

Self-organization of surfactant molecules on immersed gold substrates

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Resumo

The adsorption of surfactants on solid substrates is subject of both fundamental and applied interests. Many nano-sized systems used in drug delivery formulations in pharmacological sciences are constituted by surfactants alkyl ether sulfates, C_nSO_4 , and polyoxyethylene alkyl ethers, C_nEm . The aim of this work was to study the interaction of dilute solutions (below the critical micelle concentration, CMC) of different ionic (the alkyl ether sulfates $C_{10}SO_4$, $C_{12}SO_4$, $C_{14}SO_4$ and $C_{18}SO_4$) and nonionic surfactants (the alkyl ethers $C_{10}E_8$, $C_{12}E_8$, $C_{14}E_8$, $C_{16}E_8$ and $C_{18}E_8$) with the surface of a polycrystalline gold electrode of a electrochemical quartz crystal microbalance (EQCM). The gold electrode surfaces, after the film adsorption, were characterized with the Atomic Force Microscope (AFM) and potentiostatic measurements.