



**Daniel D. Joseph**

**Professor, Regents and Russell  
J. Penrose Professor Emeritus**

**Deceased May 24, 2011**

The group that was directed by Professor Joseph engaged in research on viscoelastic fluids, multiphase flows, fluidized beds, two-fluid dynamics, and drag reduction. Other projects are concerned with the motion of solid particles and drops and bubbles in Newtonian and viscoelastic fluids. The studies carried out in Joseph's lab were done with the aid of experiments, theory and high performance computing. One project focused on water lubricating pipelining of heavy crude oils and dispersions. Stability theory shows that the water would stay on the wall where it lubricated the flow of the oil. Drag reductions of the order of the viscosity ratio can be achieved---reductions of a thousand-fold or more. Another project was to understand the exceptional enhancements of the rheological properties of semi-dilute aqueous polymeric solutions seeded by small particles and nanoparticles. Professor Joseph and his collaborators also had a new subject in fluid mechanics which was developed in his published monograph.

### **Degrees**

1950 M.A., Sociology, University of Chicago

1959 B.S., Mechanical Engineering, Illinois Institute of Technology

1960 M.S., Mechanics, Illinois Institute of Technology

1963 Ph.D., Mechanical Engineering, Illinois Institute of Technology

### **Experience**

2006-2009: Professor Aerospace Engineering Mechanics, University of Minnesota

1994-2005: Regents' Professor Aerospace Engineering Mechanics, University of Minnesota

1991-2001: Russell J. Penrose Professor Aerospace Engineering Mechanics, University of Minnesota

1968 - 2009: Professor Aerospace Engineering and Mechanics, University of Minnesota

1965 - 1968: Associate Professor Aerospace Engineering and Mechanics, University of Minnesota

1963 - 1965: Assistant Professor Aerospace Engineering and Mechanics, University of Minnesota

1962 - 1963: Assistant Professor Mechanical Engineering, Illinois Institute of Technology

## Honors and Fellowships

Thompson Scientific/ISI's Highly Cited Researchers  
Fluid Dynamics Prize of the APS, Nov 1999  
Professional Achievement Citation of the University of Chicago, June 1999  
Kovaszny Lecturer, University of Houston, Mechanical Engineering, April 1999  
Illinois Institute of Technology Professional Achievement Award, 1997  
Thomas Baron Fluid-Particle Systems Award of the AIChE, Nov. 1996  
Croco Lecturer, Princeton University, Mechanical Engineering, October 1995  
Timoshenko Medalist of the ASME, May 1995  
Fellow of the American Physical Society, November 1993  
Bingham Medalist of the Society of Rheology, October 1993  
American Academy of Arts and Sciences, April 1993  
Schlumberger Foundation Award, July 1993  
Aris Phillips Lecturer, Yale University, April 1992  
G.I. Taylor Lecturer, Cambridge Phil. Soc., Jan 1992  
Distinguished Service Award, US Army CERDEC, 1992  
National Academy of Sciences, 1991  
G. I. Taylor Medalist, Society of Engineering Science, 1990  
National Academy of Engineering, 1990  
Guggenheim Fellow, 1969-70

## Patents

### [The wave-speed meter](#)

(US Patent No. 4,602,502). This device is to be used to measure wave speeds and to determine the effective rigidity of a liquid.

### [The spinning rod interfacial tensiometer](#)

(US Patent No. 4,644,782). This device is used to determine the interfacial tension between immiscible liquids.

### [Spinning drop tensiometer](#)

(US Patent No. 5,150,607). This device is used for polymer blends and in the [oil industry](#) where temperature is important.

### Device and method for [determining drag on surfaces](#)

(US Patent No. 5,301,541).

### [Conduit having hydrophilic](#) and oleophobic inner surfaces for oil transportation

(US Patent No. 5,385,175).

### Method and apparatus for [measuring a parameter of a multiphase flow](#)

(US Patent No. 5,646,352).

### Process for [suppressing foam formation in a bubble column reactor](#)

(US Patent No. 5,922,190)

### [Foam control using a fluidized bed of particles](#)

(US Patent No. 5,922,191)

Apparatus and method for [determining dynamic stability of emulsions](#)  
(US Patent No. 5,987,969)  
Process for [pumping bitumen froth through a pipeline](#)  
(US Patent No. 5,988,198)

## Consulting

Syncrude Canada Ltd, 1995-present  
Teltech, 1993-present  
InoMet, Inc., 1993  
Gillette, 1993-present  
CRDEC (US ARMY) 1992-present  
ICASE (NASA-LANGLEY) 1992-present  
Dowell-Schlumberger, 1992-present  
Proctor Gamble, 1992  
PDVSA, Intevep, Caracas, Venezuela, 1990-present  
Schlumberger-Doll, Ridgefield, CT, 1990  
MM-Mars, Hacketts town, NJ, 1990-1991  
Shell-Houston, 1987-1990; Water lubricated pipelining of viscous crudes  
Pillsbury Corp., 1987-1988; Acoustic waves in bread dough  
Hoechst-Celanese, 1986-present; Interfacial tensiometer for polymer blending  
Psi Star, Hayward, CA, 1985; Anisotropic etching of circuit boards

## Editorial Positions

Editorial Board, Springer-Verlag series *Interdisciplinary Applied Mathematics*  
Associate Editor, *PanAmerican Mathematical Journal*, 1994-present  
Associate Editor, *International Journal of Multiphase Flow*, 1994-present  
Associate Editor, *Bifurcation and Chaos in Applied Sciences and Engineering*, 1991-present  
International Advisory Board, *European Journal of Mechanics B/Fluids*, 1990-present  
Associate Editor, *Video Journal of Engineering Research*, 1990-present  
Associate Editor, *Theoretical and Computational Fluid Mechanics*, 1989-present  
Associate Editor, *Journal of Non-Newtonian Fluid Mechanics*, 1985-present  
Associate Editor, *Journal for Society for Interaction of Mathematics and Mechanics*, 1979-84  
Associate Editor, *SIAM Journal of Applied Mathematics*, 1976-79  
Associate Editor, *Journal of Applied Mechanics*, 1973-76  
Associate Editor, *Archive for Rational Mechanics and Analysis*, 1967-84

## Publications

- I. Marusic, D.D. Joseph & K. Mahesh, 2007, Laminar and turbulent comparisons for channel flow and flow control, *Journal of Fluid Mechanics*, 570: 467-477, (Journal Article) [More Details](#), [Request PDF](#)
- T. Funada, D. D. Joseph, M. Saitoh and S. Yamashita, 2006, Liquid jet in a high Mach number air stream, *Int. J. Multiphase Flow*, 32, 20-50., (Journal Article) [More Details](#), [Request PDF](#)

- J. C. Padrino and D.D. Joseph, 2006, Numerical study of the steady state uniform flow past a rotating cylinder, *J. Fluid Mech.*, 557, 191-223., (Journal Article) [More Details](#), [Request PDF](#)
- J. Wang and D.D. Joseph, 2006, Pressure corrections for the effects of viscosity on the irrotational flow outside Prandtl's boundary layer, *J. Fluid Mech.*, 557, 145-165., (Journal Article) [More Details](#), [Request PDF](#)
- J. Wang and D.D. Joseph, 2006, Boundary layer analysis for effects of viscosity of the irrotational flow on the flow induced by a rapidly rotating cylinder in a uniform stream, *J. Fluid Mech.*, 557, 167-190., (Journal Article) [More Details](#), [Request PDF](#)
- J. Wang and D.D. Joseph, 2006, Purely irrotational theories of the effect of the viscosity on the decay of free gravity waves, *J. Fluid Mech.*, 559, 461-472., (Journal Article) [More Details](#), [Request PDF](#)
- T. Ko, N.A. Patankar, D.D. Joseph, 2006, Lift and multiple equilibrium positions of a single particle in Newtonian and Oldroyd-B fluids, *Computers and Fluids*, 35, 121-146., (Journal Article) [More Details](#)
- T. Funada, J. Wang and D. D. Joseph, 2006, Viscous potential flow analysis of stress-induced cavitation in an aperture flow, *Atomization and Sprays*, Issue 7, vol.16, pp. xx-yy., (Journal Article) [More Details](#), [Request PDF](#)
- D. D. Joseph, 2006, Potential Flow of Viscous Fluids: Historical Notes, *Int. J. Multiphase Flow*, 32, 285-310., (Journal Article) [More Details](#), [Request PDF](#)
- D. D. Joseph, 2006, Helmholtz decomposition coupling rotational to irrotational flow of a viscous fluid, *PNAS*, September 26, 2006 Vol. 103, No.39., 14272-14277., (Journal Article) [More Details](#), [Request PDF](#)
- T.W. Pan, D.D. Joseph & R. Glowinski, 2005, Simulating the dynamics of fluid-ellipsoid interactions, *Computers and Structures*, 463-478, (Journal Article) [More Details](#), [Request PDF](#)
- P. Singh and D.D. Joseph, 2005, Fluid dynamics of floating particles, *J. Fluid Mech.*, 530, 31-80, (Journal Article) [More Details](#), [Request PDF](#)
- J. Wang, D.D. Joseph and T. Funada, 2005, Purely irrotational theories of the effects of viscosity and viscoelasticity on capillary instability of a liquid cylinder, *J. Non-Newtonian Fluid Mech.*, 129, 106-116., (Journal Article) [More Details](#), [Request PDF](#)
- B.H. Yang, J. Wang, D.D. Joseph, H. Hu, T.W. Pan and R. Glowinski, 2005, Migration of a sphere in tube flow, *J. Fluid Mech.*, 540, 109-131., (Journal Article) [More Details](#), [Request PDF](#)
- F. Garcia, R. Garcia and D.D. Joseph, 2005, Composite power law holdup correlations in horizontal pipes, *Int. J. Multiphase Flow*, 31(12), 1276-1303., (Journal Article) [More Details](#), [Request PDF](#)
- F. Viana, T. Funada, D.D. Joseph, N. Tashiro and Y. Sonoda, 2005, Potential flow of a second-order fluid over a tri-axial ellipsoid, *J. App. Math.*, Issue 4, pp. 341-364., (Journal Article) [More Details](#), [Request PDF](#)
- T.W. Pan, R. Glowinski & D.D. Joseph, 2005, Simulating the dynamics of fluid-cylinder interactions, *J. of Zhejiang Univ. Science*, 6A(2), 97-109., (Journal Article) [More Details](#), [Request PDF](#)
- T. Funada, M. Saitoh, J. Wang and D. D. Joseph, 2005, Stability of a Liquid Jet into Incompressible Gases and Liquids: Part 2. Effects of the irrotational viscous pressure, *Int. J. Multiphase Flow*, 31, 1134-1154., (Journal Article) [More Details](#), [Request PDF](#)
- T. Hesla, D.D. Joseph, 2004, The maximum contact angle at the rim of a heavy floating disk, *J. Colloid and Interface Sci.*, 186-191, (Journal Article) [More Details](#), [Request PDF](#)
- S. Sanders, T. Ko, R. Bai, and D.D. Joseph, 2004, Factors governing friction losses in selflubricated transport of bitumen froth: 1. Water release, *Can. J. Chem. Eng.*, 735-742, (Journal Article) [More Details](#)

- J. Wang, R. Bai, C. Lewandowski, G.P. Galdi, and D.D. Joseph, 2004, Sedimentation of Cylindrical Particles in a Viscoelastic Liquid: Shape-Tilting., *China Particuology*, 13-18, (Journal Article) [More Details](#)
- J. Wang, R. Bai, and D.D. Joseph, 2004, Nanoparticle-laden tubeless and open siphons, *J. Fluid Mech.*, 335-348, (Journal Article) [More Details](#), [Request PDF](#)
- J. Wang, D.D. Joseph and T. Funada, 2004, Pressure corrections for potential flow analysis of capillary instability of viscous fluids, *J. Fluid Mech.*, 383-394, (Journal Article) [More Details](#), [Request PDF](#)
- D.D. Joseph, J. Wang, 2004, The dissipation approximation and viscous potential flow, *J. Fluid Mech.*, 365-377,, (Journal Article) [More Details](#), [Request PDF](#)
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- T. Funada, D.D. Joseph, T. Maehara and S. Yamashita, 2004, Ellipsoidal model of the rise of a Taylor bubble in a round tube, *Int. J. Multiphase Flow*, 31, 473-491., (Journal Article) [More Details](#), [Request PDF](#)
- J. Wang, R. Bai, C. Lewandowski, G.P. Galdi, and D.D. Joseph, 2004, Sedimentation of Cylindrical Particles in a Viscoelastic Liquid: Shape-Tilting, *China Particuology*, 2(1), 13-18., (Journal Article) [More Details](#)
- T. Min, J.Y. Yoo, H. Choi, D.D. Joseph, 2003, Drag reduction by polymer additives in a turbulent channel flow, *J. Fluid Mech.* 486, 213-238, (Journal Article) [More Details](#), [Request PDF](#)
- T. Funada and D.D. Joseph, 2003, Viscoelastic potential flow analysis of capillary instability, *J. Non-Newtonian Fluids*, 111, 87-105, (Journal Article) [More Details](#), [Request PDF](#)
- P. Singh, T.I. Hesla, D.D. Joseph, 2003, Distributed Lagrange multiplier method for particulate flows with collisions, *Int. J. Multiphase Flow*, 29(3), 495-509, (Journal Article) [More Details](#), [Request PDF](#)
- M.I. Briceño and D.D. Joseph, 2003, Self-lubricated transport of aqueous foams in horizontal conduits, *Int. J. Multiphase Flow*, 29(12), 1817-1831, (Journal Article) [More Details](#), [Request PDF](#)
- J. Wang, D.D. Joseph, N.A. Patankar, M. Conway and B. Barree, 2003, Bi-power law correlations for sedimentation transport in pressure driven channel flows, *Int. J. Multiphase Flow*, 29(3), (Journal Article) [More Details](#), [Request PDF](#)
- J. Wang, D.D. Joseph, 2003, Particle-laden tubeless siphon, *J. Fluid Mech.* 480, 119-128, (Journal Article) [More Details](#), [Request PDF](#)
- J. Wang and D.D. Joseph, 2003, Lift forces on a cylindrical particle in plane Poiseuille flow of shear thinning fluids, *Phys. Fluids.*, 18(8), 2267-2278, (Journal Article) [More Details](#), [Request PDF](#)
- F. Viana, R. Pardo, R. Yáñez, J.L. Trallero and D.D. Joseph, 2003, Universal correlation for the rise velocity of long gas bubbles in round pipes, *J. Fluid Mech.*, 494, 379-398, (Journal Article) [More Details](#), [Request PDF](#)
- D.D. Joseph, J. Wang, R. Bai, B.H. Yang and H. Hu, 2003, Particle motion in a liquid film rimming the inside of a partially filled rotating cylinder, *J. Fluid Mech.*, 496, 139-163, (Journal Article) [More Details](#), [Request PDF](#)
- D.D. Joseph, A.M. Kamp, T. Ko, R. Bai, 2003, Modeling foamy oil flow in porous media II: Nonlinear relaxation time model of nucleation, *Int. J. Multiphase Flow*, 29(9), 1489-1502, (Journal Article) [More Details](#), [Request PDF](#)
- D.D. Joseph, 2003, Rise velocity of spherical cap bubble, *J. Fluid Mech.*, 488, 213-233, (Journal Article) [More Details](#), [Request PDF](#)
- D.D. Joseph, 2003, Critical Remarks about flow charting., *Multiphase Science and Technology*, 12, (Journal Article) [More Details](#)

- C. Ortiz, D.D. Joseph, G. Beavers, 2003, Acceleration of a liquid drop suddenly exposed to a high speed air stream., *Int. J. Multiphase Flow.*, 217-224, (Journal Article) [More Details](#), [Request PDF](#)
- T.W. Pan, D.D. Joseph, R. Bai, R. Glowinski, V. Sarin, 2002, Fluidization of 1204 spheres: simulation and experiment, *J. Fluid Mech.*, 451, 169-191, (Journal Article) [More Details](#), [Request PDF](#)
- T. Ko, H. G. Choi, R. Bai and D.D. Joseph, 2002, Finite element method simulation of turbulent wavy core-annular flows using a k-<sub>t</sub> turbulence model method, *Int. J. Multiphase Flow*, 28(7), (Journal Article) [More Details](#), [Request PDF](#)
- T. Funada, D.D. Joseph, 2002, Viscous potential flow analysis of capillary instability, *Int. J. Multiphase Flow*, 28(9), 1459-1478, (Journal Article) [More Details](#), [Request PDF](#)
- N.A. Patankar, D.D. Joseph, J. Wang, R. Barree, M. Conway, M. Asadi, 2002, Power law correlations for sediment transport in pressure driven channel flows, *Int. J. Multiphase Flow*, 28(8), (Journal Article) [More Details](#), [Request PDF](#)
- D.D. Joseph, G.S. Beavers, T. Funada, 2002, Rayleigh-Taylor instability of viscoelastic drops at high Weber numbers, *J. Fluid Mech.*, 453, 109-132, (Journal Article) [More Details](#), [Request PDF](#)
- D.D. Joseph, D. Ocando, 2002, Slip velocity and lift, *J. Fluid Mech.*, 454, 263-286, (Journal Article) [More Details](#), [Request PDF](#)
- D.D. Joseph, A.M. Kamp, R. Bai, 2002, Foamy Oil Flow in Porous Media, *IMA Volumes in Mathematics and its Applications*, Volume 131: Resource Recovery, Confinement, (Journal Article) [More Details](#), [Request PDF](#)
- D.D. Joseph, A.M. Kamp, R. Bai, 2002, Modeling Foamy Oil Flow in Porous Media, *Int. J. Multiphase Flow*, 28(10), 1659-1686, (Journal Article) [More Details](#), [Request PDF](#)
- C. Mata, E. Pereyra, J.L. Trallero, and D.D. Joseph, 2002, Stability of stratified gas-liquid flows, *Int. J. Multiphase Flow*, 28(8), 1249-1268, (Journal Article) [More Details](#), [Request PDF](#)
- T. Funada, D.D. Joseph, 2001, Viscous potential flow analysis of Kelvin-Helmholtz instability in a channel, *J. Fluid Mech.*, 445, 263-283, (Journal Article) [More Details](#), [Request PDF](#)
- N.A. Patankar, T. Ko, H.G. Choi, D.D. Joseph, 2001, A correlation for the lift-off of many particles in plane Poiseuille flows of Newtonian fluids, *J. Fluid Mech.*, 445, 55-76, (Journal Article) [More Details](#), [Request PDF](#)
- N.A. Patankar, P.Y. Huang, T. Ko, D.D. Joseph, 2001, Lift-off of a single particle in Newtonian and viscoelastic fluids by direct numerical simulation, *J. Fluid Mech.*, 438, 67-100, (Journal Article) [More Details](#), [Request PDF](#)
- N.A. Patankar, D.D. Joseph, 2001, Lagrangian numerical simulation of particulate flows, *Int. J. Multiphase Flow*, 27(10), 1685-1706, (Journal Article) [More Details](#), [Request PDF](#)
- N.A. Patankar, D.D. Joseph, 2001, Modeling and numerical simulation of particulate flows by the Eulerian-Lagrangian approach, *Int. J. Multiphase Flow*, 27(10), 1659-1684, (Journal Article) [More Details](#), [Request PDF](#)
- H.G. Choi, D.D. Joseph, 2001, Fluidization by lift of 300 circular particles in plane Poiseuille flow by direct numerical simulation, *J. Fluid Mech.*, 438, 101-128, (Journal Article) [More Details](#), [Request PDF](#)
- A. Pereira, G. McGrath, D.D. Joseph, 2001, Flow and stress induced cavitation in a journal bearing with axial throughput, *J. Tribology*, 123, 742-754, (Journal Article) [More Details](#), [Request PDF](#)
- T. Hall, D.D. Joseph, 2000, Rotating cylinder drag balance with application to riblets, *Experiments in Fluids*, 29(3), 215-227, (Journal Article) [More Details](#), [Request PDF](#)
- R. Glowinski, T.W. Pan, D.D. Joseph, 2000, Fictitious domain methods for particulate flow in two and three dimensions, *The Mathematics of Finite Elements and Applications X*, (Journal Article) [More Details](#), [Request PDF](#)

- R. Bai, D.D. Joseph, 2000, Steady flow and interfacial shapes of a highly viscous dispersed phase, *Int. J. Multiphase Flow*, 26, 1469-1491, (Journal Article) [More Details](#), [Request PDF](#)
- P.Y. Huang, D.D. Joseph, 2000, Effects of shear thinning on migration of neutrally buoyant particles in pressure driven flow of Newtonian and viscoelastic fluids, *J. No*, (Journal Article) [More Details](#), [Request PDF](#)
- P. Singh, D.D. Joseph, T.I. Hesla, R. Glowinski, T.W. Pan, 2000, A distributed Lagrange multiplier/fictitious domain method for viscoelastic particulate flows, *J. Non-Newtonian Fluid Me*, (Journal Article) [More Details](#), [Request PDF](#)
- P. Singh, D.D. Joseph, 2000, Sedimentation of a sphere near a wall in an Oldroyd-B fluid, *J. Non-Newtonian Fluid Mech.*, 94(2-3), 179-203, (Journal Article) [More Details](#), [Request PDF](#)
- N.A. Patankar, P. Singh, D.D. Joseph, R. Glowinski, T.-W. Pan, 2000, A new formulation of the distributed Lagrange multiplier/fictitious domain method for particulate flows, *Int. J. Mul*, (Journal Article) [More Details](#), [Request PDF](#)
- R. Glowinski, T.-W. Pan, T.I. Hesla, D.D. Joseph, 1999, A distributed Lagrange multiplier/fictitious domain method for particulate flows, *Int. J. Multiphase Flow*, 25(5), 755-794, (Journal Article) [More Details](#), [Request PDF](#)
- H.H. Hu, D.D. Joseph, 1999, Lift on a sphere near a plane wall in a second-order fluid, *J. Non-Newtonian Fluid Mech.*, 88, 173-184, (Journal Article) [More Details](#), [Request PDF](#)
- D.D. Joseph, R. Bai, C. Mata, K. Sury, C. Grant, 1999, Self-lubricated transport of bitumen froth, *J. Fluid Mech.*, 386, 127-148, (Journal Article) [More Details](#), [Request PDF](#)
- D.D. Joseph, J. Belanger, G.S. Beavers, 1999, Breakup of a liquid drop suddenly exposed to a high-speed airstream, *Int. J. Multiphase Flow*, 25, 1263-1303, (Journal Article) [More Details](#), [Request PDF](#)
- C. Mata, D.D. Joseph, 1999, Foam control using a fluidized bed of hydrophobic particles, *Int. J. Multiphase Flow*, 25, 63-85, (Journal Article) [More Details](#), [Request PDF](#)
- R. Glowinski, T.-W. Pan, T.I. Hesla, D.D. Joseph, J. Periaux, 1998, A fictitious domain method with distributed Lagrange multipliers for the numerical simulation of particulate flow, *Co*, (Journal Article) [More Details](#), [Request PDF](#)
- P.Y. Huang, H.H. Hu, D.D. Joseph, 1998, Direct simulation of the sedimentation of elliptic particles in Oldroyd-B fluids, *J. Fluid Mech.*, 362, 297-325, (Journal Article) [More Details](#), [Request PDF](#)
- M. Cloitre, T. Hall, C. Mata, D.D. Joseph, 1998, Delayed-die swell and sedimentation of elongated particles in wormlike micellar solutions, *J. Non-Newtonian Fluid Mech.*, 79, 157- 171, (Journal Article) [More Details](#), [Request PDF](#)
- J. Guitian, D.D. Joseph, 1998, How bubbly mixtures foam and foam control using a fluidized bed, *Int. J. Multiphase Flow*, 24(1), 1-16, (Journal Article) [More Details](#), [Request PDF](#)
- G.A. Nunez, H.J. Rivas, D.D. Joseph, 1998, Drive to produce heavy crude prompts variety of transportation methods, *Oil & Gas Journal*, 59-68,, (Journal Article) [More Details](#)
- D.D. Joseph, 1998, Cavitation and the state of stress in a flowing liquid, *J. Fluid Mech.*, 366, 367-378, (Journal Article) [More Details](#), [Request PDF](#)
- T.Y. Liao, D.D. Joseph, 1997, Sidewall effects in the smoothing of an initial discontinuity of concentration, *J. Fluid Mech.*, 342, 37-51, (Journal Article) [More Details](#), [Request PDF](#)
- P.Y. Huang, J. Feng, H.H. Hu, D.D. Joseph, 1997, Direct simulation of the motion of solid particles in Couette and Poiseuille flows of viscoelastic fluids, *J. Fluid Mech.*, 343, 73-94, (Journal Article) [More Details](#), [Request PDF](#)
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- D.D. Joseph, 1997, Technical Forum-Questions in fluid mechanics: Understanding foams and foaming, *J. Fluids Engineering*, 119, 497-498, (Journal Article) [More Details](#), [Request PDF](#)
- D.D. Joseph, 1997, Lubricated pipelining, *Powder Technology*, 94, 211-215, (Journal Article) [More Details](#), [Request PDF](#)
- Joseph, D.D., A. Huang, and G.V. Candler, 1996, Vaporization of a Liquid Drop Suddenly Exposed to a High-Speed Airstream, *Journal of Fluid Mechanics*, Vol. 318, pp. 223-236, July 10,, (Journal Article) [More Details](#), [Request PDF](#)
- R. Bai, K. Kelkar, D.D. Joseph, 1996, Direct simulation of interfacial waves in a highviscosity-ratio and axisymmetric core-annular flow, *J. Fluid Mech.*, 327, 1-34, (Journal Article) [More Details](#), [Request PDF](#)
- M.S. Arney, G.S. Ribeiro, E. Guevara, R. Bai, D.D. Joseph, 1996, Cement-lined pipes for water lubricated transport of heavy oil, *Int. J. Multiphase Flow*, 22(2), 207-221, (Journal Article) [More Details](#)
- J. Feng, P.Y. Huang, D.D. Joseph, 1996, Dynamic simulation of sedimentation of solid particles in an Oldroyd-B fluid, *J. Non-Newtonian Fluid Mech.*, 63, 63-88, (Journal Article) [More Details](#), [Request PDF](#)
- J. Feng, D.D. Joseph, 1996, The motion of a solid sphere suspended by a Newtonian or viscoelastic jet, *J. Fluid Mech.*, 315, 367-385, (Journal Article) [More Details](#)
- J. Feng, D.D. Joseph, 1996, The motion of solid particles suspended in viscoelastic liquids under torsional shear, *J. Fluid Mech.*, 324, (Journal Article) [More Details](#)
- G.A. Nunez, M. Briceno, C. Mata, H. Rivas, D.D. Joseph, 1996, Flow characteristics of concentrated emulsions of very viscous oil in water, *J. Rheol.*, 40(3), 405-423, (Journal Article) [More Details](#), [Request PDF](#)
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- D.D. Joseph, A.C. Bannwart, Y.J. Liu, 1996, Stability of annular flow and slugging, *Int. J. Multiphase Flow*, 22(6), 1247-1254, (Journal Article) [More Details](#), [Request PDF](#)
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- Y.J. Liu, T.Y. Liao, D.D. Joseph, 1995, A two-dimensional cusp at the trailing edge of an air bubble rising in a viscoelastic liquid, *J. Fluid Mech.*, 304, 321-342, (Journal Article) [More Details](#)
- P. Singh, D.D. Joseph, 1995, Dynamics of fluidized suspensions of spheres of finite size, *Int. J. Multiphase Flow*, 21(1), 1-26, (Journal Article) [More Details](#)
- M. Poletto, R. Bai, D.D. Joseph, 1995, Propagation of voidage waves in a twodimensional liquid-fluidized bed, *Int. J. Multiphase Flow*, 21(2), 223-239, (Journal Article) [More Details](#)
- M. Poletto, D.D. Joseph, 1995, Effective density and viscosity of a suspension, *J. Rheol.*, 39(2), 323-343, (Journal Article) [More Details](#), [Request PDF](#)
- J.J. Nelson, A.E. Alving, D.D. Joseph, 1995, Boundary layer flow of air over water on a flat plate, *J. Fluid Mech.*, 284, 159-169, (Journal Article) [More Details](#)
- J. Feng, P.Y. Huang, D.D. Joseph, 1995, Dynamic simulation of the motion of capsules in pipelines, *J. Fluid Mech.*, 286, 201-227, (Journal Article) [More Details](#)
- J. Feng, D.D. Joseph, 1995, The unsteady motion of solid bodies in creeping flows, *J. Fluid Mech.*, 303, 83-102, (Journal Article) [More Details](#)
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