

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Diffusion in Single Supported Lipid Bilayers C.L. ARMSTRONG, McMaster University, Hamilton, Canada, M. TRAPP, Institut de Biologie Structurale, Grenoble, France, M.C. RHEINSTÄDTER, McMaster University, Hamilton, Canada — Despite their potential relevance for the development of functionalized surfaces and biosensors, the study of single supported membranes using neutron scattering has been limited by the challenge of obtaining relevant dynamic information from a sample with minimal material. Using state of the art neutron instrumentation we have, for the first time, modeled lipid diffusion in single supported lipid bilayers.¹ While we find that the diffusion coefficient for the single bilayer system is comparable to a multi-lamellar lipid system, the molecular mechanism for lipid motion in the single bilayer is a continuous diffusion process with no sign of the flow-like ballistic motion reported in the stacked membrane system. In the future, these membranes will be used to hold and align proteins, mimicking physiological conditions enabling the study of protein structure, function and interactions in relevant and highly topical membrane/protein systems with minimal sample material.

¹C.L. Armstrong, M.D. Kaye, M. Zamponi, E. Mamontov, M. Tyagi, T. Jenkins and M.C. Rheinstädter, *Soft Matter Communication*, 2010, Advance Article, DOI: 10.1039/C0SM00637H

C.L. Armstrong
McMaster University

Date submitted: 18 Nov 2010

Electronic form version 1.4