MODEL STUDIES OF LIPID AND FATTY ACID MONOLAYERS BY BBSFG

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Model studies of lipid and fatty acid monolayers in systems that are mimics of atmospheric marine aerosols and biological lung surfactant are experimentally feasible. Here, we use broad-bandwidth sum frequency generation vibrational spectroscopy (BBSFG) to study the monolayer systems. Molecules investigated include fatty acids and phospholipids. The scope of our research encompasses structural properties based on orientation, chemical composition, and molecular interactions affected by lipid chain conformations, head groups and subphase saline concentrations. Thermodynamic properties based on phase changes in compression isotherms of monolayers that are coupled with spectral information will also be presented.