

Abstract Submitted  
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**Gradient Sensing in Reactive, Ternary Membranes** OLGA KUKSENOK, ANNA C. BALAZS, University of Pittsburgh — Using computer simulations, we investigate the behavior of reactive ternary ABC membranes that are subjected to an external, spatially nonuniform stimulus, which controls the rate of interconversion between the A and B components. We assume that A and B have different spontaneous curvatures. Furthermore, the C component is taken to be nonreactive and incompatible with both A and B. We find that a gradient in the applied stimulus causes the dynamic reconstruction of the membrane, with a preferential reorientation of the reactive AB domains along the gradient. In addition, the external gradient effectively controls the transport of the nonreactive C component within the membrane. The latter effect could potentially be exploited for cleaning the membrane of the nonreactive C impurities or for the targeted delivery of the C component to specific locations.

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