

Contents

Biomimetic Survival Hydrodynamics and Flow Sensing <i>Michael S. Triantafyllou, Gabriel D. Weymouth, and Jianmin Miao</i>	1
Motion and Deformation of Elastic Capsules and Vesicles in Flow <i>Dominique Barthès-Biesel</i>	25
High-Reynolds Number Taylor-Couette Turbulence <i>Siegfried Grossmann, Detlef Lohse, and Chao Sun</i>	53
Shear Banding of Complex Fluids <i>Thibaut Divoux, Marc A. Fardin, Sebastien Manneville, and Sandra Lerouge</i>	81
Bacterial Hydrodynamics <i>Eric Lauga</i>	105
Quadrant Analysis in Turbulence Research: History and Evolution <i>James M. Wallace</i>	131
Modeling of Fine-Particle Formation in Turbulent Flames <i>Venkat Raman and Rodney O. Fox</i>	159
Seismic Sounding of Convection in the Sun <i>Shravan Hanasoge, Laurent Gizon, and Katepalli R. Sreenivasan</i>	191
Cerebrospinal Fluid Mechanics and Its Coupling to Cerebrovascular Dynamics <i>Andreas A. Linninger, Kevin Tangen, Chih-Yang Hsu, and David Frim</i>	219
Fluid Mechanics of Heart Valves and Their Replacements <i>Fotis Sotiropoulos, Trung Bao Le, and Anvar Gilmanov</i>	259
Droplets and Bubbles in Microfluidic Devices <i>Shelley Lynn Anna</i>	285
Mechanics of Hydraulic Fractures <i>Emmanuel Detournay</i>	311
A Normal Mode Perspective of Intrinsic Ocean-Climate Variability <i>Henk Dijkstra</i>	341
Drop Impact on a Solid Surface <i>C. Josserand and S.T. Thoroddsen</i>	365

Contrail Modeling and Simulation <i>Roberto Paoli and Karim Shariff</i>	393
Modeling Nonequilibrium Gas Flow Based on Moment Equations <i>Manuel Torrilhon</i>	429
The Fluid Mechanics of Pyroclastic Density Currents <i>Josef Dufek</i>	459
The Dynamics of Microtubule/Motor-Protein Assemblies in Biology and Physics <i>Michael J. Shelley</i>	487
Dynamics and Instabilities of Vortex Pairs <i>Thomas Leweke, Stéphane Le Dizès, and Charles H.K. Williamson</i>	507

Indexes

Cumulative Index of Contributing Authors, Volumes 1–48	543
Cumulative Index of Article Titles, Volumes 1–48	553