Structure of aqueous solutions of acetonitrile investigated by acoustic and positron annihilation measurements.

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Streszczenie

We report the results of acoustic and positron annihilation measurements in aqueous solutions of acetonitrile (CH3CN). Hydrophobicity of the solute is discussed, as well as the possibility of describing the title system in terms of hydrophobic solvation. The concept of Levay et al. of calculating the "ideal positronium lifetimes is applied, basing on the mean volume of cavities (holes) in liquid structure available for positronium pseudoatom. The same calculations performed using the Tao model of annihilation yield very different results. It can be concluded that either acetonitrile forms with water clathrate-like hydrates of untypical architecture, or it is too weak hydrophobic agent to form clathrate-like hydrates at all. The former interpretation seems to be more probable.

Adres publiczny

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http://www.ifpan.edu.pl