

Abstract Submitted  
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**Domain formation in multicomponent lipid bilayers coupled to elastic substrate** MD ZULFIKAR ALI, RANJAN MUKHOPADHYAY, Clark University — We will discuss the physics that governs the lipid localization and domain formation in multicomponent lipid bilayers coupled to an elastic substrate. Lipid localization and domain formation has been studied extensively in biological cell membranes. In this talk we will extend a previous model for membrane energetics to account for the coupling between the bending and the local lipid composition of the two leaflets. Our aim is to determine the relationship between the localization and domain formation in the presence of lipid flip-flops between the two leaflets and the effect of intrinsic curvature of the lipids. Using a lattice model for the membrane, we simulate the system and study the effect of lipid flip-flop on lipid organization in the membrane.

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