Structure and Dynamics of Biomembranes

Hiroshi Noguchi



Institute for Solid State Physics, University of Tokyo, Kashiwa, Chiba 277-8581, Japan noguchi@issp.u-tokyo.ac.jp



Dynamics of Red Blood Cells in Flows

capillary flow





Flow-induced ordered structures



of membrane fluctuation.



H. Noguchi, EPL 102, 68001 (2013).

Polymer-Grafting Induced Micro-Domain



Polymer grafting can stabilize micro-domains, since



Rolled lamella Induced by Shear Flow

polymer have larger entropy at domain boundary.

H. Wu, H. Shiba, and H. Noguchi, Soft Matter 9, 9907 (2013).

Tubulation by Banana-shaped Proteins





Shear flow unstabilizes lamellar structure leading to rolled lamella, which scattering pattern agrees with intermediate state into onion phase in experiment.

H. Shiba, H. Noguchi, and G. Gompper, J. Chem. Phys. 139, 014702 (2013).

H. Noguchi, EPL 108, 48001 (2014); H. Noguchi, J. Chem. Phys. 143, 243109 (2015); H. Noguchi, Sci. Rep. 6, 20935 (2016).