

Abstract Submitted  
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**Solvent and salt effects on the adsorption of polymers to charged surfaces** GOVARDHAN REDDY, ARUN YETHIRAJ, Univeristy of Wisconsin - Madison — The effect of solvent quality and salt concentration on the adsorption of charged polymers to a planar uniformly charged surface is studied using molecular dynamics simulation. The polyion chains are modeled as chains of charged spheres, the counter ions to the polyions and the surface are modeled as charged spheres, and the solvent molecules are modeled as uncharged spheres. The polyion adsorption is studied as a function of monomer and salt concentration, solvent quality and surface charge density of the surface. The amount of polyion adsorbed on the surface increases with the decrease in solvent quality as the system approaches a bulk phase transition. There are some surprising and counter-intuitive results in this regime. For example, incorporating a short-ranged attraction between the polymers and the surfaces decreases the number of adsorbed polymers, and the amount of polyion adsorbed decreases as the salt concentration increases.

Govardhan Reddy  
University of Wisconsin Madison

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