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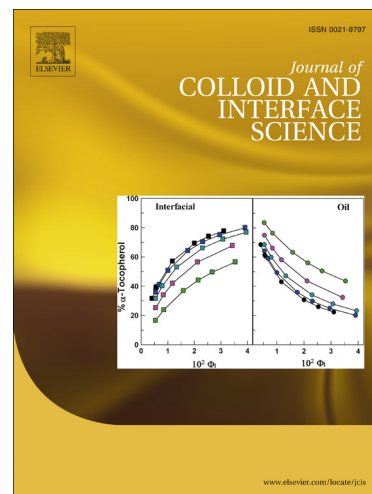
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Giant optical activity of sugar in thin soap films

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Abstract

We report on enhanced experimental optical activity measurements of thin soap films in the presence of sugar. This unusual optical activity is linked to the intramolecular chiral conformation of the glucose molecules at the air/liquid interface. Choosing sodium dodecylsulfate (SDS) as a model surfactant and glucose as model sugar, favorable interactions between the anionic group $-\text{OSO}_3^-$ and glucose molecules are highlighted. This induces an interfacial anchoring of glucose molecules leading to a perturbing influence of the asymmetric chiral environment.

Keywords:

Soap film; optical activity; interfacial structure; chirality

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