

Contents

A Survey of Quantitative Descriptors of Arterial Flows	1
Diego Gallo, Giuseppe Isu, Diana Massai, Francesco Pennella, Marco A. Deriu, Raffaele Ponzini, Cristina Bignardi, Alberto Audenino, Giovanna Rizzo and Umberto Morbiducci	
Fluid–Structure Interaction Modeling of Patient-Specific Cerebral Aneurysms	25
Kenji Takizawa and Tayfun E. Tezduyar	
A Full-Eulerian Approach for the Fluid–Structure Interaction Problem	47
Satoshi Ii, Kazuyasu Sugiyama, Shu Takagi and Yoichiro Matsumoto	
Physiological Significance of Cell-Free Layer and Experimental Determination of its Width in Microcirculatory Vessels	75
Bumseok Namgung, Leo Hwa Liang and Sangho Kim	
Computational Simulation of NO/O₂ Transport in Arterioles: Role of Cell-Free Layer	89
Seungkwan Cho, Swe Soe Ye, Hwa Liang Leo and Sangho Kim	
Flow-Induced Deformation of a Capsule in Unbounded Stokes Flow.	101
Toshihiro Omori, Takuji Ishikawa, Yohsuke Imai and Takami Yamaguchi	
Cell-Free Layer (CFL) Measurements in Complex Geometries: Contractions and Bifurcations	119
Susana Novais, Diana Pinho, David Bento, Elmano Pinto, Tomoko Yaginuma, Carla S. Fernandes, Valdemar Garcai, Ana I. Pereira, José Lima, Maite Mujika, Ricardo Dias, Sergio Arana and Rui Lima	

Image Processing in the Tracking and Analysis of Red Blood Cell Motion in Micro-Circulation Experiments.	133
Ana João and Alberto Gambaruto	
Flow of Red Blood Cells Suspensions Through Hyperbolic Microcontractions	151
Vera Faustino, Diana PINHO, Tomoko Yaginuma, Ricardo C. Calhelha, Geyong M. Kim, Sergio Arana, Isabel C. F. R. Ferreira, Mónica S. N. Oliveira and Rui Lima	
Responses of Living Cells to Hydrodynamic Stimuli Due to Fluid Flow	165
Naoya Sakamoto	
The Effect of a Static Magnetic Field on the Flow of Iron Oxide Magnetic Nanoparticles Through Glass Capillaries.	181
N. Pereira, M. Mujika, S. Arana, T. Correia, A. M. T. Silva, H. T. Gomes, P. J. Rodrigues and R. Lima	
Three-Dimensional Simulations of Ciliary Flow	197
Raymond Quek, Kian Meng Lim and Keng Hwee Chiam	
Flow on the Surface of the Tracheal Lumen by Ciliary Motion of Asymmetric Axonemal Structures	219
Hironori Ueno	
Index	237

Visualization and Simulation of Complex Flows in
Biomedical Engineering

Lima, R.; Imai, Y.; Ishikawa, T.; Oliveira, V. (Eds.)

2014, VIII, 240 p. 111 illus., Hardcover

ISBN: 978-94-007-7768-2