

Abstract Submitted
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Neutron scattering from polyelectrolyte solutions in the presence of a hydrophilic polymer WEN-LI WU, SANGHUN LEE, TAIKI TOMINAGA, VIJAY TIRUMALA, ERIC LIN, JIAN PING GONG, HIDEMITSU FURUKAWA, YOSHIHITO OSADA, POLYMERS DIVISION, NIST TEAM, LABORATORY OF SOFT AND WET MATTER, NIST TEAM — The structure of highly charged polyelectrolytes in water has been extensively studied. Existing models adequately describe the small-angle scattering from polyelectrolytes using characteristic physical parameters such as the Debye screening length. However, the influence of a hydrophilic polymer on the structure of a polyelectrolyte in solution such as the case of Double-Network Hydrogels has not been widely studied. Here, we present our recent neutron scattering results from such a multicomponent system. This talk discusses neutron scattering from a monovalent polyelectrolyte in water and in an aqueous solution of neutral polymer capable of hydrogen bonding. The thermodynamic parameters that govern the mutual interactions between the charged polyelectrolyte, neutral polymer, and water are used as parameters to successfully describe the observed neutron scattering results.

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