

Comparative Dielectric Properties of 1,2-Dichloroethane with n-Methylformamide and n,n-Dimethylformamide Using Time Domain Reflectometry Technique in Microwave Frequency

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Abstract : The study of dielectric relaxation properties of polar liquids in the binary mixture has been carried out at 10, 15, 20 and 25 °C temperatures for 11 different concentrations using time domain reflectometry technique. The dielectric properties of a solute-solvent mixture of polar liquids in the frequency range of 10 MHz to 30 GHz gives the information regarding formation of monomers and multimers and also an interaction between the molecules of the liquid mixture under study. The dielectric parameters have been obtained by the least squares fit method using the Debye equation characterized by a single relaxation time without relaxation time distribution.

Keywords : excess properties, relaxation time, static dielectric constant, and time domain reflectometry technique

Conference Title : ICDM 2019 : International Conference on Dielectric Materials

Conference Location : London, United Kingdom

Conference Dates : December 09-10, 2019