Synopsis of Original Research Paper

Structure and Functionality of Supramolecules Constructed by Amphiphiles

Toyoko Imae

Department of Chemistry, Faculty of Science, Nagoya University

The surface pressure-area (π-A) isotherms of dioctadecyldimethylammonium chloride ($2C_{18}$DAC) and dioctadecyldimethylammonium cinnamate ($2C_{18}$DA · Cin) were measured, and their time dependence was examined. The surfaces of Langmuir-Blodgett films of $2C_{18}$DAC and $2C_{18}$DA · Cin were observed by atomic force microscopy (AFM). Then the location and effect of cinnamate anions for molecular organization on Langmuir monolayer of $2C_{18}$DA were discussed. Just after the preparation, cinnamate ions bind on hydrophilic surface of $2C_{18}$DA monolayer, by forming ion pairs with $2C_{18}$DA cations and by directing aromatic groups toward the interior of water subphase. When Langmuir film is maintained during long time at a constant surface pressure, cinnamate ions are intercalated into monolayer, since aromatic groups penetrate into hydrophobic interior of monolayer.