Preface

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We would like to begin by expressing our heartfelt gratitude to the authors for their exceptional contributions. The quality of their research and the rigor of their scientific approach reflect their dedication and expertise. These articles showcase innovative solutions and significant advancements in their respective fields, paving the way for meaningful progress.

A sincere thank you is also extended to our *reviewers*, whose meticulous evaluations, constructive feedback, and commitment to upholding the highest standards of scientific integrity have been instrumental in maintaining the quality of this publication.

We are equally grateful to the *editorial board* and *journal managers* of *IJPEC*, whose hard work and seamless coordination have ensured the smooth operation of the editorial processes for Vol. 16, No. 3, 2025. Their diligence and professionalism play a vital role in the success of this journal.

This volume brings together a collection of groundbreaking research spanning multiple disciplines. The featured works highlight critical developments and address contemporary challenges, emphasising both theoretical advancements and practical applications.

The journey begins with 'Development of an enhanced method for establishing RQR radiation qualities for diagnostic radiology energy according to IEC 61267', which presents a refined approach to improving diagnostic radiology standards, thereby contributing to greater precision and reliability in medical imaging.

Next, 'Optimisation of the management of solid radioactive waste converted from Iodine.131 therapy in nuclear medicine' provides innovative solutions for the sustainable and safe management of radioactive byproducts, an essential issue in nuclear medicine.

In the domain of control systems, 'Implementing H_∞ control for two-dimensional systems delayed networks utilising the observer-based approach under the random access protocol' explores advanced methodologies for handling delays in complex network systems, enhancing their performance and stability.

In the energy sector, 'Enhanced energy management in photovoltaic systems based on microgrids connected distributed generation using hybrid approaches' highlights strategies for optimising renewable energy integration, while 'An enhanced power quality BL-SCC converter stationed battery charging scheme' addresses the pressing need for efficient energy storage and distribution systems.

Finally, 'Research design of DC energy metering device based on Hall sensor' demonstrates practical innovations in energy metering, combining precision and efficiency to support future advancements in energy monitoring technologies.

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These contributions underscore the importance of interdisciplinary collaboration and the role of science in tackling the global challenges of energy, health, and technology. We are proud to facilitate the dissemination of these outstanding works and to foster a platform for international scientific dialogue.

We hope this volume inspires future research and serves as a valuable resource for scholars and practitioners alike.