

Abstract Submitted
for the DFD08 Meeting of
The American Physical Society

Sorting Category: 04. (E)

Lateral migration of vesicles with viscosity contrast in simple shear and Poiseuille flows GWENNOU COUPIER, Lab. Spectrometrie Physique, Grenoble, NATACHA CALLENS, Microgravity Research Center, Bruxelles, BADR KAOUI, Lab. Spectrometrie Physique, Grenoble, CHRISTOPHE MINETTI, FRANK DUBOIS, Microgravity Research Center, Bruxelles, CHAOUQI MISBAH, THOMAS PODGORSKI, Lab. Spectrometrie Physique, Grenoble — The ability of soft objects (such as vesicles, drops or blood cells) to adapt their shapes under non-equilibrium conditions allows them to migrate transversally to the flow in a confined situation, even in the Stokes limit. We present an overview of our recent experiments on phospholipidic vesicles placed in two simple flows : simple shear between two sliding walls and Poiseuille flow in a channel. Some of these experiments were run under microgravity conditions in order to get rid of the screening of the lift forces by the vesicle's weight. Quantitative migration laws are exhibited and discussed. In particular, they depend strongly and non monotonously on the reduced volume (or excess area) of vesicles and the viscosity contrast between internal and external fluids.

Prefer Oral Session
 Prefer Poster Session

Thomas Podgorski
tpodgors@ujf-grenoble.fr
Lab. Spectrometrie Physique, Grenoble

Date submitted: 04 Aug 2008

Electronic form version 1.4