A VIBRATIONAL SUM FREQUENCY SPECTROSCOPY STUDY AT THE LIQUID-AIR INTERFACE OF CROWN ETHER SOLUTIONS.

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Aqueous solutions of benzo-15-crown-5 (B15C5) and nitro- benzo-15-crown-5 (NB15C5) have been studied using the surface sensitive technique vibrational sum freqvency spectroscopy in order to obtain molecular information and also structure and orientation of functional groups. The concentration range of 2-10 mM of the respective solutions has been studied in the CH/OH and the C-O/C=O regions, and in order to clarify peak assignments in CH/OH region, experiments with deuterated water will be performed. The vibrational spectra shows that as the concentration increases more ordered structure is obtained at the interface and the same effect is obtained if salt was added to solution. Surface tension measurements of these solutions were performed in order to elucidate the time behavior of molecules exhibited at interfaces. The combination of results from the CH/OH and the C-O/C=O regions allows a throughout characterization of the behavior of the benzo-15-crown-5 (B15C5) and nitro- benzo-15-crown-5 (NB15C5) at the interface to be obtained.