

Abstract Submitted
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Electrohydrodynamics of Three-Dimensional Vesicles EBRAHIM KOLAHDOUZ, DAVID SALAC, University at Buffalo SUNY — A new numerical method is presented to model the dynamic behavior of three-dimensional vesicles in the Stokes regime and in the presence of electric fields. The interface is described using the Jet Level Set method of Nave et. al, while a multi-step projection method is used to simultaneously enforce fluid and interface conditions. The electric field is obtained through a second-order Immersed Interface Method, for which the necessary jump conditions have been developed. The fluid equations are solved for using a Continuum Surface Force method. The formulation and a parallel implementation will be presented, in addition to sample results.

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