

References

- Abbott A. P., Miaw C. L. and Rusling J. F. (1992). Correlations between solvent polarity scales and electron transfer kinetics and an application to micellar media. *J. Electroanal. Chem.*, **327**: 31-46.
- Abolfazl Ezzati, Elham Gorouhi, and Toraj Mohammadi (2005). Separation of water in oil emulsions using microfiltration. *Desalination* **185**: 371–382.
- Ali M. F. and Alqam M. H. (2000). The role of asphaltenes, resins and other solids in the stabilization of water in oil emulsions and its effects on oil production in Saudi oil fields. *Fuel* **79**: 1309–1316.
- Al Sabagh A.M., Kandil N.Gh., Badawi A.M., and El-Sharkawy H. (2000). Surface activity and thermodynamic of micellization and adsorption for isooctylphenol ethoxylates, phosphate esters and their mixtures with N diethoxylated perfluorooctanamide. *Colloids and Surfaces A: Physicochemical and Engineering Aspects* **170**: 127–136.
- American petroleum institute (1996). Introduction to oil and gas production. 5th ed. Pp 1 and 66.
- Anil Bhardwaja and Stanley Hartlanda (2011). Studies on build up of interfacial film at the crude oil / water interface. *Journal of Dispersion Science and Technology* **19(4)**: 465-473.
- Ayad A. A., Hamed H. A., and Essam A. S. (2010). Components and Treatments of Oilfield Produced Water. *Al-Khwarizmi Engineering Journal*, **6(1)**: 24 – 30.

- Azza A .A. and Ferial M. A. (2010). Nutritional quality of *Jatropha curcas* seeds and effect of some physical and chemical treatments on their anti-nutritional factors. *African journal of food science* **4(3)**: 93-103.
- Bancroft W. D. (1913). The theory of emulsification. *J. Phys. Chem.*, **17**: 514-520.
- Benjamin I. (1996). Chemical Reactions and Solvation at Liquid Interfaces: A Microscopic Perspective. *Chem. Rev.* **96**: 1449-1475.
- Bhardwaj A. and Hartland S. (1993). Study of demulsification of water in crude oil emulsion. *J. Disp. Sci. Tech.* **14 (5)**: 541-557.
- Bhattacharyya D. N., Kelkar R. Y., Al- Meida M. R., Das A. K. and Chikhale S. V. (1994). Performance of water in oil emulsion: prediction based on interfacial and thermodynamic properties. *Tenside Surfactants Detergents*, **31(4)**: 260-264.
- Bhupati R. Bhattacharyya (1992). Water soluble polymer as water in oil demulsifier. United States Patent 5,100,582.
- Bunton C. A., Carrasco N., Huang S. K., Paik C. H., and Romsted L. S. (1978). Reagent Distribution and Micellar Catalysis of Carbocation Reactions. *Journal of the American Chemical Society* **100(17)**: 5420-5425.
- Charles C. Patton (1986). Applied water technology. Published by Campbell petroleum series. Norman, Oklahoma. Pp. 19,20,21, and 22.
- Christophe Dicharry, David Arla, Anne Siquin, Alain Graciaa, and Patrick Bouriat (2006). Stability of water/crude oil emulsions based on interfacial dilatational rheology. *Journal of Colloid and Interface Science* **297**: 785–791.
- Cockbain E. G. and Mc Roberts T. S. (1953). The stability of elementary emulsion drops and emulsions. *J. Colloid Sci.* **8**: 440-451.

- Fingas M., Fieldhouse B., Bobra M., Tennyson E. (1993). The Physics and Chemistry of Emulsions, Proceedings of the Workshop on Emulsions, Marine Spill Response Corporation, Washington, D.C., 7 pp.
- Fingas M. and Fieldhouse B. (2003). Studies of the formation process of water in oil emulsions. *Marine Pollution Bulletin* **47**: 369–396.
- Fingas M. and Fieldhouse B. (2009). Studies on crude oil and petroleum product emulsions: Water resolution and rheology. *Colloids and surfaces A: Physicochem. Eng. Aspects* **333**: 67–8.
- Hammond E. G. and Wang T. (2005). Method of converting free fatty acids to fatty acid methyl esters with small excess of methanol. United States Patent 6,965,044 B1.
- Hannisdal A., Ese M., Hemmingsen P. V., and Sjoblom J. (2006). Particle-stabilized emulsions: Effect of heavy crude oil components pre-adsorbed onto stabilizing solids. *Colloids and Surfaces A: Physicochem. Eng. Aspects* **276**: 45–58.
- Jinxin Li, Jinjun Zhang , Haijun Yang , and Yongcheng Ning (2006). Separation and characterization of alkyl phenol formaldehyde resins demulsifier by adsorption chromatography, gel permeation chromatography, infrared spectrometry and nuclear magnetic resonance spectroscopy. *Analytica Chimica Acta* **566**: 224–237.
- Jixiang Guo, Qing Liu, Mingyuan Li, Zhaoliang Wu, and Alfred A. Christy (2006). The effect of alkali on crude oil/water interfacial properties and the stability of crude oil emulsions. *Colloids and Surfaces A: Physicochem. Eng. Aspects* **273**: 213–218.
- Johan Sjoblom, Narve Aske, Inge Harald Auflem, Øystein Brandal, Trond Erik Havre, Øystein Sæther, Arild Westvik, Einar Eng Johnsen, and Harald -

- Kallevik (2003). Our current understanding of water-in-crude oil emulsions. Recent characterization techniques and high pressure performance. *Advances in Colloid and Interface Science*. **100 –102**: 399–473.
- Joseph D. McLean and Peter K. Kilpatrick (1997). Effects of asphaltene solvency on stability of water-in-crude-oil emulsions. *Journal of colloid and interface science* **189**: 242–253.
 - Kate Van Dyke (1997). Fundamentals of petroleum. Published by Petroleum extension service. Texas. 4th ed. Pp 13, 14,174,175.
 - Khafniza B. K. (2012). *Formulation of antibiotic ointment from the Jatropha latex curcas*. University Malaysia Pahang, Malaysia.
 - Kim Y. H., Wasan D. T. and Breen P. J. (1995). A study of dynamic interfacial mechanisms for demulsification of water in oil emulsions. *Colloids and Surfaces A: Physicochem. Eng. Aspects* **95**: 235-247.\
 - Kim Y. H. and Wasan D. T. (1996). Effect of Demulsifier Partitioning on the Destabilization of Water-in-Oil Emulsions. *Ind. Eng. Chem. Res.* **35**: 1141-1149.
 - Krawczyk M. A., Wasan D. T., and Shetty C. S. (1991). Chemical Demulsification of Petroleum Emulsions Using Oil-Soluble Demulsifiers. *Ind. Eng. Chem. Res.* **30(2)**: 367-375.
 - Laurier L. Schramm (2000). Surfactant: fundamentals and applications in the petroleum industry. Published by the press syndicate of the University of Cambridge, United Kingdom. Pp. 5.
 - Langevin D., Poteau S., Hénaut I., and Argillier J. F. (2004). Crude oil emulsion properties and their application to heavy oil transportation. *Oil & Gas Science and Technology* **59(5)**: 511-521.

- Mandal A. B. and Nair B. U. (1991). Cyclic Voltammetric Technique for the Determination of the Critical Micelle Concentration of Surfactants, Self-Diffusion Coefficient of Micelles, and Partition Coefficient of an Electrochemical Probe. *J. Phys. Chem.*, **95**: 9008-9013.
- Martin M. Z., Gunter L. E., Jawdy S. S., Wullschleger S. D., Wheeler C. S. and Jha A. K. (2013). Genetic Improvement, Sustainable Production and Scalable Small Microenterprise of *Jatropha* as a Biodiesel Feedstock. *J Bioremed Biodeg.* **S4**: 1-9.
- Mosayebi A. and Abedini R. (2013). Using demulsifiers for phase breaking of water/oil emulsion. *Petroleum & Coal* **55 (1)**: 26-30.
- Moran K. and Czarnecki J. (2007). Competitive adsorption of sodium naphthenates and naturally occurring species at water-in-crude oil emulsion droplet surfaces. *Colloids and Surfaces A: Physicochem. Eng. Aspects* **292**: 87–98.
- Mingyuan Li, Meiqin Lin, Zhaoliang Wu, and Alfred A. Christy (2004). The influence of NaOH on the stability of paraffinic crude oil emulsion. *Fuel* **84**: 183–187.
- Narve Aske, Harald Kallevik and Johan Sjoblom. (2001). Determination of Saturate, Aromatic, Resin, and Asphaltenic (SARA) Components in Crude Oils by Means of Infrared and Near-Infrared Spectroscopy. *Energy & Fuels* **15**: 1304-1312
- Narve Aske (2002). *Characterization of Crude Oil Components, Asphaltene Aggregation and Emulsion Stability by means of Near Infrared Spectroscopy and Multivariate Analysis*. Norwegian University of Science and Technology, Norway.

- Nianxi Yan, Murray R. Gray, and Jacob H. Masliyah (2001). On water-in-oil emulsions stabilized by fine solids. *Colloids and Surfaces A: Physicochem. Eng. Aspects* **193**: 97–107.
- Nuraini M., Abdurahman H. N., and Kholijah A. M. S. (2011). Effect of chemical breaking agents on water in crude oil emulsion system. *International journal of chemical and environmental engineering*. **2(4)**: 250-254.
- Pablo Canizares, Fabiola Martinez, Justo Lobato, and Manuel Andres Rodrigo (2007). Break up of oil in water emulsions by electrochemical techniques. *Journal of Hazardous Materials* **145**: 233–240.
- Petrodar Operating Company (2006). Start up & Operating Manual for Palouge Field Production Facilities. Document no: PDOC-123A(FPF)-ML-PRO-002. REV.: C. Pp. 5, 6, 7 and 9.
- Petroleum extension service (1990). Treating oilfield emulsions. Publisher university of Texas of Austin. 4th ed. Pp. 8, 9, 10, and 36.
- Philip Merchant Jr. and Sylvia M. Lacy (1988). Water based demulsifier formulation and process for its use in dewatering and desalting crude hydrocarbons oils. United States Patent 4,737,265.
- Preston W. C. (1948). Some correlating principles of detergent action. *J. Phys. Colloid Chem.* **52**: 84-96.
- Rathman J. F. and Scamehorn J. F. (1984). Counterion Binding on Mixed Micelles. *J. Phys. Chem.* **88**: 5807-5816.
- Rosen M. J. (1978). Surfactants and interfacial phenomena. John Wiley and Sons Inc., New York.
- Saha S. K., Tiwari P. K., and Dogra S. K. (1994). Prototropic Equilibrium of Some Benzimidazoles in Anionic and Nonionic Micelles. *J. Phys. Chem.* **98**: 5953-5955.

- Salimon J., Bashar. A., and Nadia S. (2011). Hydrolysis optimization and characterization study of preparing fatty acids from *Jatropha curcas* seed oil. *Chemistry Central Journal* **5(67)**: 1-9.
- Schott H. (1995). Hydrophilic–lypophilic balance, solubility parameter, and oil–water partition coefficient as universal parameters of nonionic surfactants. *Journal of Pharmaceutical Sciences* **84(10)**: 1215–1222.
- Sharma I. C., Haque I. and Srivastava S. N. (1982). Chemical demulsification of natural petroleum emulsions of Assam (India). *Colloid and polymer science*. **260**: 616-622.
- Shetty C. S., Nikolvo A. D. and Wasan D.T. (1992). Demulsifications of water in oil emulsions using water soluble demulsifiers. *J. Disp. Sci. Technol.* **13(2)**: 121-133.
- Shinitzky M. and Haimovitz R. (1993). Chiral Surfaces in Micelles of Enantiomeric N-Palmitoyl- and N-Stearoylserine. *J. Am. Chem. SOC.* **115**: 12545-12549.
- Shinoda K., Kunieda H., Arai T., and Saijo H. (1984). Principles of Attainlng Very Large Solubilization (Microemulsion): Inclusive Understanding of the Solubilization of Oil and Water in Aqueous and Hydrocarbon Media. *J. Phys. Chem.* **88(5)**: 126-5 129.
- Shweta D. Mehta (2005). *Making and breaking of water in crude oil emulsion*. A&M University Texas, USA.
- Singh R. K. and Padhi S. K. (2009). Characterization of jatropha oil for the preparation of biodiesel. *Natural product radiance*, **8(2)**: 127-132.
- Speight, J. G. (2001). *Handbook of petroleum analysis*. John Wiley and Sons, Inc., publication. USA. Pp 1, 2, 7, 27, 31,41,46,48, 101, 102, 103, 104, 105, 109, 115,118,119, and 127.

- Stark D. A. (1998). Notes on petroleum processing. Department of aerospace and mechanical engineering, University of Notre Dame. Pp. 4 and 5.
- Stein T. M. and GeIlman S. H. (1992). Synthesis and Aggregation Properties of a New Family of Amphiphiles with an Unusual Headgroup Topology. *J. Am. Chem. SOC.* **114**: 3943-3950.
- Sucheta A., Haque I., and Rusling J. F. (1992). Dechlorination of 9-Chloroanthracene in an Adsorbed Film of Cationic Surfactant on an Electrode. *Langmuir.* **8**: 1633-1636.
- Sun Dezhi, Jong Shik Chung, Duan Xiaodong, and Zhou Ding (1999). Demulsification of water-in-oil emulsion by wetting coalescence materials in stirred- and packed-columns. *Colloids and Surfaces A: Physicochem. Eng. Aspects* **150**: 69–75.
- Tahany M. A. (2013). Preparation of some Novel (oxyethylene / oxypropylene) Derivatives from Alkyleneamines as De-emulsifiers to Break Water in Oil Emulsion in Petroleum Industry. M.Sc. thesis, Benha University, Egypt.
- Taylor G. M. (1997). Demulsifier for water in oil emulsion and method of use. United States Patent 5,609,794.
- Taolei Sun, Lu Zhang, Yiyang Wang, Sui Zhao, Bo Peng, Mingyuan Li, and Jiayong Yu (2002). Influence of demulsifiers of different structures on interfacial dilational properties of an oil–water interface containing surface-active fractions from crude oil. *Journal of Colloid and Interface Science* **255**: 241–247.
- Trond Erik Havre and Johan Sjöblom (2003). Emulsion stabilization by means of combined surfactant multilayer (D-phase) and asphaltene particles. *Colloids and Surfaces A: Physicochem. Eng. Aspects* **228**: 131–142.
- Venkatesan P., Cheng Y., and Kahne D. (1994). Hydrogen Bonding in Micelle Formation. *J. Am. Chem. SOC.* **116**: 6955-6956.

- Wanli Kang, Guolin Jing, Hongyan Zhang, Mingyuan Li, and Zhaoliang Wu (2006). Influence of demulsifier on interfacial film between oil and water. *Colloids and Surfaces A: Physicochem. Eng. Aspects* **272**: 27–31.
- Williams C. Lyons (1996). Standard handbook of petroleum and natural gas engineering. Gulf publishing company. Texas. Vol. (1). Pp 300,310,322, and 323.
- Wilson K., Malone K., Zulu D., Mutamba E. and Vermeeylen S. (2013). Can the biofuel crop, *Jatropha curcas*, be used as a locally-grown botanical pesticide? A lab and field study in Zambia. Proceedings of the First International Conference on Pesticidal Plants Volume 1, 124-127.
- Zacharlasse K. A., Phuc N. V., and Koranklewicrt B. (1981). Investigation of Micelles, Microemulsions, and Phospholipid Bilayers with the Pyrldinium N-Phenolbetaine ET (30), a Polarity Probe for Aqueous Interfaces. *J. Phys. Chem.* **85**: 2676-2683.
- Zaki N. N., Abdel Raouf M. E., and Abdel Azim A.-A. A. (1996). Propylene oxide-Ethylene oxide copolymers as demulsifiers for water in oil emulsion, I. effect of molecular weight and hydrophilic-lypophylic balance on the demulsification efficiency. *Monatshefte fur chemie* **127**: 621-629.
- Zhang Z., Xu G. Y., Wang F., Dong S. L., and Chen Y. (2005). Demulsification by amphiphilic dendrimer copolymers. *Journal of Colloid and Interface Science* **282**: 1–4.
- Zhang Z., Xu G.Y., Wang F., Dong S.L., and Li Y.M. (2004). Characterization and demulsification of poly (ethylene oxide)–block–poly(propylene oxide)–block–poly(ethylene oxide) copolymers. *Journal of Colloid and Interface Science* **277**: 464–470.