## INTERNATIONAL JOURNAL OF ELECTRICAL ENGINEERING AND APPLIED SCIENCES

### EDITORIAL BOARD

Editor-in-Chief	Maaspaliza Azri	(UTeM)
Associate Editors- In-Chief	Mohd Hendra Hairi Jurifa Mat Lazi Rahifa Ranom	(UTeM) (UTeM) (UTeM)
Editorial Advisory Board Members	Ali M. Eltamaly (King Saud University, Saudi Arabia) Haiyu Li (The University of Manchester, United Kingdom) Bala Venkatesh (Toronto Metropolitan University, Canada) Krismadinata (Universitas Negeri Padang, Indonesia) Hussain Shareef (United Arab Emirates University, UAE) John Fletcher (University of New South Wales, Australia) Tamer Khatib (An-Najah National University, Palestine) Chong Shin Horng (Advanced Remanufacturing and Technology Centre, Yam Siwakoti (University of Technology Sydney, Australia) Mohd Amran Mohd Radzi Md Nazri Othman Titik Khawa Abdul Rahman (Asia e University, Malaysia)	. Singapore) (UPM) (UTeM)
Editorial Board	Mohd Shahrieel Mohd Aras Aida Fazliana Abdul Kadir Ser Lee Loh Zulhani Rasin Nurul Ain Mohd Said Nurdiana Nordin Azhan Ab Rahman Nur Ilyana Anwar Apandi Mohd Ruzaini Hashim Ahmad Asrul Ibrahim Hana Abdul Halim Herdawatie Abdul Kadir Zainah Md Zain Mohd Kamalrulzaman bin Md Akhir	(UTeM) (UTHM) (UTHM) (UMP) (UMP) (UMP)

**UTeM Publication** Rahizah Abdul Rahman

Designed & Typeset Ahmad Masmuliyadi Mohd Yusof

# INTERNATIONAL JOURNAL OF ELECTRICAL ENGINEERING AND APPLIED SCIENCES

### Contents

Volur	me 7 Number 2	October 2024
No.	Title	Page
	Inverse Definite Overcurrent Relay Response at Pencawang Masuk Utama Pagoh, Johor M.H. Hairi, A.S. Mohd Isira, M.N. Kamarudin, M.F. Packeer Mohamed, A.	S. Sobri 1
	Solar-Powered Peltier Thermoelectric Water Cooling and pH Monite K.I. Jasmee, S.A. Jumaat	
	Sigmoid-Function-Based Adaptive Pelican Optimization Algorithm of Global Optimization  A. F. Seini Yussif, S.Adjei, B.E.Wilson	
	Improving Grid-Connected Tidal Power Systems Through PWM Inverters Based on Voltage-Oriented Control L. M. Kangaji, E. Orumwense, A. Raji	27
5.	Integration of Artificial Neural Network in a IEEE 5 BUS System T.L. Makosso, A.Almaktoof, K.Abo-Al-Ez	39
6.	Review of Different Types of Neural Network Architectures T.L. Makosso, A. Almaktoof, K. Abo-Al-Ez	47
	Understanding the Discharge Characteristics of Lithium Iron Phosp and Lithium Cobalt Oxide Cathode Materials  M.S.A. Muhamad Saripudin, R. Ranom, I.W. Jamaludin, U. Habibah	
	Development of Automatic Cloth Folding System by Using Arduino Microcontroller and Servo Gears S. Md Rozali, N. S. Mohd Shaari, R. Ramli, M. F. Rahmat, Z. Has	
	Effect of Defect Density Variation in CdTe Solar Cell Using Cu as A I Transport Layer and Back Contact F. T. Johora, M. A. Khan, A. Al Asad, Md. Rabiul Islam, A. Rayhan	
	Enhancing PV System Stability in the Angolan Power Network throw Modeling and Simulation of Fuzzy Logic Controllers  A.F. Catraio, M.E.S. Mnguni	
	Improved Tuna Swarm Optimization (ITSO) Algorithm based on Adaptive Fitness-Weight for Global Optimization  A.F.Seini Yussif, T.Seini, C.Adu	99
12.	Real-time Implementation of a Full State Feedback Controller for a DC Motor  K. Love, C. Kriger, N. Tshemese-Myandaha	109

#### MESSAGE FROM THE EDITOR-IN-CHIEF

It is with great enthusiasm that we present Volume 7, Issue 2 of the International Journal of Electrical Engineering and Applied Sciences (IJEEAS). This issue reflects our ongoing commitment to showcasing cutting-edge research and innovative contributions in electrical engineering and related fields.

The articles in this edition cover a wide range of topics, including the integration of Artificial Neural Networks for fault detection in power grids, enhancements in CdTe solar cell performance, and real-time implementation of control systems for DC motors. Advancements in renewable energy are also highlighted, with studies focusing on PV system stability in Angola, optimization algorithms for global solutions, and grid-connected tidal power systems. Further contributions include overcurrent protection assessments, solar-powered water-cooling systems, and a review of neural network architectures. Additionally, practical applications such as automatic cloth folding systems and in-depth analyses of lithium-ion battery discharge characteristics showcase the diverse applications of electrical engineering research.

I extend my heartfelt appreciation to the authors, reviewers, and the entire editorial team for their dedication and hard work. Together, we continue to drive innovation and knowledge sharing in our field. We hope this volume inspires readers and fosters collaboration in solving engineering challenges.

Sincerely,

Maaspaliza Azri Editor-in-Chief IJEEAS