FTIR SPECTRA OF AZIDE ION IN REVERSE MICELLES

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Reverse micelles (RM) are nanosize water droplets solubilized in bulk nonpolar organic solvent by ambiphilic surfactants. Confinement effects and solvation properties can be investigated by changing the water content (ω=[H_2O]/[surfactant]). FTIR spectroscopy was used to study the antisymmetric stretching vibration band of azide ion (2048.5 cm^{-1} in bulk water) dissolved in nonionic nonylphenol polyoxyethylene RM as a function of ω. The azide band is red-shifted (compared to in bulk water) and tends toward the bulk value with increasing ω. The band position also depends on the charge of the surfactant. The shift with ω is compared with changes observed for other RM properties and is explained in terms of the water core micropolarity.