

Front Cover

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Volume 17, Issue 1, 2026

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Journal of Mechatronics, Electrical Power, and Vehicular Technology (MEV) is an internationally peer-reviewed journal aims to provide authoritative global source of scientific information for researchers and engineers in academia, research institutions, government agencies, and industries. The Journal publishes original research papers, review articles and case studies focused on:

Mechatronics: including control system, robotic, CNC Machine, sensor, signal processing, electronics, actuator, and mechanical dynamics.

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FOREWORD FROM EDITOR-IN-CHIEF

Most valued Readers,

It is with great honor that I present the July 2026 issue of the Journal of Mechatronics, Electric Power and Vehicular Technology (JMEV). This edition exemplifies the journal's enduring mission: to advance knowledge, foster innovation, and provide a platform for scholarly exchange across the dynamic fields of mechatronics, energy systems, robotics, and vehicular technologies. This issue highlights a broad spectrum of cutting-edge research, addressing critical technical challenges across clean energy integration, advanced control architectures, vehicular technology, smart building management, and intelligent automation.

A significant portion of this issue is devoted to renewable and sustainable energy technologies. Several papers explore innovations in solar energy systems, including a comprehensive review of solar tracker technologies and an enhanced particle swarm optimization approach for photovoltaic parameter identification. Complementing these studies are contributions on building energy management systems, very-low-head pico hydro turbines, wind-power-based multilevel inverter design, bioethanol utilization from sago dregs for household energy applications in Papua, and analytical optimization of Stirling engine performance. Together, these works highlight ongoing efforts to improve energy efficiency, increase renewable energy utilization, and support global sustainability goals.

The issue also features notable advances in electric power systems and smart grid technologies. Research on congestion management using advanced interline power flow controllers integrated with artificial intelligence and machine learning demonstrates the transformative potential of intelligent control for future power networks. Likewise, studies on battery swapping station scheduling under battery heterogeneity emphasize the importance of predictive analytics and optimization methods in supporting the growing ecosystem of electric mobility.

In the field of robotics, automation, and intelligent systems, readers will find the expanding role of embedded systems, intelligent algorithms, and adaptive control in enhancing system performance and operational reliability in the following studies. A comprehensive review of Kalman filter variants for simultaneous localization and mapping (SLAM), providing valuable insights into autonomous navigation and future robotic applications. Additional contributions include the design of an Arduino-controlled automated water droplet photography system and the development of adaptive fuzzy-PID control combined with feedforward compensation for industrial heating ovens.

Vehicular technology and transportation engineering are represented through research on artificial intelligence-based field-oriented control for the Jabodebek Light Rail Transit traction system and the development of hyperelastic material models for vehicle tire design. These works contribute to the advancement of intelligent transportation systems, sustainable mobility, and modern vehicle engineering.

Collectively, these articles embody the spirit of interdisciplinary collaboration and the pursuit of excellence. They not only enrich academic discourse but also provide actionable insights for industry leaders, policymakers, and practitioners striving toward sustainable and intelligent technological futures.

We extend our sincere gratitude to all the authors, peer reviewers, and editorial board members whose dedication made this publication possible. We trust that the insights presented in this July 2026 issue will serve as a valuable reference, inspiring further interdisciplinary research and industrial collaboration across mechatronics, power systems, and vehicular technologies.

We invite our readers to explore the diverse contributions in this issue and trust that they will find inspiration for future innovations and technological advancements.

Bandung, July 2026

Editor-in-Chief

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