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EDITORIAL

Special issue on biofluid dynamics

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SUMMARY

A total of 10 papers in the area of computational biofluid dynamics are collated and presented in this special issue. Copyright © 2008 John Wiley & Sons, Ltd.

KEY WORDS: biofluid dynamics; numerical methods; meshing; respiratory systems; blood flow; fluid–structure interaction

This special issue contains a small collection of invited papers on biofluid dynamics and biofluid–structure interaction. A total of 10 papers are included in this special issue and they are divided into two categories. Among the 10 articles, the first five are classified as fundamental papers and the rest are treated as applications in biofluid dynamics. Geometrical modelling and meshing are two important areas of present day biofluid dynamics computation and the first two papers of this issue discuss these aspects. The paper by Appanaboyina *et al.* [1] deals with an embedded griding technology for complex problems of blood flow and the article by Gambaruto *et al.* [2] attempts to quantify the uncertainties associated with segmentation and reconstruction of arterial conduits. The articles by Lee *et al.* [3] and Barth *et al.* [4] deal with fluid flow in model geometries, relevant to blood flow and the paper by Wood *et al.* [5] discusses a partitioned method for the interaction of fluid and membranes.

The second category of papers presented in this issue deals with biofluid dynamics applications. The article by Croft *et al.* [6] discusses flow in the right ventricle of the heart. The work of Tezduyar *et al.* [7] is a review article and they summarize their work and research in arterial fluid–structure interaction. The fluid dynamics of the human respiratory system has been presented in the papers by Nithiarasu *et al.* [8] and Wall and Rabczuk [9]. While the former discusses the air flow in a human upper airway, Wall and Rabczuk [9] study the flow in the lower airway lung geometry.

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Finally, the last paper by Lechuga *et al.* [10] discusses the interdisciplinary topic of tissue fluids using a molecular dynamics approach.

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