A Generalized Lennard-Jones Potential for the Osmotic Pressure of Binary Globular Protein Solutions

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The generalized Lennard–Jones (GLJ) pair potential function is employed to calculate the osmotic properties of binary globular protein/salt systems with various conditions. In this work, the characteristic parameters for the GLJ potential function are assumed to be dependent on density as well as temperature, which are obtained from the computer simulation data for the compressibility factor. The energy parameters are determined from the experimental cloud–point temperature (CPT) data for protein solutions and directly used to describe osmotic pressures of the corresponding systems with no model parameters. The proposed model agrees fairly well with experimental data.