

25
TAHAP
1999-2024
UITM SEBUAH UNIVERSITI



UNIVERSITI
TEKNOLOGI
MARA

20 & 21
MAY
2024



International Industrial Revolution 4.0 Exposition

"INNOVATING IDEAS, TRANSPIRING DREAMS"

ABSTRACT BOOK

Strategic Partners:



Perpustakaan
Sultan Badlishah

Organized By:

**COLLEGE OF COMPUTING, INFORMATICS AND MATHEMATICS,
UNIVERSITI TEKNOLOGI MARA, KEDAH BRANCH**

UiTM *di haduku*

لويها فتوى موليا



<https://kedah.uitm.edu.my/>



<https://www.facebook.com/RektorKdhu>

<https://www.facebook.com/UITMSPKerbok>



UITM Cawangan Kedah Channel

Copyright @ 2024 by Universiti Teknologi MARA Kedah Branch.

Published by College of Computing, Informatics and Mathematics,
Universiti Teknologi MARA Kedah Branch.

All rights reserved. No part of this publication may be reproduced, copied, stored in any retrieval system or transmitted in any form or by any means, electronic, mechanical. Photocopying, recording or otherwise, without the prior permission from the Rector, Universiti Teknologi MARA Kedah Branch, 08400 Merbok, Kedah, Malaysia.

The views, opinions and technical recommendations expressed by the contributors are entirely their own and do not necessarily reflect the views of the Faculty of the University.

Copy Editors: Mohd Zhafri Mohd Zukhi
Shahida Farhan Zakaria
Norin Rahayu Shamsuddin
Nor Athirah Mohd Zin
Khairul Adilah Ahmad

Cover Design: Syahrini Shawalludin
Jasmin Ilyani Ahmad

IREx 2024

The successful inauguration of IR4.0 Exposition IREx 2019 has witnessed ground breaking initiatives, ideas, and innovations materialised into numerous practical devices today. Treading on the same triumph, the College of Computing, Informatics, and Mathematics, UiTM Kedah is thrilled to announce the continuation of said event, IREx 2024 with the theme: *Innovating Ideas, Transpiring Dreams*.

The IREx 2024 aspires to incorporate even more exciting new technologies including, but not limited to, Information & Communication Technology (ICT), Educational Technology & Innovation (ED), Operational Excellence (OE), Internet of Things (IoT), Process Improvement, Ideas & Design, Multimedia, and Electronics that will chart new milestones in human history. This will serve as an excellent platform for scientists and innovators alike to meet the like-minded individuals and showcase inspiring ideas and notable innovations.

PROGRAM SCHEDULE

International Industrial Revolution 4.0 Exposition (IREx 2024)
21ST May 2024 (Tuesday)
Dewan Perdana, UiTM Kedah Branch

TIME	EVENT
8.00 – 9.00 am	Registration & Booth Set Up
9.00 am – 12.00 pm	Exhibition & Judging Session
12.00 pm – 2.00 pm	Obedient Drone Session & Break
2.00 pm – 5.00 pm	Official Closing & Prize Giving Ceremony
5.00 pm	Program Ends

Official Closing Ceremony

International Industrial Revolution 4.0 Exposition (IREx 2024)

TIME	EVENT
2.00 pm	Arrival of Guests and Participants
2.30 pm	Arrival of VVIP
	National anthem - Negaraku And Wawasan Setia Warga
2.40 pm	UiTM
	Welcoming Speech
3.00 pm	Rector's Welcoming Speech
	Officiating Speech
3.10 pm	Gimmick & Montage presentation
3.30 pm	Prize Giving Ceremony
4.00 pm	Photography
5.00 pm	Program Ends

CATEGORY A

IRX025	ARABIC GAME BOARD	2
IRX036	TAKRAW KICK DEVICE-MENINGKATKAN KEMAHIRAN SEPAKAN TAKRAW DI KALANGAN MURID SEKOLAH RENDAH	3
IRX068	PRO CROSS-MATH CHALLENGE	4
IRX082	MULTIPURPOSE SOAP	5
IRX083	PUFFER FISH BOAT	6
IRX092	MY GAMES ACADEMIA	7
IRX095	'ROBOCRAB' PEMBERSIH SAMPAH	8
IRX096	TG-ELMH V2 (TITI GAJAH-ENTER LAMP MERAH HIJAU VERSION 2)	9
IRX103	TANDAS PINTAR	10
IRX117	MESTO	11
IRX118	SMART PARKING LOT	12
IRX121	INOVASI BAHAN BANTU MENGAJAR (MIKROPENGAWAL DAN PENGATURCARAAN)	13
IRX126	PORTABLE WATER FILTER (POWFiL)	14
IRX128	INOVASI GEODETECTOR:SISTEM PINTAR PENGESAN BENCANA ALAM	15
IRX129	INOVASI RUHGUARD: SISTEM PINTAR PENGESAN KESELAMATAN DI PADANG SEKOLAH	16

CATEGORY B

IRX006	INNOVATIVE QUALITY ASSESSMENT SYSTEM IN CONSTRUCTION (QLASSIC) EQUIPMENT: SSTL PRO	18
IRX007	INDUSTRIAL BUILDING SYSTEM (IBS) : KENAF FIBER CONCRETE PANEL	19
IRX008	SAFETY PRECAUTIONS APPLIED TO A BRICK CUTTING MACHINE: ARDUINO SYSTEM, SECURITY SENSOR AND INTERNET OF THINGS (IoT)	20
IRX011	THE IDIOMS BOARD GAME	21
IRX013	ECO FRIENDLY TILES	22
IRX017	AUTOMATIC SYSTEM OF HEALTH TRACKER (ASTHRA)	23
IRX018	AEROCARGE-DRIVE (EXTRACTING WASTE ENERGY TO USEFUL ENERGY)	24
IRX019	STAR e-FUTURE	25
IRX020	REVOLUTIONIZING MOBILITY: EASY COMPACT CHAIRCANE (E3C)	26
IRX021	SCOFT: A CULTURED DRINK	27
IRX026	AUTOMATED FERTIGATION SYSTEM V2 (AFS V2)	28
IRX027	ALTERNATIVE CHICKEN FEED FROM COCONUT DREGS	29
IRX031	SMART COUNTER	30
IRX032	DIGITAL SIT AND REACH TOOL	31
IRX033	FINGERPRINT DOOR LOCK	32
IRX034	HEART BEAT SENSOR	33
IRX035	PEMBANGUNAN DRON AIR UNTUK SISA DI SUNGAI ATAU LAUT	34
IRX042	BEEZYBIN	35
IRX043	SMART FARM	36
IRX052	SAFETY EXTENSION	37
IRX053	VISTRAP	38
IRX054	QUICKSTRIPS	39
IRX056	UTILIZING ALEXNET CNN FOR ENHANCED DIAGNOSTIC ACCURACY IN CONJUNCTIVITIS DETECTION	40
IRX057	AI-POWERED SCURVY DETECTION : BRIDGING HEALTHCARE DISPARITIES IN RURAL SETTINGS	41
IRX061	KAWASAKI DISEASE AND HFMD EARLY SCREENING SYSTEM BASED ON SKIN IMAGES AND ALEXNET CONVOLUTIONAL NEURAL NETWORK	42
IRX062	ADVANCING MICROPLASTIC DETECTION IN WATER SYSTEMS USING SEM IMAGING AND AI ANALYSIS	43
IRX063	CAR SAFETY REMAINDER v2	44
IRX072	AR PUTRA: VIRTUAL TOURISM EXPERIENCES THROUGH AUGMENTED REALITY	45
IRX078	SOLAR POWERED AIR CONDITIONING UNIT (GREEN ENERGY)	46
IRX079	i-IGCSE STEM	47
IRX084	ARDUINO ENHANCED RADIATOR'S COOLANT LEVEL SENSOR SENSORAD	48

CATEGORY B

ARDUINO ENHANCED RADIATOR'S COOLANT LEVEL SENSOR SENSORAD

Mohd Nafis Md Soleh¹, Ahmad Harith Asrar², Muhammad Haikal Mohd
Azman³, Auna Danisha Mohd Fadzli⁴
^{1,2,3,4}*SM Sains Sultan Mohamad Jiwa*

[¹*nafissoleh@gmail.com*](mailto:nafissoleh@gmail.com)

ABSTRACT - The engine of an automobile produces significant heat, which, if not managed, can lead to engine overheating and potentially irreversible damage. To prevent this, cars are equipped with cooling systems, with coolant playing a crucial role in absorbing engine heat. However, coolant shortages due to leaking radiator caps can lead to cooling system failure, posing risks of engine overheating and even vehicle explosions, with potential severe injuries or fatalities for passengers, not to mention the costly repairs. To address this, SensoRad provides real-time coolant level monitoring for drivers, displaying the reservoir tank level. Utilizing an Arduino microcontroller, it interfaces with a magnetic floater sensor, issuing warnings through a buzzer and an LCD screen. The floater, attached to the reservoir tank lid, generates a magnetic field when the coolant level drops, triggering the Arduino to alert the driver. Though effective, this system has limitations. It simulates a real tank in a smaller setup and employs a cost-effective Arduino microcontroller. Future iterations may integrate advanced microprocessors found in automotive applications, enabling multi-level sensor integration for enhanced performance.

Keywords: radiator, coolant, sensor, arduino,



Organized By:

**COLLEGE OF COMPUTING, INFORMATICS AND MATHEMATICS,
UNIVERSITI TEKNOLOGI MARA, KEDAH BRANCH**