

Professional Vita

Jerzy Bławdziewicz

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RESEARCH INTERESTS: hydrodynamics, soft matter, nanomaterials,
granular media, biophysics, and biological matter

EDUCATION AND DEGREES

- **Ph. D. Theoretical Physics**, University of Warsaw, January 1986
Dissertation: "Kinetic theory of hard-sphere fluids."
- **M. S. Theoretical Physics**, Department of Physics, University of Warsaw, April 1980

ACADEMIC APPOINTMENTS

- **Associate Chair, Director of Graduate studies** Department of Mechanical Engineering
Texas Tech University, (2013–present)
- **Professor**, Department of Mechanical Engineering
Texas Tech University, 2010–present
- **Associate Professor**, Department of Physics
Yale University, 2006–2010
- **Associate Professor**, Department of Mechanical Engineering
Yale University, 2005–2010
- **Assistant Professor**, Department of Mechanical Engineering
Yale University, 2001–2005
- **Lecturer and Associate Research Scientist**, Department of Chemical Engineering
Yale University, 1999–2001
- **Senior Research Scientist** Institute of Fundamental Technological Research,
Polish Academy of Sciences Warsaw, Poland, 1991–1998
- **Assistant Professor** Department of Physics, University of Szczecin, Poland, 1986–1991

AWARDS

- Member of TTU Transdisciplinary Research Academy, 2012/13 and 2014/15

- NSF CAREER Award, 2004
- Hellman Family Fellowship Award, 2002
- French Ministry of Science Fellowship, 1993

Other (recent)

- Article “Nematode locomotion in unconfined and confined fluids” [Phys. Fluids, **25**, 081902 (2013)] chosen by American Physical Society for press release.
- Article “Controllable nanoimprinting of metallic glasses: effect of pressure and interfacial properties” [Nanotechnology **24**, 105301 (2013)] featured in Nanotechweb.
- 2008 Notable Accomplishment from CBET Award: “CAREER: Collective Dynamics of Confined Suspensions,” (program: Particulate and Multiphase Processes).
- PRL Highlight: “Jamming Transition and New Percolating Universality Classes in Particulate Systems with Attraction” [PRL **100**, 028001 (2008)], selected by Newsletter of the Division of Biological Physics of APS.
- Article “Hydrodynamic Crystals: Collective Dynamics of Regular Arrays of Spherical Particles in a Parallel-Wall Channel,” [PRL **100** 174502 (2008)], selected for May 12 (2008) issue of Virtual Journal of Nanoscale Science & Technology.

RESEARCH GRANTS

1. “Collaborative Research: Experiment, Simulation, and Theory of Slowly Driven Granular Materials - From Microstate Statistics to Macroscopic Properties,” National Science Foundation, collaborative project with CUNY, total award \$ 400,000; grant period 2010–2013.
2. “Hydrodynamic Crystals: Structural Evolution in Confined Suspension Flows,” National Science Foundation, award \$ 300,000; grant period 2009-2014.
3. “CAREER: Dynamics of Confined Colloidal Suspensions,” National Science Foundation; award: \$ 400,000; grant period 2004-2009.
4. “Particle Dynamics in Asymmetric Colloidal Mixtures,” National Science Foundation; award: \$ 357,000; grant period 2002–2005.
5. “Drop Coalescence: Drainage and Stabilization of Thin Liquid Films,” NASA OBPR Microgravity research Division; award: \$ 305,000; grant period 2001–2004.
6. “Hydrodynamic Confinement Effects in Complex Fluids,” Hellman Family Fellowship; award \$ 30,000.

SUPERVISION OF RESEARCH**Ph.D. dissertations**

- Michael Holcomb “The role of mechanical signaling in embryo development”

- Amar Patel “Mechanisms of chemotaxis and neuromuscular control in a nematode *C. elegans*”
- Alejandro Bilbao “Biophysics of undulatory locomotion”
- Guo-Jie Gao “Jamming in hard-sphere systems,” December 2009 (co-advised); at present Assistant Professor at NTU.
- Sukalyan Bhattacharya “Dynamics in highly-bidisperse colloidal suspensions,” December 2005; at present: Associate Professor, Texas Tech University).
- Martin B. Nemer “Near-Contact Motion of Liquid Drops in Emulsions and Foams,” 2003 (co-advised); at present: Sandia National Laboratories.
- Petia M. Vlahovska “Dynamics of a surfactant-covered drop and the non-Newtonian rheology of emulsions,” 2003 (co-advised); at present: Assistant Professor, Brown University.

Postdoctoral associates

- Dr. Martin Aseze (2012–2013)
- Dr. Frank van Bussel (2012–2013)
- Dr. Venkat Padmanabhan (2011-2012)
- Dr. S. S. Ashwin (2009–2011)
- Dr. Gregg Lois (2007–2009)
- Dr. Mauricio Zurita-Gotor (2004–2006)
- Dr. Eligiusz Wajnryb (2003–2005)

INVITED TALKS (RECENT)

- “Undulatory Locomotion on a Submillimeter Scale: From Hydrodynamics to Neuromuscular Control,” Department of Mathematics & Statistics, Texas Tech University, Lubbock TX, October 8, 2014.
- “Undulatory Locomotion on a Submillimeter Scale: From Hydrodynamics to Neuromuscular Control,” Department of Physics, Texas Tech University, Lubbock TX, September 18, 2014.
- “Locomotion of *C. elegans*: Evolutionary Adaptation and Neuromuscular Control,” Frontiers in Applied and Computational Mathematics, NJIT, Newark, NJ, May 31–June 2, 2013.
- “The swapping-trajectory effect: lattice evolution and buckling transition in wall-bounded hydrodynamic crystals,” Microparticles in Stokes Flow, Symposium in Honor of François Feuillebois 65th Birthday, 21-24 August 2011, Warsaw, Poland.
- “Microhydrodynamics of soft matter,” CNLS, Los Alamos National Lab, Los Alamos, May 18, 2010.

- “Microhydrodynamics of soft matter,” Department of Mechanical Engineering, Lehigh University, Bethlehem, Pennsylvania, March 26, 2010.
- “What can we learn from studying small granular packings,” DARPA Workshop *Granular Dynamics Meeting*, Arlington, VA, February 17–18, 2010.
- “Nonlinear phenomena in dispersion flows: structural transitions and chaos,” College of Engineering, Texas Tech University, Lubbock, Texas, November 16, 2009.
- “Small granular systems and their relevance for descriptions of macroscopic granular packings,” Keynote Presentation, 7th New England Granular Materials Workshop, New Haven, June 12, 2009.
- “Numerical simulations in complex fluids,” International Symposium on *Mathematical Simulation in Science and Technology*, Seville, Spain, January 29–30, 2009.
- “Friction in microchannel flows,” NSF Workshop on *Friction: A Grand Challenge at the Interface of Solid and Fluid Mechanics*, Montreux, Switzerland, March 14–15, 2008.
- “Stepwise Drainage of thin liquid films stabilized by colloidal particles,” *Frontiers in Applied and Computational Mathematics: Mathematical Fluid Dynamics*, NJIT, Newark, NJ, May 2006.
- “Equilibrium and non-equilibrium thermodynamics of thin liquid films stabilized by colloidal particles,” PSME Symposium *Complex Fluids in Confined Spaces* at 2006 ACS Spring National Meeting, Atlanta, GA, March 2006.
- “Dynamics and near-critical behavior of viscous drops in creeping flows,” *Dynamics Days 2005*, 24th Annual International Conference, Long Beach, CA, January 2005.

PROFESSIONAL SERVICE

- Serving at NSF panels to evaluate research proposals in 2004, 2006, 2008, and 2010–2014
- Serving at NASA panel to evaluate research proposals in 2008
- Frenkiel Award Committee, 2008, 2009
- Member of AIChE Programming Committee, area J1 Fluid Dynamics, since 2006
- Organizing meetings:
 - Program coordinator for fluid-dynamics sessions at 2006 AIChE Annual Meeting
 - 78th ACS Colloid and Surface Science Symposium (sessions on Dynamic Behavior of Complex Fluids), 2004
 - 16th New England Complex Fluids Workshop, June 2003
- Chairing conference sessions:
 - AIChE Annual Meetings, since 2000
 - APS March Meetings in 2007 and 2008
 - APS DFD Meeting in 2008

- Reviewing papers for Journal of Fluid Mechanics, Physics of Fluids, Physical Review Letters, PNAS, Physical Review E, Journal of Rheology, Journal of Computational Physics, Journal of Engineering Mathematics, and others.

LIST OF PUBLICATIONS

H-index 22, 1580 citations (according to Web of Science)

1. F. Feuillebois, M. Ekiel-Jezewska, E. Wajnryb, A. Sellier, and J. Bławdziewicz, Viscosity of a dilute suspension of elongated particles in a linear shear flow between two walls, *J. Fluid Mech.*, in review.
2. T. Etheridge, M. Rahman, C. Gaffney, D. Shaw, F. Shephard, J. Magudia, D. E. Solomon, T. Milne, J. Bławdziewicz, D. Constantin-Teodosiu, P. L. Greenhaff, S. A. Vanapalli, and N. J. Szewczyk, The integrin-adhesome is required to maintain muscle structure, mitochondrial ATP production and movement forces in *Caenorhabditis elegans*, *FASEB J.*, in review.
3. S. S. Bithi, W. S. Wang, M. Sun, J. Bławdziewicz, Bławdziewicz, and S. A. Vanapalli, Coalescing drops in microfluidic parking networks: A multifunctional platform for drop-based microfluidics, *Biomicrofluidics* **8**, 034118 (2014).
4. H. Nganguia, Y.-N. Young, P. M. Vlahovska, J. Bławdziewicz, J. Zhang, and H. Lin, Equilibrium electro-deformation of a surfactant-laden viscous drop, *Phys. Fluids* **25**, 092106 (2013).
5. A. Bilbao, E. Wajnryb, S. A. Vanapalli, and J. Bławdziewicz, Nematode locomotion in unconfined and confined fluids, *Phys. Fluids* **25**, 081902 (2013).
6. M. B. Nemer, P. Santoro, X. Chen, J. Bławdziewicz, and M. Loewenberg, Coalescence of drops with mobile interfaces in a quiescent fluid, *J. Fluid Mech.* **728**, 471 (2013).
7. M. Zurita-Gotor, F. S. Gittleston, A. D. Taylor, and J. Bławdziewicz, Stratified rod network model of electrical conductance in ultrathin polymer-carbon nanotube multilayers, *Phys. Rev. B* **87**, 195449 (2013).
8. G. Kumar, J. Schroers, and J. Bławdziewicz, Controllable nanoimprinting of metallic glasses: effect of pressure and interfacial properties. *Nanotechnol.* **24**, 105301 (2013).
9. J. Bławdziewicz and E. Wajnryb, The swapping-trajectory effect: lattice evolution and buckling transition in wall-bounded hydrodynamic crystals. *J. Phys. Conf. Ser.* **392**, 012008 (2012).
10. V. Padmanabhan, Z. S. Khan, D. E. Solomon, A. Armstrong, K. P. Rumbaugh, S. A. Vanapalli, and J. Bławdziewicz, Locomotion of *C. elegans*: A Piecewise-Harmonic Curvature Representation of Nematode Behavior. *PLoS ONE* **7**(7), e40121 (2012).
11. S. S. Ashwin, J. Bławdziewicz, C. S. O'Hern, and M. Shattuck, Calculations of the structure of basin volumes for mechanically stable packings. *Phys. Rev. E* **85**, 061307 (2012).

12. M. Zurita-Gotor, J. Bławdziewicz, and E. Wajnryb, Layering instability in a confined suspension flow. *Phys. Rev. Lett.* **108**, 068301 (2012).
13. P. J. A. Janssen, M. Baron, P. D. Anderson, J. Bławdziewicz, M. Loewenberg, and E. Wajnryb, Collective dynamics of confined rigid spheres and deformable drops. *Soft Matter* **8**, 7495 (2012).
14. L. Pasol, M. Martin, M. Ekiel-Jezewska, E. Wajnryb, J. Bławdziewicz, and F. Feuillebois, Motion of a sphere parallel to plane walls in a Poiseuille flow. Application to field-flow fractionation and hydrodynamic chromatography. *Chem. Eng. Sci.* **66**, 4078 (2011).
15. N. Khurana, J. Bławdziewicz, and N. T. Ouellette, Reduced Transport of Swimming Particles in Chaotic Flow due to Hydrodynamic Trapping. *Phys. Rev. Lett.* **106**, 198104 (2011).
16. S. K. Veerapaneni, Y.-N. Young, P. M. Vlahovska, and J. Bławdziewicz, Dynamics of a Compound Vesicle in Shear Flow. *Phys. Rev. Lett.* **106**, 158103 (2011).
17. J. Bławdziewicz, M. Ekiel-Jezewska, and E. Wajnryb, Hydrodynamic coupling of spherical particles to a planar fluid–fluid interface: Theoretical analysis. *J. Chem. Phys.* **133**, 114703 (2010).
18. J. Bławdziewicz, M. Ekiel-Jezewska, and E. Wajnryb, Motion of a spherical particle near a planar fluid–fluid interface: the effect of surface incompressibility. *J. Chem. Phys.* **133**, 114702 (2010).
19. G. Kumar, P. A. Staffier, J. Bławdziewicz, U. D. Schwarz, and J. Schroers, Ultrasooth metal surfaces through thermoplastic forming of metallic glass. *Appl. Phys. Lett.* **97**, 101907 (2010).
20. J. Bławdziewicz, R. H. Goodman, N. Khurana, E. Wajnryb, and Y.-N. Young, Nonlinear hydrodynamic phenomena in Stokes flow regime. *Physica D* **239**, 1214 (2010).
21. G. Lois, J. Bławdziewicz, and C. S. O’Hern, Protein folding on rugged energy landscapes: Conformational diffusion on fractal networks. *Phys. Rev. E* **81**, 051907 (2010).
22. J. W. Merrill, S. K. Sainis, J. Bławdziewicz, and E. R. Dufresne, Many-body force and mobility measurements in colloidal systems, *Soft Matter* **6**, 2187 (2010).
23. Z. Adamczyk, K. Sadlej, E. Wajnryb, M. Nattich, M. Ekiel-Jezewska, and J. Bławdziewicz, Streaming potential studies of colloid, polyelectrolyte and protein deposition. *Adv. Colloid. Interface Sci.* **153**, 1, (2010).
24. B. Cichocki, E. Wajnryb, J. Bławdziewicz, J. K. G. Dhont, and P. Lang, The intensity correlation function in evanescent wave scattering, *J. Chem. Phys.* **132**, 074704 (2010).
25. G.-J. Gao, J. Bławdziewicz, and C. S. O’Hern, Geometrical families of mechanically stable granular packings, *Phys. Rev. E* **80**, 061303 (2009).
26. G.-J. Gao, J. Bławdziewicz, C. S. O’Hern, and M. Shattuck, Experimental demonstration of nonuniform frequency distributions of granular packings. *Phys. Rev. E* **80**, 061304 (2009).

27. H. M. Chiu, G. Kumar, J. Bławdziewicz, and J. Schroers, Thermoplastic extrusion of bulk metallic glass, *Scripta Materialia* **61** 28 (2009).
28. K. Sadlej, E. Wajnryb, J. Bławdziewicz, M. Ekiel-Jezewska, and Z. Adamczyk, Streaming current and streaming potential for particle covered surfaces: Virial expansion and simulations, *J. Chem. Phys.* **130** 144706 (2009).
29. P. M. Vlahovska, J. Bławdziewicz, and M. Loewenberg, Small deformation theory for a surfactant-covered drop in linear flows. *J. Fluid Mech.* **624**, 293 (2009).
30. G. Lois, J. Bławdziewicz, and C. S. O'Hern, A percolation model for glassy dynamics in disordered materials, *Phys. Rev. Lett.* **102**, 015702 (2009).
31. M. Ekiel-Jezewska, E. Wajnryb, J. Bławdziewicz, and F. Feuillebois, Lubrication approximation for microparticles moving along parallel walls. *J. Chem. Phys.* **129**, 181102 (2008).
32. J. Bławdziewicz and E. Wajnryb, Equilibrium and nonequilibrium thermodynamics of particle-stabilized thin liquid films. *J. Chem. Phys.* **129**, 194509 (2008).
33. P. Pal, C. S. O'Hern, J. Bławdziewicz, E. R. Dufresne, and R. Stinchcombe, A minimal model for kinetic arrest. *Phys. Rev. E* **78**, 011111 (2008).
34. J. Bławdziewicz and E. Wajnryb, An analysis of the far-field response to external forcing of a suspension in Stokes flow in a parallel-wall channel. *Phys. Fluids* **20**, 093303 (2008).
35. G. Lois, J. Bławdziewicz, and C. S. O'Hern, Reliable protein folding on non-funneled energy landscapes: the free energy reaction path. *Biophys. J.* **95**, 2692 (2008).
36. S. Bhattacharya, and J. Bławdziewicz, Effect of small particles on the near-wall dynamics of a large particle in a highly bidisperse colloidal solution. *J. Chem. Phys.* **128**, 214704 (2008).
37. Y.-N. Young, J. Bławdziewicz, V. Cristini, and R. H. Goodman, Hysteretic and chaotic dynamics of viscous drops in creeping flows with rotation. *J. Fluid Mech.* **607**, 209 (2008).
38. M. Baron, J. Bławdziewicz, and E. Wajnryb, Hydrodynamic crystals: collective dynamics of regular arrays of spherical particles in a parallel-wall channel. *Phys. Rev. Lett.* **100**, 174502 (2008).
39. G. Lois, J. Bławdziewicz, and C. S. O'Hern, Jamming transition and new percolation universality classes in particulate systems with attraction. *Phys. Rev. Lett.* **100**, 028001 (2008).
40. M. Zurita-Gotor, J. Bławdziewicz, and E. Wajnryb, Swapping trajectories: a new wall-induced cross-streamline particle migration mechanism in a dilute suspension of spheres. *J. Fluid Mech.* **592**, 447 (2007).
41. G.-J. Gao, J. Bławdziewicz, and C. S. O'Hern, Enumeration of distinct mechanically stable disk packings in small systems. *Phil. Mag. B* **87**, 425 (2007).

42. M. B. Nemer, X. Chen, D. H. Papadopoulos, J. Bławdziewicz, and M. Loewenberg, Comment on “Two touching spherical drops in uniaxial extensional flow: Analytic solution to the creeping flow problem.” *J. Colloid Interface Sci.* **308**, 1 (2007).
43. M. Zurita-Gotor, J. Bławdziewicz, and E. Wajnryb, Motion of a rod-like particle between parallel walls with application to suspension rheology. *J. Rheol.* **51**, 71 (2007).
44. G.-J. Gao, J. Bławdziewicz, and C. S. O’Hern, Frequency distribution of mechanically stable disk packings. *Phys. Rev. E* **74**, 061304 (2006).
45. S. Bhattacharya, J. Bławdziewicz, and E. Wajnryb, Hydrodynamic interactions of spherical particles in Poiseuille flow between two parallel walls. *Phys. Fluids* **18**, 053301 (2006).
46. S. Bhattacharya, J. Bławdziewicz, and E. Wajnryb, Far-field approximation for hydrodynamic interactions in parallel-wall geometry. *J. Comput. Phys.* **212**, 718, (2006).
47. P. M. Vlahovska, M. Loewenberg, and J. Bławdziewicz, Deformation of a surfactant-covered drop in a linear flow. *Phys. Fluids* **17**, 103103, (2005).
48. S. Bhattacharya, J. Bławdziewicz, and E. Wajnryb, Hydrodynamic interactions of spherical particles in suspensions confined between two planar walls. *J. Fluid Mech.* **541**, 263, (2005).
49. S. Bhattacharya, J. Bławdziewicz, and E. Wajnryb, Many-particle hydrodynamic interactions in parallel-wall geometry: Cartesian-representation method. *Physica A* **356**, 294 (2005).
50. J. Bławdziewicz and E. Wajnryb, Phase equilibria in stratified thin liquid films stabilized by colloidal particles. *Europhys. Lett.* **71**, 269 (2005).
51. N. Xu, C. S. O’Hern, and J. Bławdziewicz, Random close packing revisited: Ways to pack frictionless disks. *Phys. Rev. E* **71** 061306 (2005).
52. J. Bławdziewicz, E. Wajnryb, J. Given, and J. B. Hubbard, Sharp scalar and tensor bounds on the hydrodynamic friction of arbitrarily shaped bodies in Stokes flow. *Phys. Fluids.* **17**, 033602 (2005).
53. M. B. Nemer, X. Chen, D. H. Papadopoulos, J. Bławdziewicz, and M. Loewenberg, Hindered and accelerated coalescence of drops in Stokes flow. *Phys. Rev. Lett.* **92**, 114501 (2004).
54. J. Bławdziewicz and S. Bhattacharya, Comment on “Drift without flux: Brownian walker with a space-dependent diffusion coefficient.” *Europhys. Lett.* **63**, 789 (2003).
55. J. Bławdziewicz, V. Cristini, and M. Loewenberg, Multiple stationary states for deformable drops in linear Stokes flows. *Phys. Fluids* **15**, L37 (2003).
56. V. Cristini, J. Bławdziewicz, M. Loewenberg, and L. R. Collins, Breakup in stochastic Stokes flows: sub-Kolmogorov drops in isotropic turbulence. *J. Fluid Mech.* **492**, 231 (2003).

57. V. Cristini, S. Guido, A. Alfani, J. Bławdziewicz, and M. Loewenberg, Drop breakup and fragment size distribution in shear flow. *J. Rheol.* **47**, 1283 (2003).
58. P. D. Patel, E. S. G. Shaqfeh, J. E. Butler, V. Cristini, J. Bławdziewicz, and M. Loewenberg, Drop breakup in the flow through fixed fiber beds: An experimental and computational investigation. *Phys. Fluids* **15**, 1146 (2003).
59. J. Bławdziewicz, V. Cristini, and M. Loewenberg, Critical behavior of drops in linear flows: I. Phenomenological theory for drop dynamics near critical stationary states. *Phys. Fluids* **14**, 2709 (2002).
60. S. Bhattacharya and J. Bławdziewicz, Image system for Stokes-flow singularity between two parallel planar walls. *J. Math. Phys.* **43**, 5720 (2002).
61. P. M. Vlahovska, J. Bławdziewicz, and M. Loewenberg, Nonlinear rheology of a dilute emulsion of surfactant-covered spherical drops in time-dependent flows. *J. Fluid Mech.* **463**, 1–24 (2002).
62. V. Cristini, J. Bławdziewicz, and M. Loewenberg, An adaptive mesh algorithm for evolving surfaces: simulations of drop breakup and coalescence. *J. Comput. Phys.* **168**, 445 (2001).
63. J. Bławdziewicz, P. M. Vlahovska, and M. Loewenberg, Rheology of a dilute emulsion of surfactant-covered spherical drops. *Physica A* **276**, 50 (2000).
64. J. Bławdziewicz, E. Wajnryb, and M. Loewenberg, Hydrodynamic interactions and collision efficiencies of spherical drops covered with an incompressible surfactant film. *J. Fluid Mech.* **395**, 29 (1999).
65. J. Bławdziewicz, V. Cristini, and M. Loewenberg, Stokes flow in the presence of a planar interface covered with incompressible surfactant. *Phys. Fluids* **11**, 251 (1999).
66. J. Bławdziewicz, V. Cristini, and M. Loewenberg, Near-contact motion of surfactant-covered spherical drops: Ionic surfactant. *J. Colloid Interface Sci.* **211**, 355 (1999).
67. D. Bruneau, F. Feuillebois, J. Bławdziewicz, and R. Anthore, Three-dimensional intrinsic convection in dilute and dense dispersions of settling spheres. *Phys. Fluids* **10**, 55 (1998).
68. V. Cristini, J. Bławdziewicz, and M. Loewenberg, Near-contact motion of surfactant-covered spherical drops. *J. Fluid Mech.* **366**, 259 (1998).
69. V. Cristini, J. Bławdziewicz, and M. Loewenberg, Drop breakup in three-dimensional viscous flows. *Phys. Fluids* **10**, 1781 (1998).
70. J. Bławdziewicz and F. Feuillebois, Calculation of an effective slip in a settling suspension at a vertical wall. *Fluid Mech. Research* **22**, 66 (1995).
71. J. Bławdziewicz and M. Ekiel-Jezewska, How shear flow of a semidilute suspension modifies its self-mobility. *Phys. Rev. E* **51**, 4704 (1995).

72. S. Tokarzewski, J. Bławdziewicz, and I. Adrianov, Two-point Pade approximants for formal Stieltjes Series. *Numerical Algorithms* **8**, 313 (1994).
73. S. Tokarzewski, J. Bławdziewicz, and I. Adrianov, Effective conductivity for densely packed, highly conducting cylinders. *Appl. Phys. A* **59**, 604 (1994).
74. B. Cichocki, B.U. Felderhof, K. Hinsen, E. Wajnryb, and J. Bławdziewicz, Friction and mobility of many spheres in Stokes flow. *J. Chem. Phys.* **100**, 3780 (1994).
75. J. Bławdziewicz and G. Szamel, Structure and rheology of semidilute suspension under shear. *Phys. Rev. E* **48**, 4632, (1993).
76. J. Bławdziewicz, B. Cichocki, and H. Van Beijeren, H-theorem for a linear kinetic theory. *J. Stat. Phys.* **66**, 607 (1992).
77. G. Szamel, J. Bławdziewicz, and J. A. Leegwater, Self-diffusion in sheared colloids: Violation of Einstein relation. *Phys. Rev. A* **45**, R2173, (1992).
78. J. Bławdziewicz, G. Szamel, and H. Van Beijeren, Diffusion controlled reactions: upper bounds on effective rate constant. *J. Chem. Phys.* **94**, 7967 (1991).
79. J. Bławdziewicz and G. Stell, Ladder approximation for three- and four-particle correlation functions: Application to thermodynamic perturbation theory. *Phys. Rev. A* **42**, 5917 (1990).
80. J. Given, J. Bławdziewicz, and G. Stell, Diffusion-controlled reactions in a polydisperse medium of reactive sinks. *J. Chem. Phys.* **93**, 8156 (1990).
81. J. Bławdziewicz, B. Cichocki, and R. Holyst, Generalized Ornstein-Zernike approach to many-particle equilibrium correlation functions. *Physica A* **157**, 857 (1989).
82. J. Bławdziewicz, B. Cichocki, and G. Szamel, Ladder approximation for three- and four-particle correlation functions. *J. Chem. Phys.* **91**, 7467 (1989).
83. J. Bławdziewicz and G. Stell, Local H-Theorem for a kinetic variational theory. *J. Stat. Phys.* **56** 821 (1989).
84. J. Bławdziewicz and B. Cichocki, Linear kinetic theory of hard-sphere fluids: I. General formalism. *Physica A* **127**, 38 (1984).
85. M. Mareshal, J. Bławdziewicz, and J. Piasecki, Local entropy production from the revised Enskog equation: General formulation for inhomogeneous fluids. *Phys. Rev. Lett.* **52**, 1169 (1984).

Book Chapters

1. J. Bławdziewicz, Boundary integral methods for Stokes Flows. In: *Computational Methods for Multiphase Flow*, A. Prosperetti and G. Tryggvason, Ed., Cambridge University Press (2006).

2. J. Bławdziewicz, Structure and transport properties of colloidal suspensions in stationary shear flow. In: *Flow of Particles in Suspensions*, U. Schaflinger, Ed., Springer, Wien (1996).

Conference Proceedings

1. M. Reyes-Mata, J. Bławdziewicz, E. Wajnryb, and M. Zurita-Gotor, Aggregation and effective thermal conductivity of nanofluids: Dependence on cluster size and morphology, *Proceedings of the ASME 2014 International Mechanical Engineering Congress & Exposition IMECE2014*, November 14-20, 2014, Montreal, Quebec, Canada, in press.
2. J. Bławdziewicz, Equilibrium and non-equilibrium thermodynamics of thin liquid films stabilized by colloidal particles, *Abstracts of Papers of the American Chemical Society* **231**, 474-PMSE (2006).
3. M. B. Nemer, J. Bławdziewicz, and M. Loewenberg, Linear viscoelasticity of concentrated emulsions. *Mechanics for a new millennium*, 75-84, H. Aref and J.W. Phillips (eds.), Kluwer (2001).
4. M. B. Nemer, J. Bławdziewicz, and M. Loewenberg, Linear viscoelasticity of concentrated emulsions *Proceedings of the Third EuroConference on Foams, Emulsions, and Applications, Delft, The Netherlands, June 2000*.
5. P. M. Vlahovska, J. Bławdziewicz, and M. Loewenberg, Rheology of an emulsion of surfactant-covered drops. *Proceedings of XIII International Congress on Rheology, Cambridge, UK, August 2000*.
6. F. Feuillebois, J. Bławdziewicz, D. Bruneau, and R. Anthore, Models of the intrinsic convection in a settling suspension of spheres. In: *Continuum Models and Discrete Systems, Proceedings of the 8th International Symposium*, p. 181 (1995).

Technical Reports

1. J. Bławdziewicz and F. Feuillebois, Étude physique du transport des aérosols dans le code ECART. Final report, collaboration contract of CNRS URA 857 with EDF (1995).
2. S. Tokarzewski, J. Bławdziewicz, and I. Adrianov, Two-point Pade approximants for Stieltjes series. Report IPPT, (1993).
3. J. Bławdziewicz and G. Stell, Linear transport through random media. Rijksuniversiteit Utrecht (1990).
4. J. Bławdziewicz and G. Stell, Smoluchowski coagulation equation with a time-dependent coagulation kernel. SUNY College of Engineering and Applied Sciences Report # 557(1989).
5. B. Cichocki and J. Bławdziewicz, Linear kinetic theory of hard-sphere fluids: II. H-Theorem. Warsaw University, (1985).