



Editorial

Dear Readers,

Innovation is the art of transforming knowledge into application, ultimately aiming to upgrade the quality of living standards. Sharing of ideas and research outputs is pivotal in inspiring and taking forward innovation beyond geographical and subject boundaries. Mapana Journal of Sciences (MJS), adhering to its commitment to fostering innovative research, publishes pioneering research and review articles in the diverse and complex domain of sciences. Continuing the commitment to showcasing outstanding research outputs, the editorial team of Mapana Journal of Sciences is delighted to present you with the third issue of 2024.

In the field of Computer Science, Sunitha et al., proposed a deep-learning approach to detect Boron deficiencies in banana leaves, employing a CNN model with Skip Connections (CNNSC) comprising thirteen layers. The evaluation metrics showcase a remarkable accuracy of approximately 95%, which makes the model superior to established architectures like VGG16, DenseNet, and Inception V3. Divya et al., report the utilization of pre-trained models that are built on convolutional neural networks (CNNs) for the detection of plant diseases. The developed model stands as a notable example of artificial intelligence (AI) solutions in the agriculture and farming sector, which has opened an innovative method to detect and classify plant illnesses. In another article, Dhanalakshmi et al., have put forward an information retrieval system that enables users to formulate queries in natural language and obtain pertinent information from a knowledge graph specific to a particular domain. The system utilizes natural language processing techniques to analyze user queries, generating SPARQL queries to retrieve pertinent data from the knowledge graph. The proposed model can effectively retrieve relevant information with an average precision of approximately 95%.

In the domain of Chemical and Material Sciences, Sanjay et al. reported the synthesis, characterization, solubility profile, and feasibility of hydrolysis of disclosed prodrugs of Atovaquone. These prodrugs have shown better water solubility than the parent drug and hence can contribute to enhancing the bioavailability and clinical efficacy of Atovaquone. Rajashree et al., compared the photodegradation and bacterial growth inhibition properties of PbS/SnO₂ (PS) and rGO-PbS/SnO₂ (rPS) nanocomposites (NCs) synthesized through one-pot green synthesis and chemical precipitation methods. The rGO-PbS/SnO₂ (rPS) nanocomposite catalyst demonstrated a maximum degradation efficiency of 93% against rhodamine B (*RhB*) dye, and a notable enhancement of antibacterial activity was observed upon rGO inclusion in PbS/SnO₂. In another work, Sanjay et al., explored the chemical consequences occurring during its step-wise synthesis (process chemistry) of Atovaquone, thereby providing further insights into techniques for yield enhancement. Experimental and chemical aspects related to six process-origin impurities of Atovaquone are discussed in detail.

Athul et al., have attempted to characterize the total graph of interval graphs and proper interval graphs, contributing to the field of Mathematics.

In this issue, we have three review articles providing in-depth ideas about the recent developments and future prospects of three different fields. Jain et al., provide a detailed review on artificial intelligence-assisted diagnosis for blood cancer using machine learning. This review effectively highlights the wide-ranging applications of AI in medicine, with a specific focus on its contribution to treatment, diagnosis, prognosis and prediction. Sujayaraj et al. have presented a review of various snare types and examined their scientific implications for their demographic impacts on terrestrial mammals and birds. The review points out that the increasing wildlife crimes, driven by forest exploitation and encroachment, are threatening endangered species. This underscores the need for actionable management strategies and utilization of more advanced methods for effectively combating snare hunting and poaching. Sudipta et al., give a detailed insight into novel antidiabetic therapeutics from traditional medicinal

plants. A number of plant-generated chemical compounds, especially polysaccharides, glycosides, terpenes, flavonoids, and polypeptides, are reported to possess antidiabetic properties. The review proposes the possibility and prospects of developing these natural medications for the treatment of Diabetes mellitus.

As we unfold the present issue of MJS to the readers, we extend our heartfelt appreciation to all the authors, reviewers, editorial board members, and assistant editors whose contributions have made this publication possible. Mapana takes pride in upholding its commitment and tradition, spreading insights for innovative research and sustainable solutions. We expect that the scientific knowledge brought about by this issue would stimulate further innovation covering a diversity of topics and disciplines, exemplifying the interdisciplinary nature of contemporary scientific research.

Dr Manoj Balachandran

Editor