The Interaction between Multi-Charged Organic Salt and Poly Vinyl Pyridine Microgel Particles

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The interaction between three organic salts, Tropaeolin O, Sunset Yellow FCF and Sulfanilic acid azochromotrop, with poly(2-vinylpyridine) (PVP) microgel particles has been investigated. The three organic salts differ in the number of sulfuric ions present in their molecules. This is significant since the uptake of dye into the PVP microgels was investigated in relation to the ionic interaction between the organic salts and the positively charged microgel network. For all the three organic salts, the particle size and electrophoretic mobility decrease with the organic salt concentration, and the concentration of dye required to cause this decease is reduced upon increasing the number of sulfuric ions present in the organic salt molecule. The absorbed amount of organic salt into the microgel particles also decreased with increasing number of sulfuric ions. The addition of background electrolyte to the system decreased the interaction between the organic salts and the microgel particles. These results suggest that the uptake of the organic salt into the microgel particles is through an electrostatic interaction and increasing the number of charged groups present in the organic salts results in physical cross-linking of the microgel network.