Molecular self-assembling of butan-1-ol,butan-2-ol, and 2-methylpropan-2-ol in carbon tetrachloride solutions as observed by near-infrared spectroscopic measurements.

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Streszczenie

The self-associations of butan-1-ol, butan-2-ol, and 2-methylpropan-2-ol (*tert*-butanol) in the pure liquid state and in carbon tetrachloride solutions have been studied mainly through near-infrared spectroscopic observation at various temperatures. A new analysis assuming a successive association process for the alcohol molecules was applied to the sharp band around 1410 nm (the first-overtone band of the OH stretching vibration mode attributed to free OH monomer and partly to OH polymer); it became clear that the mean association number for each alcohol increases with increasing concentration and decreases with increasing temperature. Comparisons of the association numbers at various constant temperatures for the three kinds of alcohols show that the association abilities are on the order butan-1-ol > butan-2-ol > 2-methylpropan-2-ol.

Adres publiczny

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