



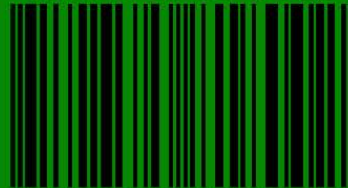
# Asian Journal of

# Electrical and Electronic Engineering

VOLUME 4 ISSUE 2 SEPTEMBER 2024



eISSN 2785-8189



9 7 7 2 7 8 5 8 1 8 0 0 2

<https://alambiblio.com/ojs/index.php/ajoeee>



## **CHIEF EDITOR**

Prof. Dr. AHM Zahirul Alam, IIUM, Malaysia

## **EXECUTIVE EDITOR**

Assoc. Prof. Dr. Muhammad Mahbubur Rashid, IIUM, Malaysia

## **EDITORIAL BOARD MEMBERS**

Prof. Dr. Sheroz Khan  
Onaizah College of Engineering and Information Technology  
Saudi Arab

Prof. Dr. AHM Asadul Huq  
Department of Electrical and Electronic Engineering  
Dhaka University, Bangladesh

Prof. Dr. Pran Kanai Shaha  
Department of Electrical and Electronic Engineering  
Bangladesh University of Engineering and Technology,  
Bangladesh

Assoc. Prof. Dr. SMA Motakabber  
Faculty of Engineering  
International Islamic University Malaysia, Malaysia

Prof. Dr. ABM Harun Ur Rashid  
Department of Electrical and Electronic Engineering  
Bangladesh University of Engineering and Technology,  
Bangladesh

Prof. Dr. Joarder Kamruzzaman  
Engineering and Information Technology  
Federal University, Australia

Dr. Md Arafatur Rahman  
Reader in Cyber Security  
University of Wolverhampton  
United Kingdom

## **AIMS & SCOPE OF THE ASIAN JOURNAL OF ELECTRICAL AND ELECTRONIC ENGINEERING**

The **Asian Journal of Electrical and Electronic Engineering (AJEEE)**, published biannually (March and September), is a peer-reviewed open-access journal of the **Alambiblio Press**.

The Asian Journal of Electrical and Electronic Engineering publishes original research findings as regular papers and review papers (by invitation). The Journal provides a platform for Engineers, Researchers, Academicians, and Practitioners who are highly motivated to contribute to the Electrical and Electronics Engineering disciplines. It also welcomes contributions that address the developing world's specific challenges and address science and technology issues from a multidisciplinary perspective.

## **REFEREES' NETWORK**

All papers submitted to AJEEE Journal will be subjected to a rigorous reviewing process through a worldwide network of specialized and competent referees. Each accepted paper should have at least two positive referees' assessments.

## **SUBMISSION OF A MANUSCRIPT**

A manuscript should be submitted online to the Asian Journal of Electrical and Electronic Engineering (AJEEE) website <https://journals.alambiblio.com/ojs/index.php/ajoeee/>. Further correspondence on the status of the paper could be done through the journal's website



## COPYRIGHT NOTICE

**Consent to publish:** The Author(s) agree to publish their articles with AlamBiblio Press.

**Declaration:** The Author(s) declare that the article has not been published before in any form. It is not concurrently submitted to another publication and does not infringe on anyone's copyright. The author (s) holds the AlamBiblio Press and Editors of the Journal harmless against all copyright claims.

**Transfer of copyright:** The Author(s) hereby agree to transfer the article's copyright to **AlamBiblio Press**, which shall have the non-exclusive and unlimited right to publish the article in any form, including in electronic media. For articles with more than one author, the corresponding author confirms that he/she is authorized by his/her co-author(s) to grant this transfer of copyright.

**The Asian Journal of Electrical and Electronic Engineering Journal follows the open access policy.**

All articles published with open access will be immediately and permanently free for everyone to read, download, copy and distribute.

## ASIAN JOURNAL OF ELECTRICAL AND ELECTRONIC ENGINEERING

eISSN 2785-8189



9 7 7 2 7 8 5 8 1 8 0 0 2



Published by:

**AlamBiblio Press,**  
PV8 platinum Hill  
Jalan Melati Utama, 53100 Kuala Lumpur, Malaysia  
Phone (+603) 2713 7308

Whilst the publisher and editorial board make every effort to see that no inaccurate or misleading data, opinion or statement appears in this Journal, they wish to make it clear that the data and opinions appearing in the articles and advertisements herein are the responsibility of the contributor or advertiser concerned. Accordingly, the publisher and the editorial committee accept no liability whatsoever for the consequence of any such inaccurate or misleading data, opinion or statement.



This work is licensed under a Creative Commons Attribution-Non-Commercial 4.0 International License.



Volume 4, Issue 2, September 2024

TABLE OF CONTENTS

**EDITORIAL**..... i

**COPYRIGHT NOTICE** ..... ii

**ARTICLES**

IMPROVING THE PRIVACY IN WIRELESS-ENABLED 5G NETWORKS: A LIGHTWEIGHT PROTOCOL FOR IIOT COMMUNICATIONS..... 1  
*Mamoon M. Saeed, Rashid A. Saeed, Mohammed Suliman Elbashier, Elmustafa Sayed Ali and Zeinab E. Ahmed*

EVALUATION OF CLASSIFICATION ALGORITHMS IN TRACING MALICIOUS TELEPHONE NUMBERS ..... 18  
*Van Vuong Ngo*

IMPROVING CROWD COUNTING PERFORMANCE: A CONVOLUTIONAL NEURAL NETWORK APPROACH WITH TRANSFER LEARNING 26  
*Marwah M. Ahmeed and Othman O. Khalifa*

RIPENESS ASSESSMENT AND QUALITY CONTROL OF MANGO GOLD SUSU USING AN E-NOSE SYSTEM ..... 35  
*Nur Irdina Fakhrol Anwar, Nor F. Za'bah and Aliza Aini Md Ralib*

A COMPARATIVE STUDY BETWEEN TRANSFORMER COUPLED UN-TUNED AND TUNED POWER DERIVATIVE CIRCUITS FOR ULTRASONIC CLEANING SYSTEM..... 43  
*S.M. A. Motakabber, Md. Mominul Hoque and A. H. M. Zahirul Alam*

SECURING THE IOT EDGE DEVICES USING ADVANCED DIGITAL TECHNOLOGIES ..... 52  
*Abdul Manan Sheikh, Md Rafiqul Islam, Mohamed Hadi Habaebi, Adnan Kabbani, Suriza Ahmad Zabidi and Athaur Rahman bin Najeeb*

A SYSTEMATIC REVIEW ON FACIAL DETECTION AND RECOGNITION: LIMITATIONS AND OPPORTUNITIES ..... 61  
*Mohammad Amir Khan, Hasan Firdaus Bin Mohd Zaki, Azhar Bin Mohd Ibrahim, S.M Afzal Hoq and Amir Akramin bin Shafie*

BLOCKCHAIN BASED EMAIL SECURITY TO MITIGATE PHISHING ATTACK ..... 77  
*Othman O. Khalifa, Tengku Hanis Sofea Binti Tengku Nor Effendy, Muhammed Zaharadeen Ahmed, Elmahdi A. El-Khazmi and Abdelrahim Nasser Esgiar*