Adsorption of poly(4-vinylpyridine) N-alkyl quaternized at the chloroform/water interface

Urzúa, Marcela D.

Ríos, Hernán E.

The Du Noüy method has been employed to study the interfacial properties of poly(4-vinylpyridine) N-n-alkyl quaternized with hexyl, octyl and decyl bromide, at the chloroform/water interface. The interfacial tension is highly dependent on the hydrophilic-hydrophobic balance between the pyridinium group and the length of the polyelectrolyte side aliphatic chain. The excess interfacial concentration, ?, is determined according to the Gibbs-Szyszkowski equation. The areas covered by monomer unit at the interface, ?, are smaller than those reported for low molecular weight amphipathic molecules. The linear dependence of ?Goads with the number of carbon atoms on the side-chain allows the determination of a contribution of just 0.13 kJ for each methylene lateral group and -36 kJ for the vinylpyridinium bromide contributions to ?Goads. The dependence of the interfacial tension on temperature suggests that the entropy is the main factor determining the adsorption process.