

Preface

The papers in this special issue are from work presented at a workshop held last Spring at the Laboratoire Léon Brillouin (LLB), the nuclear reactor institute in Saclay near Paris.

Jean Rossat-Mignod, who died suddenly last summer, was director of the LLB at the time of the workshop. I would like to take this opportunity to pay him homage for his warm encouragement of multidisciplinary research at the LLB. As a result of which, this institute was a natural forum for work on membranes that explores the interface between biology, physics and chemistry.

The self-assembly of phospholipids and other amphiphiles in water is at the origin of the biogenesis of cell membranes and many other natural phenomena. Understanding the polymorphism of the structures formed and their various

properties poses a formidable challenge in “soft condensed matter physics”.

In the workshop, we had an overview of recent progress in the field. Theoretical and experimental approaches – X-ray and neutron scattering, and NMR of isotopically labelled molecules, making these last methods particularly powerful for the study of complex systems – were aimed at different levels of organisation ranging from a topological treatment of chloroplast membrane stacks to the motion of protons in purple membranes. And, of course, the still mysterious role of water remains a recurring theme in these studies.

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