

Editorial

In this edition, our journal brings forth a collection of papers showcasing innovative research spanning diverse fields, from architecture and engineering to materials science and biology. Each contribution offers valuable insights into contemporary challenges and presents novel approaches to address them, exemplifying the spirit of interdisciplinary collaboration and innovation.

This paper underscores the pivotal role of Building Information Modeling (BIM) in driving sustainability within the architecture, engineering, and construction (AEC) industry. Through a systematic review, the authors elucidate how BIM tools and processes facilitate environmentally sensitive design, leveraging accelerated performance simulations and green building certification systems. By integrating BIM platforms such as Revit-Insight 360, significant reductions in energy use intensity (EUI) and lifecycle costs are demonstrated, highlighting the potential for widespread mainstreaming of sustainable building practices. However, interoperability challenges remain a hindrance, emphasizing the need for standardized modeling practices and enhanced analytical integration to realize BIM's full potential in guiding sustainable building lifecycles [1].

In the realm of semiconductor manufacturing, the author addresses a critical issue concerning metal corrosion by halogen elements, particularly bromine (Br). While previous studies have focused on fluorine and chlorine contamination, the mechanisms underlying Br-induced aluminium corrosion have received limited attention. Through comprehensive analysis using Auger electron spectroscopy and scanning electron microscopy, the authors unravel the formation of aluminium bromide defects and propose a chain chemical reaction mechanism driving Br-induced corrosion. This study fills a significant gap in our understanding of semiconductor reliability issues, providing valuable insights for mitigating corrosion-related failures in semiconductor devices [2].

Turning our attention to biology, the author delves into the intricate musculature of the Australian lungfish, *Neoceratodus forsteri*, shedding light on its feeding mechanisms. Through meticulous anatomical examination, the authors elucidate the roles of various muscles associated with jaw movement and hyoid apparatus control, offering a comprehensive understanding of the physiological adaptations facilitating feeding in this ancient fish species. This study enriches our knowledge of vertebrate anatomy and functional morphology, contributing to broader insights into evolutionary adaptations and ecological interactions [3].

Lastly, this paper presents a robust localization algorithm designed for mobile robot navigation in complex indoor environments. The proposed algorithm, named Branch-and-Bound for Robust Localization (BB-RL), integrates global localization, position tracking, and resolution of the kidnapped robot problem within a unified framework. Through innovative approaches such as Finite State Machine (FSM)-based relocalization judgment and loop-closure optimization, BB-RL demonstrates enhanced reliability and accuracy in real-world scenarios. This advancement in robotics promises to revolutionize indoor navigation systems, opening new avenues for autonomous robot deployment in diverse applications [4].

Collectively, these papers represent the forefront of research across various disciplines, offering valuable contributions to their respective fields. As editors, we commend the authors for their dedication to advancing knowledge and fostering innovation, and we look forward to further exploration and collaboration in the pursuit of scientific excellence.

References:

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Editor-in-chief

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