

Langmuir monolayers as valuable tools to study structures and reactions at interfaces

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Monomolecular films at the air/water interface are interesting model systems to study different problems in biophysics or material science. Many parameters can be easily varied (composition, lateral packing density, surface pressure and area exposed to the medium, pH, salt concentrations, etc.). The structures formed in two dimensions can be compared with 3-dimensional structures to elucidate the role of confinements. The interactions of dissolved biomolecules (DNA, peptides, enzymes) with the lipid layers can be studied using surface sensitive methods in terms of structural changes, binding affinities, and reaction yield. Some examples including new lipids, ions, DNA, enzymes, peptides, and nanoparticles will be presented.