

Bibliography

- [1] HILL, J. W.; PETRUCCI, R. H.; MCCREARY, T. W. ; PERRY, S. S..
General Chemistry. Prentice Hall, New Jersey, fourth edition, 2005.
I.1
- [2] ATKINS, P.; DE PAULA, J.. **Physical Chemistry**. Oxford University Press, Inc., Oxford, seventh edition, 2002. I.1
- [3] GURNETT, D. A.; BHATTACHARJEE, A.. **Introduction to Plasma Physics: with Space and Laboratory Applications**. Cambridge University Press, 2005. I.1
- [4] MARON, S. H.; LANDO, J. B.. **Fundamentals of Physical Chemistry**. Macmillan, New York, 1974. I.1
- [5] BARKER, J. A.; HENDERSON, D.. **What is “liquid”? understanding the states of matter**. Reviews of Modern Physics, 48(4):587–671, 1976.
I.1
- [6] BIRD, R. B.; ARMSTRONG, R. C. ; HASSAGER, O.. **Dynamics of Polymeric Liquids**, volumen 1. John Wiley & Sons, New York, second edition, 1987. I.1, II.2(c), III.2(b), IV.2(b)
- [7] LARSON, R. G.. **The Structure and Rheology of Complex Fluids**. Oxford University Press, Inc., New York, 1999. I.1
- [8] FAWCETT, W. R.. **Liquids, Solutions, and Interfaces – From Classical Macroscopic Descriptions to Modern Microscopic Details**. Oxford University Press, Inc., New York, 2004. I.1
- [9] MARCH, N. H.; TOSI, M. P.. **Introduction to Liquid State Physics**. World Scientific Publishing Co. Pte. Ltd., Singapore, 2002. I.1
- [10] ROSENBERG, R. M.. **Principles of Physical Chemistry**. Oxford University Press, Inc., New York, 1977. I.1
- [11] KOTZ, J. C.; TREICHEL, P.. **Chemistry and Chemical Reactivity**. Saunders College Publishing, third edition, 1996. I.1

- [12] FOX, R. W.; MCDONALD, A. T.. **Introduction to Fluid Mechanics**. J. Wiley and Sons, New York, fifth edition, 1998. I.1
- [13] JOHN, J. E. A.; HABERMAN, W. L.. **Introduction to Fluid Mechanics**. Prentice Hall, New Jersey, second edition, 1980. I.1
- [14] HANSEN, A. G.. **Fluid Mechanics**. J. Wiley and Sons, New York, 1967. I.1
- [15] MOORE, W. J.. **Physical Chemistry**. Prentice Hall, New Jersey, fourth edition, 1972. I.1
- [16] ONODERA, N.; SUGA, H. ; SEKI, S.. **Glass transition in dehydrated amorphous solid**. Bulletin of The Chemical Society of Japan, 41(9):2222–&, 1968. I.1
- [17] BEMBENEK, S. D.; LAIRD, B. B.. **The role of localization in glasses and supercooled liquids**. J. Chem Phys., 104(13):5199–5208, 1996. I.1
- [18] BARNES, H. A.; WALTERS, K.. **The yield stress myth?** Rheol. Acta, 24:323–326, 1985. I.2
- [19] HARTNETT, J. P.; HU, R. Y. Z.. **The yield stress – an engineering reality**. J. Rheol., 33(4):671–679, 1989. I.2
- [20] ASTARITA, G.. **The engineering reality of the yield stress**. J. Rheol., 34(2):275–277, 1990. I.2
- [21] BARNES, H. A.. **A brief history of the yield stress**. Appl. Rheology, 9:262–266, 1999. I.2, III.4(b), IV.3(b)
- [22] BARNES, H. A.. **The yield stress – a review or “ $\pi\alpha\nu\tau\alpha\ \rho\epsilon\iota$ ” – everything flows?** J. Non-Newt. Fluid Mech., 81:133–178, 1999. I.2, III.4(b), IV.3(b)
- [23] PIAU, J. M.. **Carbopolgels: Elastoviscoplastic and slippery glasses made of individual swollen sponges. Meso- and macroscopic properties, constitutive equations and scaling laws**. J. Non-Newt. Fluid Mech., 144:1–29, 2007. I.2, II.1
- [24] DE SOUZA MENDES, P. R.; DUTRA, E. S. S.. **Viscosity function for yield-stress liquids**. Applied Rheology, 14(6):296–302, 2004. I.3, I.3, II.2(b), II.2(b), III.1, III.2(a), III.2(a), III.6, IV.1, IV.2(a), IV.2(a), IV.5, V.2(a), V.2(a), V.4

- [25] DE SOUZA MENDES, P. R.. **Dimensionless non-Newtonian fluid mechanics**. J. Non-Newt. Fluid Mech., 147(1-2):109–116, November 2007. I.3, II.2(b), III.2(a), IV.2(a), V.2(a), V.3(a)
- [26] DE SOUZA MENDES, P. R.; DUTRA, E. S. S.; SIFFERT, J. R. R. ; NACCACHE, M. F.. **Gas displacement of viscoplastic liquids in capillary tubes**. J. Non-Newtonian Fluid Mechanics, 145(1):30–40, 2007. I.3, III.2(a), IV.4(a), IV.5
- [27] DE SOUZA MENDES, P. R.; NACCACHE, M. F.; VARGES, P. R. ; MARCHESINI, F. H.. **Flow of viscoplastic liquids through axisymmetric expansions-contractions**. J. Non-Newtonian Fluid Mech., 142(1-3):207–217, March 2007. I.3, III.2(a)
- [28] BERCOVIER, M.; ENGELMAN, M.. **A finite-element method for incompressible non-Newtonian flows**. J. Computat. Phys., 36:313–326, 1980. I.3, III.1
- [29] PAPANASTASIOU, T. C.. **Flows of materials with yield**. J. Rheology, 31:385–404, 1987. I.3, III.1
- [30] VAUTHEY, S.; MILO, C.; FROSSARD, P.; GARTI, N.; LESER, M. E. ; WATZKE, H. J.. **Structured fluids as microreactors for flavor formation by the maillard reaction**. J. Agric. Food Chem., 48:4808–4816, 2000. II.1
- [31] CURRAN, S. J.; HAYES, R. E.; AFACAN, A.; WILLIAMS, M. C. ; TANGUY, P. A.. **Properties of carbopol solutions as models for yield-stress fluids**. J. Food Sci., 67(1):176–180, 2002. II.1
- [32] TAYLOR, N. W.; BAGLEY, E. B.. **Dispersions or solutions? a mechanism for certain thickening agents**. J. Appl. Polym. Sci., 18:2747–2761, 1974. II.1
- [33] BARNES, H. A.. **A review of the slip (wall depletion) of polymer solutions, emulsions and particle suspensions in viscometers: its cause, character, and cure**. J. Non-Newtonian Fluid Mech., 56:221–251, 1995. II.1
- [34] KALYON, D. M.; YARAS, P.; ARAL, B. ; YILMAZER, U.. **Rheological behavior of a concentrated suspension: A solid rocket fuel simulant**. J. Rheol., 37(1):35–53, January/February 1993. II.1

- [35] NICKERSON, C. S.; KORNFIELD, J. A.. A “cleat” geometry for suppressing wall slip. *J. Rheol.*, 49(4):865–874, July/August 2005. II.1
- [36] NGUYEN, Q. D.; BOGER, D. V.. Yield stress measurements for concentrated suspensions. *J. Rheol.*, 27(4):321–349, 1983. II.1
- [37] NGUYEN, Q. D.; BOGER, D. V.. Direct yield stress measurement with the vane method. *J. Rheol.*, 29(3):335–347, 1985. II.1
- [38] BARNES, H. A.; CARNALI, J. O.. The vane-in-cup as a novel rheometer geometry for shear thinning and thixotropic materials. *J. Rheol.*, 34(6):841–866, August 1990. II.1
- [39] LIDDELL, P. V.; BOGER, D. V.. Yield stress measurements with the vane. *J. Non-Newtonian Fluid Mech.*, 63:235–261, 1996. II.1
- [40] BARNES, H. A.; NGUYEN, Q. D.. Rotating vane rheometry — a review. *J. Non-Newtonian Fluid Mech.*, 98:1–14, 2001. II.1
- [41] STOKES, J.; TELFORD, J.. Measuring the yield behaviour of structured fluids. *J. Non-Newtonian Fluid Mech.*, 124:137–146, 2004. II.1
- [42] BUSCALL, R.; MCGOWAN, J. I. ; MORTON-JONES, A. J.. The rheology of concentrated dispersions of weakly attracting colloidal particles with and without wall slip. *J. Rheol.*, 37(4):621–641, July/August 1993. II.1, II.6
- [43] BARNES, H. A.. Measuring the viscosity of large-particle (and flocculated) suspensions — a note on the necessary gap size of rotational viscometers. *J. Non-Newtonian Fluid Mech.*, 94:213–217, 2000. II.1
- [44] DONTULA, P.; MACOSKO, C. W. ; SCRIVEN, L. E.. Origins of concentric cylinders viscometry. *J. Rheol.*, 49(4):807–818, July/August 2005. II.2(a)
- [45] DONTULA, P.; MACOSKO, C. W. ; SCRIVEN, L. E.. Letter to the editor: Comment on “origin of concentric cylinder viscometry” [*j. rheol.* 49, 807-818 (2005)]. the relevance of the early days of viscosity, slip at the wall, and stability in concentric cylinder viscometry - authors’ response. *J. Rheol.*, 49:1551–1551, November/December 2005. II.2(a)

- [46] COUETTE, M.. **On a new apparatus for the study of friction of fluids.** *Compt. Rend.*, 107:338–390, 1888. II.2(a)
- [47] PIAU, J.-M.; PIAU, M.. **Letter to the editor: Comment on “origin of concentric cylinder viscometry”** [*j. rheol.* 49, 807–818 (2005)]. **the relevance of the early days of viscosity, slip at the wall, and stability in concentric cylinder viscometry.** *J. Rheol.*, 49(5):1539–1550, November/December 2005. II.2(a)
- [48] Ansys. **Fluent Users Guide**, 2008. II.4, V.2(a), V.2(a), V.4
- [49] PIAU, J. M.. **Flow of a yield stress fluid in a long domain. Application to flow on an inclined plane.** *J. Rheology*, 40:711–723, 1996. III.1
- [50] LIPSCOMB, G. G.; DENN, M. M.. **Flow of Bingham fluids in complex geometries.** *J. Non-Newtonian Fluid Mechanics*, 14:337–346, 1984. III.1
- [51] DENN, M. M.. In: Adams, M.; Mashelkar, R.; Pearson, J. ; Rennie (Eds.), A., editors, **DYNAMICS OF COMPLEX FLUIDS**, p. 372–378, London, 1998. Imperial College Press. III.1
- [52] BURGOS, G.; ALEXANDROU, A. ; ENTOV, V.. **On the determination of yield surfaces in Herschel–Bulkley fluids.** *J. Rheol.*, 43(3):463–483, 1999. III.1
- [53] MITSOULIS, E.; MATSOUKAS, A.. **Free surface effects in squeeze flow of Bingham plastics.** *J. Non-Newtonian Fluid Mech.*, 129:182–187, 2005. III.1
- [54] LIU, B. T.; MULLER, S. J. ; DENN, M. M.. **Convergence of a regularization method for creeping flow of a Bingham material about a rigid sphere.** *J. Non-Newtonian Fluid Mech.*, 102:179–191, 2002. III.1, III.5(b)
- [55] SOARES, E. J.; NACCACHE, M. F. ; DE SOUZA MENDES, P. R.. **Heat transfer to viscoplastic liquids flowing laminarly in the entrance region of tubes.** *Int. J. Heat Fluid Flow*, 20:60–67, 1999. III.1
- [56] BEVERLY, C. R.; TANNER, R. I.. **Numerical analysis of three-dimensional Bingham plastic flow.** *J. Non-Newtonian Fluid Mechanics*, 42:85–115, 1992. III.1

- [57] AL KHATIB, M. A.; WILSON, S. D. R.. **The development of Poiseuille flow of a yield-stress fluid.** J. Non-Newtonian Fluid Mechanics, 100:1–8, 2001. III.1
- [58] AL KHATIB, M. A.; WILSON, S. D. R.. **Flow of Bingham fluids in an orthogonal rheometer.** Int. J. Engng. Sci., 63:621–632, 2003. III.1
- [59] ALEXANDROU, A. N.; MCGILVREAY, T. M. ; BURGOS, G.. **Steady Herschel-Bulkley fluid flow in three-dimensional expansions.** J. Non-Newtonian Fluid Mech., 100:77–96, 2001. III.1
- [60] VRADIS, G. C.; ÖTÜGEN, M. V.. **The axisymmetric sudden expansion flow of a non-Newtonian viscoplastic fluid.** J. Fluids Engineering, 110:193–200, 1997. III.1
- [61] JAY, P.; MAGNIN, A. ; PIAU, J. M.. **Viscoplastic fluid flow through a sudden axisymmetric expansion.** AIChE Journal, 47(10):2155 – 2166, 2001. III.1
- [62] PATANKAR, S. V.. **Numerical heat transfer and fluid flow.** Hemisphere Publishing Corporation, New York, 1980. III.3, V.4
- [63] SETTARI, A.; AZIZ, K.. **A generalization of the additive correction methods for the iterative solution of matrix equations.** SIAM J.Num. Anal., 10:506–521, 1973. III.3
- [64] TSAI, T. M.; MIKSYS, M. J.. **Dynamics of a drop in a constricted capillary tube.** J. Fluid Mech., 292:197–217, 1994. IV.1
- [65] OLBRICHT, W. L.; KUNG, D. M.. **The deformation and breakup of liquid drops in low Reynolds number flow through a capillary.** Physics of Fluids A, 4(7):1347–1354, 1992. IV.1
- [66] MARTINEZ, M. J.; UDELL, K. S.. **Axisymmetric creeping motion of drops through circular tubes.** J. Fluid Mech., 210:565–591, 1990. IV.1
- [67] WESTBORG, H.; HASSAGER, O.. **Creeping motion of long bubbles and drops in capillary tubes.** J. Colloid and Interface Sci., 133(1):135–147, 1989. IV.1
- [68] OLBRICHT, W. L.. **Pore-scale prototypes of multiphase flow in porous media.** Annual Review of Fluid Mechanics, 28:187–213, 1996. IV.1, IV.4(b)

- [69] STARK, J.; MANGA, M.. **The motion of long bubbles in a network of tubes.** *Transport in Porous Media*, 40:201–218, 2000. IV.1
- [70] FAIRBROTHER, F.; STUBBS, A. E.. **Studies in electroendosmosis. Part VI. The bubble-tube methods of measurement.** *J. Chem. Soc.*, 1:527–529, 1935. IV.1
- [71] TAYLOR, G. I.. **Deposition of a viscous fluid on the wall of a tube.** *J. Fluid Mech.*, 10:161–165, 1961. IV.1, IV.1, IV.4(b)
- [72] COX, B. G.. **On driving a viscous fluid out of a tube.** *J. Fluid Mech.*, 14:81–96, 1962. IV.1
- [73] BRETHERTON, F. P.. **The motion of long bubbles in tubes.** *J. Fluid Mech.*, 10:166–188, 1961. IV.1, IV.1
- [74] GIAVEDONI, M. D.; SAITA, F. A.. **The axisymmetric and plane cases of a gas phase steadily displacing a newtonian liquid: A simultaneous solution of the governing equations.** *Physics of Fluids*, 9:2420–2428, 1997. IV.1
- [75] LEE, A. G.; SHAQFEH, E. S. G. ; KHOMAMI, B.. **A study of viscoelastic free surface flows by the finite element method: Hele-shaw and slot coating flows.** *J. Non-Newt. Fluid Mech.*, 108:327–362, 2002. IV.1, IV.4(b)
- [76] QUINTELLA, E. F.; SOUZA MENDES, P. R. ; CARVALHO, M. S.. **Displacement flows of dilute polymer solutions in capillaries.** *J. non-Newtonian Fluid Mechanics*, (accepted), 2007. IV.1, IV.4(b)
- [77] GOLDSMITH, H. L.; MASON, S. G.. **The flow of suspensions through tubes.** *J. Colloid Sci.*, 18:237–261, 1963. IV.1
- [78] TELETZKE, G. F.; DAVIS, H. T. ; SCRIVEN, L. E.. **Wetting hydrodynamics.** *Revue de Physique Appliquée*, 23:989–1007, 1988. IV.1
- [79] ALLOUCHE, M.; FRIGAARD, I. A. ; SONA, G.. **Static wall layers in the displacement of two visco-plastic fluids in a plane channel.** *J. Fluid Mech.*, 424:243–277, 2000. IV.1
- [80] GABARD, C.. **Déplacements de fluides miscibles non-newtoniens en conduite cylindrique verticale.** Tese de Doutorado, Université Paris VI, 2001. IV.1

- [81] GABARD, C.; HULIN, J.-P.. Miscible displacement of non-newtonian fluids in a vertical tube. *Eur. Phys. J. E*, 11:231–241, 2003. IV.1, IV.4(b)
- [82] SOARES, E. J.; CARVALHO, M. S. ; DE SOUZA MENDES, P. R.. Immiscible liquid-liquid displacement in capillary tubes. *Journal of Fluids Engineering*, 127(1):24–31, 2005. IV.1, V.3(a)
- [83] ALEXANDROU, A. N.; ENTOV, V. M.. On the steady-state advancement of fingers and bubbles in a Hele-Shaw cell filled by a non-Newtonian fluid. *Euro. Jnl of Applied Mathematics*, 8:73–87, 1997. IV.1
- [84] ALEXANDROU, A. N.; ENTOV, V. M.; KOLGANOV, S. S. ; KOLGANOVA, N. V.. On bubble rising in a Hele-Shaw cell filled with a non-Newtonian fluid. *Euro. Jnl of Applied Mathematics*, 15:315–327, 2004. IV.1
- [85] LINDNER, A.; COUSSOT, P. ; BONN, D.. Viscous fingering in a yield stress fluid. *Phys. Rev. Lett.*, 85(2):314–317, July 2000. IV.1
- [86] DIMAKOPOULOS, Y.; TSAMOPOULOS, J.. Transient displacement of a viscoplastic material by air in straight and suddenly constricted tubes. *J. Non-Newtonian Fluid Mech.*, 112:43–75, 2003. IV.1
- [87] SOARES, E. J.; CARVALHO, M. S. ; DE SOUZA MENDES, P. R.. Gas-displacement of non-newtonian liquids in capillary tubes. *Int. J. Heat Fluid Flow*, 27(1):95–104, 2006. IV.4(b)
- [88] HAUT, R. C.; CROOK, R. J.. Primary cementing: The mud displacement process. *SPE*, (8253), September 1979. V.1
- [89] HAUT, R. C.; CROOK, R. J.. Laboratory investigation of lightweight, low-viscosity cementing spacer fluids. *J. Petroleum Tech.*, p. 1828–1834, August 1982. V.1
- [90] SAUER, C. W.. Mud displacement during cementing: A state of art. *J. Petroleum Tech.*, p. 1091–1101, September 1987. V.1
- [91] LOCKYEAR, C. F.; HIBBERT, A. P.. Integrated primary cementing study defines key factors for field success. *J. Petroleum Tech.*, 41(12):1320–1325, December 1989. V.1

- [92] JAKOBSEN, J.; STERRI, N.; SAASEN, A.; AAS, B.; KJOSNES, I. ; VIGEN, A.. Displacement in eccentric annuli during primary cementing in deviated wells. SPE, (21686), April 1991. V.1
- [93] TEHRANI, A.; FERGUSON, J. ; BITTLESTON, S. H.. Laminar displacement in annuli: A combined experimental and theoretical study. SPE, (24569), October 1992. V.1
- [94] VEFRING, E. H.; BJORKEVOLL, K. S.; HANSEN, S. A.; STERRI, N.; SAEVAREID, O.; AAS, B. ; MERLO, A.. Optimization of displacement efficiency during primary cementing. SPE, (39009), August 1997. V.1
- [95] FRIGAARD, I. A.; BITTLESTON, S. H. ; FERGUSON, J.. Mud removal and cement placement during primary cementing of an oil well. SPE, 2002. V.1
- [96] FRIGAARD, I. A.; PELIPENKO, S.. Effective and ineffective strategies for mud removal and cement slurry design. SPE, (80999), 2003. V.1
- [97] GUILLOT, D.; COUTURIER, M.; HENDRIKS, H. ; CALLET, F.. Design rules and associated spacer properties for optimal mud removal in eccentric annuli. SPE, (21594), June 1990. V.1
- [98] DUTRA, E. S. S.; NACCACHE, M. F.; MENDES, P. R. S.; SOUTO, A. A. O.; MARTINS, A. L. ; MIRANDA, C. R.. Analysis of interface between newtonian and non-newtonian fluids inside annular eccentric tubes. ASME/IMECE, (59335), 2004. V.1
- [99] DUTRA, E. S. S.. Deslocamentos de líquidos não newtonianos em tubos anulares excêntricos. Dissertação de Mestrado, PUC-Rio, 2005. V.3(b), V.7
- [100] HIRT, C. W.; NICHOLS, B. D.. Volume of fluid (vof) method for the dynamics of free boundaries. J. Comp. Phys., 39:204–225, 1981. V.4
- [101] American Petroleum Institute. Recommended Practice for Testing Well Cements., Addendum 2, 1997. V.5(b)