

# Electrical conductivity of hydrophobically modified polyelectrolytes in methanol/water solution

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Measurements of the electrical equivalent conductivity of potassium salts of poly(maleic acid-co-1-olefins), PA-nK<sub>2</sub> with  $n = 12, 18$  has been carried out in methanol-water mixtures in the whole range of composition. The relative interaction parameter  $f^*$ , was determined as a function of the mole fraction of methanol. The values of  $f^*$  do not follow the same tendency of the limiting equivalent conductivity. This unusual behavior was rationalized in terms of a methanol-induced conformational transition that takes the polymer chain from a compact to an expanded structure. As a consequence of this transition the average charge distance in the polyion increases with increasing mole fraction of methanol. This brings about a decrease of the linear charge density parameter, and therefore an increase of the fraction of polymer charges dissociated from their counterions. The existence of the conformational transition of the PA-nK<sub>2</sub> copolymers was confirmed through fluorescence probing experiments.