

TABLE OF CONTENTS

01	Nguyen Van Toan, Mai Xuan Hai, Doan Tat Khoa The role of artificial intelligence and machine learning in mechanical engineering: A review.	3 – 13
<i>Electronics & Automation</i>		
02	Tran Dinh Cuong, Phan Thanh Tai, Nguyen Thanh Quang, Phan Tran Dang Khoa Improved MRAS with stator and rotor resistance estimation for vector control of induction motors.	14 – 24
03	Le Khanh Thanh, Vu Quoc Huy, Le Ba Tuan Real-time long-term target tracking on an ARM platform with NPU acceleration and integration into UAV line-of-sight stabilization.	25 – 34
04	Vuong Viet Thao, Pham The Anh, Phan Thi Lan, Nguyen Trung Hieu Real-time speech acquisition, compression and wireless transmission solution on resource-constrained embedded systems.	35 – 46
05	Vu Minh Thanh, Luu Duc Tho, Pham The Quang Research and design of a low phase-noise dielectric resonator oscillator for X- band radar applications.	47 – 54
06	Chu Hoa Lu, Dang Tien Trung, Vu Manh Tuan Building solutions and algorithms for water resource allocation for a river basin.	55 – 62
<i>Chemistry, Biology & Environment</i>		
07	Nguyen Duy Anh, Nguyen Huu Van, Do Thi Thuy, Nguyen Cong Thang, Khong Manh Hung Fabrication of W-doped VO ₂ materials with low phase transition temperature for adaptive thermal camouflage application.	63 – 69
08	Nguyen Ngoc Son, Vu Minh Thanh, Pham Thi Phuong, Do Quoc Manh, Le Gia Khiem, Nguyen Thi Huong Study on the fabrication of sulfuric acid-resistant butyl rubber for military battery linings.	70 – 77
09	Nguyen Tien Manh Biodegradable poly (lactic acid)/ZnO/Pluronic composite films: Mechanical properties, antibacterial performance, and fruit preservation.	78 – 86
10	Han Duy Linh Formation and stability of Sc(III), La (III), Dy(III), Pr(III) and Y(III) complexes with hydroxypyridine-carboxylic acids in aqueous solution.	87 – 94
11	Le To Lan, Dang Diem Quynh, Dang Phuong Nam, Dang Phuong Thuy, Duong Thi Thanh Loan, Nguyen Thi Xuan, Nguyen Thi Nhung Harnessing bioinformatics to identify unique gene sequences tailored for the specific detection of <i>Staphylococcus aureus</i> by real-time PCR.	95 – 103
12	Dang Duy Khanh, Le Ngoc Hoan, Tran Minh Anh, Nguyen Minh Tri, Vu Ngoc Toan Study on the development of an extraction process and evaluation of certain properties of the extract from perilla (<i>Perilla frutescens</i> var. <i>crispa</i>) leaves.	104 – 112

Physics & Materials Science

- 13** **Nguyen Thi Anh Huy, Tran Thanh Viet, Nguyen Khoi Nguyen, Le Anh Kien** 113 – 120
Multifunctional electrospun CS/PVA/AgNPs nanofiber membranes for dye removal and antimicrobial water purification.
- 14** **Truong Tung Khuong, Pham Hong Thach, Mai Huy Hoang, Pham Trung Kien, Phu Phuoc Huy** 121 – 128
Microwave-assisted synthesis of $\text{Co}_{0.4}\text{Ni}_{0.6}\text{Al}_2\text{O}_4$ - Evaluating the effect of practical parameters on material properties.

Information Technology & Applied Mathematics

- 15** **Ngo Hoang Dang, Nguyen Huy Anh, Vu Viet Hoang, Nguyen Huy Hoang, Tran Lam** 129 – 136
An LLM-driven framework for strategic writing style transformation in cyber influence operations.
- 16** **Doan Huong Giang, Ho Anh Dung** 137 – 145
Privacy-aware smart camera for abnormal event detection in home environments.

Mechanics & Mechanical Engineering

- 17** **Tran Ngoc Thanh, Dinh Van Hien, Bui Van Am** 146 – 153
Building a mathematical model describing the dome profile of a solid fuel engine case made from composite materials using winding technology.
- 18** **Nguyen Van Ngon, Do Thi Nhan, Chu Hai Long, Pham Thanh Dong** 154 – 163
Optimizing long-range UAV detection on YOLOv8: Breaking-point distance analysis and combining adaptive tiling with AdamW optimizer.
- 19** **Nguyen Hoang, Tran Duy Thong, Pham Quang Anh, Tran Dinh Van, Pham Quoc Tuan, Dinh Van Duy, Nguyen Dac Trung** 164 – 174
Influence of lower sheet material strength on joint quality in self-piercing riveting.