

Abstract Submitted
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Cationic xylan adsorption onto self-assembled monolayers and model cellulose surfaces ALAN ESKER, ABDULAZIZ KAYA, DANIEL DRAZENOVICH, WOLFGANG GLASSER, Virginia Tech, KATRIN SCHWIKAL, THOMAS HEINZE, University of Jena — Self-assembly of cationic hydroxypropyltrimethylammonium xylans (HPMAs) with different degrees of substitution (DS) onto self-assembled monolayers (SAMs) and model cellulose surfaces has been investigated by surface plasmon resonance (SPR). Maximal adsorption of HPMAs onto COOH-terminated SAMs occurs at an intermediate DS=0.10. Ionic strength effects on adsorbed amount follow different trends at low and high DS values which qualitatively agree with predictions of scaling theory for polyelectrolyte adsorption. For adsorption onto model cellulose surfaces and OH-terminated SAMs, surface excess values are relatively low compared to COOH-terminated SAMs. For adsorption onto CH₃-terminated SAMs, solubility of the HPMAs plays an important role as HPMAs adsorption decreases with increasing DS values.

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