Special Issue

Mathematical Modelling of Infectious Diseases: Integrating Multi-Scale Dynamics

Message from the Guest Editor

This Special Issue focuses on cutting-edge mathematical and computational techniques for modeling infectious diseases, with an emphasis on integrating multi-scale dynamics and time-delay effects. The interplay between processes occurring at different biological and ecological scales, from the cellular level to entire populations, presents complex challenges in understanding disease transmission and progression. Multi-scale dynamics will allow researchers to incorporate various levels of interaction within disease models, ranging from individual behavioral patterns to large-scale population trends. By addressing these different scales, researchers can more accurately simulate how local events influence broader epidemiological patterns. This Special Issue invites original research articles, reviews, and case studies that bridge the gap between theory and practice, fostering collaboration among mathematicians, biologists, epidemiologists, and public health experts.

Guest Editor

Dr. Hammed Fatoyinbo

Department of Mathematical Sciences, School of Engineering, Computer and Mathematical Sciences, Auckland University of Technology, Auckland 1142, New Zealand

Deadline for manuscript submissions

31 March 2026

About the Journal

Message from the Editor-in-Chief

The journal *Mathematics* publishes high-quality, refereed papers that treat both pure and applied mathematics. The journal highlights articles devoted to the mathematical treatment of questions arising in physics, chemistry, biology, statistics, finance, computer science, engineering and sociology, particularly those that stress analytical/algebraic aspects and novel problems and their solutions. One of the missions of the journal is to serve mathematicians and scientists through the prompt publication of significant advances in any branch of science and technology, and to provide a forum for the discussion of new scientific developments.

Editor-in-Chief

Prof. Dr. Francisco Chiclana
School of Computer Science and Informatics, De Montfort University, The Gateway, Leicester LE1 9BH, UK

Author Benefits

High Visibility:
indexed within Scopus, SCIE (Web of Science), RePEc, and other databases.

Journal Rank:
JCR - Q1 (Mathematics) / CiteScore - Q1 (General Mathematics)

Rapid Publication:
manuscripts are peer-reviewed and a first decision is provided to authors approximately 18.4 days after submission; acceptance to publication is undertaken in 2.4 days (median values for papers published in this journal in the first half of 2025).

MDPI