

Special Issue

Pathology–Therapeutics– Medicine of Vascular and Respiratory Diseases: Recent Progress Using CFD and AI

Message from the Guest Editors

Vascular and respiratory diseases are two leading causes of death worldwide, and it has been widely recognized that fluid transport phenomena, including the synergistic study of mass, momentum, heat transfer, thermodynamics and the kinetics of chemical reactions, have key roles in investigating the mechanisms of pathophysiology–therapeutics–medicine for such diseases. As a noninvasive and promising alternative, mathematical models and computational methods can help us greatly in understanding these complicated pathological mechanisms and therapeutic strategies, bridging the gap from lab to clinic and building future digital twin systems. Contributions including case studies, original and unpublished research, and systematic reviews within this scope are welcome, including preliminary studies of model construction and developments and applications of novel computational/mathematical methods/AI algorithms. Other on-site/ in vivo/in vitro experimental contributions supporting, developing, and validating the associated numerical methods and models are also welcome.

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