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PNiPAM: an amphiphilic polymer probing the mean energetic state of water IRMGARD BISCHOFBERGER, University of Fribourg, Department of Physics, PAOLO DE LOS RIOS, EPF Lausanne, Laboratory of Statistical Biophysics, ILIAN JELEZAROV, University of Zürich, Department of Biochemistry, VERONIQUE TRAPPE, University of Fribourg, Department of Physics — We find that the effect of alcohol on the thermodynamic properties of aqueous solutions of poly-N-isopropyl acrylamide (PNiPAM) directly relates to the mixing enthalpy of the water/alcohol mixture itself. This correlation between solution and solvent thermodynamics indicates that the thermodynamics of aqueous solutions of PNiPAM is primarily determined by the mean energetics of the solvent. Such behavior sheds light on the nature of hydrophobic hydration, which we will discuss in this contribution.

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