Dielectric properties of methanol+hexane critical mixtures without and with ionic additives.

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Streszczenie

The electric permittivity and conductivity of methanol + hexane and methanol + hexane + $(CH_3)_4NCl$ mixtures were investigated in the vicinity of consolute critical point. The properties of the investigated system are similar to those of others phase separating mixtures. The observed low frequency dispersion was explained in terms of Maxwell-Wagner phenomena in a mixture with large concentration fluctuations. The generalised equations describing ε(t) and σ(t) (ε — is the electric permittivity, σ — is the specific conductivity, t — is the reduced temperature) both in low and high frequencies were proposed and tested for the title systems. Critical mixtures and microemulsions were found to be similar. The permittivity dispersion both for $x < x_c$ and $x = x_c$ is large (x is the mole fraction of methanol, x_c is the critical concentration) — as in “water-in-oil” emulsions, whereas in the alcohol-rich systems, $x > x_c$, the dispersion is negligible — as in “oil-in-water” ones.

Adres publiczny

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