

Contents

Heart & Vessels

- M.W. Collins & Q. Long:** Three-Dimensional Numerical Simulation of Oscillatory Flow in Blood Vessel Branches 7.
- Jan Fiala:** Mathematical and Experimental Study of Pulsatile Flow in Elastic Tubes 20
- P. Janíček, J. Burša:** Complex Modeling of Stress and Strain on Blood Vessels Walls 26
- J. Konfršt:** Experimental Study of the Hydrodynamical Properties of Corrugated Vascular Grafts 36.
- J. Kořenář, F. Klimeš:** Estimation of Turbulent Characteristics of Pulsatile Flow behind Artificial Heart Valves 38.
- P. Kučera & Z. Skalák:** A Theoretical Remark on a non-Dirichlet Boundary Condition Applied on the Outlet of the Tube 47.
- F. Maršík, S. Převorovská, J. Musil:** Energy Conversion in Heart Muscle under Load 53.
- J. Nevrlý:** Numerical Simulation of the System for Blood Pump 57
- M. Pásek, J. Šimurda:** Mathematical Model of Contraction of Cardiac Cells (Excitation - Contraction Coupling) 59.
- H. Shima, P. Simon, N. Kupilik, L. Huber, G. Wipplinger, R. Scherer, E. Wolner:** Influence of Compliance Mismatch of Aortic Prostheses on the Hemodynamics of the Aortic Root: Computer Simulation and *invitro* Studies 61.
- B. B. Šrámek:** Beat-by-Beat Concept in Systemic Hemodynamics 65
- J. Vocel, J. Musil:** On Rheological Changes of Blood and Polymer Substitutes in Experimental Work 70.

Bone & Joints

- V. Fuis:** Determining the Reliability of Ceramic Head of Hip Joint 74
- L. Iván:** Creating a Three-Dimensional Model of the Pelvic and Femur Using Computer Tomography 76.
- M. Petrtýl:** Remodeling of Femoral Cortical Bone due to the Dominant Principal Stresses 78.