Editorial

The Special Issue on *Multidisciplinary Innovation in Engineering Science & Technology (2020)* in the *Advances in Science, Technology and Engineering Systems Journal (ASTES Journal)* presents a compelling collection of research that reflects the growing importance of innovation driven by multidisciplinary collaboration. The year 2020 marked a period in which the convergence of diverse scientific and engineering domains became increasingly essential for addressing complex and rapidly evolving global challenges. This special issue captures that shift by bringing together contributions that integrate knowledge, methodologies, and technologies from multiple disciplines to advance both research and practical applications.

A key theme across the papers in this issue is the role of innovation at the intersection of engineering science and emerging technologies. The contributions highlight how advancements in computational methods, artificial intelligence, and data analytics are being combined with traditional engineering principles to create more efficient, adaptive, and intelligent systems. These developments are evident in applications such as smart infrastructure, advanced manufacturing, healthcare technologies, and environmental systems, where multidisciplinary approaches enable more comprehensive and effective solutions.

The issue also emphasizes the significance of collaborative research in fostering technological breakthroughs. By integrating expertise from fields such as mechanical, electrical, civil, and computer engineering, along with applied sciences, researchers are able to address complex problems that cannot be solved within a single domain. The studies included demonstrate how such collaboration leads to the development of innovative models, improved system designs, and enhanced analytical frameworks. This multidisciplinary synergy not only accelerates the pace of innovation but also broadens the scope of potential applications.

Another important aspect highlighted in this collection is the focus on sustainability and resilience. The challenges faced in 2020 underscored the need for engineering solutions that are robust, flexible, and environmentally responsible. The research presented explores strategies for optimizing resource utilization, integrating renewable energy systems, and designing infrastructure that can adapt to changing conditions. These contributions reflect a growing commitment to aligning technological advancement with sustainable development goals and societal needs.

Advances in digital technologies and their integration into engineering systems are also prominently featured. The use of simulation tools, digital twins, and real-time monitoring systems has transformed the way engineering processes are designed and managed. The papers in this issue illustrate how these technologies enable more accurate predictions, improved decision-making, and enhanced system performance. This digital transformation is a key driver of innovation, enabling the development of interconnected and intelligent systems across various sectors.

The editorial team expresses its sincere gratitude to all authors, reviewers, and contributors whose dedication and expertise have made this special issue possible. Their efforts have resulted in a high-quality compilation of research that advances multidisciplinary innovation in engineering science and technology. The works presented in this issue highlight the increasing importance of integrated approaches in driving technological progress, offering valuable insights and inspiration for future research and development in an increasingly interconnected world.

Guest Editor

Prof. María Jesús Espinosa Trujillo