang

## List of Publications

1. Dzaharudin, F., Ooi, A., Manasseh, R., Effects of boundary proximity on monodispersed microbubbles in ultrasonic fields, *Journal of Sound Vibration*, 2017, vol. 410, pp. 330-343
2. Dzaharudin, F., Alias, E. A., Kasuan, M. N. and Jamaludin, U. K., Effects of microbubble size on the dynamical behaviour of encapsulated Sonovue® contrast agents in ultrasonic fields, *International Medical Device & Technology Conference (iMEDITEC 2017)*
3. Dzaharudin, F., Ralib, A. M., Nor, M. B. and Jamaludin, U. K., 'Implementation of a Prototype Glomerular Filtration Rate Application To Monitor Creatinine Kinetic Dynamics in Critically Ill Patients', *IEEE-EMBS Conference on Biomedical Engineering and Sciences*, 2016, Kuala Lumpur, Malaysia, pp. 46-50, 4 December 2016
4. Ummu K Jamaludin, Fatimah Dzaharudin, Normy Norfiza A Razak, HM Luqman, W Zuhrihan WM Zulkifly, Fatanah M Suhaimi, Azrina Md Ralib, Mohd Basri Mat Nor, Christopher G Pretty, Performance of STAR virtual trials for diabetic and non-diabetic in HTAA intensive care unit, *IEEE-EMBS Conference on Biomedical Engineering and Sciences*, 2016, Kuala Lumpur, Malaysia, pp. 193-198, 4 December 2016
5. Jamaludin, U. K. Suhaimi, F. M., Razak, N. N. A., Ralib, A. M., Nor, M. B. M., Mathematical Modelling of Glucose-Insulin System Behaviour in Hospital Tengku Ampuan Afzan Intensive Care Unit Patients, *Journal of Engineering and Applied Sciences*, 2016, vol. 11 no. 18, pp. 10899-10903
6. Dzaharudin, F., 'Numerical Study of the dynamics of microbubble clusters in ultrasonic fields', Thesis for Doctor of Philosophy in The University of Melbourne, Australia, November 2014.
7. Dzaharudin, F., Sergey S. Suslov, Ooi, A. and Manasseh, R., 'Effects of coupling, bubble size, and spatial arrangement on chaotic dynamics of microbubble cluster in ultrasonic fields', *The Journal of the Acoustical Society of America*, 2013, vol. 134, no. 5, pp.3425-3434.
8. Dzaharudin, F., Sergey S. Suslov, Ooi, A. and Manasseh, R., 'Dynamical-systems measures of ultrasound contrast agent proximity to target walls', *The Journal of the Acoustical Society of America*, 2011, vol. 130, no. 4, pp.2502.
9. Li, M., Dzaharudin, F., Manasseh, R. and Ooi, A., 'The effect of a solid boundary on the dynamics of a small group of ultrasound driven microbubbles', *Proceedings of 20th International Congress on Acoustics, ICA 2010*, pp. 639-646.
10. Chong, K.J.Y., Quek C.Y., Dzaharudin, F., Ooi, A. and Manasseh, R., 'The effects of coupling and bubble size on the dynamical-systems behaviour of a small cluster of microbubbles', *Journal of Sound and Vibration*, 2010, vol. 329, no. 6, pp. 687-699

## List of Course / Trainings/ Seminars Attended

### A) External course/training seminar

1. 1-Day Workshop on Accreditation Assessment, 12 November 2017, MySET, Marriott Hotel, Putrajaya, Malaysia
2. 1-Day Workshop on Complex Engineering Problem Solving, 11 November 2017, MySET, Marriott Hotel, Putrajaya, Malaysia
3. Course DAT101x: Microsoft Professional Program: Data Science Orientation, Microsoft, Certificate Issue Date: 22 September 2017, Certificate ID: 5b376208fb8e4518b27946d60bb

4. Course DAT201x: Querying with Transact-SQL, Microsoft, Certificate Issue Date: 22 September 2017, Certificate ID: 3afe5967b7cd4c4186ee4e1f8c2e52a5
5. Course DAT203.1x: Data Science Essentials, Microsoft, Certificate Issue Date: 22 September 2017, Certificate ID: 1f3f15e3e5c34dbaa8b4a3e6e025f477
6. Course DAT203.2x: Principles of Machine Learning, Microsoft, Certificate Issue Date: 22 September 2017, Certificate ID: d1137d5415774682b00080f198484e7e
7. Course DAT203.3x: Applied Machine Learning, Microsoft, Certificate Issue Date: 27 September 2017, Certificate ID: a11984b8da22460095f3f80da89db44b
8. Course DAT204x: Introduction to R for Data Science, Microsoft, Certificate Issue Date: 22 September 2017, Certificate ID: 58b284cfb2654163a0445a5f5c506bbf
9. Course DAT206x: Analyzing and Visualising Data with Excel, Microsoft, Certificate Issue Date: 22 September 2017, Certificate ID: 552134ffc04548ad97dbe38055db59c8
10. Course DAT209x: Programming with R for Data Science, Microsoft, Certificate Issue Date: 22 September 2017, Certificate ID: bd0a142e76254d188687a45bc0bdd310
11. Course DAT222x: Essential Statistics for Data Analysis using Excel, Microsoft, Certificate Issue Date: 22 September 2017, Certificate ID: ffe7c7f965914e0d857c505328f0dd2b
12. Course DAT102x: Microsoft Professional Capstone: Data Science, Microsoft, Certificate Issue Date: 3 November 2017, Certificate ID: b6609958b64244c5baedf4c7fb483202
13. Big Data in Malaria Elimination, 23 May 2017, Perdana University
14. Workshop on Big Data in Healthcare, 8 December 2016, UKM Medical Center
15. Two-day workshop on developing and supporting team-based learning through cooperative learning, 29 – 30 October 2015 at Wisma IEM
16. Training on Microsoft IOT and Advanced Analytics, 7-9 June 2016 at Microsoft Malaysia Office, KLCC Tower 3.
17. STAR Training For Nurses In ICU, Iium Medical Centre (Rdu150119), 29 December 2016, Hospital UIA Kuantan
18. Training for implementation of star protocol, 30 June 2016, Hospital UIA Kuantan
19. National seminar on additive manufacturing 2016, 20 May 2016, Kuantan
20. Workshop on star protocol and introduction to International Islamic University Medical Centre, 26 April 2016, Hospital UIA Kuantan
21. Two Day Workshop On Developing And Supporting Team-Based Learning Through Cooperative Learning, 29-30 October 2015

## **B) Internal course/trainings/seminar**

1. Write and Publish in High Impact Journal, Universiti Malaysia Pahang, 11-12 September 2017
2. Kursus Asas Pengajaran Dan Pembelajaran (Pnp) Modul 7 (Practicum) Unit 3: Practical in classroom, 13 April 2017
3. Kursus Asas Pengajaran Dan Pembelajaran (Pnp) Modul 6 (Professional Practices): Unit 1(Academic Student Advisory System), 10 November 2016
4. Kursus Asas Pengajaran Dan Pembelajaran (Pnp) Modul 6 (Professional Practices): Unit 2 (Teaching Folder and Teaching Portfolio), 10 November 2016
5. Kursus Asas Pengajaran Dan Pembelajaran (Pnp) Modul 6 (Professional Practices): Unit 3 (Internationalization), 10 November 2016
6. Bengkel Pemurnian Dokumentasi EAC (Program Dwi-Ijazah Sarjana Muda Kejuruteraan Mekatronik Ump-HsKA), 6-7 August 2016
7. Bengkel Pemurnian Dokumentasi EAC (Program Dwi-Ijazah Sarjana Muda Kejuruteraan Automotif Ump-HsKA), 12-13 March 2016
8. Writing an Effective Research Proposal Workshop, 18-19 October 2016, Hotel Vistana Kuantan
9. Bengkel Akademik FKM Siri 1 2016, UMP Pekan
10. Paper AiGEV 2016 Review Workshop by Team MATEC Web of Conferences, 18-22 August 2016, UMP Pekan
11. Kerja Sebagai Ibadah, 29 February 2016
12. Program Orientasi Staff, 12-14 April 2016
13. Bengkel Route to Chartered Engineer, 3 April 2015
14. Bengkel Pemurnian Dokumentasi MQA01 (Program Dwi-Ijazah Sarjana Kejuruteraan Automotif Ump-Hska), 28 March 2015
15. Kursus Asas Pengajaran Dan Pembelajaran (Pnp) Modul 1 Unit 1 Academic Leadership Unit 1 Teaching And Learning Concept In Higher Education, 24 February 2015
16. Kursus Asas Pengajaran Dan Pembelajaran (Pnp) Modul 1 (Academic Leadership):Unit 2(Ump Teaching And Learning Practices, 24 February 2015
17. Kursus Asas Pengajaran Dan Pembelajaran (Pnp)Modul 1 Unit 3 Academic Leadership Unit 3 Ethics In Academia, 24 February 2015

18. Kursus Asas Pengajaran Dan Pembelajaran (Pnp) Modul 2(Curriculum Design): Unit 1(The Process Of Developing Outcomes), 17 March 2015
19. Kursus Asas Pengajaran Dan Pembelajaran (Pnp) Modul 2(Curriculum Design): Unit 2(Design Of Course Outcomes), 17 March 2015
20. Kursus Asas Pengajaran Dan Pembelajaran (Pnp) Modul 2(Curriculum Design): Unit 3(Design Of Learning Outcomes), 17 March 2015
21. Kursus Asas Pengajaran Dan Pembelajaran (Pnp) Modul 3 : Unit 1 (Theories Of Learning And Learning Perspectives), 10 March 2015
22. Kursus Asas Pengajaran Dan Pembelajaran (Pnp) Modul 3 : Unit 2 (Learner Diversity And Learning Styles), 22 Sept 2015
23. Kursus Asas Pengajaran Dan Pembelajaran (Pnp) Modul 3 (Understanding Learning And Teaching): Unit 3 (Effective Teaching And Delivery Approaches), 22 Sept 2015
24. Kursus Asas Pengajaran Dan Pembelajaran (Pnp)-Modul 4 Unit 1 (Teaching In Large And Small Groups), 10 Feb 2015
25. Kursus Asas Pengajaran Dan Pembelajaran (Pnp)-Modul 4 Unit 2 (Student Centred Learning), 10 Feb 2015
26. Kursus Asas Pengajaran Dan Pembelajaran (Pnp)-Modul 4 Unit 3 (Technology In Teaching), 10 Feb 2015
27. Kursus Asas Pengajaran Dan Pembelajaran Pnp Modul 5 Unit 1 Basic Concepts Of Assessment And Evaluation In Higher Education, 29 April 2015
28. Kursus Asas Pengajaran Dan Pembelajaran Pnp Modul 5 Unit 2 Alignment Learning Outcomes to Content, 29 April 2015
29. Kursus Asas Pengajaran Dan Pembelajaran Pnp Modul 5 Unit 3 Test Format Preparation Administration Scoring And Interpretation In Teaching And Learning, 29 April 2015
30. Kursus Asas Pengajaran Dan Pembelajaran (Pnp) Modul 7 (Practicum) Unit 1: The Process Of Implementing Practicum, 29 June 2015
31. Kursus Asas Pengajaran Dan Pembelajaran (Pnp) Modul 7 (Practicum) Unit 2: Classroom Management Skills, 30 June 2015
32. Kursus BEM (Code of Ethics), 10-11 September 2015
33. Kursus BEM (Engineering Management Practice), 20-21 August 2015
34. Perkongsian Ilmu Geran Antarabangsa Anjuran Pusat Penyelidikan & Pengurusan Sumber Alam, 14 May 2015
35. Kursus Persekitaran Kualiti (Qe):Amalan 5s, 18 March 2015
36. Kursus Web 2.0 In Teaching And Learning, 18 March 2015
37. Program MyUMP 2015 Siri 1, 27 March 2015
38. Publication For Young Researchers, 29 June 2015
39. Seminar Baitul Muslim 25 August 2015

### **C) Courses/trainings/seminars taught**

1. Short Course: Introduction to MATLAB, Simulink and Data Science using MATLAB, Universiti Malaysia Pahang, 20 & 22 November 2017
2. MATLAB Short Course for Beginner/Intermediate Level, Universiti Malaysia Pahang, 27-28 August 2015

### **Academic Leadership**

1. Uploaded 21 teaching materials for Universiti Malaysia Pahang's Open Course Ware (OCW) for BMM1312 Technical Informatics 1
2. SAR Task force for Accreditation of BHA Program, 2017
3. Quality coordinator for Faculty of Mechanical Engineering, 23 March 2017 – 31 December 2017
4. Co-curriculum and examination coordinator for Double-degree German HsKA Mechanical Engineering Programme (BHA), Faculty of Mechanical Engineering, 9 January 2017 - 31 December 2017
5. Co-curriculum and examination coordinator for Diploma of Mechanical Engineering Programme, Faculty of Mechanical Engineering, 1 October 2015 - 31 December 2016
6. Documentation coordinator for BHA program (Reviewing Teaching Plans and Programme Education Outcomes), 2016
7. SAR Task force for Accreditation of BMA Program, 2015
8. Examination Coordinator for Masters by Coursework, Faculty of Mechanical Engineering, UMP, 1 January 2015 - 31 December 2015
9. Documentation Coordinator for the Quality Management System, Faculty of Mechanical Engineering, 1 January 2015 - 31 December 2015
10. Judge panel for 3 minute thesis competition, Faculty of Mechanical Engineering, 28 February 2017
11. Involved in pilot test for "Pay for Performance" for UMP's strategic planning

## Teaching Experience and Course Coordinator

### Semester 1 2017/2018

BMM1312 Computer Programming, 2 credits, 39 students  
BHA2342 Technical Informatics 1, (Course Coordinator), 2 Credits, 3 Students  
BHA3342 Technical Informatics 2, (Course Coordinator), 2 Credits, 9 students  
BHA3313 Signal and Systems/BHM Information Systems, (Course coordinator), 3 credits, 26 students

### Semester 2 2016/2017

BMM1312 Computer Programming, (Course Coordinator), 2 credits, 49 students  
BHA3323 Software Engineering, (Course Coordinator), 3 credits, 20 students  
BHA3313 Signal and Systems, (Course coordinator), 3 credits, 23 students

### Semester 1 2016/2017

BMM1312 Computer Programming, (Course Coordinator), 2 credits, 54 students  
BMM3532 Measurement & Instrumentation, 2 credits, 56 students

### Semester 2 2015/2016

BMM1312 Computer Programming, (Course Coordinator), 2 credits, 100 students

### Semester 1 2015/2016

BMM1312 Computer Programming, (Course Coordinator), 2 credits, 46 students  
BMM1811 Mechanical Laboratory, 1 credit, 26 students  
BMM1563 Statics, 3 credits, 54 students

### Semester 2 2014/2015

DMM1563 Statics (c), 3 credits, 58 students  
BMM1811 Mechanical Laboratory, 1 credit, 65 students  
BMM3611 Manufacturing Processes Laboratory, 1 credit, 29 students  
DMM3011 Occupational Safety and Health (c), 1 credit, 48 students

### 2009-2014 University of Melbourne

Programming in C and MATLAB, algorithms, robotics, circuits, engineering mathematics, statics, thermodynamics, computational methods, design, fluid dynamics and human resources and management

## Postgraduate Supervision

1. MMM17013 Najihah Mohd Ali (Masters Student) Effects of microbubble clustering in proximity of boundaries in ultrasonic fields (On-going)
2. MMM16031 Khairin Ameera Khamaruzaman (Masters Student) Modelling of Glomerular Filtration Rate (GFR) for Kindey Function Analysis (On-going)
3. MMM15021 Khalijah Binti Khalid (Masters students) Developing a PID Controller for Blood Glucose Monitoring System in ICU (On-going)
4. MMM15020 Che Zafirah Rosly (Masters Student) Development of Blood glucose control Algorithm in Malaysian critically ill patients (On-going)

## Degree/ Final Year Supervision

1. MA14060 NUR AIN BINTI ANUAR Multi-parameter evaluation of in vivo drug and gene delivery (On-going)
2. MA14105 HAMZAH BIN HABIL Dynamic oscillation of acoustically controlled ultrasound-mediated gene and drug delivery (On-going)
3. MH14042 MOHAMAD NAJMI BIN OTHMAN The effects if varying ultrasound parameters on the dynamical oscillation of microbubbles for therapeutic applications (On-going)

4. MA13206 NAJIHAH BINTI MOHD ALI Effects of a boundary to the nonlinear dynamical behaviour of microbubbles in an ultrasonic field (Completed) 2016/2017
5. MA13064 WONG KAR CHUN Nonlinear behaviour of a small cluster of microbubbles for targeted drug and gene delivery in an ultrasonic field (Completed) 2016/2017
6. MA13068 TAI JEN SENG Effects of encapsulation of microbubbles for diagnostic imaging and targeted drug delivery (Completed) 2016/2017
7. MA12069 NUR SYAFIQAH BINTI HASHIM Dynamical-systems behaviour of a small cluster of microbubbles (Completed) 2015/2016
8. MC11061 MUHAMAD ARIF AZIZI BIN ROSLE The effects of various shell encapsulations on the dynamical response of the microbubbles in an ultrasonic field (Completed) 2015/2016
9. MC12063 SITI NORAI SYAH BINTI MOHD NASIR Nonlinear dynamic behaviour of microscopic bubbles near a rigid wall (Completed) 2015/2016
10. SIVA A/L GOPALAKRISHNAN Investigation on different type of blood glucose control system (Completed) 2015/2016

### Diploma/ Final Year Supervision

1. MB14126 MUHAMMAD AFIQ BIN SUMONO Study of the Rayleigh-Plesset model for therapeutic applications (Completed) 2015/2016
2. MB14140 MUHAMMAD NAIM BIN MOHD NIZAM Study of the dynamical behavior of microbubbles subjected to 20kHz ultrasound (Completed) 2015/2016

### Research Project/Grants

1. FRGS Research Grant, Study on microbubble clustering in proximity of boundaries in ultrasonic fields, RDU170126, RM59200, 15 August 2017 – 14 August 2019
2. UMP Research Grant, Development of micro bubbles diesel fuel to enhance engine performance, RDU1703155, RM20500, 20 June 2017 – 19 June 2019
3. FRGS Research Grant, Development of Glomerular Filtration Rate Monitor based on Creatinine Modelling in Critically Ill Patients, FRGS/1/2015/SKK02/UIAM/02/3, 1 November 2015 – 30 October 2017
4. UMP Research Grant, Development of native application with cloud integration for the measurement of glomerular filtration rate (GFR) for kidney function analysis, RDU160398, RM32050, 25 June 2016 – 24 June 2018
5. Industrial Grant, Microsoft MSDN Subscription on Award: Azure for Research, CRM0518267, USD \$200, 4 August 2016 – 4 August 2017
6. UMP Research Grant, Project Title: Advanced Numerical Study of Vibrations for Medical Therapy in Microtechnology, RDU151107, RM5,500, Project Leader, 15 Julai 2015 - 14 Julai 2016
7. FRGS Research Grant, Modelling of incretin mechanism in glucose-insulin control system, RDU150119, RM115,000, Project Member, 2 November 2015 - 1 November 2017
8. RAGS Research Grant, Development of A Model-Based Algorithm for Blood Glucose Control in Malaysian Intensive Care Unit Patients, RDU151405, RM 45,000, Project Member, 1 December 2015- 31 November 2017

### Patent

1. Energy Saving via Smart Card Access. 2016. RDU1403127

## University Services

1. Organising committee for Tissue Engineering Regenerative Medicine Society of Malaysia (TESMA) Seminar Series, April – May 2017
2. Panel evaluator for 3 minute thesis competition (3MT) for Faculty of Mechanical Engineering, UMP, 28 February 2017
3. Committee for iMEDITEC Conference 2017, Universiti Teknologi Malaysia, Skudai
4. Collaboration, Memorandum of Agreement (MOA) with Kulliyah of Medicine, International Islamic University of Malaysia (UIA), UMP.05/28.16/1/(NA), 30 August 2017
5. Maintaining Human Engineering Group website, June 2016-Current
6. Collaboration with Kulliyah of ICT International Islamic University of Malaysia (UIA), Gombak and Microsoft

## Community Services

1. Judge for English debate, Majlis Sukan dan Ilmiah Sekolah Menengah Agama Negeri Pahang (MASISUPA) Peringkat Pusat, Kali ke-33, 18-20 March 2017.
2. Speaker, Motivational Lecture at Sekolah Integrasi Tunku Abdul Rahman, Pekan, 19 February 2016
3. Speaker, Tafseer lecture. ISMA Wanita (NGO), 25 March 2016
4. Setting up and maintaining website and social media for ISMA Wanita (NGO). 1 January-31 December 2016
5. Committee, ISMA Wanita (NGO). 1 January-31 December 2016
6. Organizer, Workshop for Photoshop, PEMBINA (NGO), 16 April 2016

## Consultation

1. Application Development for Staggered Appointment System in Klinik Kesihatan bandar Pekan, April 2017 – August 2017
2. Consultation for Software development & improvement for Maahad Tahfiz Sains Fatimah Az-zahrah (MTSFAZ), March 2017
3. The Cube Angle Project from MRSM Tun Abdul Razak, October 2017.