



# UNIVERSITI TEKNIKAL MALAYSIA MELAKA

## STAFF PROFILE

**NAME** TS. DR. HAZRIQ IZZUAN BIN JAAFAR

**FACULTY / CENTRE** FAKULTI KEJURUTERAAN ELEKTRIK

**DESIGNATION** PENSYARAH UNIVERSITI

**CURRENT POSITION** TIMBALAN DEKAN (PEMBANGUNAN PELAJAR) - FAKULTI KEJURUTERAAN ELEKTRIK

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### ACADEMIC QUALIFICATION

YEAR	QUALIFICATION	INSTITUTION
2019	KEDOKTORAN FALSAFAH (PH.D)	UNIVERSITI TEKNOLOGI MALAYSIA
2013	SARJANA (MASTERS)	UNIVERSITI TEKNOLOGI MALAYSIA
2008	SARJANA MUDA KEPUJIAN(BACHELOR HONS)	UNIVERSITI TEKNOLOGI MALAYSIA

### FIELD OF INTEREST

CRANE CONTROL SYSTEM AND OPTIMIZATION TECHNIQUES.

### TEACHING EXPERIENCE *(last 5 years)*

#### UNDERGRADUATES

SESSION	COURSE
2021/2022	DEKC2113 - CONTROL SYSTEM ENGINEERING
2020/2021	DEKA1222 - CALCULUS
2020/2021	DEKC2113 - CONTROL SYSTEM ENGINEERING
2020/2021	DEKC3813 - CONTROL SYSTEM ENGINEERING
2020/2021	DEKP1211 - ELECTRICAL WORKSHOP
2019/2020	DEKA1113 - PHYSICS
2019/2020	DEKC3643 - AUTOMATION
2019/2020	DEKC3813 - CONTROL SYSTEM ENGINEERING
2019/2020	DEKP1111 - BASIC ELECTRICAL SKILL
2019/2020	DEKP1211 - ELECTRICAL WORKSHOP
2019/2020	DEKU3118 - INDUSTRIAL TRAINING

**POSTGRADUATES**

SESSION	COURSE
2020/2021	MEKH5123 - APPLIED SYSTEM MODELLING AND SIMULATION

**LIST OF GRANTS** (*last 5 years*)

YEAR AWARDED	TITLE OF PROJECT	TYPE OF GRANT	AMOUNT (RM)	ROLE
2021	AN ADAPTIVE FREQUENCY-FREE COMMAND SMOOTHING OF CRANE SWAY CONTROL WITH MULTIMODE DYNAMICS	GERAN FRGS (NATIONAL)	113600	MAIN RESEARCHER
2021		GERAN FRGS (NATIONAL)	117414	CO-RESEARCHER
2017	A NEW ADAPTIVE ROBUST CONTROLLER SCHEME WITH RECURSIVE PARTICLE SWARM OPTIMIZATION ALGORITHM FOR AN ELECTRO-HYDRAULIC ACTUATOR SYSTEM	HIGH IMPACT (UTEM)	30000	CO-RESEARCHER
2017	ADAPTIVE ROBUST CONTROL STRATEGY WITH RECURSIVE PRIORITY-BASED FITNESS PARTICLE SWARM OPTIMIZATION FOR AN ELECTRO-HYDRAULIC ACTUATOR SYSTEM	GERAN FRGS (NATIONAL)	73034	CO-RESEARCHER

**PUBLICATIONS (last 5 years)****JOURNAL**

YEAR	TITLE	NAME OF JOURNAL	AUTHORS
2021	CONTROL OF AN UNDERACTUATED DOUBLE-PENDULUM OVERHEAD CRANE USING IMPROVED MODEL REFERENCE COMMAND SHAPING: DESIGN, SIMULATION AND EXPERIMENT	MECHANICAL SYSTEMS AND SIGNAL PROCESSING	H.I. JAAFAR, Z. MOHAMED, M.A. AHMAD, N.A. WAHAB, L. RAMLI, M.H. SHAHEED
2020	DESIGN AND DEVELOPMENT OF AUTONOMOUS PESTICIDE SPRAYER ROBOT FOR FERTIGATION FARM	INTERNATIONAL JOURNAL OF ADVANCED COMPUTER SCIENCE AND APPLICATIONS	A.M. KASSIM, M. F. N. M. TERMEZAI, A. K. R. A. JAYA, A. H. AZAHAR S SIVARAO, F. A. JAFAR, H.I JAAFAR, M. S. M. ARAS
2020	EFFICIENT SWING CONTROL OF AN OVERHEAD CRANE WITH SIMULTANEOUS PAYLOAD HOISTING AND EXTERNAL DISTURBANCES	MECHANICAL SYSTEMS AND SIGNAL PROCESSING	LIYANA RAMLI, Z. MOHAMED, M. EFE, IZZUDDIN M. LAZIM, H. I. JAAFAR
2020	MODELLING AND FUZZY LOGIC CONTROL OF AN UNDERACTUATED TOWER CRANE SYSTEM	APPLICATIONS OF MODELLING AND SYSTEM	LIYANA RAMLI, IZZUDDIN M. LAZIM, HAZRIQ IZZUAN JAAFAR AND ZAHARUDDIN MOHAMED
2019	EFFICIENT CONTROL OF A NONLINEAR DOUBLE-PENDULUM OVERHEAD CRANE WITH SENSORLESS PAYLOAD MOTION USING AN IMPROVED PSO-TUNED PID CONTROLLER	JVC/JOURNAL OF VIBRATION AND CONTROL	JAAFAR H.I., MOHAMED Z., MOHD SUBHA N.A., HUSAIN A.R., ISMAIL F.S., RAMLI L., TOKHI M.O., SHAMSUDIN M.A.
2019	MODEL REFERENCE COMMAND SHAPING FOR VIBRATION CONTROL OF MULTIMODE FLEXIBLE SYSTEMS WITH APPLICATION TO A DOUBLE-PENDULUM OVERHEAD CRANE	MECHANICAL SYSTEMS AND SIGNAL PROCESSING	JAAFAR H.I., MOHAMED Z., SHAMSUDIN M.A., MOHD SUBHA N.A., RAMLI L., ABDULLAHI A.M.
2019	OPTIMIZATION TECHNIQUES IN PID CONTROLLER ON A NONLINEAR ELECTRO-HYDRAULIC ACTUATOR SYSTEM	JOURNAL OF ADVANCED RESEARCH IN FLUID MECHANICS AND THERMAL SCIENCES	CHAI MAU SHERN, ROZAIMI GHAZALI, CHONG SHIN HORNG, CHONG CHEE SOON, HAZRIQ IZZUAN JAAFAR
2019	PERFORMANCE ANALYSIS OF ACCELERATION SENSOR FOR MOVEMENT DETECTION IN VEHICLE SECURITY SYSTEM	INTERNATIONAL JOURNAL OF ADVANCED COMPUTER SCIENCE AND APPLICATIONS	A.M. KASSIM, A. K. R. A. JAYA, A. H. AZAHAR, H. I. JAAFAR, S SIVARAO, F. A. JAFAR, M. S. M. ARAS
2019	PERFORMANCE ANALYSIS OF POSITION TRACKING CONTROL WITH PID CONTROLLER USING AN IMPROVED OPTIMIZATION TECHNIQUE	INTERNATIONAL JOURNAL OF MECHANICAL ENGINEERING AND ROBOTICS RESEARCH	CHAI MAU SHERN, ROZAIMI GHAZALI, CHONG SHIN HORNG, HAZRIQ IZZUAN JAAFAR, CHONG CHEE SOON, YAHAYA MD SAM
2018	A NEURAL NETWORK-BASED INPUT SHAPING FOR SWING SUPPRESSION OF AN OVERHEAD CRANE UNDER PAYLOAD HOISTING AND MASS VARIATIONS	MECHANICAL SYSTEMS AND SIGNAL PROCESSING	RAMLI L., MOHAMED Z., HAZRIQ IZZUAN BIN JAAFAR
2017	AN IMPROVED INPUT SHAPING DESIGN FOR AN EFFICIENT SWAY CONTROL OF A NONLINEAR 3D OVERHEAD CRANE WITH FRICTION	MECHANICAL SYSTEMS AND SIGNAL PROCESSING	MOHAMMAD JAVAD MAGHSOUDI, Z. MOHAMED, S. SUDIN, S. BUYAMIN, H.I. JAAFAR AND S.M. AHMAD
2017	CONTROL STRATEGIES FOR CRANE SYSTEMS: A COMPREHENSIVE REVIEW	MECHANICAL SYSTEMS AND SIGNAL PROCESSING	L. RAMLI, Z. MOHAMED, A.M. ABDULLAHI, H.I. JAAFAR AND I.M. LAZIM

**CONFERENCE**

YEAR	TITLE	NAME OF CONFERENCE	AUTHORS
2019	OPTIMIZATION OF SINGLE INPUT FUZZY LOGIC CONTROLLER USING PSO FOR UNMANNED UNDERWATER VEHICLE	10TH NATIONAL TECHNICAL SEMINAR ON UNDERWATER SYSTEM TECHNOLOGY	MOHD SHAHRIEEL MOHD ARAS, SHAHRUM SHAH ABDULLAH , HAZRIQ IZZUAN JAAFAR , AHMAD ANAS YUSOF, MOHD ZAIDI MOHD TUMARI, HO GUI YAN
2018	VIBRATION CONTROL OF A NONLINEAR DOUBLE-PENDULUM OVERHEAD CRANE USING FEEDFORWARD COMMAND SHAPING	2018 IEEE CONFERENCE ON SYSTEMS, PROCESS AND CONTROL	H.I. JAAFAR, Z. MOHAMED, LIYANA RAMLI AND A.M. ABDULLAHI

**BOOK, BOOK CHAPTER, OTHER PUBLICATIONS**

YEAR	TITLE BOOK	TITLE CHAPTER BOOK	TYPE OF PUBLICATIONS	AUTHORS
2019	STUDIES IN CONTROL AND SYSTEM AUTOMATION	OPTIMAL PSO-TUNED PID FOR A DOUBLE-PENDULUM OVERHEAD CRANE	BOOK	HAZRIQ IZZUAN BIN JAAFAR
2017	COMMUNICATIONS IN COMPUTER AND INFORMATION SCIENCE	PSO-TUNED PID CONTROLLER FOR A NONLINEAR DOUBLE-PENDULUM CRANE SYSTEM	BOOK_CHAPTER	HAZRIQ IZZUAN BIN JAAFAR

**PROFESSIONAL MEMBERSHIPS / LEARNED SOCIETY**

YEAR	ROLE	INSTITUTION	LEVEL
2020	TEKNOLOGIS PROFESIONAL (LEMBAGA TEKNOLOGIS MALAYSIA)	LAIN-LAIN	KEBANGSAAN
2018	AHLI (MALAYSIAN SIMULATION SOCIETY)	LAIN-LAIN	KEBANGSAAN

**POSTGRADUATE SUPERVISION** *(last 5 years)*

NO	NAME	LEVEL OF STUDY	ROLE	STATUS
1	AHMAD FADZLI NIZAM BIN ABDUL RAHMAN	DOCTORATE	CO-SUPERVISOR	ACTIVE
2	MUHAMAD FADLI BIN GHANI	DOCTORATE	CO-SUPERVISOR	ACTIVE
3	SHARIFAH YUSLINDA BINTI SYED HUSSIEN	MASTERS	CO-SUPERVISOR	GRADUATED (2018)
4	CHONG CHEE SOON	MASTERS	CO-SUPERVISOR	GRADUATED (2017)

## STAFF PROFILE

KATEGORI MAKLUMAT	PEJABAT DIRUJUK
PERSONAL INFORMATION	BAHAGIAN SUMBER MANUSIA, PEJABAT PENDAFTAR
ACADEMIC QUALIFICATON	
PROFESSIONAL MEMBERSHIP / LEARNED SOCIETY	
TEACHING EXPERIENCE	BAHAGIAN PENGURUSAN AKADEMIK, PEJABAT PENDAFTAR
<ul style="list-style-type: none"> <li>• UNDERGRADUATES</li> </ul>	
<ul style="list-style-type: none"> <li>• POSTGRADUATES</li> </ul>	PUSAT PENGAJIAN SISWAZAH (PPS)
POSTGRADUATE SUPERVISION	PUSAT PENGAJIAN SISWAZAH (PPS)
FIELD OF INTEREST	PUSAT PENGURUSAN PENYELIDIKAN DAN INOVASI (CRIM)
LIST OF GRANTS	
LIST OF RESEARCH AWARDS	PUSAT PENGKOMERSILAN (UCC)
INTELLECTUAL PROPERTIES	
COMMERCIALIZATION	
PUBLICATIONS	PERPUSTAKAAN LAMAN HIKMAH
CONSULTANCY	PUSAT JARINGAN INDUSTRI DAN MASYARAKAT (PJIM)