Preface

It is with great enthusiasm that we present the inaugural issue of New Explorations in Electrical Engineering (NECE), the official journal of the Department of Electrical Engineering, Faculty of Engineering, Universiti Malaya. This journal marks a significant milestone in our commitment to fostering a culture of research and academic writing among faculty members and students while providing a collaborative platform for sharing knowledge and technical advancements within the broader electrical engineering community.

The establishment of NECE is driven by two primary objectives: first, to cultivate a research-driven environment within the department, encouraging both faculty and students to engage in meaningful academic discourse and innovation; and second, to facilitate knowledge sharing within the research community. By providing this platform, we also aim to improve the quality of technical writing through peer review and editorial feedback, helping researchers refine their scholarly communication.

The scope of NECE encompasses a wide range of topics within electrical engineering, including but not limited to electrical power systems, automation and control, computer engineering, electronics, microelectronics and photonics, signal processing, telecommunications, and materials science. We particularly welcome contributions that introduce novel methodologies, interdisciplinary approaches, and groundbreaking technological advancements.

For this inaugural issue, we are pleased to feature a diverse selection of research articles that exemplify the journal's vision and the breadth of the field. The topics covered in this issue include advancements in power electronics and renewable energy, with a focus on DC-DC converter design for EV dynamic charging and real-time protection schemes for distribution networks with distributed generation. The application of artificial intelligence (AI) is highlighted in multiple studies, ranging from AI-assisted analysis of Harumanis mangoes and an AI-powered GPS navigation system to the role of AI in antimicrobial resistance prediction and treatment development. In nanoelectronics and semiconductor materials, one study investigates the effects of material and geometric properties on gate-all-around nanowire TFET and FET devices, while another explores magnesium-doped zinc oxide thin films for lead-free perovskite solar cells (PSCs). Additionally, the issue includes work on image processing and medical applications, with research on fundus image enhancement using CLAHE (Contrast Limited Adaptive Histogram Equalization).

We extend our sincere appreciation to the authors for their contributions, the reviewers for their valuable feedback, and the editorial team for their dedication in bringing this issue to publication. As NECE embarks on this journey, we hope it serves as a catalyst for innovation, collaboration, and academic excellence within the electrical engineering community. We encourage researchers, practitioners, and students to contribute their insights and findings to future issues and help shape the evolving landscape of electrical engineering research.

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