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Editorial

Special issue "Applied Mathematics and Scientific Computing in Engineering and Biology"

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Applied mathematics and scientific computing are indispensable in many modern problems in engineering and biology. For instance, the design and simulation of complex engineering structures rely heavily on fast and accurate numerical algorithms. Similarly, for the modelling and analysis of biological shapes and systems, it is important to have effective quantitative methods with mathematical support. To address the latest challenges in these fields, *AIMS Mathematics* launched a Special Issue "Applied Mathematics and Scientific Computing in Engineering and Biology".

During the open period of this special issue, we received over 40 submissions and have published 7 papers. Among them, the paper "Mathematical analysis for bioconvection peristaltic transport of Sutterby nanofluid with chemical reaction" by Z. Nisar and H. Yasmin studies bioconvective peristaltic flow of a Sutterby nanofluid with potential applications to solar energy systems and biosensors. "Learning-based density-equalizing map" by Y. Huang, L. M. Lui, and G. P. T. Choi presents a learning-based density-equalizing mapping framework for scalable and robust computation of shape mappings with engineering applications. "An improved iterated greedy algorithm for scheduling distributed permutation flowshop problems with weighted total completion time criterion" by Y.-Z. Li, L.-L. Meng, and B. Zhang presents an algorithm for distributed permutation flowshop problems to facilitate distributed manufacturing and scheduling. "Wright function solutions for mixed convection flow of micropolar fluid with memory effects: A Caputo fractional derivative approach" by F. Asiri presents a systematic analysis of mixed convection flow of a fractional micropolar fluid over an oscillating plate, establishing a solid foundation for problems in fluid mechanics.

The three other published works in this special issue focus on mathematical models for studying biological systems. The work "Analysis and simulation of a normalized Caputo-Fabrizio fractional SEIR epidemic model" by R. Shafqat, S. M. Alamry, and A. Alsaadi studies a fractional-order SEIR epidemic model, which captures memory effects and allows for more realistic epidemic forecasting. The paper "Starvation-recovery dynamics: insights via a nutritional state-structured model" by S. R. Mondal presents a mathematical model for the dynamics of starvation and recovery with applications to

eco-evolutionary interactions. The work "Modeling within-host dynamics of two competing viruses with distinct target-cell populations" by N. H. AlShamrani and A. M. Elaiw presents a study on the dynamics of dual infections involving competing viruses, thereby enabling more effective clinical treatment.

Altogether, we believe that this special issue has provided a distinctive venue for showcasing recent advances in applied mathematics and scientific computing and fostering further investigations into their applications in engineering and biology.

Guest Editor

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Conflict of interest

The author declares no conflict of interest.

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