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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**

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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

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CATEGORY C

SMART WATER MANAGEMENT SYSTEMS

Ahmad Anwar Zainuddin¹, Amir 'Aatif Amir Hussin², Mohamad Syafiq Asyraf Bharudin³, Muhammad Ziyad Fathullah Mohd Yazid⁴, Muhammad Hazrin Fahmi Abd Halim⁵, Nur Syafika Bahrudin⁶

^{1,2,3,4,5,6}*Department of Computer Science, Kulliyah of ICT,*

International Islamic University Malaysia, Kuala Lumpur, Malaysia

¹anwarzain@iium.edu.my

²amiraatieff@iium.edu.my

³msasyraf01@gmail.com

⁴ziyadyazid31@gmail.com

⁵hazrinfahmi03@gmail.com

⁶nursyafikabahrudin@gmail.com

ABSTRACT- Efficient water resource management is vital for sustainable development. This work showcases a comprehensive water level monitoring system, featuring leak detection and automatic water restoration. Using specialized sensors and automation technology, it monitors levels and identifies leaks in real time. When levels drop below a set threshold, an automatic restoration process initiate. This solution establishes a strong foundation for resource efficiency, waste reduction, and addressing water shortages. By integrating level monitoring, leak detection, and automated restoration, it offers a robust framework. Work outcomes underscore the systems real-world viability, highlighting its potential to optimize water utilization and conservation efforts effectively. This work aims to create an advanced water level monitoring system with integrated leak detection capabilities using ESP8266 hardware. The ESP8266 is a versatile Wi-Fi microchip with built-in TCP/IP networking capabilities and a microcontroller, developed by Espressif Systems in China. The work would require implementations of a variety of sensors including ultrasonic and moisture (leak) sensors. This system incorporates a dedicated rain sensor module for detecting any possible leakage as well as ultrasonic sensor for measuring the depth of the water in the tank. Upon detecting any instances of leakage, the sensor will promptly initiate a signal, triggering an automatic cessation of water input to prevent wastage. This innovative approach ensures the prevention of leaks while maintaining accurate water level monitoring, enhancing overall water resource efficiency.

Keywords: Water resource management, Monitoring system, Leak detection, Automation technology, Sensors



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