

Abstract Submitted  
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**Diffusion of molecules along incompressible interfaces due to electric fields** EBRAHIM KOLAHDOUZ, DAVID SALAC, University at Buffalo SUNY  
— The diffusion of insoluble molecules, such as surfactants or lipids, on incompressible interfaces due to electric fields is important in understanding the behavior of vesicles. Here a three-dimensional model is presented to investigate the motion of molecules on an arbitrary curved and incompressible interface in the presence of electric fields and an analytic fluid flow field. The interface is described using the gradient-augmented level set method while the electric field is solved with the immersed interface method. The motion of molecules on the surface are modeled using a set of coupled convection-diffusion equations. These equations are solved using the implicit closest point method. The model and sample results are presented.

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