

Structural Properties of Polar Liquids in Binary Mixture Using Microwave Technique

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Abstract : The study of static dielectric properties in a binary mixture of 1,2 dichloroethane (DE) and n,n dimethylformamide (DMF) polar liquids has been carried out in the frequency range of 10 MHz to 30 GHz for 11 different concentration using time domain reflectometry technique at 10°C temperature. The dielectric relaxation study of solute-solvent mixture at microwave frequencies gives information regarding the creation of monomers and multimers as well as interaction between the molecules of the binary mixture. The least squares fit method is used to determine the values of dielectric parameters such as static dielectric constant (ϵ_0), dielectric constant at high frequency (ϵ_∞) and relaxation time (τ).

Keywords : shagufta shaikh excess parameters, relaxation time, static dielectric constant, time domain reflectometry

Conference Title : ICDM 2018 : International Conference on Dielectric Materials

Conference Location : New York, United States

Conference Dates : June 03-04, 2018