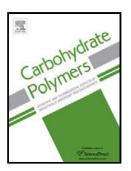
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ACCEPTED MANUSCRIPT

Dilational rheology of oil/water interfaces covered by amphiphilic polysaccharides

derived from dextran

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Highlights

- Dilational rheology of oil/water interface covered by modified dextrans was studied
- Rheology and kinetics of adsorption were well described by diffusion-limited models
- The role of hydrophobic modification was depicted qualitatively and quantitatively
- Modified dextrans were compared to common commercial stabilizers with block structure

Abstract

This work studied the adsorption at dodecane/water interface of amphiphilic polysaccharides derived from dextran (a nonionic bacterial polysaccharide) by random attachment of phenoxy groups along the chains (between 10 and 20 attached phenoxy groups per 100 glucose repeat units). The long-time kinetics of interfacial tension decrease was satisfactorily described assuming diffusion-limited adsorption of hydrophobic units (over 4 hours). Dilational rheology of dodecane/water interface was studied for the first time with that kind of amphiphilic polysaccharides and evidenced a significant elastic component. For all dextran derivatives,

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