

Molecular Organization: The Case of Bilayer Membrane

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Abstract

Biomembranes are highly organized molecular systems that execute amazingly complicated functions within the nano-sized domain. We demonstrated that analogous molecular organizations were formed spontaneously from a variety of synthetic amphiphiles, and concluded that spontaneous bilayer assembly is a general physicochemical phenomenon (not limited to the biological system). Such synthetic bilayer membranes are quite convenient for design of novel artificial nanofilms. Typical example includes formation of ordered multilayer films by simple casting and superior molecular recognition via complimentary hydrogen bonding at the air-water interface.

Research area(s): Molecular organization, Bilayer membrane, Nano-film