

Robert C. Armstrong

Selected Publications

Books

R.B. Bird, R.C. Armstrong, and O. Hassager, *Dynamics of Polymeric Liquids*, Vol.1: *Fluid Mechanics*, Wiley, New York (1977).

R.B. Bird, O. Hassager, R.C. Armstrong, and C.F. Curtiss, *Dynamics of Polymeric Liquids*, Vol.2: *Kinetic Theory*, Wiley, New York (1977).

R.B. Bird, R.C. Armstrong, and O. Hassager, *Dynamics of Polymeric Liquids*, Vol. 1: *Fluid Mechanics*, Wiley, New York (1987), Second Edition.

R.B. Bird, C.F. Curtiss, R.C. Armstrong, and O. Hassager, *Dynamics of Polymeric Liquids*, Vol.2: *Kinetic Theory*, Wiley, New York (1987), Second Edition.

Articles

M.J. Green, R.A. Brown, and R.C. Armstrong, "Initial stage of spinodal decomposition in a rigid-rod system," *J. Chem. Phys.*, **126**, 034903 (2007).

M.J. Green, R.C. Armstrong, and R.A. Brown, "Computation of the nonhomogeneous equilibrium states of a rigid-rod solution," *J. Chem. Phys.*, **125**, 214906 (2006).

A. Gopinath, R.C. Armstrong, and R.A. Brown, "Second order sharp-interface and thin-interface asymptotic analyses and error minimization for phase-field descriptions of two-sided dilute binary alloy solidification," *J. of Crystal Growth*, **291** (1), 272-289 (2006).

A. Gopinath, L. Mahadevan, and R.C. Armstrong, "Transitions to nematic states in homogeneous suspensions of high aspect ratio magnetic rods," *Phys. of Fluids*, **18** (2), Art. No. 028102 (2006)

M. Hütter, G.C. Rutledge, and R.C. Armstrong, "Crystal shapes and crystallization in continuum modeling," *Phys. of Fluids*, **17** (1), Art. No. 014107 (2005)

M. Hütter, G.C. Rutledge, and R.C. Armstrong, "Anisotropic crystal growth in continuum modeling," *ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY*, **228**, U430-U430 105-PMSE Part 2 (2004).

A. Gopinath, R.C. Armstrong, and R.A. Brown, "Observations on the eigenspectrum of the linearized Doi equation with application to numerical simulations of liquid crystals," *J. Chem. Phys.*, **121** (12), 6093-6094 (2004).

N.C. Shapley, R.A. Brown, and R.C. Armstrong, "Evaluation of particle migration models based on laser Doppler velocimetry measurements in concentrated suspensions," *J. Rheol.*, **48** (2), 255-279 (2004).

M.D. Smith, Y.L. Joo, R.C. Armstrong, and R.A. Brown, "Linear stability analysis of flow of an Oldroyd-B fluid through a closely-spaced linear array of cylinders," *J. Non-Newtonian Fluid Mech.*, 109 (1), 13-50 (2003).

J.K.C. Suen, R. Nayak, R.C. Armstrong, and R.A. Brown, "A wavelet-Galerkin method for simulating the Doi model with orientation-dependent rotational diffusivity," *J. Non-Newtonian Fluid Mech.*, 114, 197-228 (2003).

L.H. Genieser, R.C. Armstrong, and R.A. Brown, "Comparison of measured centerline stress and velocity fields with predictions of viscoelastic constitutive models," *J. Rheol.*, 47, 1331-1350 (2003).

N.C. Shapley, R.A. Brown, and R.C. Armstrong, "Evaluation of particle migration models based on laser Doppler velocimetry measurements in concentrated suspensions," *J. Rheol.*, 48 (2), 255-279 (2004).

"Molecular Orientation Effects in Viscoelasticity", *Annual Review of Fluid Mechanics*, 34, 000-000 (2002), (with J. K. C. Suen and Y. L. Joo).

"Deficiencies of FENE dumbbell models in describing the rapid stretching of dilute polymer solutions", *J. Rheol.*, 45, 721-758 (2001), (with I. Ghosh, G. H. McKinley, and R. A. Brown).

"Highly parallel time integration of viscoelastic flows," *J. Non-Newtonian Fluid Mech.*, in press (2001), (with A. E. Caola, Y. L. Joo, and R. A. Brown)

"Two-dimensional numerical analysis of nonisothermal melt spinning with and without phase transition," *J. Non-Newtonian Fluid Mech.*, in press (2001), (with Y. L. Joo, J. Sun, M. D. Smith, and R. A. Ross).

"Finite element analysis of stability of two-dimensional viscoelastic flows to three-dimensional perturbations", *J. Non-Newtonian Fluid Mech.*, 93, 203-245 (2000), (with M. D. Smith, R. A. Brown, and R. Sureshkumar).

"Dynamics of Polymeric Liquids," *Vol. 1, Fluid Mechanics, Vol. 2, Kinetic Theory*, Wiley, Second Edition (1987), (with R. B. Bird, O. Hassinger, and C. F. Curtiss)