REFERENCES

- [1] Sharma, Y.C., Singh, B., and Upadhyay, S.N. Advancements in development and characterization of biodiesel: A review. <u>Fuel</u> 87(12) (2008): 2355-2373.
- [2] de Souza, R.M., Meliande, A.L.S., da Silveira, C.L.P., and Aucélio, R.Q. Determination of Mo, Zn, Cd, Ti, Ni, V, Fe, Mn, Cr and Co in crude oil using inductively coupled plasma optical emission spectrometry and sample introduction as detergentless microemulsions. <u>Microchemical Journal</u> 82(2) (2006): 137-141.
- [3] Korn, M.G.A., et al. Evaluation of digestion procedures for simultaneous determination of Ca, P, Mg, K and Na in biodiesel by inductively coupled plasma optical emission spectrometry. <u>Journal of the Brazilian Chemical</u> <u>Society</u> 21 (2010): 2278-2284.
- [4] Amorim, F.A.C., Lima, D.C., Amaro, J.A.A., Vale, M.G.R., and Ferreira, S.L.C. Methods for vanadium determination in fuel oil by GF AAS with microemulsification and acid digestion sampling. <u>Journal of the Brazilian</u> <u>Chemical Society</u> 18 (2007): 1566-1570.
- [5] de Oliveira, A.P., Villa, R.D., Antunes, K.C.P., de Magalhães, A., and Silva, E.C.e.
 Determination of sodium in biodiesel by flame atomic emission spectrometry using dry decomposition for the sample preparation. <u>Fuel</u> 88(4) (2009): 764-766.
- [6] Pelizzetti, E. and Pramauro, E. Analytical applications of organized molecular assemblies. <u>Analytica Chimica Acta</u> 169(0) (1985): 1-29.
- [7] Murillo, M., Benzo, Z., Marcano, E., Gomez, C., Garaboto, A., and Marin, C.
 Determination of copper, iron and nickel in edible oils using emulsified solutions by ICP-AES. Journal of Analytical Atomic Spectrometry 14(5) (1999): 815-820.
- [8] Knothe, G., Gerpen, J.V., and Krahl, J. <u>The Biodiesel Handbook</u>. Vol. 1. United state of America: AOCS press, 2005.
- [9] Haseeb, A.S.M.A., Fazal, M.A., Jahirul, M.I., and Masjuki, H.H. Compatibility of automotive materials in biodiesel: A review. <u>Fuel</u> 90(3) (2011): 922-931.

- [10] Lin, L., Cunshan, Z., Vittayapadung, S., Xiangqian, S., and Mingdong, D.
 Opportunities and challenges for biodiesel fuel. <u>Applied Energy</u> 88(4) (2011): 1020-1031.
- [11] Lyra, F.H., Carneiro, M.T.W.D., Brandão, G.P., Pessoa, H.M., and de Castro, E.V. Determination of Na, K, Ca and Mg in biodiesel samples by flame atomic absorption spectrometry (F AAS) using microemulsion as sample preparation. <u>Microchemical Journal</u> 96(1) (2010): 180-185.
- [12] de Jesus, A., Silva, M.M., and Vale, M.G.R. The use of microemulsion for determination of sodium and potassium in biodiesel by flame atomic absorption spectrometry. <u>Talanta</u> 74(5) (2008): 1378-1384.
- [13] Mittelbach, M. and Schober, S. The influence of antioxidants on the oxidation stability of biodiesel. <u>Journal of the American Oil Chemists' Society</u> 80(8) (2003): 817-823.
- [14] Garrido, M.D., Frías, I., Díaz, C., and Hardisson, A. Concentrations of metals in vegetable edible oils. <u>Food Chemistry</u> 50(3) (1994): 237-243.
- [15] Lepri, F.G., et al. Determination of Trace Elements in Vegetable Oils and Biodiesel by Atomic Spectrometric Techniques—A Review. <u>Applied</u> <u>Spectroscopy Reviews</u> 46(3) (2011): 175-206.
- [16] de Souza, R.M., Leocádio, L.G., and da Silveira, C.L.P. ICP OES Simultaneous Determination of Ca, Cu, Fe, Mg, Mn, Na, and P in Biodiesel by Axial and Radial Inductively Coupled Plasma-Optical Emission Spectrometry. <u>Analytical Letters</u> 41(9) (2008): 1615-1622.
- [17] <u>Inductively couple plasma (ICP)</u>. 2014. Available from: http://glasswarechemical.com/wp-content/uploads/2012/06/ICP-AES.gif
- [18] B.Boss, C. and J.Fredeen, K. Concepts, Instrumentation, and Techniques in Inductively coupled Plasma Optical Emission Spectrometry. second ed. USA: The Perkin-Elmer Corporation 1997.
- [19] Platteau, O. and Carrillo, M. Determination of metallic elements in crude oilwater emulsions by flame AAS. <u>Fuel</u> 74(5) (1995): 761-767.

- [20] Duyck, C., et al. The determination of trace elements in crude oil and its heavy fractions by atomic spectrometry. <u>Spectrochimica Acta Part B: Atomic</u> <u>Spectroscopv</u> 62(9) (2007): 939-951.
- [21] Amais, R.S., Garcia, E.E., Monteiro, M.R., Nogueira, A.R.A., and Nóbrega, J.A. Direct analysis of biodiesel microemulsions using an inductively coupled plasma mass spectrometry. <u>Microchemical Journal</u> 96(1) (2010): 146-150.
- [22] Chaves, E.S., dos Santos, E.J., Araujo, R.G.O., Oliveira, J.V., Frescura, V.L.A., and Curtius, A.J. Metals and phosphorus determination in vegetable seeds used in the production of biodiesel by ICP OES and ICP-MS. <u>Microchemical Journal</u> 96(1) (2010): 71-76.
- [23] Huang, M., Kojima, H., Shirasaki, T., Hirabayashi, A., and Koizumi, H. Study on solvent-loading effect on inductively coupled plasma and microwave-induced plasma sources with a microliter nebulizer. <u>Analytica Chimica Acta</u> 413(1–2) (2000): 217-222.
- [24] Pokhriyal, N.K., Sanghvi, P.G., Shah, D.O., and Devi, S. Kinetics and Behavior of Copolymerization in Emulsion and Microemulsion Systems. <u>Langmuir</u> 16(14) (2000): 5864-5870.
- [25] Iqbal, J., A.Carney, W., LaCaze, S., and S.Theegala, C. Metals Determination in Biodiesel (B100) by ICP-OES with Microwave Assisted Acid Digestion. <u>The Open</u> <u>Analytical Chemistry Journal</u> 4 (2010): 18-26.
- [26] Gibaud, S. and Attivi, D. Microemulsions for oral administration and their therapeutic applications. <u>Expert Opinion on Drug Delivery</u> 9(8) (2012): 937-951.
- [27] J.Rosen, M. and T.Kunjappu, J. <u>Surfactants and Interfacial Phenomena</u>. New Jersey, USA: John Wiley & Sons, Inc., 2012.
- [28] Zhang, W., Nesset, J.E., Rao, R., and Finch, J.A. Characterizing Frothers through Critical Coalescence Concentration (CCC)95-Hydrophile-Lipophile Balance (HLB) Relationship. <u>Minerals</u> 2(3) (2012): 208-227.
- [29] Knothe, G. Analyzing biodiesel: standards and other methods. <u>Journal of the</u> <u>American Oil Chemists' Society</u> 83(10) (2006): 823-833.
- [30] de Jesus, A., Zmozinski, A.V., Barbarā, J.n.A., Vale, M.G.R., and Silva, M.r.M. Determination of Calcium and Magnesium in Biodiesel by Flame Atomic

Absorption Spectrometry Using Microemulsions as Sample Preparation. <u>Energy</u> <u>& Fuels</u> 24(3) (2010): 2109-2112.

- [31] Monteiro, M.R., Ambrozin, A.R.P., Lião, L.M., and Ferreira, A.G. Critical review on analytical methods for biodiesel characterization. <u>Talanta</u> 77(2) (2008): 593-605.
- [32] Benzo, Z., Murillo, M., Marcano, E., Gomez, C., Garaboto, A., and Espinoza, A.
 Determination of phosphorus in edible oils by inductively coupled plasma—
 Atomic emission spectrometry and oil-in-water emulsion of sample
 introduction. Journal of the American Oil Chemists' Society 77(9) (2000): 997 1000.
- [33] de Souza, R.M., Mathias, B.M., da Silveira, C.L.P., and Aucélio, R.Q. Inductively coupled plasma optical emission spectrometry for trace multi-element determination in vegetable oils, margarine and butter after stabilization with propan-1-ol and water. <u>Spectrochimica Acta Part B: Atomic Spectroscopy</u> 60(5) (2005): 711-715.
- [34] <u>Capillary Viscometers</u>. 2014. Available from: http://www.ems-viscometer.com/
- [35] Quadros, D.P.C., Rau, M., Idrees, M., Chaves, E.S., Curtius, A.J., and Borges, D.L.G. A simple and fast procedure for the determination of Al, Cu, Fe and Mn in biodiesel using high-resolution continuum source electrothermal atomic absorption spectrometry. <u>Spectrochimica Acta Part B: Atomic Spectroscopy</u> 66(5) (2011): 373-377.
- [36] Zmozinski, A.V., de Jesus, A., Vale, M.G.R., and Silva, M.M. Determination of calcium, magnesium and zinc in lubricating oils by flame atomic absorption spectrometry using a three-component solution. <u>Talanta</u> 83(2) (2010): 637-643.
- [37] Silva, J.S.A., Chaves, E.S., Santos, É.J.d., Saint'Pierre, T.D., Frescura, V.L.A., and Curtius, A.J. Calibration techniques and modifiers for the determination of Cd, Pb and Tl in biodiesel as microemulsion by graphite furnace atomic absorption spectrometry. Journal of the Brazilian Chemical Society 21 (2010): 620-626.
- [38] Boumans, P.W.J.M. Inductively Coupled Plasma Emission Spectroscopy, Part I, Methodology, Instrumentation and Performance. Part 1 ed. New York: John Wiley and Sons, Inc., 1987.

- [39] Huber, L. <u>Validation and Oualification in Analytical Laboratories</u>. 2 nd ed. New York: Informa Healthcare USA, 1999.
- [40] Taverniers, I., De Loose, M., and Van Bockstaele, E. Trends in quality in the analytical laboratory. II. Analytical method validation and quality assurance. <u>TrAC Trends in Analytical Chemistry</u> 23(8) (2004): 535-552.



VITA

Miss Amonrat Phomchomcha was born on September 14, 1987 in Udonthani, Thailand. She graduated Bachelor degree of Science in Chemistry from Srinakarinwirot University in 2010. After that, she continued to study further as a graduate student in the Department of Chemistry at Chulalongkorn University and becomes one of the members of Environmental Analysis Research Unit. She finished her postgraduate study with Master degree of Science in 2014, The present address is 2016/34-36 Soi Chan 23/1, Chan road, Chongnonsi, Yanawa, Bangkok



