

Dear readers,

It is an honor to present this edition of our journal, showcasing the effort and talent of researchers from various countries who contribute to the advancement of science and technology in diverse contexts. The articles featured in this issue highlight the wide range of topics and approaches shaping technological and scientific development worldwide. From optimizing communication systems to innovations in air quality analysis and sustainable energy, this edition celebrates global collaboration and the local application of knowledge.

From Peru, researchers Abimael Adam Francisco Paredes, Heidy Velsy Rivera Vidal de Sánchez, Inés Eusebia Jesús Tolentino, and Jimmy Grover Flores Vidal present the article Determination of Optimal Formats for Digital Image Compression. This work analyzes methods to optimize the storage and transmission of images, a critical topic in the digital age.

Venezuela offers two remarkable contributions. In the first article, Monitoring the Liquid Level of a Coupled Tank System Using Quasi-LPV Control, Pedro Teppa-Garrán, Diego Muñoz-de Escalona, and Javier Zambrano explore solutions for efficient control in industrial systems. In the second, Comparative Analysis of Flow Patterns in Flat and Conical Nozzles Outside Design Conditions, San L. Tolentino and Jorge Mírez examine flow phenomena that impact the performance of mechanical devices.

Ecuador demonstrates its commitment to research and innovation through multiple contributions in this edition. Nancy Eras, José Andrés Otaño, and Santiago González present Application of MANETs as a Communication System for Sustainable Mobility, highlighting the impact of technology on urban sustainability.

The team of P. Silverio-Cevallos, J. Maita Camaraca, D. A. Molina-Vidal, C. J. Tierra-Criollo, and P. Cevallos-Larrea introduces the Prototype

of a Multichannel Surface Muscle Stimulator Controlled Remotely, an innovative tool in the field of medicine.

In A Comprehensive Evaluation of AI Techniques for Predicting Air Quality Index: RNNs and Transformers, Pablo Andrés Buestán Andrade, Pedro Esteban Carrión Zamora, Anthony Eduardo Chamba Lara, and Juan Pablo Pazmiño Piedra explore the potential of artificial intelligence to address environmental challenges.

Ricardo Carpio-Chillogallo and Edwin Paccha-Herrera contribute an essential study titled Comparative Study of Cooling Strategies in a Lithium-Ion Battery Module to Prevent Thermal Runaway Using CFD, aimed at optimizing energy storage systems.

In the field of health, Darwin Patiño-Pérez, Luis Armijos-Valarezo, Luis Chóez-Acosta, and Freddy Burgos-Robalino investigate Convolutional Neural Networks for Diabetic Retinopathy Detection, addressing the impact of artificial intelligence in medical diagnosis.

Finally, Alan Cuenca Sánchez and Pablo Lluquiñga Eras present an educational approach in Design of a Didactic Energy Consumption Meter for Residential Use, demonstrating the importance of education in efficient energy use.

From China, Fengliang Qiao, Zhaojie Shen, and Yuxia Kang contribute the article Contact Patches of Radial Tires with Different Length-to-Width Ratios Under Static Load, providing practical solutions for the automotive industry and tire design.

The diversity of articles presented in this edition underscores the richness of international scientific talent. Contributions from Peru, Venezuela, Ecuador, and China bring fresh ideas and interdisciplinary approaches that inspire future collaborations and sustainable advancements. Each study, from its respective field, reaffirms the importance of science as a tool to address local challenges with global impact.

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Editor in Chief