Electrochemichal Properties of Amphiphilic Viologens in Self-Assembled Structures

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The electrochemical properties of amphiphilic viologens in differently charged micelles and in cubic and lamellar phases were studied at glassy carbon electrodes using various electrochemical techniques. The redox potential varied depending on the charge of the surrounding amphiphilic molecules, but also other interactions influenced on the stability of the redox states. The redox reactions were almost reversible. Adsorption, desorption and reorganisation of the amphiphilic molecules at the electrode surface caused capacitive currents. To distinguish between the non-faradaic and the faradaic current peaks, differential pulse and square- wave voltammetry were used in addition to cyclic voltammetry. Chronocoulometry was used to measure the diffusion of the amphiphilic viologen in the cubic phase.