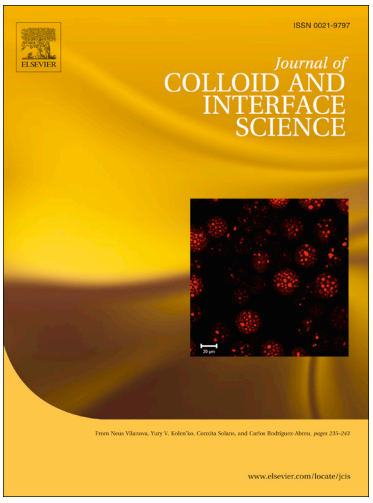

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Small angle neutron scattering study of the conformation of poly(ethylene oxide) dissolved in deep eutectic solvents

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Abstract

Hypothesis

The conformation of poly(ethylene oxide) (PEO) in deep eutectic solvents (DESs) is determined by the polymer-solvent interactions, especially hydrogen bonding interactions. The hypothesis for this work is that the hydrogen bonding environment of a DES can be varied via changing the cation or hydrogen bond donor (HBD), and therefore the solvent quality for PEO; the anion species will also effect hydrogen bonding, but this is not examined here.

Experiments

Small angle neutron scattering (SANS) is used to probe the concentration dependent conformation of 36 kDa PEO dissolved in DESs formed by mixing ethyl or butyl ammonium bromide with a molecular HBD (glycerol or ethylene glycol) in a 1:2 molar ratio.