Electronic Supplementary Information (ESI)

Pressure Effects on a Protein-Lipid Model Membrane

Chandrashekhar V. Kulkarni*, Oscar Ces, Richard H. Templer and John M. Seddon*

*Corresponding author e-mails: j.seddon@imperial.ac.uk, cvkulkarni@uclan.ac.uk

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Following figures serve as supplementary information as referred in the manuscript text.

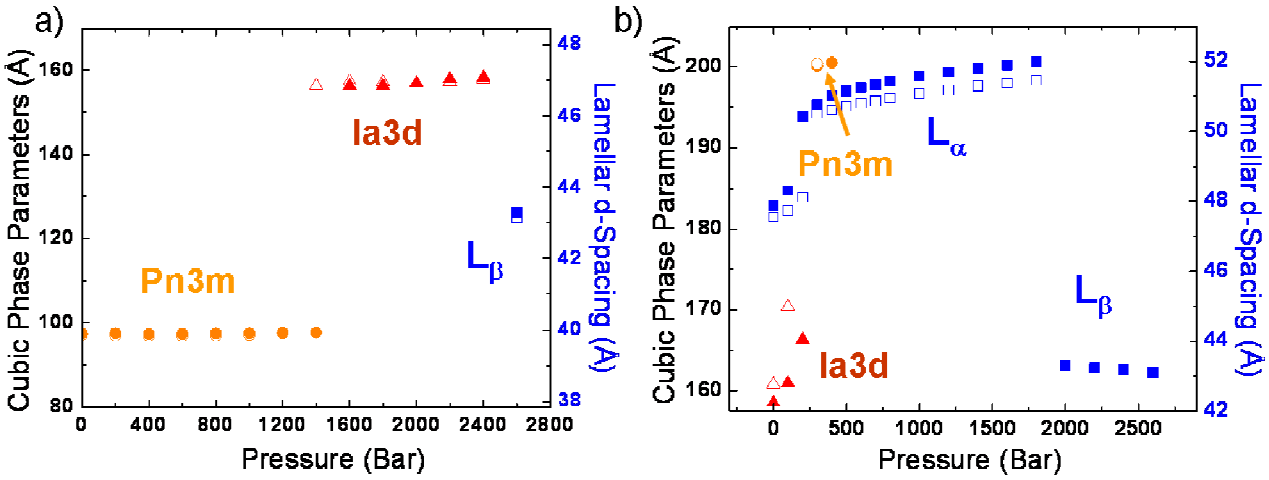

Figure SI 1: Reproducibility of experiments: a) upward and b) downward pressure scans showing that the experiments are reproducible. Solid and hollow symbols represent experiments performed with the steps of 200 bars and 100 bars respectively.

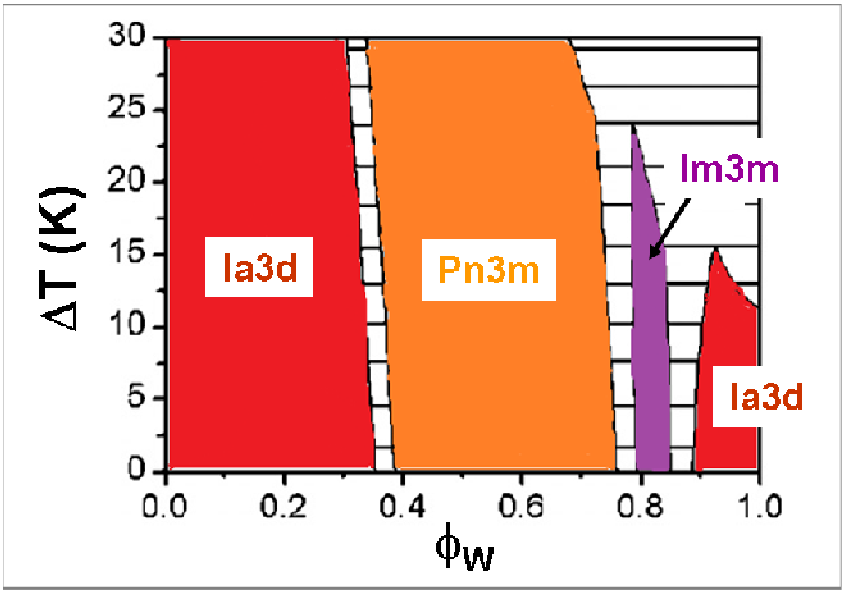

Figure SI 2: The theoretical temperature–water composition phase diagram: Figure modified from reference[1] Interesting feature is the occurrence of re-entrant *Ia3d* phase. Our theoretical model based on constant mean curvature principle predicts presence of *Ia3d* phase in high water region which is presumed to be swollen. Current work is the one of the few experimental evidences of such swollen *Ia3d* phase in lipid-water systems.

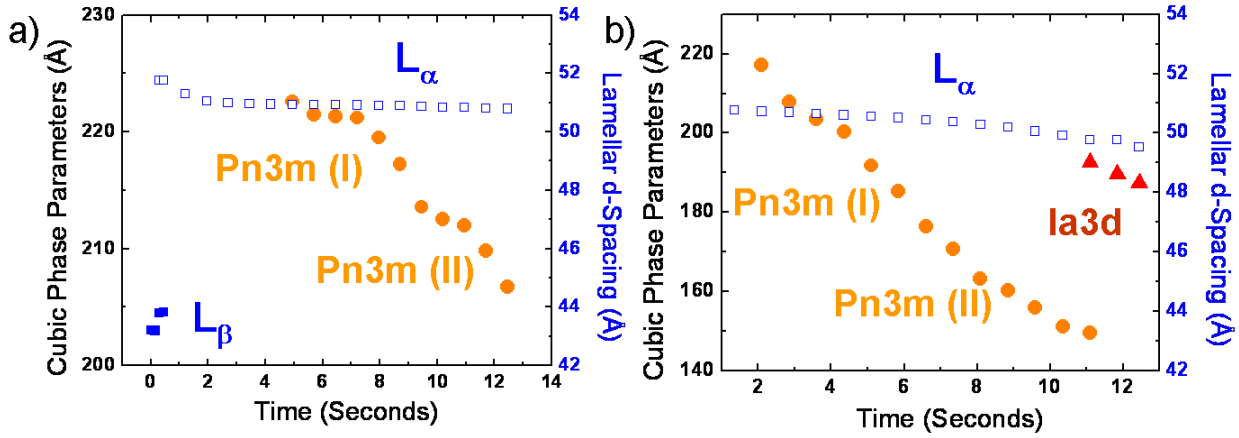

Figure SI 3: Pressure jumps mimicking sudden pressure shocks: p-jumps from a) 2.2 kbar to 1 bar (550*) and b) 800 to 200 bar (220*). Here the numbers in bracket with star indicate actual

pressure values attained when the jumps were complete. *Pn3m* (I) and *Pn3m* (II) show the swollen phases whereas *Ia3d* was not swollen and had lattice parameters similar to normal phase.

Reference:

1 Shearman, G. C., Ces, O. & Templer, R. H. Towards an understanding of phase transitions between inverse bicontinuous cubic lyotropic liquid crystalline phases. *Soft Matter* **6**, 256-262 (2010).