

Vitamin E, Bilayer Asymmetry and Siloxane Lipids: Neutrons and X-rays Probing Different Membrane Problems

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The structure and function of cellular membranes in biology remains among the most challenging areas in both the life and physical sciences. Cellular membranes are complex, assemblies rich in structure, composition and they play an active role in many cellular functions. Cell membrane maintenance is pivotal to prevent the deterioration of the membranes structure and function, which will have adverse effects on both health and food products. Moreover, membranes composed of synthetic lipids have potential applications in both drug delivery and the delivery of diagnostic agents. Neutron and X-ray scattering are key experimental techniques in answering fundamental questions about membrane systems. In this contribution I will discuss how scattering helps answer scientific questions surrounding the three facets of my membranes research group; Vitamin E, membrane asymmetry and the development of novel siloxane-based phospholipid.