

## **ABSTRACT**

LB films of dye molecules are prepared under biasing conditions. Conductive glass plates are used to deposit LB films. Three-electrode configuration (Working, Counter (pt), and standard calomel electrode (Ag/AgCl)) was used to apply a voltage to conductive glass plates coupling to a potentiostat (Hokuto- Denko). Here the LB deposition instrument acts as an electrochemical cell during the deposition of monolayers applying a fixed voltage to conductive glass plate. It was found that absorbance spectra of di octadecyl Merocyanine dye films on conductive glass plate consist of three peaks 510nm(dimers) 540nm(monomers) and 580nm(J- aggregates). In the positive biasing condition, the monomers are more abundant than dimers and J- aggregates in the dye film. In the negative biasing condition the dimers and J – aggregates are more abundant than monomers.

AFM Pictures shows that in the positive biasing condition the surface of dye films is 2D where as in the negative biasing condition it is 3D due to formation of J-aggregates.

Surface Area Isotherms explain the interlocking of R- C18 dye between two hydrocarbon chains of C18-Mero-C18 dye molecules. . Interlocked molecules minimize the formation of J- aggregates.

A photocurrent enhancement can be seen in the photo electrochemical cell when formation of J- aggregates is controlled as the J – aggregates act as the trapping centres for the charge carriers.