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Aim and Scope

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.

Electrical Power: including power generation, transmission system, new and renewable energy, turbine and generator design and analysis, grid system, and source assessment.

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FOREWORD FROM EDITOR-IN-CHIEF

Most valued Readers,

It is my great pleasure to present Volume 2 in this year (2025) of the Journal of Mechatronics, Electrical Power and Vehicular Technology (JMEV). This volume reflects the journal's continued commitment to disseminating high-quality, peer-reviewed research that advances theory, design, and practical implementation across the interconnected domains of mechatronics, electrical power systems, vehicular technology, and intelligent engineering applications.

The articles in this volume collectively demonstrate how contemporary engineering challenges are being addressed through interdisciplinary approaches that integrate sensing, control, power electronics, optimization, and data-driven intelligence. Several contributions focus on autonomous and intelligent mobility, including stereo vision–based distance estimation for autonomous parking, low-cost sensor fusion using Extended Kalman Filters for personal mobility vehicle localization, adaptive suspension systems for mobile robots, and hybrid electric motorcycle control architectures. These studies underline the growing importance of affordable, robust, and real-time solutions for autonomous and assisted transportation systems.

Another prominent theme in this volume is energy systems and power electronics, particularly in the context of sustainability and renewable energy integration. Contributions addressing maximum power point tracking (MPPT) under partial shading conditions, DC–DC converter design with advanced compensation techniques, quasi-Z-source inverter topologies for common-mode voltage reduction, and photovoltaic-driven green hydrogen production via PEM electrolysis demonstrate significant progress toward efficient, reliable, and application-oriented power conversion systems. Complementing these works, the integration of biomass gasification with solar power highlights the potential of hybrid renewable energy systems for decentralized and rural applications.

The volume also presents notable advances in communication networks, optimization, and smart infrastructure, including enhanced LEACH-based protocols for energy-efficient wireless sensor networks and bio-inspired optimization techniques for optimal distributed generation placement in power distribution systems. These studies emphasize the role of intelligent algorithms in extending system lifetime, improving power quality, and reducing losses in increasingly complex electrical networks.

In addition, emerging applications of intelligent control and computer vision for agriculture and environmental systems are represented through works on fuzzy logic–based hydroponic nutrient dosing and IoT-enabled, edge-based visual detection for precision agriculture. These contributions demonstrate how mechatronic and electrical engineering solutions can directly support food security, sustainability, and resource efficiency.

Taken together, the papers in this volume showcase not only technical rigor but also strong experimental validation and real-world relevance. They reflect the journal's mission to bridge fundamental research and practical engineering implementation, while promoting innovation that responds to societal and industrial needs.

On behalf of the editorial board, I would like to express my sincere appreciation to the authors for their valuable contributions, to the reviewers for their careful and constructive evaluations, and to all readers for their continued support of the Journal of Mechatronics, Electrical Power and Vehicular Technology. We hope that this volume will serve as a meaningful reference and inspiration for researchers, practitioners, and policymakers working in these dynamic and rapidly evolving fields.

Bandung, December 2025

Editor-in-Chief

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