

## Bibliografia

- [1] M. Paris de Ferrer. *Inyección de agua y gas en yacimientos petrolíferos*. Maracaibo, Venezuela, 2º edition, 2001.
- [2] P. Janssen. *Characterization of Oil in Water Mixtures Produced in High-Watercut Oil Wells*. PhD thesis, Delft University of Technology, June 2000.
- [3] M.J. Vanden Zande e W.M.G.T. Van den Broek. The effects of productions rate and choke size on emulsion stability. *INGEPET*, 1999.
- [4] Sunil Kokal e Jamal Al-Juraid. Quantification of various factors affecting emulsion stability: Watercut, temperature, shear, asphaltene content, demulsifier dosagem and mixing different crudes. *SPE*, 56641, 1999.
- [5] D. Cuthiell et.al. The in situ formation of heavy oil emulsions. *SPE*, 30319:675–688, 1995.
- [6] F. P. Nilsen e P.E. Gramme G.A Davies. The formattions of stable dispersions of crude and oil and produced water: The influence of oil type, wax and asphaltene content. *Proceedings of the SPE Annual Technical Conference and exhibition in Denver*, pages 163–171, 1996.
- [7] C. Noik et.al. Characterization and emulsion behaviour of athabasca extra-heavy-oil produced. *SPE/PS-CIM/CHOA 97748*, PS2005-34:675–688, 2005.
- [8] M.A. Sarbar e M.D. Wingrove. Physical and chemical characterization of saudi arabian crude oil emulsions. *SPE*, 38817:675–685, 1997.
- [9] W.M.G.T van den Broek e C.K. Harris P.H. Janssen. Laboratory study investigation emulsion formation in the near wellbore region of a high water-cut oil well. *SPE Journal*, March 2001:71–79, 2001.
- [10] J. Sjöblom et al. Our current understanding of water-in-crude oil emulsions: Recent characterization techniques and high pressure performance. *Advances in Colloid and Interface Science*, 100 a 102:399–473, 2003.

- [11] H. Soo e C. Radke. The flow of dilute, stable emulsions in porous media. *Industrial Engineering Chemical Fundamental*, 23:342–347, 1984.
- [12] W.L. Trindade e C.C. Branco. The offshore heavy oil development challenges in brazil. *SPE*, 97381, 2005.
- [13] E. Dendy Sloan Jr. The formattions of stable dispersions of crude and oil and produced water: The influence of oil type, wax and asphaltene content. *NATURE — VOL — 20*, 426, 2003.
- [14] L.C. Bianco ; A.D.Gabrysch e J.N. Montagna. Challenges on completion for productivity for deelep water heavy oils. *SPE*, 98342, 2006.
- [15] M. Dong e S.Ma Q.Liu. Alkaline/surfactant flood potential in western canadian heavy oil reservoirs. *SPE*, 99791, 2006.
- [16] J.L. Salager. *Emulsionación. Cuaderno FIRP 232*. Laboratorio de Fenómenos Interfaciales y Recuperación de Petróleo. Universidad de los Andes, Mérida, Venezuela, 1993.
- [17] Q.Liu et.al. Synergy of alkali and surfactant in emulsification of heavy oil brine. *Colloid and Surface A:Physicochemical Engineering Aspects*, 273:219–228, 2006.
- [18] Paul Becher. *Emulsions: Theory and Practice*. Oxford University Press, 3rd edition, 2001.
- [19] J.L. Salager. *Coloides. Cuaderno FIRP 130*. Laboratorio de Fenómenos Interfaciales y Recuperación de Petróleo. Universidad de los Andes, Mérida, Venezuela, 1994.
- [20] J.L. Salager. *Surfactante en Solución Acuosa. Cuaderno FIRP 201*. Laboratorio de Fenómenos Interfaciales y Recuperación de Petróleo. Universidad de los Andes, Mérida, Venezuela, 1993.
- [21] Sunil Kokal. Crude-oil emulsions: A state-of-the-art review. *SPE*, 77497, 2005.
- [22] D.R. Link et.al. Geometrically mediated breakup of drops in microfluidic devices. *Physical Review Letters*, 48(5), 2004.
- [23] T. Thorsen et.al. Dynamic pattern formation in a vescicle-generating microfluidic device. *Physical Review Letters*, 86(18):4163–4166, 2001.

- [24] T.J. Peña. Establecimiento de un modelo de caracterización de fracciones pesadas para crudos provenientes del norte de monagas. Trabajo especial de grado, Universidad Simón Bolívar, Caracas, Venezuela, 2003.
- [25] W.R. Rossen. A critical review of roof “snap-off” as a mechanism of steady state foam generation in homogeneous porous media. *Colloid and Surfaces A: Physicochemical Engineering Aspects*, 225:1–24, 2003.
- [26] P. A. Gauglitz et.al. Foam generation in homogeneous porous media. *Chemical Engineering Science*, 57:4037–4052, 2002.
- [27] W. L. Olbricht. Pore-scale prototypes of multiphase flow in porous media. *Annual Review in Fluid Mechanics*, 28:187–213, 1996.
- [28] J. Ratulowski e H.C. Chang. Snap off at strong constrictions: Effect of pore geometry. *American Chemical Society*, 14:282–294, 1988.
- [29] J.G. Roof. Snap-off of oil droplets in water-wet pores. *SPE*, 2504:85–90, 1983.
- [30] W.R. Rossen. Snap-off in constricted tubes and porous media. *Coll. Surf. A: Physicochem.Eng.Aspects*, 2000.
- [31] R. A. Bruijn. Tipstreaming of drops in simple shear flows. *Chemical Engineering Science*, 48(2):277–284, 1993.
- [32] T.M. Tsai e Kathleen J. Stebe C. D. Eggleton. Tip streaming from a drop in the presence of surfactants. *Physical Review Letters*, 87(4), 2001.
- [33] D. M. Kung W. L. Olbricht. The deformation and breakup of liquid drops in low reynolds number flow through a capillary. *Physical Fluids*, A4(7):1347, 1992.
- [34] Roger E. Khayat et.al. Influence of shear and elongation on drop deformation in convergent-divergent flows. *International Journal of Multiphase Flow*, 26:17–44, 2000.
- [35] M.J. Martinez e K.S. Udell. Axisymmetric creeping motion of drops through a periodically constricted tube. *AIP Con. Procedures*, 197:222–234, 1988.
- [36] W. L. Olbricht e L.G. Leal. The motion of droplets through a tube of periodically varying diameter. *Journal of Fluid Mechanics*, 134:329–55, 1983.

- [37] P. Sourieau e M. Combarous B. Legait. Inertia, viscosity and capillary forces during two-phase flow in a constricted capillary tube. *Journal of Colloid and Interface Science*, 91(2), 1983.
- [38] P. A. Gauglitz e C. J. Radke. The dynamics of liquid film break up in cylindrical constricted capillaries. *Journal of Colloid and Interface Science*, 134(1):14–40, 1989.
- [39] T.M. Tsai e M.J. Miksis. Dynamics of a drop in a constricted capillary-tube. *Journal of Fluid Mechanics*, 274:197–217, 1994.
- [40] Ch. D. Han e K. Funatsu. An experimental study of droplet deformation and breakup in pressure-driven flows through converging and uniform channels. *Journal of Rheology*, 22(2):113–133, 1978.
- [41] A. Al-Gramdhi e N.S Meeranpillai Sunil Kokal. An investigative study of potential emulsion problems before field development. *SPE*, 102856, 2006.
- [42] C.M.St. Laurent e C. J. Radke P. A. Gauglitz. Experimental determination of gass-bubble breakup in a constricted cylindrical capillary. *Industrial Engineering Chemical Resume*, 27:1282–1291, 1988.
- [43] Boger D.V. Cooper-White J.J. e McKinley G.H. Rodd L.E., Scott T.P. The inertio elastic planar entry flow of low viscosity elastic fluids in micro-fabricated geometries. *Hatsopoulos Microfluids Laboratory, Dept. of Mechanical Engineering, Massachusetts Institute of Technology*, HML Report Number 04-P-03:69–72, 2004.
- [44] S. Cobos. Experimental study of emulsion flow through a pore-throat capillary model. CIT06-0664, Curitiba, Brazil, 2006. ABCM.
- [45] T. Tsai. *Numerical Solution of Free Boundary Problem with Surface Tension at Low Reynolds Number, Operators*. PhD thesis, NorthWestern University, Department of Applied Mathematics, 1994.
- [46] B. C. Sendrea Camacho. Estudio de los parámetros físico-químicos y de flujo que afectan el desplazamiento de aceite y emulsiones a través de un sistema capilar modelo poro-cuello. Trabajo especial de grado, UCV/PDVSA-Intevep, 2002.
- [47] R.W. Fox e A.T. Mc Donald. *Introdução à Mecânica dos Fluidos*. John Wiley and Sons, Inc., 4<sup>o</sup> edition, 1998.

- [48] A. L. Ballardb e E. D. Sloan Jr. M. D. Jagera. The next generation of hydrate prediction ii: Dedicated aqueous phase fugacity model for hydrate prediction. *Fluid Phase Equilibria*, 211(1):85–107, August 2003.
- [49] J.L. Salager e R.A. de Salager. *Formulación. HBL, PIT y R de Winsor. Cuaderno FIRP 210*. Laboratorio de Fenómenos Interfaciales y Recuperación de Petróleo. Universidad de los Andes, Mérida, Venezuela, 1992.
- [50] J.L. Salager et al. Current phenomenological know-how and modeling of emulsions inversion. *Industrial Engineering Chemical Resumes*, 39:2665–2676, 2000.
- [51] C.M. Hernández; T.J. Peña e L.J. Chacón. Identificación de aditivos alternos para formulaciones asp para el lic la salina. Technical Report INT-7855,2000, PDVSA-Intevep, 2000.
- [52] R. G. Barroeta et al. Simulación física del proceso de estimulación con microorganismos a través de pruebas en medio poroso. Technical Report INT-7858,2000, PDVSA-Intevep, 2000.
- [53] J.L. Salager. *Emulsionación. Influencia de las variables de agitación, formulación y composición. Cuaderno FIRP 732*. Laboratorio de Fenómenos Interfaciales y Recuperación de Petróleo. Universidad de los Andes, Mérida, Venezuela, 1994.
- [54] J.L. Salager et al. Simultaneous conductivity and viscosity measurements as a technique to track emulsions inversion by the phase-inversion-temperature method. *Langmuir*, 20:2134–2140, 2004.
- [55] Joel Bertrand. *Generalidades sobre los aparatos de agitación mecánica. Cuaderno FIRP 410*. Laboratorio de Fenómenos Interfaciales y Recuperación de Petróleo. Universidad de los Andes, Mérida, Venezuela, 1993.
- [56] M.A.Busolo; C.M. Hernández e T.J. Peña. Mezclas asp y sus efectos en los fluidos de producción. estudios de emulsificación fuera de medio poroso. Technical Report INT-7631,2000, PDVSA-Intevep, 2000.
- [57] R. Kunert et al. Caracterização de emulsões geradas nas linhas de escoamento durante a produção de petróleo com injeção de água. In IBP, editor, *Rio Oil and Gas 2006 Expo and Conference*, page 123, Rio de Janeiro, Brazil, 2006. IBP.
- [58] A. H.Mohammadi et al. Gas hydrates in oil systems. *SPE*, 99437, 2006.

- [59] X. Bredzinsky e V. Beunat A. Sinquin. Kinetic of hydrates formation: Influence of crude oils. *SPE*, 71543:675–685, 2001.
- [60] C. Dalmazzone et al. Prediction of gas hydrates formation with dsc technique. *SPE*, 84315, 2003.
- [61] J.L. Salager et al. Surfactant-oil-water systems near the affinity inversion. xii. emulsion drop size versus formulation and composition. *Journal of Dispersion Science and Technology*, 23:55 63, 2002.
- [62] M. Ramirez et al. Drop size distribution bimodality and its effect on o=w emulsion viscosity. *Journal of Dispersion Science and Technology*, 23:309 321, 2002.
- [63] S. Ahn et al. Paraffin crystal and deposition control by emulsification. *SPE*, 93357, 2005.
- [64] P. Souza Mendes e F. H. Marchesini. A note on the reometry of viscoplastic liquids. In ABCM, editor, *III- Brazilian Conference on Reology*, pages 85–86. ABCM Comité de Reologia e Fluidos Não Newtonianos, Julho 2006.
- [65] F. H. Marchesini P. Souza Mendes e M. F. Naccache, P. R. Vargas. Flow of viscoplastic liquids through axisymmetric expansions contractions. *Journal of Non-Newtonian Fluid Mechanic*, 142:207–217, 2007.