



**ZULKIFLI BIN MOHAMED**

**ASSOC. PROF. TS. DR.**

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**POSITION:**

Head: Sports Engineering & Artificial Intelligence Centre (SEA-IC)

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**FIELD OF SPECIALIZATION & RESEARCH INTEREST**

1. Sports Engineering & Technology
2. Internet of Things
3. Artificial Intelligence
4. Multi-Objective Optimization
5. Control Engineering
6. Robot Design and Development
7. Remote Monitoring
8. Autonomous & Unmanned System
9. Agri & Aquaculture

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**EDUCATION**

- |   |             |
|---|-------------|
| <b>1. Doctor in Engineering (Robotic &amp; Intelligent System)</b><br>University of Toyama, Japan | <b>2014</b> |
| <b>2. Master of Engineering (Mechanical)</b><br>Universiti Teknologi Malaysia (UTM)               | <b>2006</b> |
| <b>3. Bachelor of Engineering (Hons) Mechanical</b><br>Universiti Teknologi MARA (UiTM)           | <b>2003</b> |
| <b>4. Diploma in Mechanical Engineering</b><br>Universiti Teknologi MARA (UiTM)                   | <b>2000</b> |
| <b>5. Certificate in Pre-Science</b><br>Kolej Yayasan Pelajaran MARA (KYPM)                       | <b>1995</b> |

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**PROFESSIONAL AFFILIATION****SINCE**

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|--|------|
| 1. Malaysia Board of Technologist (PT18120017)                       | 2018 |
| 2. IEEE (90300406)   | 2012 |
| 3. IEEE Robotic & Automation Society                                 | 2012 |
| 4. IEEE Communication Society  | 2012 |
| 5. International Association of Engineer                             | 2010 |
| 6. The Institution of Engineers Malaysia (IEM) (39190)               | 2009 |
| 7. Int. Assoc. of Computer Science & Information Technology (IACSIT) | 2009 |
| 8. Board of Engineers Malaysia (BEM)                                 | 2005 |

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**LANGUAGE**

English & Malay Language

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## WORKING EXPERIENCE

### 1. SCHOOL OF MECHANICAL ENGINEERING, COLLEGE OF ENGINEERING UiTM SHAH ALAM

Head of SEA-IC 2020 – Present  
Associate Prof. 2020 - Present

### 2. FACULTY OF MECHANICAL ENGINEERING UiTM SHAH ALAM

Head of SEA-IC 2018 - 2020  
Senior Lecturer 2010 – 2020  
Lecturer 2007 – 2010  
Research Assistant 2003 - 2004

### 3. MH DELIMA SDN BHD

Project Manager: *IoT Based Agriculture System for MAFI* 2021 – 2022  
Project Manager: *IoT Based Aquaculture System* 2021 - 2022

### 4. ALIGEN ENTERPRISE

Project Manager: *Smart Portable Young Imam Device* 2021 - 2022

### 5. BINTULU PORT BERHAD

Project Manager: *IoT for Gas Monitoring System, Bintulu* 2020 - 2021

### 6. JABATAN PERIKANAN MALAYSIA

Project Manager: *IoT for PPUG Hatchery, Lumut, Perak* 2020 - 2021

### 7. KOPERASI DESA MUARA HUJUNG RINTIS

Project Manager: *IoT for Manjung Aquabest, Lumut, Perak* 2020 - 2021

### 8. ONE NATION RESOURCES

Head Trainer: *IoT for Agriculture Application, Kuala Lumpur* 2020 - 2021  
Head Trainer: *IoT for Agriculture (Online)* May 2021

### 9. ROBOPRENEUR SDN BHD

Technical Advisor: *ADAM Humanoid Robot Project* March – Dec 2018

### 10. AMERAAL BELTECH SDN BHD

Maintenance Engineer 2002 – 2003

## OTHER APPOINTMENT

### 1. HRDF TTT TRAINER

Certified Trainer 19 June 2021

### 2. ADVISOR

Engine Union Student Society May 2018 – April 2019

### 3. HEAD

Center of Study – DCSE 1 Jan - 31 Mar 2018

\* Early Resignation due to Consultation Work

4. **HEAD**  
Center of Study – DCSE Jan – 31 Dec 2016
5. **COORDINATOR**  
Degree Advance Course Aug – Dec 2015
6. **COORDINATOR**  
Peer Tutor & Off Campus May 2014 - July 2015
7. **HEAD OF PROGRAM**  
Bachelor of Engineering (Hons) Mechanical (EM220) 2009 – 2011
8. **HEAD OF CONTINGENT**  
Inter Faculty Sport Fiesta (FKM) 2007 – 2008
9. **INTERNAL AUDITOR**  
Faculty of Mechanical Engineering  
2007 - 2019
10. **HEAD**  
Students Development Committee 2008 – 2009
11. **COORDINATOR**  
Robotic & Industrial Automation (CADEM) 2008 – 2009
12. **MANAGER**  
FKM Warriors Football Team 2009

## **NATIONAL**

1. **PANEL PENILAIAN PEGAWAI PENYELIDIK ISN**  
Institut Sukan Negara (ISN) 1 Sept 2021 – 31 Aug 2023
2. **FELO**  
Collaborative Group Internet of Things UiTM Oct 2020 – July 2021
3. **VISITING RESEARCH FELLOW**  
Sports Engineering Research Centre (SERC), UniMaP July 2020 – July 2022
4. **PERMANENT MEMBER**  
J.K Penilai Geran Institut Sukan Negara (ISN) July 2020 – June 2022

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## **TEACHING & LEARNING**

1. **MASTER**  
System Modelling & Simulation (MEC705)
2. **DEGREE**  
Control Engineering (MEC522)  
System Identification (MEC623)  
Robotics & Automation (MEM665) – FKM, FSG, FKK
3. **DIPLOMA**  
Automation (KJP323)

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**AWARD**

1.	<b>Anugerah Pasukan Penyelidikan Cemerlang - SEA-IC (2020)</b>	<b>2021</b>
2.	Anugerah Penjanaan Pendapatan (2020)	2021
3.	Anugerah Perunding Cemerlang (2020)	2021
4.	Anugerah Khidmat Masyarakat COVID-19 (2020)	2021
5.	EM220 Best Lecturer Award (2018-2019)	2020
6.	COE & RIG Award – SEA-IC (2018-2019)	2020
7.	Perfect Attendance Award (2018-2019)	2020
8.	<b>Best Presenter Award -IEICES 2018, University of Kyusu Japan</b>	2018
9.	Best Academic Staff Award - FKM	2017
10.	UiTM Excellence Service Award	2016
11.	<b>Best PhD Student – University of Toyama</b>	2014
12.	<b>Best Paper Award – ACET 2013 Conference (Hong Kong)</b>	2013
13.	Bowling Individual Champion Malaysian Embassy, Japan	2012
14.	Bowling Team 1 <sup>st</sup> Runner-Up Malaysian Embassy, Japan	2012
15.	Bowling Individual Champion (Hokuriku Region), Japan	2012
16.	Bowling Individual Champion (Toyama Ken), Japan	2012
17.	UiTM Excellence Service Award	2010
18.	Best Staff Room Award	2008

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**RESEARCH GRANT****COMPLETED**

NO	RESEARCH PROJECT	SOURCE	TOTAL FUNDS	BEGIN YEAR	ROLE
1	A Comparison Study Between Theoretical, Finite Element and Testing of Auxetic Composite Plate using Unidirectional Carbon Fibre	Dana Kecemerlangan	MYR 5,000	December 2007	Member
2	<b>Frameworks Configuration &amp; Optimization using Neural Networks</b>	<b>Dana Kecemerlangan</b>	<b>MYR 5,000</b>	<b>December 2009</b>	<b>HEAD</b>
3	High Static Low Dynamic Stiffness (HSLDS) Mechanism on Passive Car Suspension System	Dana Kecemerlangan	MYR 5,000	Januari 2009	Member
4	Evaluation on Abrasion Resistance of Cocopeat ( <i>Cocos Nucifera</i> ) – Polymer Composite	FRGS	MYR 55,000	January 2010	Member
5	<b>Proportional-Derivative Active Force Control of Twin Rotor MIMO System</b>	<b>FRGS</b>	<b>MYR 40,000</b>	<b>January 2010</b>	<b>HEAD</b>

6	<b>Development of An Autonomous Vehicle for Elderly &amp; Handicap People: An Initial Study</b>	<b>Self-Funded</b>	<b>MYR 0.00</b>	<b>July 2014</b>	<b>HEAD</b>
7	The Internet of Robotics Things (IoRT): Robot-Mediated Tele Rehabilitation System for Autism Therapy	PRGS	MYR 202,000	August 2016	Member
8	Innovative Advanced Component Mode Synthesis Modelling for Vehicle Vibration Dynamics	FRGS	MYR 108,000	August 2016	Member
9	Performance Characteristics of Inertia Induced Torque Converter	FRGS	MYR 66,500	August 2016	Member
10	Development of a Motorcycle Riding Guideline Using A Full-Scale Human Machine Environment Interfaced (HMEI) Motorcycle Simulator	LESTARI	MYR 20,000	July 2016	Member
11	Investigation the Effect of Visible Light Transmission Level on Vehicle Indoor Air Quality	LESTARI	MYR 20,000	July 2016	Member
12	Using Embedded Sensor for Analyzing Multi Configuration Stiffened Panels Under Load Compressive	LESTARI	MYR 20,000	July 2016	Member
13	Moisture Control of Burung Puyuh Cage	PPRN	MYR 50,000	June 2016	Member
14	<b>An Improved Version of Multi-Objective Evolutionary Algorithm Control Technique in Minimizing Energy, Power Consumption and Trajectory of 6 Degrees of Freedom Robot Manipulator</b>	<b>FRGS</b>	<b>MYR 77,200</b>	<b>August 2016</b>	<b>HEAD</b>
15	<b>The Comparison Study on the Effect of Video Tape &amp; F2F Instruction &amp; Demonstration During Practical Session: Nursing Context</b>	<b>ARAS</b>	<b>MYR 20,000</b>	<b>July 2016</b>	<b>HEAD</b>
16	<b>Fetal Movement Detection Belt (FEMOB)</b>	<b>SINERGI</b>	<b>MYR 50,000</b>	<b>July 2016</b>	<b>HEAD</b>
17	Development of Tilted Quad rotor for Autonomous Flight	BESTARI	MYR 35,000	July 2017	Member
18	Establishment of A Newly Designed Cemented Hip Prosthesis (HP) to Improve Implant Life	MITRA	MYR 50,000	July 2017	Member
19	Stochastic Geometry Probabilistic Algorithm in Dynamic Object Recognition of Robotic Navigation and Mapping	FRGS	MYR 94,340	August 2017	Member
20	<b>Establishment of A New Upper Limb Humanoid Robot System for Increasing Elderly People Life Quality</b>	<b>BESTARI</b>	<b>MYR 25,000</b>	<b>2018</b>	<b>HEAD</b>
21	<b>Creality CR-10 3D Printer</b>	<b>Maker Shop Bayan Lepas Pulau Pinang</b>	<b>MYR 3,400</b>	<b>2018</b>	<b>HEAD</b>

22	<b>Development of Examination Hall Assistive Robot (EHAR): Phase 1 - Phase 2</b>	<b>GEV Integrated (M) Sdn Bhd</b>	<b>MYR 1,000</b>	<b>2018</b>	<b>HEAD</b>
23	A Gravitational Search Algorithm Based Active Force Controller for a Rehabilitation Lower Limb Exoskeleton	BESTARI	MYR 35,000	January 2018	Member
24	<b>Stress Performance Analysis using Insole System for Football Player</b>	<b>GIP Grant</b>	<b>MYR 20,000</b>	<b>2019</b>	<b>HEAD</b>
25	IoT Based Smart Aquaculture Monitoring & Control System for Manjung Aquabest Hatchery	Koperasi Desa Hujung Rintis Lumut Perak	MYR 6,000	December 2019	Member
26	<b>Remote Monitoring Unit for IoT Application</b>	<b>MH Delima Sdn Bhd</b>	<b>MYR 17,500</b>	<b>December 2019</b>	<b>HEAD</b>
	<b>TOTAL</b>	<b>ALL</b>	<b>MYR 1,030,940</b>	<b>HEAD</b>	<b>MYR 259,100</b>

## ON GOING

NO	RESEARCH PROJECT	SOURCE	TOTAL FUNDS	BEGIN YEAR	ROLE
1	Developing new version of engineered cementitious composite towards integrated structural and materials design	REI	MYR 32,000	2018	Member
2	<b>Magnetic Based Hybrid Electricity Generator System for Rural Application</b>	<b>LESTARI SDG</b>	<b>MYR 20,000</b>	<b>2019</b>	<b>HEAD</b>
3	Development of Pico Hydroelectric System with Smart Energy Storage for Domestic Use	LESTARI SDG	MYR 20,000	Dec-19	Member
4	Formulation of an integrated numerical and soft-computing framework model for the prediction of vibration induced by railway operation in Malaysia	FRGS-RACER	MYR 51,200	2019	Member
5	Smart IoT Aquaculture Monitoring & Control System (SAMS-MKII) for Broodstock Production of Giant Freshwater Prawn in a Hatchery	MySI, MOSTI	MYR 149,750	2020	Member
6	Micro Industry Hub (MTCE FKM)	MTC - MIH	MYR 150,000	2021	Member
7	Micro Industry Hub (ACM EV FKM)	ACM-EV - MIH	MYR 304,000	2021	Member
8	A Kinetic Mechanism Based on Lens Law Concept of Hybrid Generator	GPK	MYR 20,000	2021	Member

9	Shah Alam Towards Smart City: Centralized Energy Monitoring System for Sustainable Low Carbon Planning of Majlis Bandaraya Shah Alam (MBSA)	SRP-MBSA	MYR 50,000	2021	Member
10	Development and Validation of Internet of Things (IoT) Based Insole Monitoring System For Soccer Players (ISNAPP-005-2020)	Institut Sukan Negara (ISN)	MYR 128,000	2021	Principle Investigator
11	Optimization of Mechanical Infrastructure Operations For Flood Management Via Multi-Objective Evolutionary Algorithm	Wasserwelt Industries Sdn Bhd	MYR 90,000	2021	HEAD
12	Development Of Smart Chili Farm Monitoring & Control System Via Internet of Things (IoT) Approach	MH Delima Sdn Bhd	RM15,000	2021	HEAD
13	Development Of Android & iOS Apps for Nex-Plex Internet of Things System	MH Delima Sdn Bhd	RM15,000	2021	Member
14	The Effect of Hydraulic Jump Phenomenon at Takungan Banjir Sri Rampai for Flood Mitigation System in Kampung Baru Kuala Lumpur	GIP	RM21,600	2021	HEAD
	<b>TOTAL</b>	<b>ALL</b>	<b>MYR 1,066,550</b>	<b>HEAD</b>	<b>MYR 274,600</b>

## CONSULTATIONS

NO	RESEARCH PROJECT	SOURCE	TOTAL FUNDS	BEGIN YEAR	ROLE
1	Humanoid Robot Project: ADAM	Robopreneur Sdn Bhd	10,000	March – Dec 2018	HEAD
2	Lab Equipment Commissioning & Training for KKTML Lenggong	SciEdge Sdn Bhd	2,000	Jul-18	HEAD
3	Lab Equipment Installation, for KKTML Lenggong	SciEdge Sdn Bhd	1,000	Jul-18	Member
4	Lab Equipment Installation, for KKTML Lenggong	SciEdge Sdn Bhd	1,000	Jul-18	HEAD
5	Design of 6 & Multiple Perforated Holes for Face Shield Project	GAIA Plas Sdn Bhd	6000	Jun-20	Member



6	Innovation Project on Development of Customize 3D Printed Product (Phase 2)	AA 3D Printing & Design	2000	Jul-20	Member
7	Innovation Project on Development of Customize 3D Printed Product (Phase 1)	AA 3D Printing & Design	2000	Jul-20	<b>HEAD</b>
8	IoT Hands on Training for Kolej Vokasional	One Nation Resources	32,000	Sep-20	Member
9	IoT Hands on Training for Agriculture Application	One Nation Resources	RM4,100	Sep-20	<b>HEAD</b>
10	TVET IoT Training of Trainers for Industrial Application	SIRIM Bhd	36,000	Feb-20	Member
11	Flood Monitoring & Warning System via IoT for Jinjang Fire Station	Jinjang Fire & Rescue Station	3,000	Jan2020	<b>HEAD</b>
12	Technical Advisor for Vibration Assessment at Arkema THIOCHEMICALS Sdn. Bhd.	Intekma Sdn Bhd	7,000	July 2020	Member
13	Vibration and Thermoacoustic Measurement and Assessment for SRU Unit at MRCSB Plant, Melaka	Intekma Sdn Bhd	5,000	March 2020	Member
14	IoT for PPUG Jabatan Perikanan Malaysia	MH DELIMA	5,000	October 2020	<b>HEAD</b>
15	IoT Gas Monitoring System for Bintulu Port	Bintulu Port Berhad	161,800	October 2020	<b>HEAD</b>
16	Vibration Assessment and Analysis At K-4102AB, Melaka	Intekma Sdn Bhd	7,000	January 2021	<b>Member</b>
17	Internet of Things (IoT) For Agriculture Industries	One Nation Resources	3,000	May 2021	<b>HEAD</b>
18	Smart Portable Young Imam Device Project	Aligen Enterprise	50,000	May 2021	<b>HEAD</b>
19	Sample Tracking & Database System Via IoT Approach for NIOSH	MH Delima Sdn Bhd	3,000	May 2021	<b>Member</b>
20	IoT Base Agriculture System for Institut Pertanian Ayer Hitam	MH Delima Sdn Bhd	5,000	Sept 2021	<b>Member</b>
21	IoT Base Agriculture System for TKPM Pagoh	MH Delima Sdn Bhd	5,000	Sept 2021	<b>Member</b>
22	IoT Base Agriculture System for TKPM Kg Manong Perak	MH Delima Sdn Bhd	3,000	Sept 2021	<b>Member</b>
23	IoT Base Agriculture System for Jabatan Pertanian Putrajaya	MH Delima Sdn Bhd	7,000	Sept 2021	<b>HEAD</b>

24	IoT Base Agriculture System for Pusat Penetasan Udang Galah, Lumut Perak	MH Delima Sdn Bhd	7,000	Sept 2021	HEAD
	<b>TOTAL</b>	<b>ALL</b>	<b>MYR 363,800</b>	<b>HEAD</b>	<b>MYR 260,800</b>

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### **COPYRIGHT & PATENT**

1. Examination Hall Assistive Robot (EHAR) - (600-RIBU (IP.5/3/64/UI) (PI2019004643), 2018
2. A Pico Hydroelectric System with Smart Energy Storage System for Domestic Use – Copyright, 2019
3. An IoT-Based Ovitrap System Applied for Aedes Mosquito Surveillance – Copyright, 2019

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### **SPEAKER & LECTURE**

1. **Keynote Speaker:** International Conference on Advances in Sports Technology, Science & Engineering (ASSE2021), *Internet of Things in Sports* (22 December 2021)
2. **Invited Speaker:** 3rd International Conference on Applied Photonics and Electronics (InCAPE 2021), UniMAP, *Internet of Things: Challenge & Opportunities*. (5 – 6 October 2021)
3. **Invited Speaker:** Virtual Sports Science and Sports Medicine Conference (VSMSS), Institut Sukan Negara, *Internet of Things in Sports: Challenge & Opportunities*. (4 – 5 November 2020)
4. **Webinar Speaker/Panel:** Online Seminar: *Tantangan & Peluang Riset & Publikasi Untuk Bidang Sains & Teknologi dimasa Pandemi Covid-19*, Publication and Conference Management Centre (PCMC), Universitas Mataram, West Nusa Tenggara, Lombok Indonesia (16 July 2020)
5. **Keynote Speaker:** 4<sup>th</sup> International Conference on Science & Technology 2019 (ICST 2019), Universitas Mataram, West Nusa Tenggara, Lombok Indonesia, *Sports Engineering: Challenge & Opportunities*. (10 December 2019)
6. **Guest Lecture:** Faculty of Engineering, Universitas Mataram, West Nusa Tenggara, Lombok Indonesia, *Internet of Things (IoT) in Sports*. (11 December 2019)
7. **Co-Exhibitor:** TM ONE Smart Industry Showcase – Aquaculture IoT System Solution for Udang Galah Hatchery Application (21 – 22 August 2019)

## EXTERNAL EXAMINER

1. *Improvement of Child Robot Interaction for Children Diagnosed with Cognitive Impairments*, Lutfi Idzhar, Universiteit Gent, Belgium, 2020 (PhD).
2. *Enhancing Internet of Things Monitoring Systems Through Solar Power, 3d Printing and Multi-Cellular Network Connectivity for Outdoor Precision Agriculture*, Kisheen Rao Gsangaya, Universiti Tenaga Nasional Malaysia (UNITEN), 2021 (Master)

## EXPERTISE

1. **Judge:** Int. Research Invention, Innovation & Exhibition (I-RIE 2021)
2. **Judge:** Student Idea Innovation Competition 2018
3. **Judge:** Pertandingan Robot Tempur Malaysia, Pusat Sains Negara 2017
4. **Judge:** National Innovative Smartphone Controller Contest 2016
5. **Judge:** SIDC 2014

## TRAINING

1. **Trainer & Organizer:** Online Training IoT for Agriculture (2021)
2. **Trainer & Organizer:** Hands on Training IoT for Agriculture (2020)
3. **Trainer & Organizer:** Hands on Training IoT for Kolej Vokasional (2020)
4. **Trainer & Organizer:** TVET Training of Trainers - Internet of Things (2020)
5. **Trainer & Organizer:** Basic & Advance Arduino Training (2018 – 2020)
6. **Trainer & Organizer:** Advance IoT Training (2018 – 2020)
7. **Trainer & Organizer:** Arduino School Break Program (2019)
8. **Trainer:** *Basic Arduino Training for KKTM Staff for KKTM Banting* – (2016)

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## PUBLICATIONS

### BOOK CHAPTER

1. **Z. Mohamed**, G. Capi, “*Assistive Intelligent Humanoid Robot in Human Environments*”, IGI Global book on Robotics, Automation and Control in Industrial and Service Settings, 2015.

## JOURNAL

### 2021

1. M.A.S.M. Adnan, M.H.M Ramli, N.S. Khusaini, W.S.W. Mohamad, **Z. Mohamed**, “*Design and Development of IoT Based Water Leakage Monitoring System*” International Journal of Nanoelectronics and Materials, (In Press)

## 2020

1. K.K Kamaludin, A.M.I Mamat, **Z. Mohamed**, "*Engine Characteristics Analysis of Turbocharged Spark Ignition Engine with Water Injection Charge Air Coolin*" Journal of Advanced Research in Fluid Mechanics and Thermal Sciences, Vol (68), 1, pg 133 – 142, 2020
2. M.A.H. Sham, N.A. Elias, N.A.N.M. Kamarolzaman, N. Aziz, N.S. Khusaini, S. Khusairi and **Z. Mohamed**, "*Development of Examination Hall Assistive Robot (EHAR)*", Mechanical Engineering and Science, pg 61, 2020.
3. M.S. Mat Dris, M.H.M. Ramli, N.S. Khusaini, N. Aziz and **Z. Mohamed**, "*Design and Development of Insole Monitoring System for Runner*", Mechanical Engineering and Science, pg 103, 2020.

## 2019

1. N.Z Ishak, N.S Khusaini, N. Aziz, S. Kushairi, **Z. Mohamed**, "*Design and Analysis of a New Humanoid Robot Torso*", International Journal of Engineering & Advanced Technology, Vol. 9 (1) Oct 2019.
2. **Z. Mohamed** M.A.M Anuar, "*Determination of Joint Load of Human Lower Limb by Using 2D Inverse Dynamics Modelling*", International Journal of Engineering & Advanced Technology, Sept 2019.
3. M.A, Anuar, **Z. Mohamed**, "*An IoT-Based Ovitrap System Applied for Aedes Mosquito Surveillance*", International Journal of Engineering & Advanced Technology, Sept 2019.
4. M.S.M Dris, N.S Khusaini, N.Aziz, M.S.B Shaari, S. Khusairi, **Z. Mohamed**, "*Design & Development of Insole Monitoring System for Runner*" International Journal of Recent Technology and Engineering (IJRTE), April 2019
5. N.S. Khusaini, N. Aziz, K.I Sainan, A.R Hemdi, **Z. Mohamed**, "*Preliminary Study on Strength Identification Measurement for World Cup Soccer Players in Whoscored.com using Rasch Measurement Model*" International Journal of Recent Technology and Engineering (IJRTE), April 2019

## 2018

1. **Z. Mohamed**, M.A. Ayub, M.H.M Ramli, M.S.M Deris, M.S.B Shaari, S. Khusairi, "*Assistive Robot Simulator for Multi-Objective Evolutionary Algorithm Application*" International Journal of Engineering & Technology, Oct 2018
2. **Z. Mohamed**, A. Hariz, N. Ariff, M.A.M. Anuar, R. Ramli, M.S.M Deris, M.S.B Shaari, S. Khusairi, M.A. Anuar, S. Khusairi, K.S Mohamad, "*Energy & Path Optimization of Robot Arm Simulator via Multi-Objective Evolutionary Algorithm*" International Journal of Engineering & Technology, Oct 2018.

3. N.F.A Zulkepli, S. Khusairi, M.S.B Shaari, N.S. Khusaini, N. Aziz, K.I. Sainan, **Z. Mohamed**, "*Development of Universal Wheelchair Transporter*" International Journal of Engineering & Technology, Oct 2018.
4. U.M. Zulhilmi, A. Hariz, S. Khusairi, M.S.B Shaari, **Z. Mohamed**, "*Performance Analysis of Solar Car Suspension System*" International Journal of Engineering & Technology, Oct 2018.
5. K.I. Sainan, M. Mohamad, **Z. Mohamed**, M.S.B Shaari, M.F Mat, "*Athletes Tracking: Using Homography Method: A Preliminary Study*", International Journal of Engineering & Technology, Oct 2018.

## 2015

1. G. Capi, **Z. Mohamed**, M. Kitani, S. Kaneko, "*Assistive Humanoid Robot Arm Motion Generation in Dynamic Environment Based on Neural Networks*" *Journal of Automation and Control Engineering*, vol. 3 (2), April 2015.
2. I. M. Ariffin, A. I. Hakam, H. Yussof, **Z. Mohamed**, M. A. Miskam, A. Tan, A. R. Omar, "*Sensor Based Mobile Navigation Using Humanoid Robot NAO*" *Procedia Computer Science*, October 2015
3. **Z. Mohamed**, G. Capi, "*Humanoid Robot Navigation in Human Environment*", *Journal of Engineering Sciences and Technology*, November 2015

## 2014

1. **Z. Mohamed**, M. Mano, M. Kitani, G. Capi, "*Adaptive Humanoid Robot Arm Motion Generation by Evolved Neural Controller*", *International Journal of Artificial Intelligence and Neural Networks*, vol. 4 (1), pp. 25-30, January 2014.
2. M. Mano, **Z. Mohamed**, M. Kitani, G. Capi, "*A New BMI Based Method for Wheelchair Robot*", *International Journal of Advancements in Electronics and Electrical Engineering*, vol. 3 (1), pp. 75-79, January 2014.
3. **Z. Mohamed**, M. Kitani, G. Capi, "*Adaptive Arm Motion Generation of Humanoid Robot Operating in Dynamic Environment*", *Industrial Robot: An International Journal*, vol. 41 (2), 2014.
4. **Z. Mohamed**, M. Kitani, G. Capi, "*Robot Arm Performance Optimization using Multi Objective Evolutionary Algorithm*", *International Journal of Control, Automation and Systems*, vol. 12 (4), August 2014.

## 2013

1. **Z. Mohamed**, M. Kitani, G. Capi, "*Optimization of Robot Arm Motion in Human Environment*", *International Journal of Enhanced Research in Science Technology and Engineering*, Vol. 2, 10, pp. 65-71, 2013.

2. T.L.T Mohamed, N.F.A. Manan, **Z. Mohamed**, M.A.M Anuar, “*Development of Auto Tuning PID Controller using Graphical User Interface*”, International Journal of Information and Electronics Engineering, Vol. 3 (4), pp. 382-385, 2013.
3. G. Capi, **Z. Mohamed**, “Multiple Robot Formation – A Multi-Objective Evolution Approach”, International Symposium on Robotics and Intelligent Sensors, Vol. 41, pp. 156-162, 2013.

## **2012**

1. M.S. Meon, M.A. Anuar, M.H.M. Ramli, W. Kuntjoro, **Z. Mohamed**, “*Frame Optimization using Neural Network*”, International Journal on Advanced Science, Engineering and Information Technology, vol. 2 (1), pp. 28-33, 2012.
2. H. Ramli, M.S Meon, A.A.M. Isa, **Z. Mohamed**, “A Fuzzy-Active Force Control Architecture Based in Characterizing Nonlinear System Behaviour”, Procedia Engineering, Vol. 41, pp. 1389-1397, 2012.
3. **Z. Mohamed**, G. Capi, “*Development of a New Mobile Humanoid Robot for Assisting Elderly People*”, Procedia Engineering, Vol. 41, pp. 345-351, 2012.

## **PROCEEDING**

### **2021**

1. M.S.B, **Z. Mohamed**, M.H.M Ramli, “*A Kinetic Mechanism Based On Lens Law Concept of Hybrid Generator* ” Proceeding of International Conference in Mechanical Engineering Research (ICMER 2021)
2. M.F.A Hamid, M.H.M Ramli, **Z. Mohamed**, N.A.C. Zakaria, “*Conceptual Design and FEM Analysis of an Exoskeleton Suit for Post-stroke Patient: A Lower Limbs Exo Suit*”, 11th Asian-Pacific Conference on Medical and Biological Engineering vol. (82), pp. 126-134 (2021)
3. M.A.M Jusoh, S.C. Abdullah, M.H.M Ramli, **Z. Mohamed**, N.H. Yunus, “*Development of a Pico-Hydro Generating System with SES-BMS for Domestic Use*”, The 7th International Conference on Science and Social Research 2020 (CSSR 2020)

### **2020**

1. M.N.A Nordin, M. Hamdan, H. Hasan, W.K Yeo, H. Ismail, **Z. Mohamed**, R.M.F.R Azidin, “*Selected Physiological Responses During Youth Soccer Match Simulation*” 7<sup>th</sup> Sports Medicine & Sports Science Conference 2020 (VSMSS2020), 4-5 Nov 2020

## 2018

1. M.H.M Ramli, M.A.M. Anuar, **Z. Mohamed**, “*Modelling and control of a nonlinear magnetostrictive actuator system*” The International Conference on Innovative Technology, Engineering and Sciences 2018 (iCITES 2018)

## 2017

1. R. Ramly, R.E.M. Nasir, **Z. Mohamed**, A.R.A. Ghani “*Multi-configuration Stiffened Panels under Compressive Load: Part 1 - Theoretical Analysis*” 4<sup>th</sup> International Conference on Science & Social Research (CSSR 2017), 2017.
2. M.S.A Sulaiman, M.A. Yunus, M.N.A Rani, A.M. Saman, **Z. Mohamed**, M.A.S. Aziz Shah, “*Characterization of the dynamic characteristics of a complex jointed structure*” 2017 Int. Conf. on Mechanical, Aeronautical and Automotive Engineering (ICMAA 2017)

## 2016

1. W.H.M. Isa, Z. Taha, I. M. Khairuddin, A.P.P.A. Majeed, K.F. Muhammad, M.A. Hashem, J. Mahmud, **Z. Mohamed**, “*An intelligent active force control algorithm to control an upper extremity exoskeleton for motor recovery*” Joint conference of iMEC 2015 (2nd International Manufacturing Engineering Conference & APCOMS 2015 (3rd Asia-Pacific Conference on Manufacturing Systems), 2016

## 2015

1. W. S W. Mohamad, **Z. Mohamed**, Z. H. Solihin, K. A. Mohamed “*A Simulation Study of Energy Utilization in a Variable Link Length 3 DOF Revolute Articulated Manipulator*”, Int. Conference of Advance Mechanical Engineering (ICAME 2015), August 2015.
2. **Z. Mohamed**, G. Capi, “*Multi Objective Optimization of Humanoid Robot Arm Motion for Obstacle Avoidance*”, IEEE Int. Symposium on Robotics and Intelligent Sensor (IRIS 2015), October 2015
3. I. M. Ariffin, A. I. Hakam, H. Yussof, **Z. Mohamed**, M. A. Miskam, A. Tan, A. R. Omar, “*Sensor Based Mobile Navigation Using Humanoid Robot NAO*” IEEE Int. Symposium on Robotics and Intelligent Sensor (IRIS 2015), October 2015
4. **Z. Mohamed**, G. Capi, “*Humanoid Robot Navigation in Human Environment*”, International Conference On Advanced Science, Engineering And Technology (ICASET 2015), November 2015.

## 2014

1. G. Capi, **Z. Mohamed**, M. Kitani, S. Kaneko, “*Assistive Humanoid Robot Arm Motion Generation in Dynamic Environment Based on Neural Networks*” 2014
2. **Z. Mohamed**, M. Mano, M. Kitani, G. Capi, “*Adaptive Humanoid Robot Arm Motion Generation by Evolved Neural Controller*”, International Journal of Artificial Intelligence and Neural Networks, vol. 4 (1), pp. 25-30, Jan 2014.
3. M. Mano, **Z. Mohamed**, M. Kitani, G. Capi, “*A New BMI Based Method for Wheelchair Robot*”, International Journal of Advancements in Electronics and Electrical Engineering, vol. 3 (1), pp. 75-79, January 2014.

## 2012

1. S.A Bahari, M.A. Kassim, C.M.S. Said, M.I. Misnon, **Z. Mohamed**, “*Hardness and Frictional Resistivity of Cocopeat (Cocos Nucifera)-Polymer Composite*”, 15<sup>th</sup> European Conference on Composite Material (ECCM15), pp. 1-8, 2012.

## 2010

1. S.A Bahari, M.S. Chik, M.A. Kassim, C.M.S. Said, M.I. Misnon, **Z. Mohamed**, E.A Abu, “*Frictional and Heat Resistance Characteristics Coconut Husk Particles Filled Automotive Brake Pad*”, 2<sup>nd</sup> ASEAN APCTP Workshop on Advanced Materials Science and Nanotechnology (AMSN), 2010.
2. M.A.M. Nor, **Z. Mohamed**, A.M. Saman, A.H. Abdullah, “*Yaw-axis Robust Control Design for MIMO System using Internal Model Control PID*”, International Symposium on Robotics and Intelligent Sensors (IRIS), 2010.
3. **Z. Mohamed**, M.A.M. Nor, M.A. Anuar, N.F.A Manan, “*Internal Model Control PID for MIMO System*”, 2<sup>nd</sup> International Conference on Computer and Automation Engineering (ICCEA), pp. 692-695, 2010.
4. S.A Bahari, M.S. Chik, M.A. Kassim, C.M.S. Said, M.I. Misnon, **Z. Mohamed**, E.A Abu, “*Friction and Heat Resistance of Automotive Brake Pad Mixed with Different Size and Percentages of Coconut Husk Particles*”, 2<sup>nd</sup> ASEAN APCTP Workshop on Advanced Materials Science and Nanotechnology (AMSN), pp. 162-168, 2010
5. T.L.T Mohamed, M.R.H. Azman, **Z. Mohamed**, “*Development of Auto Tuning PID Controller using Graphical User Interface (GUI)*”, 2<sup>nd</sup> International Conference on Computer Engineering and Application, pp. 491-495, 2010.

## 2009

1. M.A. Anuar, **Z. Mohamed**, “*Multimedia Courseware – System Dynamics*”, I-Learn Center UiTM, 2009.



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## INVENTIONS, INNOVATION & DESIGNS COMPETITIONS

### 2021

1. Strategic Sustainability Radar System – 32<sup>nd</sup> International Invention, Innovation & Technology Exhibition 2021 (ITEX 2021) – **Best Invention Award & Gold Award**
2. IoT Base Water Leakage Monitoring System - Graduate Digital IID 2021 (GDIID2021) – **Diamond & Gold Award (SV)**
3. IoT Based Water Quality Monitoring System and Test for Swimming Pool Water Physicochemical Quality - Graduate Digital IID 2021 (GDIID2021) – **Gold Award (SV)**
4. GTNLARM21 - Graduate Digital IID 2021 (GDIID2021) – **Gold Award (Member)**
5. GTNLARM21 – Int. Exhibition and Symposium on Productivity, Innovation, Knowledge, Education, and Design (i-SPIKE2021) – **Gold Award (Member)**
6. IoT Based Muscle Fatigue Monitoring System in Weightlifting - Graduate Digital IID 2021 (GDIID2021) – **Silver Award (SV)**
7. IoT Based Water Quality Monitoring System and Test for Swimming Pool Water Physicochemical Quality - International Exhibition and Symposium on Productivity, Innovation, Knowledge, Education, and Design (i-SPIKE2021) – **Silver Award (SV)**
8. IoT-Based Black Soldier Fly Compositing Bin – *Anugerah Industri Selangor (AINS)* – *(Members)*

### 2019

1. An IoT-Based Ovitrap System Applied for Aedes Mosquito Surveillance - *Invention, Innovation & Design Expo 2019 – Gold Medal (Members)*
2. Examination Hall Assistive Robot – *iISAID UiTM Kedah – Bronze Medal (Member)*
3. A Pico Hydroelectric System with Smart Energy Storage System for Domestic Use - *Invention, Innovation & Design Expo 2019 – Bronze Medal (Members)*

### 2018

1. Examination Hall Assistive Robot - *Invention, Innovation & Design Expo 2018 – Gold Medal (Head)*
2. Low Input High Output Voltage System - *Invention, Innovation & Design Expo 2018 – Bronze Medal (Members)*

## **2016**

1. Development of Smart Storage System - *Invention, Innovation & Design Expo 2016 – Bronze Medal (Head)*
2. Full Scale Human Ergonomic Motorcycle Simulator - *Invention, Innovation & Design Expo 2016 – Gold Medal (Member)*
3. Domestic Portable Water Filter - *Invention, Innovation & Design Expo 2016 – Gold Medal (Member)*
4. 3D Print Cooling System- *Invention, Innovation & Design Expo 2016– Gold Medal (Member)*

## **2015**

1. Design and Development of FEMOB System – *Invention, Innovation & Design 2015 – Technical Advisor for Faculty of Health Science (UiTM) – Gold Medal.*
2. Design and Development of FEMOB System – *Pecipta 2015 – Technical Advisor & Team Member - Faculty of Health Science (UiTM) – Participant (Dec 2015)*

## **2010**

1. Design & Development of Auto-Tuning PID Controller using MATLAB Simulink & GUI, *Invention, Innovation & Design 2010 - Group Leader (UiTM) – Bronze Medal*
2. Modified IVT Torque Converter for Automotive Transmission, *Invention, Innovation & Design 2010 – Members (UiTM) – Silver Medal*
3. Modified IVT Torque Converter for Automotive Transmission, *Malaysia Technology Expo 2010 - Members (UiTM)*

## **2009**

1. Design & Development of Portable Traffic Light using PIC Microcontroller, *Invention, Innovation & Design 2009 – Group Leader (UiTM)*
2. Design & Development of Software for Plate Thickness of Storage Tanks's Shell using Microsoft Excel & Graphical User Interface (GUI), *Invention, Innovation & Design 2009 – Group Leader (UiTM)*

## **2008**

1. Development of Novel Grading System for FFB of Oil Palm using Injected Force Device, *Invention, Innovation & Design 2008 – Member (UiTM)*

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## POST GRADUATE MAIN SUPERVISION

### GRADUATED: MSc - 4

1. Adoption of Robotic Process Automation (RPA) in Maxis Specification to Complex Project Budget Management - **Noor Azah Ab Halim** (M.Eng. Management)
2. Development of Compact Supper Dissolve Oxygen Monitoring System via IoT Approach - **Afiq Hanafie Azlan** (MSc)
3. Data Acquisition & Footwork Analysis of 10 Pin Bowler via Microsoft Kinect – **Nurul Liyana Zainudin** (MSc)
4. ADAS: Malaysian Perception & Introduction in Driving Training Program – **Muhammad Saufi Shamsudin** (MSc)

### ON GOING: PhD – 5, MSc - 4

1. Flowrate Optimization via Multi-Objective Optimization – **Ir. Nor Hapida** (PhD)
2. Sports Artificial Intelligence System for Football – **En Khairul Imran Sainan** (PhD)
3. Magnetic Based Hybrid Electricity Generator System for Rural Application – **En Mohd Saiful Bahari Shaari** (PhD)
4. Deep Learning Approach for Non-Contact Vibration Monitoring - **Pn Norheliena Aziz** (PhD)
5. Football Players Force Velocity Classification via RASCH Model & Particle Swarm Method – **Pn Nurul Syuhadah Khusaini** (PhD)
6. Development of In-Sole Sensor System for Footballer – **Muhammad Siddiq bin Mat Dris** – (M.Eng)
7. Simulation of Hydraulic Jump at Takungan Banjir Sri Rampai – **Karl Lanchang** (MSc)
8. Data Collection System for Building Rainwater Drainage: Application Toward Monitoring & Validation – **Tajul Zaffli** (MSc)
9. Analysis of Suspension Rope Passenger Lift: Allowable Diameter Reduction for Safety & Strength – **Mohd Najib Tugiman** (MSc)

## POST GRADUATE CO-SUPERVISION

### ON GOING: PhD – 2, MSc - 3

1. IoT Based System for Lubrication Monitoring System – **Nor Shaebah** (PhD)  
- UPM

2. Water Injection Control System for Turbocharged Engine – **Khairul Khusairi bin Kamaludin** (PhD) – On Going – Universiti Teknologi MARA.
3. Smart Monitoring Aquaculture System – **Amir Yazid Yaacob** (M.Eng)
4. IoT Based Approach Manufacturing System – **Syahmi Shahar** (M.Eng)
5. Stochastic Geometry Probabilistic Algorithm to Solve Object Recognition in Robotic Simultaneously Localization and Mapping (SLAM) – **En Ilmi bin Mohd Ariffin** (M.Eng) – On Going

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## SKILLS

### Computer Skills

Microsoft Office – Word, Excel, PowerPoint, Visio & Publisher

Solid Modeling – Fusion 360, Solidworks, CATIA & 3D Printing

Programming Software – C++, MATLAB & Arduino

Audio Video Editing – Vegas & Sound Forge

Numerical Analysis & Simulation – MATLAB & Simulink

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## INTEREST

Bowling & Snowboarding

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## COLLABORATION & MOU

- |     |  |      |
|-----|--|------|
| 1.  | Faculty of Dentistry – <i>Custom Helmet Design for Hockey Goalkeeper</i> | 2021 |
| 2.  | Persatuan Inovasi & Rekapipta Malaysia, MOU                              | 2021 |
| 3.  | Bintulu Port Bhd   | 2020 |
| 4.  | Pusat Pembenihan Udang Galah, Jab. Perikanan Malaysia, Lumut             | 2020 |
| 5.  | Universiti Malaysia Perlis (UNIMAP), MOU                                 | 2020 |
| 6.  | B&M Asset Management, MOU  | 2020 |
| 7.  | One Nation Resources, MOU  | 2020 |
| 8.  | Bomba & Penyelamat Jinjang   | 2020 |
| 9.  | Bomba & Penyelamat Sri Hartamas  | 2020 |
| 10. | Universiti Malaysia Pahang (iMAMS Lab), MOU                              | 2019 |
| 11. | Universiti Tenaga Malaysia (UNITEN)                                      | 2019 |
| 12. | Universitas MATARAM, Indonesia   | 2019 |
| 13. | Institut Sukan Negara (ISN), MOU   | 2019 |
| 14. | MyInvent Sdn Bhd, MOU  | 2019 |
| 15. | Koperasi Hujung Rintis Bhd, MOU  | 2019 |
| 16. | MH Delima Sdn Bhd, MOA   | 2019 |
| 17. | TM One   | 2019 |
| 18. | SciEdge Sdn Bhd  | 2018 |
| 19. | Robopreneur Sdn Bhd  | 2018 |

20. Hosei University, Tokyo, Japan 2016

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#### **UNIVERSITY SERVICE**

1. J.K Akademik Pengajian Mekanikal	2021
2. J.K Penilaian Projek STEM UiTM	2020
3. J.K Penilaian Teknikal	2019
4. J.K Siasatan Dalaman	2016

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#### **STUDENTS ACTIVITIES**

1. NVOKE – Advisor	2021 - Present
2. Smart Horizon Tech Solution – Advisor	2020 - Present
3. UiTM Stem Program	2018 - Present
4. SEA-IC Tyro Club – Founder & Advisor	2018 - Present
5. UiTM Eco-Photon – Technical Advisor	2018-2019
6. Peer Tutoring Program – Founder & Advisor	2015-2018
7. Formula SAE – Technical Advisor	2016

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#### **SCHOOL PROGRAM (STEM)**

1. PPD Sabak Bernam	2021
2. Sek. Men. Keb. Sungai Ranggam, Teluk Intan, Perak	2021
3. Sek. Men. Seri Samudera, Manjung, Perak	2021
4. Sek. Men. Keb. Seksyen 9, Shah Alam –Advisor	2019 - 2021
5. Sek. Men. Keb. Seksyen 18, Shah Alam – STEM Program	2020
6. Sek. Agama Men. Jeram - Advisor STEM	2019
7. Sek. Men. Keb. Batu Unjur Klang – Advisor STEM	2019
8. Sek. Men. Keb. Mutiara, WP Labuan	2019
9. MRSM Taiping	2019
10. Sek. Men. Sains Jeli, Kelantan	2019
11. Sek. Sultan Alam Shah, Putrajaya	2018
12. Sek. Men. Islam Hira' Jeram, Kuala Selangor	2018
13. Sek. Men. Keb. B.B Sungai Buloh, Sungai Buloh	2018
14. Sek. Men. Keb. Hillcrest, Gombak	2018
15. Sek. Men. Keb. Puncak Alam, Selangor	2018
16. Sek. Men. Keb. B.B Salak Tinggi, Selangor	2018

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#### **INTERNATIONAL PROGRAM**

1. National Institute of Tech. Ube College, Japan	2019
a. Tomoya Furukawa (2019268686) - Internship	
b. Yuma Tsuruga (2019694824) – Internship	

## **NATIONAL PROGRAM**

1. Faculty of Science Computer & Mathematics, Cawangan Raub, Pahang  
2021
    - a. Muhammad Sofee Abdul Rahman (2019289698) – Internship
    - b. Mohamad Idlan Nazmi bin Mohammad (2019279802) Internship
  
  2. Faculty of Sport Science & Recreation, Cawangan Negeri Sembilan 2019
    - a. Muhammad Iskandar Mat Rozi (2017651518) – Internship (SR113)
    - b. Muhammad Addin Muhammad Afandi (2017484154) – Internship (SR113)
- 

## **COMMUNITY**

1. Malaysian Sport Tech. Association (MySTA) – Treasury 2020 - Present
  2. Persatuan Penduduk Bandar Nusarhu – Secretary 2015 - 2018
  3. Mechanical Eng. Fac. Alumni Society (MEFAS) – Secretary 2016 - Present
  4. UiTM Bikers Club – Founder 2014
- 

## **REFFEREES**

1. Prof. Sr. Ir. Dr. Suhaimi Abdul Talib  
Assistant Vice Chancellor, College of Engineering UiTM
  2. Prof. Dr. Genci Capi  
Hosei University, Tokyo, Japan
-