LITERATURE REVIEW:

Osemeahon S.A. and Barminas J.T., (2006) the ultrasonic viscosity measurement has been successfully employed to detect and access weak and strong molecular interaction present in binary and ternary ketones liquid mixture.

Dand D. and Gung J., (2006) Viscosity is a measure of fluids resistance to flow it is one of the most important properties of fluids, plays an important role in the petroleum industry. The viscosity and refractive index of cured oil is the crucial part to investigate. Most of studies were based on viscosity effect on droplet size distribution and refractive index of oil in water emulsion.

Ilia Anisa A.N., and Ahurahaman H Nour. (2009) Thus in coating industry knowledge of the viscosity and refractive index is considerable importance for manufacturing process. Stability and rate of cure of paint film.

Marks A. and Haidekker., (2001) Membrane viscosity is physical property of cell. Variation of membrane viscosity is linked to variety of diseases such as artheroderosis diabetes etc.

Nathanael G., Ruta. K. and Remijus J., (2004) Transition state theory was applied to obtain there modynamic parameter of viscous flow to calculate molar refractivity of liquid.

Ling, and Van Winkle., (1958) Densities and viscosities of 1-propanol + water, toluene + octane, 1-butanol + water, acetone + 1, 4- dioxane and methanol + 1, 4 –dioxane at temperatures 30, 55, 75 and 95°C. It was found that the liquid viscosity for the same liquid composition was lower at higher temperature.

Che, and Thompson., (1962) The estimated precision in the liquid density determination was 0.05% Densities and refractive indices of 1-proanol, 2-propanol and methanol with water were measured at 20 and 25°C . The density –composition curves for both 1-propanol and 2-propanol exhibit a steady decrease in density with increase in weight percent of alcohol.

Michail, and Kimel., (1963) Densities and viscosities of binary aqueous solutions of 1-propanol have been studied and presented using power series equation at 25, 30, 35, 40 and 50°C. The maximum deviation of the calculated values as compared with the experimental
values reported was less than 0.15% and 0.88% for density and viscosity, respectively. Viscosity studies of solutions of water in \( n \)-aliphatic alcohols were also reported at 15, 25, 35 and 45\(^\circ\)C.

Aprano, D., et al., (1979) The viscosity of most liquids as a function of temperature at constant pressure can be represented by Arrhenius equation. For most the systems, water decreases the viscosity of the dry alcohols, while for the lower members of the series literature data report an increase in viscosity, surface tension, carbon dioxide solubility and diffusivity of methanol, ethanol, aqueous propanol and aqueous ethylene glycol solutions at 25\(^\circ\)C.

Soliman, A. and Marshal, (1990) Kinematic viscosities of eight binary, five ternary and one quaternary liquid mixture are reported for a wide range of temperatures and composition. The data were correlated with the McAllister equation and also with two modified versions of the McAllister equation.

Liew, K.Y, Sen, C.E., and et. al., (1993) the viscosities of long chain \( n \)-alcohols from 15 to 80\(^\circ\)C. Plot of the logarithm of viscosity versus reciprocal absolute temperature were almost linear. The energies of activation were found to increase with Chain length. The viscosities and densities of 1-propanol + 1-butanol, 1-propanol + 1-pentanol, 1-butanol + 1-pentanol, 1-butanol + 1-decanol, 1-pentanol + 1-decanol, 1-pentanol + 1-octanol, 1-heptanol + 1-octanol and 1-decanol + 1-undecanol were measured over the entire composition range at 35 and 40\(^\circ\)C and at atmospheric pressure. The viscosity data were correlated by the McAllister equation with an average absolute erro.

Zhang, A. and Han, (1996) the viscosity and density of water + sodium chloride + potassium chloride solutions at 25\(^\circ\)C and 3.5\(^{th}\) term in molarity was added to the extended Jones-Dole equation to produce a new equation. This extended Jones-Dole type equation can represent well the viscosities of the systems studied to saturated concentrations. The viscosity and density of water + sodium chloride + calcium chloride + calcium chloride solutions and water + potassium chloride + calcium chloride solutions were measured over the entire concentration range at 25\(^\circ\)C. The extended Jones-Dole equation represents well for these systems up to high concentration.
Herskovits T.P. and Kelly T.M.(1973). The relative viscosity and the viscosity B and C coefficients of alcohols, urea and amide solutions. The most significant finding of their study was the viscosity increments of most of those solutes were in the ranges predicted by the Einstein and Simha equation for rigid spherical or ellipsoidal particles. Viscosities for solutions of some a-amino acids in 5 mol kg\(^{-1}\) aqueous urea have been determined from 5 to 35\(^{0}\)C at 10\(^{0}\)C intervals.

Wang, et al., (2000) The viscosity B-coefficients for the amino acids in the aqueous urea solution have been calculated.

Islam, and Waris (2004) Investigated the solute–solvent and ion-solvent interactions in leucine + aqueous urea, sodium chloride + aqueous urea and potassium chloride + aqueous urea systems.

Pal, A. and Kumar, S. (2004) measured the viscosities and densities of L-glycine, L-alanine and L-valine in aqueous urea solutions ranging from 5 to 25% urea by mass. The viscosity data have been analysed by Jones-Dole equation. The values of the B-coefficients for all amino acids in aqueous urea are positive indicating that the ion-solvent interactions are strong.