

Abstract Submitted
for the DFD19 Meeting of
The American Physical Society

Semi-Permeable Vesicles with Adhesion BRYAN QUAIFE, ASHLEY GANNON, Florida State University, YUAN-NAN YOUNG, New Jersey Institute of Technology — We consider adhering, semi-permeable, two-dimensional elastic membranes that are permeable to water, but not to solutes. For inextensible membranes (vesicles), the adhesive force can result in the formation of doublets or clusters of vesicles, and this significantly alters the hydrodynamics and rheological properties of the flow. Moreover, depending on the flow condition and body forces, semi-permeability results in the vesicles either inflating towards a circular vesicle or deflating towards a long slender body. Suspensions of adhering semi-permeable vesicles under a variety of flow conditions will be presented and compared to suspensions of clean vesicles.

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Date submitted: 26 Jul 2019

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